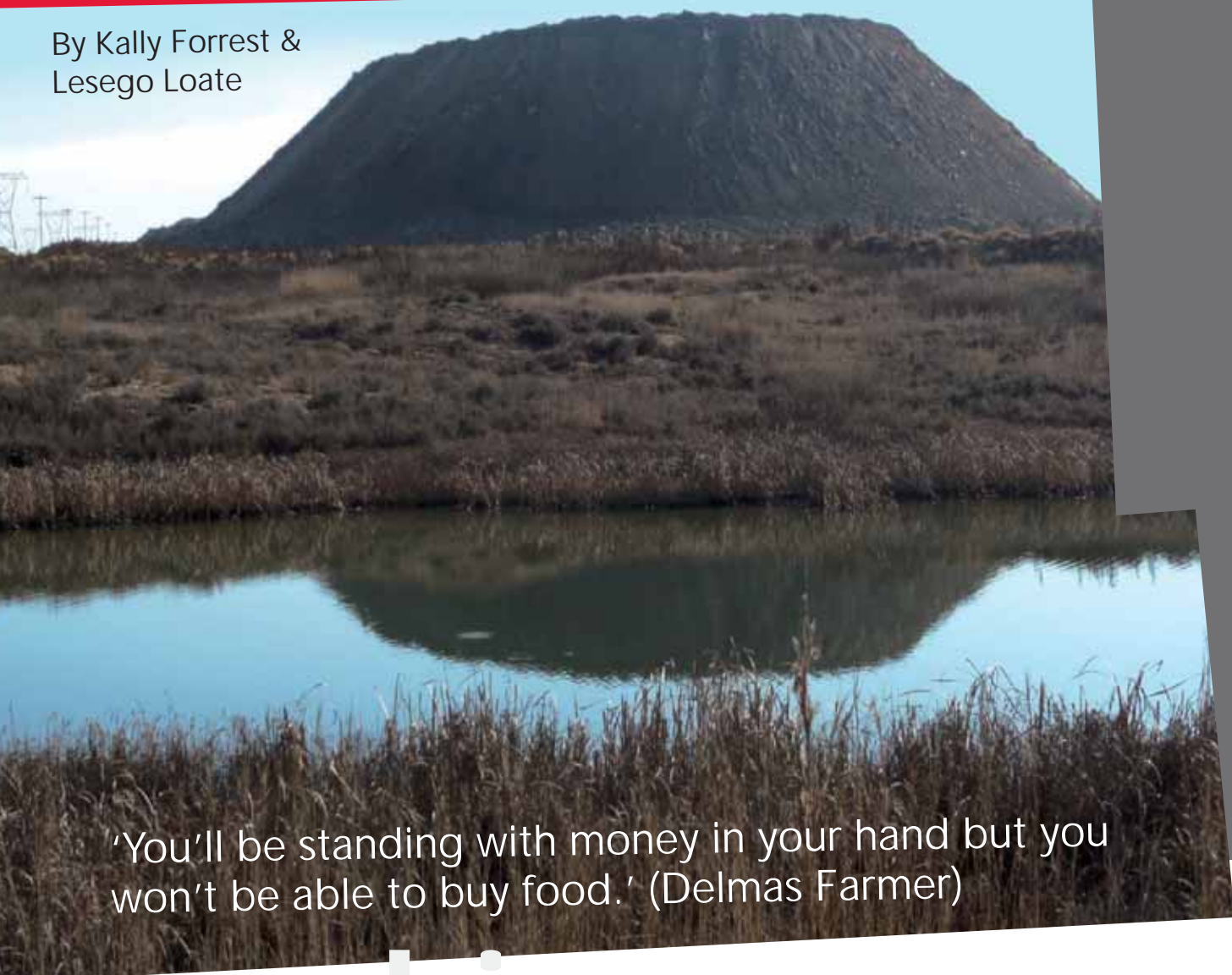


Coal, water and mining flowing badly

By Kally Forrest &
Lesego Loate



'You'll be standing with money in your hand but you won't be able to buy food.' (Delmas Farmer)

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Coal, water and mining flowing badly

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Acronyms & Abbreviations

AMD	Acid Mine Drainage
ANC	African National Congress
BEE	Black Economic Empowerment
CEO	Chief Executive Officer
COSATU	Congress of South African Trade Unions
CSA	Coal Supply Agreement
DA	Democratic Alliance
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DWA	Department of Water Affairs
DWS	Department of Water & Sanitation
EIA	Environmental Impact Assessment
EMI	Environmental Management Inspectors
EMPL	Environmental Management Plan
EMRI	Environmental Mineral Resource Inspectors
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IDP	Integrated Development Plan
IWUL	Integrated Water Use Licence
JSE	Johannesburg Stock Exchange
MEC	Mineral Energy Complex
MPRDA	Minerals Petroleum Resources Development Act
Mt	Million tonnes
NEMA	National Environmental Management Act
NEMPAA	National Environmental Management: Protected Areas Act
NWA	National Water Act
OES	One Environmental System
PCD	Pollution Control Dam
RBCT	Richards Bay Coal Terminal
SANCO	South African National Civic Organisation
SLP	Social Labour Plan
SPLUMA	Spatial Planning Land Use Management Act
The Chamber	The Chamber of Mines
WUL	Water Use License

Summary Main Findings

Findings in Delmas

- Coal mines selectively adhered to and evaded the spirit of water laws without serious consequences.
- Regulatory avoidance occurred in all mines - juniors and majors, local and foreign, black and white.
- The cumulative impacts of coal mines on water were a threat to local and downstream water resources.
- Environmental, mining and water laws should protect water supplies but mining was polluting resources and destroying land and agriculture.
- Delmas will transmute from an agricultural to a mining town and restoration of its former rich agricultural land will not be possible.
- After the withdrawal of mines Delmas will become a wasteland and mine flooding will contaminate downstream water and further compromise the water quality of the Olifants River catchment area.
- BEE mining juniors were not favoured in the regulatory regime over the majors.
- Weak enforcement by the Department of Water & Sanitation (DWS) and the Department of Mineral Resources (DMR) impacted dangerously on water resources.

Meaning of Regulatory Failure: Enforcing the law

- Some problems with the framing of water laws exist but mine compliance and the DWS and DMR's weak enforcement is the overriding concern.
- The DMR holds the contradictory role of promoting mine development and protecting the environment.
- Unusually the department, in this case the Department of Environment, developing the law is not the monitoring/compliance authority.
- The DMR is the mining environmental inspectorate and enforcement authority under the One Environmental System (OES) but it promotes mining over the environment.
- A breakdown in cooperative governance between departments' responsible for mining's impact on water is in evidence.

- The elevation of mining over the environment relates to politics, power and accumulation.
- The DWS is subject to DMR and OES power relations including the time limit for evaluating composite authorisations.
- Multiple regulations, policies, and court judgments on mine licencing and water impacts cannot resolve the cooperative governance failure. The law is incoherent and cannot set guidelines to resolve conflicts. A grey zone operates below the formal licensing regime in which both juniors and majors operate. The law is paralysed by power politics and black elite formation which legalises the illegal.
- Farmers have rights in the formal regulatory system but these are trumped by minings' substantive rights in the informal zone.

Meaning of Regulatory Failure: Fenceline Communities

- The Delmas fenceline community is dominated by white commercial farmers.
- Farmers complain and take legal action against DMR/DWS to enforce their water and other rights.
- Mines and state departments ignore farmers' grievances.
- Farmers' rights are eroded and they are coerced into selling their agricultural land.
- Farmers are on the right side of the law, but the wrong side of history.
- Mining expands with impunity with the consequent destruction of land, agriculture and water and food security.
- Farmers have the financial resources to move elsewhere so the main loser is South Africa's food and water security.

Meaning of Regulatory Failure: Threat to food & water

- Delmas contributes to the Highveld Mpumalanga agriculture and food economy but production has steeply dropped.
- Delmas is not a special case - all of the Mpumalanga Highveld is under threat.
- The state does not fully acknowledge the crisis of future food and water shortages so it cannot plan, or take action, to prevent it.

- The DMR promotes intensification of coal mining for both export and coal fired energy.
- The mining water regulatory failure is opportunistically employed by water grabbing extractives.
- The dominance of the DMR means that other state departments and agencies are unable to promote alternate sources of power.

Meaning of Regulatory Failure: Short Termism

- Short termism of state and mining capital exists in relation to food and water security in pursuit of power, influence and accumulation.
- Elite capture of wealth creation while ecological breakdown impacts on people's lives.
- The Delmas coal study is a microcosm of state priorities.
- The African National Congress (ANC) has given birth to transformative laws which it undermines.
- A simultaneous expansion and erosion of rights is occurring.
- The erosion of water rights paradoxically puts apartheid constructs under pressure such as white commercial farming and land ownership.
- South Africa is still transitioning to a stable democracy. Capture of the means of wealth creation by a black elite is still in process. Movement forward on environmental protection is followed by retrogressive steps - previously mining and water was not monitored at all. But half measures on water and food provision will seriously impact on people's lives, and ecological breakdown cannot accommodate prolonged collapse and renewal as what happens now has long term impacts.

Introduction

What is this report about?

An obvious fact needs to be stated: when we talk about water we are talking about a fundamental resource in the reproduction of the human species. We are also talking about food production, human livelihoods and environmental sustainability. As Carl Sagan put it, 'Anything else you're interested in is not going to happen if you can't breathe the air and drink the water.'¹ Yet in a perversion in South Africa the needs of the mining industry as a driver of economic development often appear to supersede the protection of a clean water supply. These contradictory needs and the contestation between them lie at the heart of post-apartheid transformative mining regulations.

In South Africa there are numerous instances of failed accountability and regulatory systems, which have implications for the deepening of democracy. The extractives industry is an important sector where regulatory accountability has broken down. This study seeks to understand how and why various actors in the coal mining industry have evaded transformative regulations with particular reference to the management of water and the issuing of water licences by the state.

The research investigated how the post-apartheid state has attempted to restructure the coal industry historically dominated by a few large corporates. The state has aimed to fragment these majors so as to open up space for the emergence of a new black elite and to encourage foreign direct investment. Its policy of black economic empowerment (BEE) includes attempts to facilitate the formation of black-owned companies through industry charters, and procurement measures implemented by Eskom, the state's energy utility, which issues coal supply contracts (CSA). Alongside such official initiatives the research investigated whether informal practices such as collusion, favouritism, tender rigging and bribery operated through patronage networks across state institutions and in the private sector seeking to secure opportunities and deals.

The study also examines whether a dual industry structure and regulatory system has emerged which separates the coal majors from juniors, particularly BEE

enterprises, with consequent impacts on water resources. Does the first tier operate at a visible level, with formal standards of reporting and accountability, while a second tier operates in a 'grey zone' characterised by a mixture of formal and informal practices? Or does regulatory avoidance manifest in both? Who gets favoured in the state's water allocation system and do mining interests trump all else? This investigation will thus examine paradoxical state imperatives such as black class formation versus the protection of water resources in a water scarce country.

This gives rise to the question of whether the regulatory system is truly designed to facilitate accountability, or if it is calculated to enable water grabbing by the mining industry regardless of the needs of other constituencies. Is there a bias in the way laws and regulations have been framed and implemented by the state which favours the mining sector above all others with serious implications for clean water supplies and the production of food and food security? Further even if coal mines observed the water licensing and regulatory system would this make a difference to the just distribution of water?

Methodology

Various information sources were used in this Report but the Case Study was most important in informing arguments and conclusions. Delmas in the Mpumalanga Province and its surrounding mines within a 30 kilometre radius was chosen for a range of features that could address the questions under investigation. Using a triangulation of methods we interviewed key informants through site visits as well as random informants and also observed the external impacts of mining on water resources in the area. The Case Study was not only ethnographic as other information was gleaned from interviews in Gauteng and other locations in Mpumalanga. The main sources were government officials in national, provincial and local spheres; company officials, representatives from the Chamber of Mines and miners from Delmas' coal mines; commercial white farmers living adjacent to mines and their related agricultural organisations; environmental NGOs and academics working on extractives; and community members from the Delmas township of Botleng. A range of literature was accessed and included academic and popular

articles, books, reports and journals as well as local and international NGO and government policy reports.

The Report is divided into 6 Parts:

- Part 1: Introduction: What is this Report about & Methodology
- Part 2: Overview of the Coal Industry
- Part 3: Emergence of black major and junior coal miners
- Part 4: Delmas Coal Mining Case Study
- Part 5: Water use legislation, regulations & policies
- Part 6: Concluding Remarks
- Part 7: Guidelines to Action

Overview of the Coal Industry

Coal is of strategic importance to South Africa's economy in both the export trade and as energy feedstock in the generation of electricity and manufacture of steel, plastics, chemicals and other products. Coal is also central to the debate about a future economic growth path and is intertwined with economic transformation associated with black class formation. Government has identified the mining sector as important in its BEE thrust, which is changing ownership patterns in the sector. Water regulation thus sits at the centre of important policy issues.

However, coal presents challenges in relation to clean water resources, making water regulation in the mining industry crucial in a water scarce country.² Regulation intersects with food security. It also raises strategic questions and choices concerning the energy-economy which touches on the future of coal and the reduction of greenhouse gas emissions agreed to in COP 21 and whether South Africa can meet its commitments due to its political lock-in to coal energy.

Global Trends in Coal

Coal plays a significant role in global energy production accounting in 2015 for 40.8% of electricity generation.³ Global production has grown since 2000 by 69% and the capacity of coal fired power stations by 35% since 2005. Electricity generation has doubled since 2000 and coal is responsible for half of its growth. Coal was the fastest growing energy source between 2000 and 2010⁴.

Economic development in the Global South has led to increased demand for coal energy in China, India, South Africa and South Asian countries which also have significant coal reserves. Most top importers are Asian⁵ with China's annual consumption between 1980 and 2008 jumping by a staggering 400%.⁶ Demand has plateaued however due to its phase out in countries of the Global North such as France, United Kingdom, Denmark and the United States and the curtailing of overproduction in China.⁷

Total coal reserves (not yet extracted) globally are estimated at 891 billion tonnes which equates to 110 years of output⁸. The US (26%) and Russia (17.6%) lead ten countries with 90% of reserves with South Africa lying in ninth place.⁹

The domestic demand for coal energy in coal producing countries restricts their role in the export market so the top producers are not necessarily the top exporters.¹⁰ Some countries are not coal producers but are significant consumers while countries like China and India are significant coal producers and importers. This points to a robust coal market in which South Africa benefits as it consumes less than it produces. In 2015, Australia was the leading exporter with South Africa ranked fifth exporting 25% of its coal.¹¹ Although small, it possesses large spare production capacity and has access to the Atlantic and Asia-Pacific markets, the latter accounting for 53% of exports with 40% to India.¹² Europe formerly its leading market is now second.

Exports are shipped out through the privately owned Richard's Bay Coal Terminal (RBCT) with a capacity of 91 million tonnes per annum (Mtpa). In 2014 RBCT exported a record 71.3 Mt of coal to 41 countries. The Department of Mineral Resources (DMR) manages the Quattro Black Economic Empowerment scheme, with a capacity of 4 Mt, for junior black companies. However exports have experienced a price drop almost halving since 2011 and costing R23 billion in lost revenue.¹³

South African Coal

Estimations of South Africa's coal reserves vary from between 15 to 55 billion tonnes.¹⁴ About 96% is bituminous (used in energy production), 2% is coking coal and 2% anthracite. The reserves and mines have been centred in the Central Basin of the Mpumalanga Province home to most of South Africa's electricity generation although the quantity and quality is in decline.¹⁵ These coal fired power stations generate 90% of electricity¹⁶ however future production in the Limpopo Waterberg coalfields is set to increase.¹⁷

Coal energy is central to South Africa's political economy and to understand its dependence on this power it is important to understand its role within the overall economy.

The coal sector is the largest mining revenue generator. It contributes 1% to GDP, employs 90 000 people, paid R19 billion in wages in 2014 and is a vital source of foreign exchange at R50.5 billion in 2011. Since the 1990s South Africa has exported 30% of its coal accounting for 50% of coal revenue.¹⁸ Reliance on coal stems from an historical energy-intensive mineral resources industrialisation growth path often referred to as the Minerals-Energy Complex (MEC).¹⁹ Coal generates power for mining and the beneficiation of mineral and manufacturing commodities. Underpinning the MEC are a network of relationships between government and the private sector cutting across policy making, finance, infrastructure, manufacturing, mining and electricity generation.²⁰

Eskom which is responsible for electricity generation and the largest consumer of coal, has been central to the MEC and the economy. It buys 53% of South Africa's coal and its 13 power stations provide 90% of electricity.²¹ Many were built adjacent to private mines with long term Eskom supply contracts while Eskom calibrated most power stations for low quality coal. Its contracts were mainly long term cost-plus (cost of production plus a profit margin) which with a government price limit allowed for some of the lowest coal and electricity prices in the world. The export and domestic markets functioned in tandem with exports ensuring domestic energy security as they provided higher revenue for coal producers to offset Eskom's low domestic price.²²

This cheap coal/electricity MEC regime has partially fractured however because of the growth of the finance and services sectors; the internationalisation and diversification of mining companies; the emergence of a black economic elite; changes in mineral and energy policies; and the introduction of renewable energy due to climate change pressures with South Africa's being one of the highest GHG emitters in the world. Many key coal companies moved out of South Africa entailing changes in relationships with public institutions while BEE policies introduced new ownership patterns which also disrupted the MEC.²³

Eskom's Procurement of Coal

More of South Africa's exports are lower grade coal than formerly which has threatened South Africa's energy security.²⁴ Eskom's suppliers were the main coal producers however they are increasingly targeting the higher priced export market forcing Eskom to sign short term contracts with majors and juniors to meet coal shortages. Moreover, domestic prices have increased for Eskom with the impact of higher export parity prices, the decline

of Central Basin coal, the decrease of long term cost plus contracts, and the rise in transport costs as only three power stations are supplied mine to mouth making road haulage essential. This has led to higher electricity tariffs eroding the MEC cheap energy model. It also faces financial pressures due to the building of the huge Medupi and Kusile power stations to add energy capacity.²⁵

However parts of the MEC are entrenched as South Africa is still an energy intensive economy with supply focused on intensive users. Eskom's 31 largest customers in mining, processing, heavy industry and manufacturing account for 44% of electricity consumption. However black owned companies now account for 30% of coal production representing the transfer of R47 billion to the historically disadvantaged although Eskom's supply is still dependent on a few large coal mining corporations (or subsidiaries).

Eskom still holds the monopoly over electricity generation remaining the largest consumer of domestic coal which combined with the export market means water and agriculture will continue to be impacted especially if poorly regulated.²⁶

Water use in coal mining

Water is an important input in coal mining and most mines actively recycle because of its shortage. However in Mpumalanga more water is consumed by agriculture than in mining. Mining is both underground and open-cast and both use and discard water of various kinds. Different WULs are thus required and the mine will apply for an Integrated Water Use Licence (IWUL).

In underground mining water is a hindrance which must be removed before mining commences and it is sent to reservoirs underground where pipes transport it to different sections. Dewatering also occurs in opencast mining. The uncontaminated water from these pits is pumped up, stored and used in the spraying of coal stockpiles and roads for dust control.²⁷

Continuous miners which break the coal face underground use clean water supplied by the municipality, from a treatment plant, or from boreholes for which mines require a licence. Water is sprayed on the coal face to prevent spontaneous combustion and to stop nozzles from blocking. The roof bolter which prevents ceiling collapse also requires clean water.

Water that comes in contact with coal underground is 'dirty' and must be pumped to the surface into a pollution control dam (PCD). The freeboard²⁸ on PCDs

must be designed for possible flood events and levels of water must be managed to prevent discharge into the surrounds. A PCD must be properly sealed with cement and plastic linings so that dirty water does not seep into the groundwater. Thus storm water plans are important and 'impacted' water must be separated from clean water sources - the responsibility of an environmental department or manager.

Once the coal has been brought to the surface via conveyor belts it proceeds to the processing plant which according to mineworker Boxolele Nongalo, 'is all about water'.²⁹ The beneficiation process reduces the coal ash content, brings it to export requirements and removes rocks and impurities in lower grade Eskom coal.³⁰ Coal is crushed, washed with chemicals mixed with water to reduce its non-carbon ash content, dried and excess water is sent to the PCD.³¹

The PCD is only one structure dealing with waste water. The mine is required to have other waste water management facilities such as a discard facility, sewage treatment plant and a means to manage the dirty water flow from stockpiles. The IWUL requires the mine to have a monitoring programme of water storage facilities such as boreholes and waste water facilities and it must record information such as pollution incidents, low flow and flooding. Meters monitor water pumped into and out of storage facilities and this information must be recorded. Water meters for boreholes should be augmented with a water level logger to adequately record groundwater abstraction rates and water levels. Groundwater quantity must be monitored on a monthly basis and groundwater quality on a quarterly basis for pollutants. Boreholes within a one kilometre radius of the mine are also part of this groundwater monitoring programme.³²

Rain water is polluted when it runs off discard and stockpiles in both abandoned and working mines before it enters rivers, streams, wetlands, dams and other water resources. The coal mining process, regardless of mining method, leads to Acid Mine Drainage (AMD) where high sulphate concentrations may render water unpotable and unfit for use in irrigation.³³

Thus although mines try to be 'water wise' and use less water than agriculture, the deleterious impacts of their water use is much larger. Well-developed water management plans and good adherence to water use licences are essential.

Three

Black majors & juniors emerge, white majors thrive

Before moving to the findings of the research in the Delmas Coal mining area it is important to understand the distinction between coal majors and juniors referred to in the introduction. It should be noted that not all BEE miners are juniors so it is important to distinguish between different kinds of coal companies, and this includes black and white companies.

In the last century six major mining groups dominated the coal industry in South Africa and influenced state policy through a common voice in The Chamber of Mines (The Chamber). Currently the industry is still dominated by large corporations albeit under new names - Exxaro, Glencore Xstrata, Anglo American, South 32 and Sasol Mining.³⁴ They own the biggest share of RBCT, giving them a monopoly on the profitable export market.³⁵ But as Grant Mitchell from The Chamber Emerging Miners Desk comments, 'It' no longer six companies running the country, now its 75. There's a move away from monopolies and now it's a broader ownership base.'³⁶

The MPRDA signalled the state's intention to weaken the domination of corporates and their hoarding of rights in order to unlock space for junior black companies. It facilitated the entry of BEE entrepreneurs through formal policies such as the Broad Based Black Economic Empowerment Act (2003) and its various Codes expressed through the Mining Charter which unlike other industry charters was enforceable in law. Under the Charter corporations had to guarantee 26% black ownership and apply for a mining licence typically granted for 30 years or less. Eskom would play a central role in promoting BEE through the provision of supply contracts. In addition from 1996 the ANC government reduced capital and exchange controls thus allowing mining corporates to move their primary listings abroad whilst they unbundled in South Africa. This often involved selling, sometimes less productive, assets to members of the aspirant black bourgeoisie.³⁷

Black entrepreneurs entered the coal mining industry

in different ways and the pattern altered as the sector developed. The early post-1994 period is associated with high levels of political patronage involving the ANC elite and black and white business. Enmeshed relations developed between corporates and the ANC political establishment where both sides exploited the relationship for mutual benefit. Many established white mining companies approached politically well placed BEE partners to favourably position them with the new ANC government and ensure access to private and state business and to gain mining rights where long delays were common.³⁸

The first major BEE entrant in 1996 was ANC benefactor Patrice Motsepe from African Rainbow Minerals (ARM) who developed a diverse portfolio including coal where by 2012 it held a 10% stake in Xstrata SA, an Anglo Swiss company, and a 20.9% stake in RBCT. Cyril Ramaphosa's (now South Africa's deputy president) Shanduka Resources also held stakes in coal and together with Bridget Radebe (wife to Jeff Radebe former minister of justice and sister to Motsepe) were beneficiaries of Optimum Mine's creation in 2007 when BHP Billiton divested from South Africa and Shanduka Coal became one of the largest coal suppliers to Eskom. Shanduka later became Glencore's black empowerment partner which by 2012 held over 50% of Shanduka Coal and Glencore the remaining 49.9%. Thereafter Glencore and Xstrata merged to become one of the world's largest coal conglomerates and Glencore bought Shanduka's Optimum Coal. Ramaphosa was also director of Kangra Coal which had a stake in RBCT.

Other ministers also owned coal interests including former minister of environment Vali Moosa who served on the board of Anglo Coal's New Largo mine in Mpumalanga which supplied the mega coal fired power station of Kusile. Coal of Africa a coking coal mine also involved Moosa and his business partner Popo Molefe of Dereko Investments, a former North West premier. Molefe chaired the board of Chancellor House, the ANC's investment arm which accessed numerous coal mining rights in the 2000s many in Mpumalanga. Chancellor House and BEE became an important source of funding for the ANC.³⁹ Meanwhile Exxaro Coal was created through an empowerment deal entailing the unbundling of Eyesizwe Coal and Kumba Iron Ore. On Exxaro's board sat a Chancellor House trustee.⁴⁰ And

so it went on. The pattern was clear. It paid to be a prominent ANC politician. The black elite were entering the lucrative mining economy through the intermediation of large corporations requiring a black empowerment partner in order to adhere to Mining Charter codes. At times these politically connected BEE companies became wholly owned black companies with some like Exxaro, Shanduka and ARM becoming significant players.

Such rich pickings were reserved almost exclusively for the ANC political elite and were not illegal but as Cargill observes can be described as 'legal corruption' which '... against the backdrop of widespread poverty and joblessness, appears ethically indefensible.'⁴¹ Some activity was naked BEE rent seeking in relation to large white corporates involving little productive investment. By the 2000s 'legal' corrupt activity slid into overt political cronyism defined by Transparency International as 'the manipulation of policies, institutions, and rules of procedure in the allocation of resources and financing by decision-makers who abuse their position to sustain power, status and wealth.'⁴²

It was in this context that the DMR tasked with distributing mining licenses was drawn into promoting influential ANC political networks whose business interests were conjoined with the notion of BEE as a tool of wealth redistribution. Licences were distributed liberally but selectively to powerful black actors.⁴³ The DMR as broker acted on a political mandate in the guise of an economic one allocating licences to politically connected black business who donated to the ANC.⁴⁴

This manipulation of transformatory legislation by the DMR was difficult to challenge as a lack of accountability became embedded in the institution. Such practices were not unlawful but indicated that the DMR was overreaching its mandate. Companies wishing to object to well-placed individuals getting specialist treatment held back for fear of DMR officials denying them future access to resources.⁴⁵

The next generation of black juniors had different roots and struggled to get into the industry. Coal extraction requires less investment than other minerals so was favoured by emerging miners. But what is a 'junior'?

Juniors in coal are 'small medium' registered operations generally involving opencast activity which employ about 200 people in one or two mines, have an annual turnover of about R30 million, and total assets of between 18-100 million. Typically, they have a below R50 million balance sheet (net assets and reserves).⁴⁶ Mitchell describes BEE juniors thus,

Some are entrepreneurs, some political opportunists... some are skilled, and have capacity and are in it for the long haul. Some have formed joint ventures with established companies where the former did the exploration and were awarded a percentage of profits, royalties or shares once mining began - if it's a big deposit juniors can make big money. They are small operations but big compared to emergent companies in manufacturing. Lots of juniors mushroomed with BEE legislation especially where they had big partners.⁴⁷

Juniors have differing origins. They may be foreign owned; BEE companies established by corporates to fulfil 26% black ownership; independent black companies; or a few black companies operating as contractors to larger mines. BEE companies have seen the most growth and are the focus in this report.

Juniors are not small 'fly by nights' or informal mines which extract rapidly and disappear. 'Small scale or artisanal mining is generally poverty driven, with little or no technology and which in many instances operate outside of the framework of the law.' noted Grant.⁴⁸ Juniors have more in common with majors, which many aspire to become.

The lack of venture capital and loan finance are large obstacles for junior black miners.⁴⁹ They are perceived as risky by the investment community so while short term loans can be accessed they are of little value in developing a mine.⁵⁰ Eskom's purchase from BEE players has grown significantly at about 30% of its coal at a much higher cost than formerly. Yet despite its support in reality Eskom is no longer willing to invest in coal mines and is signing shorter contracts than in the past.⁵¹ Moreover the majors benefit hugely from exports which generate the largest share of coal earnings, in 2012 60%, while juniors often extract poorer quality coal and struggle to meet export standards and so do not make full use of their Quattro allocation.

Compliance with water regulations, as with majors, has been an issue for juniors although sometimes for different reasons. The cost of entering mining is prohibitive as a range of costly studies are required involving millions of rands. Ayanda Bam, CEO of junior mine Kuyasa, lamented government's lack of support, 'Government must be responsible for making sure that legislation is not discouraging and finances should be made possible to get into the industry as a loan... A lot of black people want to get into mining... They can't get in. Obtaining a mining right is impossible...'⁵² He complained of an

obstructive state bureaucracy forcing juniors into corruption,

If you can't get a water licence, this could delay you for years... So why should R10 000 [bribe] be an obstacle... The policies are good. It's the implementation and the institutions. The website [to apply for licence] you can't get in, it doesn't work... The work done by the political and executive arm gets confused with this...Political influence is standard. You must move in the right circles.⁵³

Another junior CEO, Wonderboy Manzini from Masemanzi Mining told of his arduous journey to get into coal mining and the grey areas he traversed. Confronted with the problem of raising capital he initially tried to engage in BEE fronting paying out substantial cash, but the deal never materialised.⁵⁴ He cashed in his Eskom pension but failed to get a licence. A neighbour offered to buy coal from him which he accessed from Vlakfontein African Explorations, a state mine, unable to sell while awaiting a licence. In this way he entered coal trading through an off-take agreement. Eskom bought coal from him as a middleman with no questions about the source or possession of a water licence and in this way he raised capital to acquire a mining licence and operate a mine. He later won an Eskom supply contract and also began exporting.⁵⁵

Manzini learned to 'manage' the process of obtaining a licence,

You must find an individual in the DMR... offer money ...pop up money all the way... because mining rights can take two years... although it's better now. You rely on that individual to know what to expect. Big companies have done this before so they know. So it's not so hard for them... Some mine without water licences. Some get a mining permit and then mine and get a water licence later. Some officials say you can mine, some say you can't.⁵⁶

Thus licenses were 'for sale' for juniors and environmental and water use issues of little interest.

Anglo American Coal consultant, Ritva Muhlbauer, argues that,

Smaller mines have less will, less money, less integrity, and are less environmentally conscious. Junior miners get in and get out and make money as fast as possible. Water Affairs does not police junior mines properly - they are not fined. There are governance issues. Junior mines if there is too much rain can't control it - don't manage levels, can't pump out, don't separate clean and dirty water and so it spills out into dams, rivers and wetlands.⁵⁷

Is this true that junior miners are the worst water offenders? Many of these juniors are BEE mines so do they benefit from a more lax licensing and monitoring regime than the majors? After the Delmas case study below we assess whether BEE juniors are favoured by the state and hence are the worst regulatory offenders.

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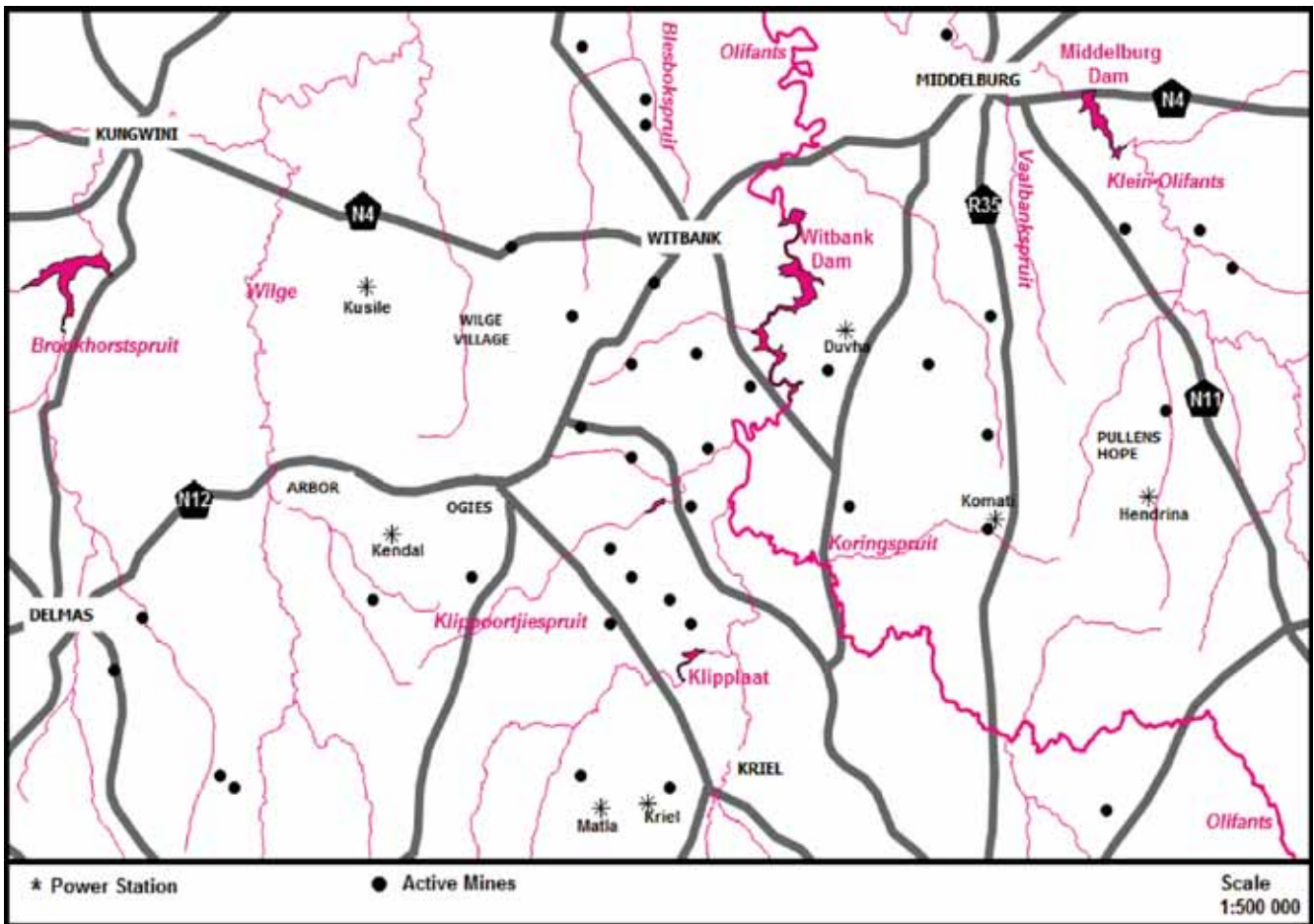
Delmas Coal Mining Case Study

Introduction: Selection of Delmas

The Case Study examines the Highveld region of the Mpumalanga province town of Delmas and its surrounding coal mines within a 30 kilometre radius.

Delmas was selected for a number of reasons. It is a new frontier (albeit small) of coal mining ideally placed to supply some of Eskom's power stations. Until 12 years ago two mines operated but as Emalahleni's reserves depleted, 17 greenfields have emerged. This recent growth makes the impact of coal mining on water and the effectiveness of post-apartheid regulations easier to monitor. Further the high number of new mines allows for an analysis of the cumulative impacts of mining.

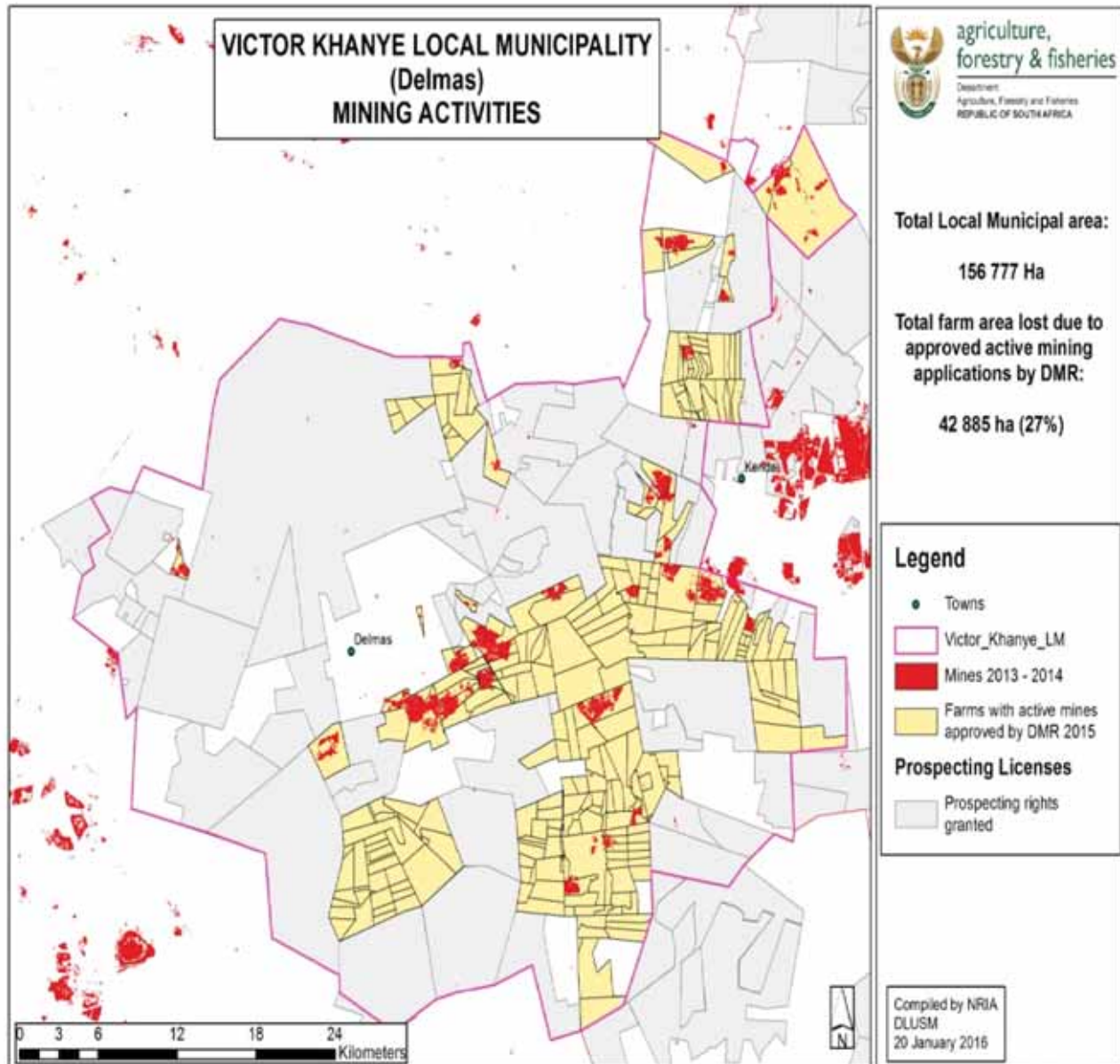
Upper Olifants



Groundwork

Delmas lies at the headwaters of the Olifants River Catchment Area. Tributaries such as the Koffiespruit, Wilge, Bronkhorstspuit and Blesbok flow into the Bronkhorstspuit, Loskop and other dams and merge into the Olifants which ultimately joins the Limpopo. The European Union has threatened to withdraw agricultural exports from farmers around the Loskop Dam representing billions of Rands in income and thousands of jobs in food production owing to cyanotoxins in the water.⁵⁸ Delmas is a fertile farming

area described as 'the maize basket of Johannesburg'.⁵⁹ Both white and yellow maize for human consumption and chicken feed is produced as well as soya beans, vegetables, poultry, livestock and dairy. White commercial farmers predominate who under apartheid were state subsidised but post-apartheid no longer enjoy this support.⁶⁰ Farmers contend that government favours mining over agriculture which is borne out by the DMR granting mining or prospecting licences on all except two farms in the area.





Delmas' rich agricultural soil

K Forrest



Dairy farming in Delmas area

K Forrest

Delmas is a dolomitic area characterised by underground drainage systems including underground rivers and the large Botleng Dolomitic Aquifer which provides clean water to the town and farm boreholes.⁶¹ It falls in a water rich part of South Africa with a higher than average rainfall of between 600-850mm per annum and so is able to contribute to drier areas of the downstream Olifants River.⁶² In the rainy season the Aquifer recharges springs, wells, wetlands and boreholes but it is at risk of contamination by mining activity.⁶³

Delmas area showing rivers & large underground Botleng Dolomitic Aquifer



Victor Khanye Municipality

F Fuls

Most water is consumed by agriculture although dry farming (captured rainfall) is common. Farms rely on borehole water for irrigation and chemical use is small. In 2005, over 3 300 cases of typhoid erupted in Delmas and four died.⁶⁴ As a result reliance on borehole water has been reduced and half the municipality's drinking water is provided by Gauteng's Rand Water and a local treatment plant drawing water from two large boreholes while farmers buy potable bottled water.⁶⁵ Small rivers and streams also provide water particularly for drinking by informal communities and cattle.

Wetlands and pans are characteristic of Delmas sustaining abundant natural activity and filtering out pollutants. Filtered streams flow out of wetlands and join with streams and rivers downstream. Wetlands also detain water allowing for replenishing of ground water and boreholes.⁶⁶ However the Victor Khanye Municipality does not keep a mandatory record of wetlands and thus mining's impact on them is not monitored.⁶⁷

All these water resources are in different ways vulnerable to coal mining in Delmas making it well positioned to illustrate cumulative impacts combined with a weak regulatory system.



A wetland next to Delmas' Botleng township

K Forrest



Wetlands & pans are characteristic of Delmas

K Forrest

Case Study Analysis

Most mines are open cast except for Delmas Coal which also operates underground and the majority are working but some are abandoned. An area-wide perspective was taken rather than in-depth studies of particular mines. The Centre for Sustainability in Mining notes, 'Licensing and permitting, especially of mining applications, must take the regional context into account, and the effect that the rate of exploitation of the resource may have on the long term sustainability of an area.'⁶⁸ Taking into account cumulative impacts, mines of different ownership types, size and length of extraction were selected to probe water use impacts, compliance, and the ease with which WULS were obtained. We also interrogated whether juniors experienced regulatory favouritism.

The Delmas study does not represent all coal mining in Mpumalanga as only one major company was present and the majority were juniors. Delmas' farmers for example cited the Anglo American Zibulo (Zondagsfontein) coal mine in nearby Ogies as more environmentally responsive than the Exxaro major.⁶⁸

Ownership included foreign and local but in all cases black ownership was present ranging from 26% to majority ownership. These included Leeuwpan belonging to coal major Exxaro with until recently majority black ownership; black controlled junior Delmas Coal held by Kuyasa; Brakfontein Colliery a junior mine owned by

Tegeta Exploration and Resources in which the Indian Gupta family's Oakbay Investments held the most shares at 34.5%, and BEE partner Mabengela Investments (director Duduzane Zuma - President Zuma's son) holding 28.5%⁷⁰; Keaton Energy a white owned junior mine with BEE partner Rutendo Mining owning 26%⁷¹; junior Kangala owned 70.5% by Universal Coal, registered in the UK, listed on the Australian Securities Exchange, with BEE partner Mountain Rush Trading holding 29.5%⁷²; Welgelegen Colliery an abandoned junior mine belonging to the Iyanga Group, a family business owned by the Burgh Group; and an abandoned mine purportedly owned by Shanduka Coal major founded by deputy president Cyril Ramaphosa.⁷³ Informal mining was not a large feature of Delmas' coalfields.⁷⁴

Clearly state-driven attempts to restructure ownership of the coal sector had been fairly successful and the unbundling of the mining majors was evident.

In all cases it was difficult to access information from mines. Admittance to mine property to compare water licences with actual conditions was impossible and gatekeeping was routine. Thus observations were limited to visible external impacts of mining, interviews and commentary. A culture of corporate transparency was fragile, or simply did not exist.

Officially mines, both junior and major, were WUL compliant although this had not always been the case. Exxaro's Leeuwpan began in 2006 and was granted a

full IWUL including for its extension in 2011; Brakfontein received a water licence in 2014 but had been mining without before this; Keaton's Vanggatfontein applied in 2008, began mining in 2009 and finally received an IWUL in January 2015.⁷⁵ Kangala issued with a six year IWUL in 2016 had mined without a licence for three years prior to this while the licence gives the impression of a greenfield operation probably to avoid the DWS acknowledging the lengthy transgression.⁷⁵ Delmas Coal which took ownership in 2002, applied for a water licence in 2010 and received one in November 2015, argued it was compliant as former laws did not require one. All mines disregarded long DWS delays and operated illegally (although with a mining licence). Foreign and South African, black and white, major and juniors all mined in default with Eskom haphazardly insisting on compliance.

Long delays meant money and for juniors this could mean the collapse of the enterprise. Said Kuyasa's CEO, 'There is huge frustration ... I hear this often. So why should R10 000 [bribe] be an obstacle If an official demands a bribe, you won't say as it will create a bad relationship with that official and they will come and find fault on your mine every day so this goes unreported.

There is corruption at high and low levels of government. We also corrupt officials as business people. It happens both ways...'⁷⁷

The acquisition of a water licence entailed official and unofficial means however it is one matter to obtain a WUL and another to comply with its conditions.

Mining major Exxaro's Leeuwpan: mining through a wetland

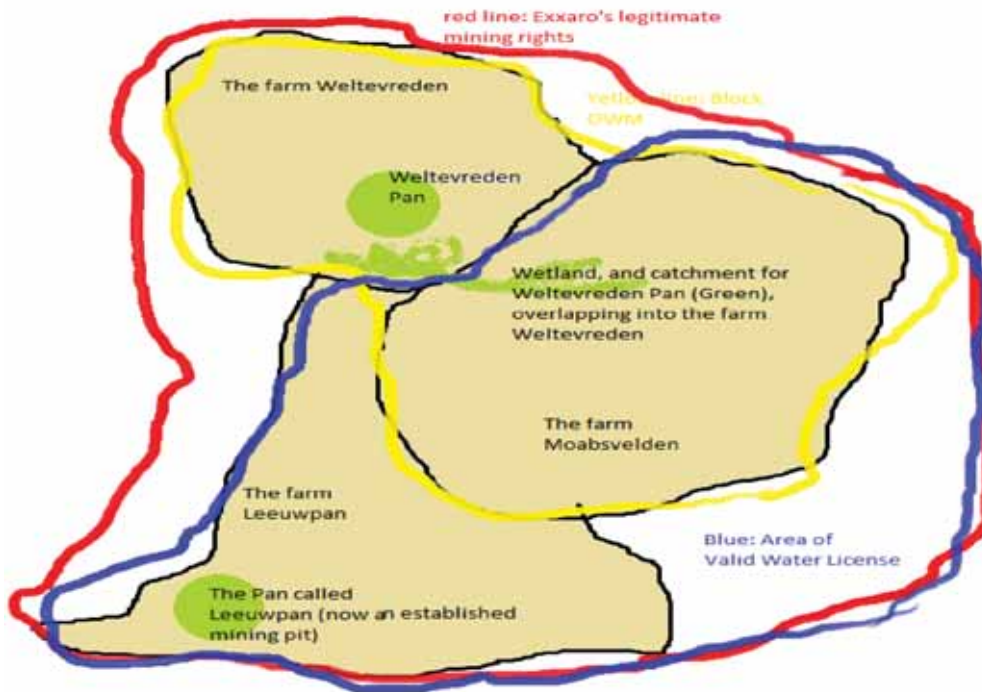
Exxaro was formed in a black empowerment deal involving Kumba Resources (formerly Iscor) and Eyesizwe Coal Exploration. It began extracting at Leeuwpan nine kms from Delmas in 2006. Leeuwpan produces for the export and domestic markets supplying the Majuba power station and employs about 500 people with a 15 year life of mine.⁷⁸

In 2011 the mine dug a trench around the Weltevreden wetland about six kms from its Leeuwpan operations. The intention was to prevent rain water from entering the wetland in preparation for mining. To drain the wetland it required a WUL from the DWA with permission to 'impede the flow of water' from a water course (s21c NWA) as well as permission to extract inside the pan.⁷⁹



Trench dug by Leeuwpan mine around Weltevreden wetland before mining

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Exxaro failed to differentiate between Leeuwpan and Weltevreden wetlands - 8kms from each other - and failed to differentiate between a mining licence and water use licence

Farmers relied on the wetland to irrigate their maize fields and provide water for cattle. It also supplied the Bronkhorstspuit River flowing out of the pan. Farmers objected to the mining on the grounds Leeuwpan had no water licence and that regulations state that no mining activity may occur within 500 metres of a wetland.⁸⁰ Confronted by indifference from the mine they took their grievance to the DWA which issued a directive to stop mining in June 2012 with which Leeuwpan complied.⁸¹ The DA raised the matter in the National Assembly where the Minister confirmed that Exxaro's excavations had ceased.⁸² Soon after the mine claimed it had a legitimate licence and that, 'Leeuwpan complies with mining, water use and environmental legislation.'⁸³

A battle to access Leeuwpan's licence which neither the company nor the DWA would or could provide included a PAIA (Promotion of Access to Information Act) application.⁸⁴ The WUL revealed that the mine only had rights to extract at the Leeuwpan wetland and not the Weltevreden section. The company meanwhile released a misleading statement confusing the two wetlands. Licences require precise GPS coordinates which transpired 'were somewhere out in the Atlantic Ocean'.⁸⁵

In September Exxaro recommenced mining and earth moving machinery removed topsoil and cut eight metres deep into the upper level to extract coal. The DWA was

alerted whilst Exxaro appealed to the Water Tribunal which the minister then disbanded. Thereafter the company successfully litigated in the North Gauteng High Court on the basis that the disbandment of the Tribunal left it without a legal channel of appeal.⁸⁶ After flagging its intention to appeal the DWA withdrew its action and mining continued and still continues the only difference being that the Weltevreden section now has a WUL despite the DWA's directive to stop mining through the wetland remaining in force.

Weltevreden was not an isolated Exxaro transgression. A Middelburg farmer protested that an Exxaro mine had bored holes in his wetland, destroying wetland life and leaving a dry cavity forcing his cattle and labourers to walk long distances to another pan.⁸⁷ In 2012 the DWA charged the Belfast Glisa Exxaro mine under the NWA for its water transgressions including mining through the Grootpan wetland and changing the course and dumping waste into a river after the DWA had issued a pre-directive.⁸⁸ *Die Beeld* journalist Elise Tempelhoff commented that Exxaro was 'willing to pay a R10 million fine if mining through a wetland meant a R100 million contract for selling export coal'.⁸⁹ She pursued the story to expose its illegal environmental activities,

Exxaro claimed in an annual report that it was in the top 40 of the JSE's Sustainability Index which



Advanced destruction of Weltevreden wetland

F Fuls

Ernst & Young had drawn up for the JSE. So I went to Ernst & Young and explained they were misleading the public and that Exxaro was stealing water. And they finally took them off the list.

I read Exxaro's annual reports and I saw that they had donated R2 million to the DA and R10 million to the ANC so nobody would say anything in parliament about their shocking environmental track record...

...Nedbank, the green bank, also gave them loans and I approached the bank and they said they're slowly moving out of the relationship. They always say this kind of thing.⁹⁰

Wetlands cannot be rehabilitated after coal has been extracted and fires ignited. It becomes a wasteland or may possibly be remediated for livestock farming but not agricultural activity.⁹¹ Exxaro, a coal major, ignored both the spirit of the law and broke the law with impunity. This is particularly concerning in the context that over half of South Africa's wetlands have been destroyed.⁹²

Junior Miners: Stealing the water

This Report began with a proposition that a dual regulatory system may exist in the coal industry where majors may be more regulatory compliant than junior miners' which are favoured in the regulatory regime.

The Exxaro example gives this supposition the lie. But how were Delmas' juniors behaving?

Delmas Coal, the town's oldest, started in 1964. Kuyasa acquired the mine in an empowerment deal in 2002 from Ingwe Coal a subsidiary of BHP Billiton, the world's largest resources company. It mines low grade coal and supplies Eskom and is viewed by The Chamber as a black junior success which has survived the vicissitudes of the market through its savvy leadership. Its offices in Witbank reveal a company secure in long term contracts.⁹³

Below Delmas Coal lies the Wilge River which snakes through Delmas farms and onto farming areas downstream. However it is dammed up by a bridge built some 15 years ago by a previous miner to create a reservoir of water. Companies contracted to the mine pump out water for mining operations. This is unlawful under the NWA and is contrary to its water licence which states, 'Structures must be designed in a way to prevent the damming of stream/river water...'⁹⁴ The mine is responsible for activities carried out by its contractors. Meanwhile across the bridge the Wilge has become a trickle. Further downstream the Brakfontein mine was discharging contaminated water into the same river. On the doorstep of Delmas Coal lies an impoverished informal settlement supplied with water by the local council in JoJo tanks.



Head office of successful black owned junior extracting at Delmas Coal, Kuyasa (KI) Mining, in Witbank

K Forrest



Dammed Wilge River where the bridge blocks the water flow to provide the mine with fresh water

K Forrest



Permanent pump next to dammed Wilge River which contractors use to extract clean water for mining at Delmas Coal

K Forrest



Winter view of Wilge River reduced to a trickle across the road from the dammed section

K Forrest

Farmer Schalekamp on the Meitjiesgoedkuil farm lives on the doorstep of Delmas Coal. A film of coal dust blows across his maize fields from five large dumps which has had a devastating impact on his crop. A wedge of thick black soil is visible bearing sickly plants and with each rainfall the dust seeps deeper into the ground water. Schalekamp commented that, 'Over the last ten years it has got worse and worse as they mine more intensively...'⁹⁵

About a kilometre away on the edge of his field lies the Haweklip railway siding where mines such as Keaton Energy dump coal into railway containers. Up to a 100 loaded trucks queue up and create clouds of dust as coal slides into containers which then sinks into the soil and has destroyed two kilometres square of land. The farmer has repeatedly complained to the mine and is currently involved in litigation.⁹⁶



Delmas farmer showing thick black coal dust on his maize field with a Delmas Coal stockpile in the background which has broken through the farm wall

The Delmas Vanggatfontein is one of two operational mines owned by JSE listed Keaton Energy.⁹⁷ Its sales stood at R865.7 million in 2015 with 17 years life of mine remaining.⁹⁸ It supplies Eskom and the domestic industry and in 2015 had 15 permanent employees and 478 contracted.⁹⁹ It applied for a licence in 2008 but continued to mine without a WUL until 2015. Eskom

pressured it to mine without a licence in order to secure its coal supply but later pressured it to be compliant.¹⁰⁰ When it mined without a licence it did not meter monitor its water use or account annually to the DWS for consumption. Since granting of a WUL Keaton has received two invoices from the DWS but is disputing the amounts. Instead of regretting past impunity, it is disputing its current liabilities.¹⁰¹

Keaton holds quarterly meetings with affected parties on mine operations to find solutions to concerns. Farmers learnt through this forum that the mine had no rehabilitation plan which pointed to deficiencies in the licensing process which requires one.¹⁰² Farmers felt the relationship between the mine and DWS officials was too cosy and a former Keaton consultant believed that officials were poorly trained and often did not know what to look for.¹⁰³

Kangala started in 2013 with an eight-year CSA with Eskom and also exports coal.¹⁰⁴ Its activities translated into record earnings in 2015 of before tax earnings of R138 million.¹⁰⁵

Groundwater quantity should be monitored from mine boreholes on a monthly basis and its quality on a quarterly basis for pollutants.¹⁰⁶ Jozua Du Plessis on the adjacent Middelbult farm complained to the DWS about fracturing and contamination of the aquifer chamber under his farm which supplies his borehole due to Kangala's blasting. DWS officials visited but could not test the borehole water because they had not brought the necessary equipment. A mine official later tested the water saying it was potable but Du Plessis commented, 'When I asked him to drink it he refused.'¹⁰⁷

The coal dust also clogs his borehole pump leading to its regular breakdown. The borehole has been in operation since the 1960s without prior contamination or persistent technical problems.¹⁰⁸

Du Plessis also asserts that Kangala is authorized to channel specified amounts of dirty water from stockpiles but the DWS fails to monitor this as biannual audits require, 'DWS does not go there to monitor compliance. I have only seen them once and that was when I laid a complaint...'¹⁰⁹ DWS audits do not include the affected fenceline farming community and Du Plessis felt powerless when facing off the mine and state. Commented a farmer citing a former Keaton consultant, 'The DMR comes and we must supply inspectors with cookies and they sign off reports.'¹¹⁰



L Loate

Du Plessis' hand blackened with coal dust when dipped in his borehole water which Kangala declared fit to drink

The Tegeta Brakfontein mine began in 2006 as a subsidiary of the Indian Gupta family's Oakbay Investments Group.¹¹¹ It contracts 180 workers and has a 10 year Eskom contract to supply Majuba Power Station and also supplies the domestic market.¹¹²

The mine, according to its licence, should have ten groundwater monitoring boreholes on its premises but does not specify the mechanisms such as water meters or flow and water level analysis.¹¹³ Fenceline farmer Johan Gericke contends, 'There is no proof that they have boreholes on that mine. Instead they come to

monitor groundwater quality from the boreholes of neighbouring farms which means if they are contaminated it cannot be proven that their mine is the source.'¹¹⁴

When Tegeta bought the mine it continued to use an unlined PCD dam not compliant with DWS specifications. Thus during its initial mining waste water was leaching into the groundwater. A former Brakfontein mine engineer commented, '...building or changing infrastructure while a mine is operating is very difficult and expensive because it can affect production.'¹¹⁴ Brakfontein thus mined in defiance of water regulations and contaminated water spilled onto Gericke's land. The mine now has three PCDs as well as sumps to drain storm water and ensure water from stockpiles does not mix with clean water.¹¹⁶

However not all water issues have been addressed by Brakfontein. The mine lies next to the main road between Delmas and Leandra surrounded by agricultural land and a wetland. Rain water flowing out of the mine, runs past its PCD, down the road and into the Wilge River 30 metres on. No water capture by the mine occurs and AMD is a likely result. Water and mud could cause serious accidents but it also impacts on a farmer's borehole next to the river, while cattle and people from an informal settlement drink the water downstream. However, before 2016, the DWS had never performed water audits despite farmers' complaints.'¹¹⁷



Rain water run off from the Brakfontein mine onto the R50 route between Delmas and Leandra

J Gericke

Busy farmers complained of the time consuming nature of collecting evidence of regulatory transgressions to forward to the DWS.¹¹⁸ They felt agriculture was not a government priority despite its critical economic role and importance for food security.¹¹⁹ Farmer Piet Combrink observed, 'My grandfather used to say: you'll be standing with money in your hand but you won't be able to buy food.'¹²⁰

Mine rehabilitation: majors and juniors

A critical part of a mining licence is the commitment to rehabilitate which has significant implications for the polluting of downstream water resources. Despite the Delmas coalfields being a new frontier of extraction, abandoned and unrehabilitated mines were in evidence. These concerned both juniors and majors.

North-east of Delmas lies the abandoned junior Welgelegen mine owned by Iyanga Coal which supplied Eskom and intends to launch further Mpumalanga mines having 'acquired numerous prospecting licenses, and invested in several drilling rigs and ongoing exploration programmes.'¹²¹ The mine opened in 2009 and was contentious from its inception. Farmers complained to the DMR that its bulk sampling pit at the prospecting stage was abandoned as an open gash and they recommended that it not be given a licence.¹²² The DMR inspector and farmers met in Delmas but on opening the Iyanga file the representative and farmers discovered to their surprise that a 2009 - 2010 licence had been extended with the nonplussed DMR official remarking, 'But who signed this document? I certainly didn't.'¹²³ Again farmers complained in 2010 that heavy rains had ruptured the PCD wall after they had warned the mine of this possibility. Welgelegen acknowledged the problem and promised to repair it in the dry season which it never did.¹²⁴

In 2014 the mine closed and farmers again complained to the DMR that there was no closure plan, 'We asked the DMR is the waste dam Ok? Is it lined properly? Is it big enough? Is there disposal of waste on the wetland and isn't the dump burning? But the DMR said no everything was fine... They are happy with the progress. They accused us of not going to the mine when there are problems and that we just run to the DMR.'¹²⁵ Topsoil had mixed with coal discard making future agricultural cultivation impossible while windswept ash from a dump had destroyed the wetland. Rain flowed over the discard dumps into an outside farm dam which overflowed into the wetland and Wilge River below. Farmers complained to the mine which admitted having no disposal plan, that dumps were burning, and that they had filled open pits with ash.¹²⁶

Meanwhile Iyanga invited the Delmas community to consult on a licence for a second mining project adjacent to Welgelegen. Farmers, refused permission to inspect the mine, took drone images and when the mine consultant boasted of Welgelegen's satisfactory restoration they produced the images. The mine was forced to admit in writing that the wetland had been destroyed but it would restore it.¹²⁷ No action was taken and the mine still lies in a dangerously contaminating state.

Farmers were particularly concerned that the PCD wall had ruptured as it was not constructed to specifications. Sulphuric water flows down gulleys into the wetland which releases water into the Wilge. According to Farmer Bezuidenhout the dam should hold polluted run-off for 50 years hence and mine engineers should follow construction guidelines for a 50 - 100 year flood line¹²⁸ to ensure it can carry possible overflow. Said Bezuidenhout, 'It has to last for at least 50 years but what if they have disappeared by then?'¹²⁹



Rain water travels across discard coal dumps into the farmlands, wetlands and Wilge

K Forrest



Rain water travels across discard coal dumps into the farmlands, wetlands and Wilge River below

K Forrest



Farmer's drone aerial view of abandoned Welgelegn mine showing areas of rain run off into an unlined farm dam below

K Forrest

The mine had probably gone insolvent during hugely expensive rehabilitation due to insufficient funds in the DMR's trust fund aggravated by the DMR's retrospective remediation reimbursement.¹³⁰ 'We intend to take them to court if they try mining again.' warned Bezuidenhout.¹³¹ The DWS was absent having no power to access mine closure funds.

In January 2013 *Forbes Magazine* named '...36 year-

old South African coal magnate the founder and chairman of Quinton van der Burgh Investments' as one of ten young African millionaires to watch in 2013.¹³²

Close to Welgelegen mine lies another abandoned mine (possibly owned by Shanduka Coal) next to a large wetland. Rain, as at Welgelegen, flows over discard dumps forming deep gulleys into a large wetland bordered by maize fields.



The discard of an abandoned mine (possibly Shanduka owned) hovers over a wetland

K Forrest

Delmas Coal is also a rehabilitation offender although it proposes to upgrade its 79 hectare discard dump and PCDs constructed in 1964 at its North Shaft to extend the mine's life by 30 years.¹³³

However close to where the Wilge River runs on mine property there are ragged hills of coal discard dumps, decades of hardened overburden (rock and soil covering a coal seam), and mining pits sporting green contaminated water. These are unremediated workings stretching

back to the 1960s which the Kuyasa junior would not have the resources to remediate. They are also the responsibility of the mine's previous owners, Ingwe (BHP Billiton), who did not remediate in a time when it was not required. Nobody is taking responsibility, including the state, which is barely managing the AMD fallout from gold mines on the West Rand.¹³⁴ As Muhlbauer observed, 'Water Affairs has not woken up to AMD and coal in the Witbank area. The concentration is on the Wits [Witwatersrand] gold mining area.'¹³⁵



Abandoned, unrehabilitated mines left by previous owners on the property of Delmas Coal. Rain flows over the discard in a process of Acid Mine Drainage which the Wilge River carries downstream.

K Forrest

Fenceline communities, mines and the state

These case studies show that white commercial farmers in Delmas are most directly affected by coal mining's impact on water and also by weak regulatory enforcement. 'Fantastic legislation' commented a farmer, 'but no-one looks after it and then if someone in government does, they get their hands cut off.'¹³⁶ A determined group of farmers have attempted to hold the mines and the DMR and DWS to account. Their tactics were limited to laying complaints and taking legal action. However their complaints were largely ignored, 'We complain to both departments ... The DMR says we don't take private calls and puts the phone down... We hear a stream is going to be diverted so we complain. But nothing happens. It is cheaper to divert a stream than a conveyor belt.'¹³⁷ Farmers questioned the DMR's reluctance to act but were met with the rejoinder from DMR, 'You don't understand it's not easy to stop mines.'¹³⁸

Farmers who raised problems were seen as troublemakers and were also fairly isolated in their community. 'Farmers don't all stick together.' explained Kleyn, 'Lots of farmers say we're wasting our time so they won't be involved any more. They get frustrated. It takes a lot of time going to meetings...people are getting *moederloos* [fed up]...'¹³⁹ Race politics also played a role as DMR officials regarded rich white farmers as spoilt irritants. An official's response to a complaint about Mbuyelo mine being granted a WUL despite polluting a borehole which stank of sulphur was, 'You white people you don't want to see any other people in this country prosper.'¹⁴⁰

Farmers were recipients of problems that plague the water regulatory system. And although the DMR's inspectorate was more active than the DWS' this was primarily to oversee observance of mine safety regulations. The DMR often invoked Section 54 of the Mine Health & Safety Act allowing for a period of mine closure following a safety infraction making it clear that safety trumps water concerns. This reflects the political power that the Congress of Trade Unions (Cosatu) wields as part of the ANC's tripartite alliance whereas civil society's environmental lobby has less muscle.¹⁴¹ Mines are not closed for water infractions.

Farmers too were being drawn into the mining economy. They told how, 'Some [mine] contractors collect water from farm boreholes and pay the farmer for this.'¹⁴² while others under pressure from the mines sold their farms 'and go and farm in the Cape'¹⁴³ Once a few farmers capitulated, others followed suit tempted by

good payouts as extractives encroached on their land. The agricultural profile of Delmas is shifting and younger generation Afrikaners have sought jobs in the mines.¹⁴⁴

The legal strategy has had some success. Farmers Bezuidenhout and Boschhoff both staved off predatory offers from mines adjacent to their farms but other litigation, such as in the case of the Weltevreden wetland, has been stymied.¹⁴⁵ Litigation has its limits as farmers' actions lacked state support and even if successful similar incursions on their land could be experienced later.

A frequent state response to farmers' complaints was to refer them back to the mines. However this was seldom successful as Bezuidenhout explained,

Mines don't actually visit sites on mines that they destroy. I asked them to come and meet me... at the site but they never came.... About four years ago we pleaded with mines... [that] we should work together but mines don't want to work together with farmers because they know what the results will be. It will cost lots more money...

*We must do a cumulative study of all mines in the area to see impacts on the environment. We asked the mines but they responded nothing doing. It's a shortcoming in the law. Mine consultants and specialists only look at the impact of a specific mine. Not the whole area...*¹⁴⁶

Ultimately it was in mines' interest to stonewall farmers and permit illegal water practices in order to force farmers off valuable coal land. Mines' environmental officers were often not up to the task. An environmental manager at a coal major complained that her degree had not prepared her for the specificities that she must solve which more often required a dedicated engineering department. She struggled with separating clean and dirty water; managing storm water run-off as over years of mining low lying dams had formed; with river diversion; and with containing oil spillages from large mining equipment in the engineering workshop. She spoke of delays in implementing a stormwater management plan because of its expense and felt unable to resolve farmers' grievances around coal dust except to inform them to stay home during blasting. Rehabilitation of early mining was also difficult as although concurrent remediation was in operation a shortage of soil to replace mined coal was an issue.¹⁴⁷

The local state was a passive observer of water regulatory breaches despite expressing concern over its negative effects on farming, 'Mines come in, agriculture goes down... We were told we have enough coal for our

needs. We shouldn't export... Stockpiles of coal sometimes sit for ages...'148 Large tracts of municipal farmland was under mining and the cooperative governance principle was a myth.149 Farms were the largest water consumers but officials argued that, 'Farmers are very careful and most rely on rain water... The less you irrigate the cheaper it is... Farmers are good at storing water. They're more environmentally responsible as their livelihood depends on water. Mines are there to collect money and that's it.'150

Mines were the largest industrial water polluters, but other industrial pollution contributed to combinedly contaminating downstream water. An animal feed factory had leaked ecoli into the Wilge River between Delmas and Arbour, and the Delmas McCain factory had spilt large amounts of chip oil into the sewerage system.151 In addition burst pipes from the sewerage works adjacent to a Botleng wetland released contaminated water into the Bronkhorstspuit River.152

Municipal officials argued that the council could not control mines' destruction of land and abuse of water resources,

The municipality has no control as mines apply for licences to the DWS and DMR and the DMR gives a mining licence. We have no power over compliance. Some mines proceed without a WUL. Our role for monitoring is limited to SLPs [Social Labour Plans].... We feel frustration. Bureaucracy comes into everything. Food security is being compromised. Land never can be rehabilitated to what it was...

*We don't have the right to look at the water licence. This is kept between parties - the DMR and the mine... We can report to Environmental Affairs. That's all we can do. We can't close mines but we have to deal with the protests... I recommend that the DMR open offices here to deal with complaints. We get accused of being in the pay of mining companies because we don't act.*153

However WULs are publicly available and municipal by-laws can regulate dust and other emissions which impact on water. A municipal official described how aquifers and municipal boreholes had collapsed because of Thaba Cheou (mineral sands) and Exxaro's blasting in the south east of Delmas causing underground shock waves. 'Dolomite is like polystyrene and the pebbles move and the aquifer collapses and closes off the flow of water and as mining covers a large area it affects water over a large area.'154 Chemicals released, such as manganese, contaminate boreholes making the water an unpleasant tasting brown whilst exposed dolomite coming into contact with air becomes brittle and collapses into sinkholes. 'It's too costly to rehabilitate boreholes. Two more [municipal boreholes] that used to supply water will soon be closed... and mines and other industries pull out more water than comes in. And it will get worse over time.'155 The destruction of water resources will increasingly impact on the council's budget as it is forced to expand purification works and purchase more supplies from Rand Water. But a paralysis and fatalism predominate, 'In fifteen years' time this place will be mined all over. It will change from an agricultural to a mining town... It's short term greediness... Later it will become a ghost town.' said Sabelo.156



Precursor to a ghost town - large areas of former farmland in Delmas are now under mining

K Forrest



K Forrest

Placard outside informal settlement near Delmas Coal - jobs and not water quality are the issue

South African National Civic Organisation (Sanco) activists were aware of mines' impact on water as well as their regulatory avoidance and destruction of livelihoods,

Trucks haul coal and have diesel spills and they park next to farms where food is growing... We've got water, it's a good farming area but there's poor monitoring of laws. People were moved away from the farms where they are now mining... They wanted to work on the land and run cattle and share the land and do their own farming like maize. Now lots of people live in Botleng in RDP houses. Before they had space now its 20 to a house... Nothing good has been brought by mines, only problems... Nothing for the community. People were small farmers now the mines are here. We never expected this to happen.¹⁵⁷

A meeting about Brakfontein mine's water pollution attracted good attendance as Kleyn described, 'A lot of community and farmers came. We support each other. The community realise the mines are a common factor. They also get sick and get bad water. In meetings we work together. It's costing money and they [small black and white farmers] can't afford to buy bottled water.'¹⁵⁸ Water however was not the township community's main concern. The municipality provides clean water and the cost of this diminishing resource will impact later. The focus was jobs and if access to the land was no longer possible the mines must provide work, 'We don't want

to wait until they've finished and we've got nothing. We want a share. We want to participate.'¹⁵⁹

Conclusion on Delmas Findings

The Delmas mines, while legally compliant in certain respects, all showed some avoidance of water laws. Mines had or were breaking the law whether by pumping fresh water from a river; mining through a wetland without a licence; continuing to mine in the face of delayed WULs; releasing polluted water onto fields, roads, streams and rivers; stunting maize and other crops with layers of coal dust which penetrated ground water; fracturing aquifers and dolomitic rock holding clean water through blasting with resultant pollution of municipal and private boreholes; and neglecting to remediate mines with consequent AMD runoff into downstream water courses and dams. Each mine, while maybe not breaking the law in the same manner, was impacting negatively on clean water supplies and thus their cumulative damage was extensive.

Weak state monitoring of water laws was routine. The DMR was more lax in the sphere of water than, for example, in mine safety. The DWS overwhelmed by the rapid expansion of mines, allowed itself to be bullied by the more powerful mining department. Dereliction of duty was present at all levels of government.

Mines flouted the law and water licence conditions but also engaged in legal avoidance. So for example they used loopholes in the law to sidestep water regulations

and licence conditions. Delaying tactics also allowed for the continuation of mining while a dispute was in progress and as the life of mine in many cases was short such delays were significant. Beyond these evasions the mines benefited from the DWS' weak monitoring and enforcement including that the DMR's excessive awarding of mining licences made it impossible for the DWS to conduct comprehensive water studies or to conduct required biannual mine audits.

Government policy promotes BEE coal miners chiefly through its parastatal Eskom yet in reality Eskom offers little support to their emergence. Thus some, for example, when faced with licence infrastructural requirements take shortcuts and use less durable materials or build inadequate facilities. Ultimately coal majors remain the main suppliers and Eskom, although it may threaten to terminate their services, will disregard legal breaches (such as an absence of a WUL) if facing a crisis of supply or will secure supplies from middlemen regardless of whether the provider held a water licence or complied with it. Eskom when necessary pays lip service to the promotion of BEE clients and to regulatory compliance. Larger mines may have the financial muscle but they too break licence conditions by stinting on the cost of say, the implementation of a water management plan.¹⁶⁰

No general evidence of regulatory favouritism or a dual regulatory system emerged in the study - *all* mines were favoured with state neglect. Muhlbauer's comment that, 'Smaller mines have less will, less money, less integrity, and are less environmentally conscious.'¹⁶¹ was overly generalised and did not acknowledge that majors were also transgressors particularly with regard to WULs and

remediation. Farmers, Sanco members and municipal officials believed, 'There is no correlation between size of mine and compliance...Exxaro contributes a lot [of pollution] but Delmas Coal too does not take responsibility or only takes partial responsibility... Exxaro does comply with its SLP. Their projects are good... but with pollution they don't. They don't comply completely they apply partially...'¹⁶² Ultimately with the state's permission water licences could be bought, granted without due follow up, or could be wholly or partially ignored while at the official level the company could boast compliance without a commitment to protecting water resources. The cumulative action of both major and junior companies in Delmas merged to threaten water and food security.

Five

Water use legislation, regulations & policies

The Delmas case study reveals the systematic way mines are able to evade water regulation, in the process destroying agricultural land, food sources, rivers, ground-water, wetlands and so on. An exploration of the history, laws and policies that govern mining and water management, including the dispensing of WULS, will go some way to explaining this regulatory breakdown. It will also indicate that such failure does not only impact on agriculture and water in Delmas but is endemic and will impact on water resources and agricultural production wherever coal is being mined in South Africa.

Transformation & Conflict

Historically and reaching into the present the MEC has been at the centre of South Africa's economic system of accumulation. This concentration of industrial and finance capital continues to rely on state support particularly through the Eskom energy parastatal and supportive state policies.¹⁶³ The exceptional status of mining in the economy resulted in a *customised* set of mining, environmental and water laws to govern its activities even in the post-apartheid transformative regime. Environmental laws had existed in a muted form, but in the post-apartheid regime new legislation delineated mining's environmental responsibilities. This exposed a tension between laws governing the right to clean water, food and an uncontaminated environment and new laws governing the ownership of mineral resources and access to mining rights. In order to understand the regulatory regime governing mining and its water use it is important to understand critical legislation which impacts on the consumption and disposal of water, namely the National Water Act (NWA, 1998), Mineral Petroleum Resources Development Act (MPRDA, 2002) and the National Environment Management Act (NEMA, 1998).

Under the new MPRDA the state removed the mineral wealth from private hands. It became the custodian of all minerals to allow for equal access to mining and to force the unbundling of the dominant large, white owned corporates. The mining authorisation or licence was the means by which the equitable distribution of rights was

effected creating the space for black and other junior companies to become players in the economy. To end the hoarding of mineral resources a 'use it or lose it' regime was introduced whereby a licence was allocated for a limited period subject to re-application if further extraction was sought.

Alongside the MPRDA rigorous environmental and water obligations were promulgated. Owing to mining's special status its environmental obligations fell under the MPRDA rather than under the NEMA like other industries. Companies applying for permits to mine were required to submit an Environmental Management Plan (EMPL) including an Environmental Impact Assessment (EIA) to the DMR. Mining rights were granted on approval of the EMPL and on proof of financial provision for post-mining rehabilitation which when completed would result in the state issuing a closure certificate.¹⁶⁴ Thus mine closure was an integral part of obtaining a licence. Mining rights' holders were 'responsible for any environmental damage, pollution or ecological degradation occurring as a result of operations, whether arising inside or outside the boundaries of the area to which the right related.'¹⁶³ Approval of the EMPL and appeals concerning the granting of rights were overseen by the national minister of mineral resources. Failure to manage environmental impacts was a criminal offence with a penalty of R500 000 or 10 years imprisonment.¹⁶⁶

The MPRDA was also located in the context of the NEMA whose Section 28 deals with the 'duty of care and remediation of environmental damage' and stipulates that any mine that causes 'significant pollution or degradation of the environment' must take measures to prevent it from occurring and if it cannot prevent it to minimise and rectify the pollution. This meant that when mining operations involved environmentally harmful activities published under NEMA's Listing Notices these were regulated by the Department of Environmental Affairs (DEA). Thus a disjointed mining environmental management regime was initiated.

Contestation soon arose once the DEA under NEMA published *activities* in 2006 requiring environmental authorisation to which mining was subject (prospecting required a basic assessment and mining an EIA process). The DMR, invoking mining's special status, claimed it was exempt from this EIA regime whilst environmental

affairs asserted its constitutional responsibility to maintain oversight of mining's impacts. Many companies thus sought authorisation from both authorities causing duplication and delay in granting of licences.¹⁶⁷

The NEMA was more exacting than the MPRDA in its licensing and compliance requirements. Environmental reports had to be prepared by an independent assessor, stiffer penalties were meted out for non-compliance and it developed an expert environmental management inspectorate (EMIs) to monitor mines. The NEMA included the *Waste Act* (2008, amended 2014) which deals crucially with the management of waste water. Mine waste known as 'residue deposits' or 'residue stockpiles' was dealt with in the mine's EMPL where it had to outline how waste would be managed. The amount of waste produced often exceeds the extracted product and thus has to be rendered inert, stabilised or isolated from the ecosystem.

In addition, the NWA required mining companies to obtain a WUL from the department of environmental & water affairs.¹⁶⁸ The riparian rights system enshrined in the *Water Act* of 1956 which allocated water to those owning land along a river's course was withdrawn. Water was designated a national competence where the minister (and government department) became the custodian of its allocation through the granting of a multiple licence or IWUL. An independent Water Tribunal was responsible for hearing appeals. Importantly an IWUL was not required at the prospecting and bulk sampling stage despite authorisation being granted for up to three years during which rivers, streams and other water resources could be diverted and polluted.

Previously environment and water fell under one department but water use is now linked to sanitation resulting in the frequent neglect of water in environmental considerations. The mine licensing process under the MPRDA requires community consultation on potential extractive activity, but objections from communities seldom prevent mining although can effect delays. Under the NWA however there is no requirement for public participation despite water being critical to local livelihoods. It is the minister's discretion to compel an IWUL applicant to engage in consultation but she rarely exercises this power.¹⁶⁹

Mining companies were thus obliged to obtain multiple authorisations from different authorities with differing requirements and to participate in several forums in order to exploit South Africa's mineral wealth. In addition water and mining laws were often in flux awaiting further amendments or regulations, while requirements were

considerably more costly than formerly. Confronted with delays and financial constraints most companies commenced mining activity without the relevant water authorisation.

Other Relevant Laws

The licensing terrain was further muddled by the uncertainty of local government's power over mining activity where it was required to directly manage the externalisation of mining's impacts. Water resources are a national competency yet municipal functions intersect with these powers. The *Spatial Planning and Land Use Management Act* (Spluma, 2013) provides for cooperative governance across all government spheres and aims to ensure that planning and land use management promote social and economic inclusion.¹⁷⁰ Under Spluma local government is empowered to decide on the optimal use of land and other resources, including water.¹⁷¹ A municipality could object to a mining licence on the grounds that it polluted local water resources but the law confuses rather than clarifies.

Municipal powers are unclear in legislative ranking and court decisions have often been too abstract to help. The *Constitutional Court Maccsand (Pty) Ltd v City of Cape Town & Others* (2012) debunked the view that mining was *sui generis* and held that different spheres of government needed to work cooperatively on mining oversight.¹⁷² Questions of where planning responsibility starts and ends for different spheres of government has not been resolved through regulations or litigation and turf wars have been common.¹⁷³ How does a municipality react to the impacts of an unremediated mine over which the DMR demonstrates little oversight? Local government can pass by-laws limiting mining's impact but can it rezone land use? Its powers appear weaker than provincial and national spheres backed by large bureaucracies. As a Victor Khanye municipal official complained,

*Legislation is crafted so that the DMR has total control over the mines. We don't have control ... Most municipalities don't have environmental managers... So the EIA is not meaningful as we don't have the expertise... We can take water issues to the province or even higher but we are not empowered... The mines consult us and highlight the economic aspect and not the environment at these meetings.*¹⁷⁴

The Department of Agriculture (DAFF) also has the power to refuse a land use especially where it impacts on the food economy. According to a DAFF manager,

Hein Lindeman, the passing of the MPRDA was an important moment in the lives of white commercial and black subsistence farmers.¹⁷⁵ Mining in democratic South Africa became the new mantra and coal's expansion in response to Eskom's urgent need to feed power stations encroached on white land and became the new entry point for black mining capitalists. But this land is also some of the richest soil in South Africa with a plentiful supply of water from rivers, dams and boreholes. In 2012, 250 000 hectares of land in Mpumalanga was under agriculture and one million hectares had been allocated to mining.¹⁷⁶ Observed Lindeman,

*... this is purely an administrative process. There's no consultation. The DMR manage the process. But downstream it's very worrying. Irrigation schemes are impacted by acid mine water and we're getting the pollution of landscapes... This acid water will penetrate into the water table and water affairs is already seeing a decline in water quality. We are seeing a fragmentation of the farming community and a decline in farming services as mine services take over... The landscape in Mpumalanga is changing from agriculture to mining.*¹⁷⁷

Voracious mining countrywide led DAFF to develop legislation to protect farm land in the Preservation and Development of Agricultural Land Bill (August 2016). The Bill notes that, 'It is in the national interest to preserve, and promote sustainable use and development of agricultural land for the production of food, fuel and fibre for the primary purpose to sustain life; and that pressures exerted on agricultural land are making it increasingly difficult to effectively and sustainably produce food; and that high value agricultural land is a scarce and non-renewable resource; and that it is in the interest of everyone to have agricultural land protected, for the benefit of present and future generations.'¹⁷⁸ Amongst other mechanisms, the proposed Act hopes to demarcate agricultural areas in need of protection beginning in Gauteng and moving onto other endangered food production areas where mining would be prohibited.

However Lindeman believes cooperative governance is necessary to enable the legislation including inter-departmental dialogue, a mediation platform and public consultation. 'This legislation is important as... there is nothing between us and the mines. We can't stop them and force them to come before an independent body and state their case. We hope this legislation will allow... agriculture to be tied in with mine licencing...'¹⁷⁹

But why is more legislation, in addition to NEMA, necessary to protect land? DAFF believes environmental

concerns and protection of arable land emerge from different perspectives, 'Environmentalists come to a critique of mining from a biodiversity and water perspective but for farmers it's about the production of food... In agriculture, land has been transformed from a natural resource into farmland. They don't see our perspective... They want renewable energy projects to take place on disturbed farm land and we say but this is for food production.' If cooperative governance is to succeed such positioning has to be resolved and turf wars have to be superseded by what Lindeman calls 'the bigger picture approach'.¹⁸⁰

Regulatory Failure: Licences & Appeals

In 2008 the water and environmental minister acknowledged the delay in issuing water licences and amendments to legislation were considered. The question of whether mining should still be subject to distinctive environmental laws lay behind discussions with the DMR arguing for the sufficiency of MPRDA clauses to govern mining's obligations. Lengthy political bargaining and court action ensued.

Meanwhile a Democratic Alliance (DA) 2009 parliamentary question exposed the emptiness of transformative water laws. The minister revealed that 104 mines were non-compliant and of these 13 were in Mpumalanga mainly in coal. Reasons for non-compliance included overly complex, incomplete and unsubmitted applications, as well as volumes of supporting documents required.¹⁸¹ In June 2010 parliamentary questions revealed that companies operating without WULs in Mpumalanga had increased to 54 and eight months later 41 Mpumalanga mines were still operating without water licenses although seven had been issued with directives, two withdrawn and one licence application declined. Many mines were operating with impunity despite the DMR holding the legal authority to stop production in unlicensed mines and the DWS to issue directives to end illegal water use while both departments held powers of arrest for mining without a water licence. In response to the slow progress in issuing water licences the DWS launched the Letsema Project to end the backlog. By March 2012, slow progress was in evidence with 53 mines operating without WULs, 17 in Mpumalanga.¹⁸²

This persistent failure was augmented by other miscarriages in the regulatory environment.

To begin with the content of water licenses was problematic. Licences are precise and stipulate what can and

cannot be done concerning extracting water or impacting on a water resource. They are based on specifications in NWA Section 21 and cover storing water; impeding or diverting the flow of water; engaging in stream flow reduction; discharging water containing waste into a water resource through a pipe, canal, sewer etc; disposing of waste which may detrimentally impact on a water resource; altering the bed, banks, course of a watercourse; and removing, discharging or disposing of water found underground.¹⁸³ Yet WULs have often been shoddily assembled and water resources internal and external to the mine have been inadequately protected or their mention omitted. Karen Chetty of Keaton Energy observed, '...water licenses have inaccuracies and inconsistent information so that they are practically unimplementable.'¹⁸⁴ Licences may stipulate costly additions or alterations to infrastructure so as an environmental lawyer testified, '... water users simply ignore these conditions... and nobody from government ever follows up on this anyway.'¹⁸⁵ WUL conditions are often not checked before they are granted and inspections are frequently inadequate or have omitted sites where water was used or impacted.¹⁸⁶ Some mines still operated in terms of permits granted under the former 1956 Water Act and the current Act was overridden.¹⁸⁷

The DWS also ignored some provisions of the Act designed to protect water resources. Section 30(1) of the NWA provides that the mine may be required to give financial security for obligations attached to the WUL in line with the 'polluter must pay principle' in NEMA's Section 2. But this was seldom a condition of the licence.¹⁸⁸

Appeal procedures concerning water use transgressions were also compromised. The Water Tribunal was intended to function as a cost-effective remedy to challenge decisions without the expense of court proceedings. However despite early successes, from 2010-2012 it only convened for 50 days during which 42 Appeals were finalised with 44 pending, and its functioning had been fraught with problems.¹⁸⁹ Appeals should entail suspension of mining pending an outcome but they were narrowly interpreted as applying only to those who in the consultation period of the licence raised objections. A High Court removed this limitation but a number of appeals had been excluded. Moreover the minister dismantled the Tribunal for several years on the grounds that an appropriately trained chair could not be found rendering the institution in need of reform. A legal expert also complained that the Tribunal was plagued '...by not knowing law. Cases are mostly decided on procedural issues... there is not even a chance for the complainant

to state its case...'¹⁹⁰ In a court case seeking the reinstatement of the Tribunal the applicants were suddenly informed that it had been reconstituted. However it has only sat once since 2015 forcing parties to resort to direct appeals to the courts or the minister.¹⁹¹

The Tribunal debacle ended the automatic suspension of mining activity on the lodging of an appeal. Section 148(2)(b) of the NWA also gave the Minister the power to lift suspensions. Companies could thus petition the minister which combined with long delays in appeal hearings meant that mining transgressions continued uninterrupted.¹⁹² Companies also used the NEMA section 24G(2) rectification loophole where if they were found to have transgressed licencing requirements they could admit guilt, fix the damage and restart the authorisation process. Paying a fine could also result in the necessary authorisation.¹⁹³

Delayed and poorly constructed licences made monitoring and enforcement of licence conditions more imperative. DWS site inspections in terms of the IWUL should be conducted bi-annually *on all* mines to ascertain compliance in summer and winter conditions. A PCD for example must be checked in the rainy season to assess whether the freeboard has been breached and overflow is likely and in winter for possible seepage. A DWS official explained however that, 'It is ideal to inspect twice a year but it's not possible to do this for every mine. We simply don't have the resources with the explosion of mines particularly in Mpumalanga.'¹⁹⁴

Between 2004 and 2010 the DMR granted 4 700 prospecting and mining rights in Mpumalanga, the highest number of authorisations nationwide. In 2016, 122 coal mines were operating in the province making it impossible for the department to conduct sufficient audits.¹⁹⁵ In consequence investigations were mainly instigated when complaints were laid¹⁹⁶ but even then many parties complained that the DWS did not respond to WUL breeches. In 2014, 103 mines were operating without valid water licences and of those, only 55 had applied for a WUL, yet few prosecutions were in evidence.¹⁹⁷

By this time over 60% of land in Mpumalanga was under prospecting or mining in one of the food baskets of South Africa.¹⁹⁸ Maize is grown commercially on large farms, and on more than 12 000 small farms, primarily in Mpumalanga, North West, Free State and KwaZulu-Natal provinces. Maize production generates 150 000 jobs a years¹⁹⁹ but it was estimated in 2012 in the Delmas, Leandra, Ogies area mining had led to an annual loss of 284 844 tons of maize with resultant 14%

price increases while continued losses could lead to South Africa becoming a maize importing country.²⁰⁰

DWS' enforcement was also problematic. In 2014/2015, 201 compliance inspections were conducted nationally. In Mpumalanga 55 mines were inspected but this was a small sample given that in 2016 there were 239 authorised mines. Two DWS officials were required to check and verify results at hundreds of monitoring points.²⁰¹ The DWS has also identified problems with the prosecutorial authorities which have little knowledge of water transgressions meaning that cases were often dismissed or misunderstood. Prosecutions are lengthy and all the while the mine continues illegal activities. In 2016 countrywide the DWS had only seven knowledgeable inspectors who were empowered to investigate and recommend prosecutions in all categories of mining. In consequence although some prosecutions were successful they were a fraction and only ever resulted in a fine and never imprisonment.²⁰²

It is difficult to get accurate figures on audits done and the issuing of pre-directives, directives and prosecutions from the DWS indicating poor record keeping or a desire not to reveal low prosecution rates. The Minister often pleads a *sub judice* rule when asked about rates prompting legal expert, Pierre de Vos, to contend that, 'One of the most irritating phenomena of our political life is the manner in which politicians wrongly invoke the so-called *sub judice* rule to avoid accountability. Because they do not want to answer difficult questions or deal with politically awkward issues...'²⁰³

Regulatory Failure: Mine Closure

Acid Mine Drainage (AMD) is associated with coal and gold mining. In brief, crushed rock containing pyrites comes into contact with oxygen, both in the atmosphere and in rain water, and a chemical reaction converts this into toxic sulphuric acid of various strengths. This polluted water then flows into streams and rivers while additionally polluting wetlands, boreholes and dams often associated with farm irrigation, and at a deeper level contaminating aquifers and groundwater. These impacts may take years to manifest as is the case in Mpumalanga's Witbank and Middelburg surrounds.²⁰⁴

AMD polluted water is unpotable whilst crops irrigated with a high saline content cannot yield. The effects are most immediately felt with open cast mining as rain water comes into direct contact with blasted rock and enters surrounding water resources. However underground mining's impacts are no less toxic. At some point water in mined underground cavities will seep through

cracks ('capillary action') and decant on the surface with similar AMD effects being experienced. Moreover if groundwater is near the surface under coal mining it will destroy the soil and nothing except hardy grass will grow. The soil can be restored through a layer of lime covering but typically capillary action again arises. 'You can't rehabilitate the soil, especially if you don't cover it with an adequate barrier of lime... people skimp on rehabilitation costs and use too little lime.'²⁰⁵

The impacts of AMD and the massive financing required to mitigate its effects and rehabilitate abandoned mines has been the responsibility of government financed by the tax payer in a country whose development resources are hugely stretched. South Africa in 2008 had 5 906 derelict and ownerless mines many of them in coal and gold and of these 1 730 were classified as 'high risk'. Limpopo Province has the most high priority abandoned mines at 44 whilst Mpumalanga has 41.²⁰⁶ In 2015, closure costs were estimated at R45.1 billion. These costs alerted the state that unless it reacted it would also be rehabilitating current mines. The MPRDA and NEMA became the mechanisms through which the state hoped to address rehabilitation and mine closure. Section 45 of the MPRDA details the state's powers to issue directives to authorised mines including timelines to remediate and recover costs if this is not done. NEMA endorses the polluter pays principle and licensed mines are required to ring-fence finances to mitigate environmental damage on closure. The DMR is responsible for ensuring that funds are sufficient and holds them in trust.²⁰⁷

However the recent abandonment or shoddy rehabilitation of coal mines has persisted and only one mine has obtained a closure certificate as the DMR does not want to confront expensive rehabilitation complications at a later date. Reasons for regulatory failure include insufficient funds in trust accounts, lax monitoring by the DMR, fly by night companies which mine rapidly and exit, and an unstated belief by many companies that the externalisation of impacts is not their responsibility. 'Mostly people don't rehabilitate,' observed a DWS official.²⁰⁸ Yet the DWS is the department most concerned with water management so why has it not intervened where the DMR has been reluctant?

One of the reasons is that the DMR controls the remediation trust funds which the DWS cannot access despite mining's impact on water resources. Further the regulations in terms of NWA s30 contain no guidelines on how rehabilitation should proceed,

It is difficult for us to claim from the Trust Fund because in the DMR water issues are not dealt with in rehabilitation. Why shouldn't the money be used for AMD? The Department [DWS] tried to access it but because there are no guidelines we can't. Water resources are not covered... We need a serious discussion between the two departments to cover aspects of closure ... There is a gap.²⁰⁹

The DMR and DWS have granted licenses in a haphazard manner with no planning regarding the aggregate impacts of mining on water. But as coal mining attenuated in the Witbank/Middelburg area the state was confronted with the rehabilitation of an entire region. In 2008 the Department of Minerals & Energy began investigating a regional mine closure strategy which should include '...interconnectivity and geohydrology, cumulative environmental impacts, regional economic development objectives, crossing municipal and regional boundaries, and surface catchments boundaries.'²¹⁰ In 2013 the DEA released the Mining and Biodiversity Guideline endorsed by government and industry²¹¹ which identified the importance of managing cumulative impacts and the need to find a balance between 'economic growth and environmental sustainability'.²¹² However this regional mine closure strategy has remained elusive.

Meanwhile the DWS has attempted to address aggregate impacts of mining on water in a new policy document proposing an integrated departmental approach. It expresses frustration with the lead role of the DMR and MPRDA where laws such as NEMA and the NWA play second fiddle. It proposes that water regulations are strengthened 'to give the DWS a strong legislative basis to impose sanctions... Abandoned mines need to be rehabilitated by DWS in cases where water security is at risk... the polluter pays principle should be applied to mine water ... Where subcontracting exists, the mine remains responsible.'²¹³ It identifies gaps in the NWA concerning 'retrospective liability' as mines often evade responsibility through transference of ownership making the new purchaser liable. It also proposes accurate financial provisioning by mines with relevant institutions to oversee remediation. It promotes the prohibition of mining in water sensitive areas and that all information on mine water management be made accessible to the public. It advocates the delegation of powers between government departments at all levels and expresses the hope that the new One Environmental (licencing) System will help to address the regulatory gap.²¹⁴

Another policy document and more laws yet multiple regulations over mine licencing and water impacts and various court judgments have not been able to resolve

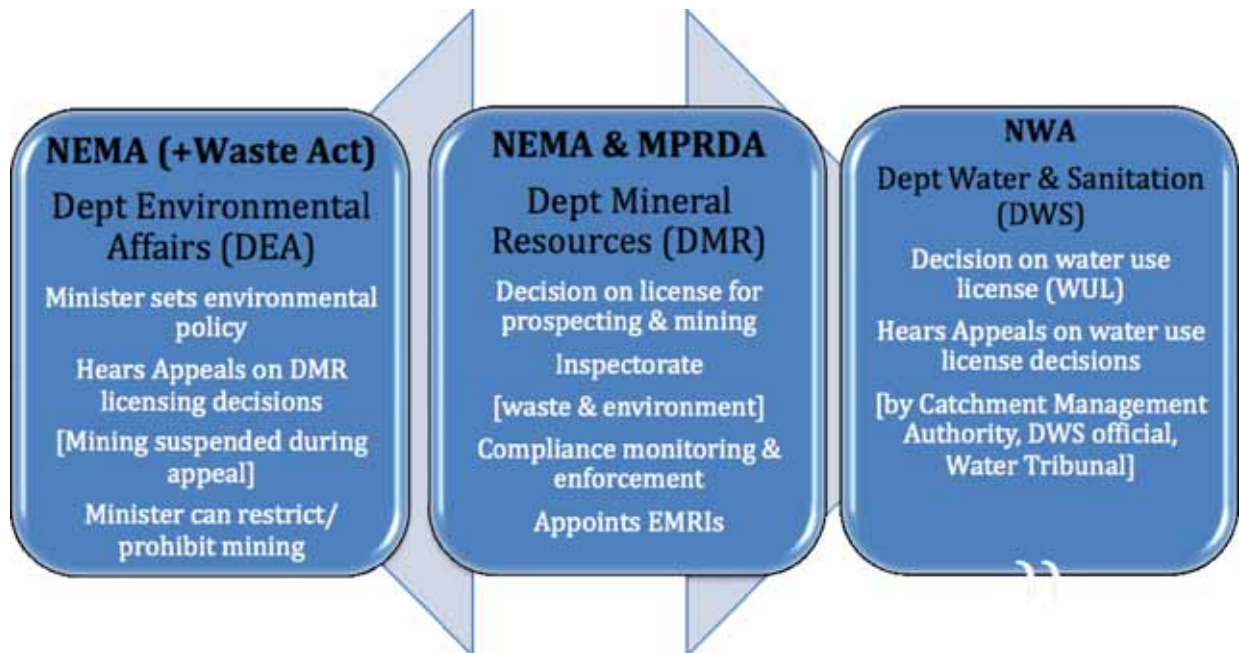
the cooperative governance failure. State departments holding varying mandates have been unable or unwilling to reconcile differences. Appeals to different authorities - the minister, Water Tribunal, the courts have proffered different outcomes which have been ignored by the authorities. Ultimately the messy legal regime is resolved by the authority holding power defined by political and economic imperatives. The law far from being a coherent system which has offered guidelines to settling conflicts has sprawled in different directions and left complainants frustrated. As Holston observes of the law in Brazil, "Along the way, law ... became a misrule of law: a system of stratagem and bureaucratic entanglement, deployed by the state and subject alike to create invincible complication, obfuscate problems, neutralise opponents and, above all legalise the illegal."²¹⁵

One Environmental System

The DWS refers with optimism to the new One Environmental System (OES) as important in resolving the cooperative governance issue. But this needs to be unpacked.

The OES (NEMA amendment 2014) underpins a Constitutional principle that different spheres of government must cooperate in mutual trust to make integrated, coherent decisions.²¹⁶ It emerged from prolonged court action and political bargaining in a process of the DMR and the DEA/DWS reaching a compromise. The OES aims to ensure that no one authority holds the power to develop, implement, monitor and enforce policy governing mining's environmental impacts but that regulations should be executed compliantly and in tandem.²¹⁷ At its centre lie three laws and three government departments which must cooperate to promote the development of mining and ensure the protection of the environment and water.

Under the OES the DEA is given the task of developing laws, regulations and policies governing mining's environmental responsibilities guided by NEMA. The DMR, on the other hand, is the issuing authority for mining licences (not water) as well as the monitoring, compliance and enforcement authority under NEMA (including the Waste Act) and the MPRDA. A DMR inspectorate must undertake this task and appoint Environmental Mineral Resource Inspectors (EMRIs) assisted by the DEA if necessary. In the licencing process the requirement for EMPLs and for the mine to establish financial provision for closure is now located in the environmental law, NEMA, and not the MPRDA. It is the DMR's responsibility to ensure that finances are sufficient to mitigate mining's environmental damage.



10 Months (300 Days) for outcome of mining & water licensing applications

ONE Environmental System (OES): sLicensing & monitoring

Under the OES appeals with respect to the granting of licences must be heard by the DEA under the Specific Environmental Management Act (SEMA) and on the lodging of an appeal all mining activity must cease. An important development in the protection of water resources is that the environmental minister has the power to prohibit mining in unmined areas and to restrict further mining in sensitive environments under the National Environmental Management: Protected Areas Act, 2003 (NEMPAA).

Separate from these processes but integral to the OES, the DWS guided by the NWA remains the issuing authority for WULs. Appeals regarding water authorisation decisions are heard by the DWS through the responsible authority in a Water Catchment Management Area or if one does not exist by a DWS official or the Water Tribunal.

All of these licensing processes must be completed within 300 days (247 excluding weekends) - under 10 months. This is problematic as the compacted period makes thorough going consultation and investigation of the mine's potential water impacts impossible yet the DMR is quick to issue licences within this time.²¹⁸ A DMR official at a mining and water workshop expressed the view that '... the regulations in the MPRDA were enough now mining has to get a water licence as well. Where will small mines get the money from to get all these

licences?'²¹⁹ While a DWS official commented that, 'We submit documents to the DMR on important environmental issues but it delays sometimes for months and then we receive a response and have to respond in minimum six weeks.'²²⁰ With truncated time frames it would be logical that consultation occur before the licence application to give civil society the opportunity to gather information but this is not the case. The time line signals a lack of intention around environmental and water matters. Commented an environmental lawyer, 'It is a tick boxes exercise and this is having an even worse impact on the environment... In a case I know of 22 days after the submission of an EIA the licence was granted after consideration of a 900 page document... No official could grant authorisation in so few days.'²²¹ Economic and political imperatives drive the EIA process. As an observer at the Joint Parliamentary Portfolio Committee to discuss the OES amendments noted, 'Emphasis ... fell upon the need for streamlining and shortening timeframes for the three authorisations (mining, environmental and water), which would now run in parallel rather than sequentially, centralising and limiting the appeal process...'²²² The time factor overrode social and environmental concerns, 'The tone of the discussion was generally pro-investment and pro-business. There was not a single mention during the committee's two-hour discussion of the constitutional environmental right, the rights of communities, the rights of future generations, and the duties that might be owed to the natural environment ...'²²³

A further complication in the OES is that the DMR responsible for compliance, monitoring and enforcement is also responsible for the development and promotion of mining. It is both referee and player.

Cooperative governance lies at the centre of the OES and the obligation to consult with other departments is now incorporated under NEMA and in the 2014 EIA regulations.²²⁴ However interdepartmental competition and the dominance of the DMR; lack of contact, follow-up, numbers of mines and time constraints; differing aims and mandates; work cultures and complexity of issues being evaluated; and personal and political interests all place constraints on the OES's success. The Chamber Environmental officer complained that, 'There is little co-ordination or consistency amongst government departments. With some you consult regionally some nationally. And under the One Environmental System the DMR is the overall competent authority but sometimes the DEA views it as encroaching on its area and they give conflicting views. There are power struggles, turf wars and confusion.'²²⁵

Interviews with DWS, DAFF and municipal officials revealed that the DMR as the issuing authority for mining licences held most power. The DWS complained that the DMR often ignored its concerns and water matters relating to a licence were disregarded. This was in part fuelled by the vaguely expressed Section 22 of the MPRDA which states that a water application must be 'submitted' rather than 'approved'.²²⁶ The DMR views mining from a black ownership perspective rather than balancing this with environmental and water concerns. At a workshop on mining and water, for example, the DMR's main concern was, 'How many mines have transformed their ownership and what should we do about mines that have not transformed?'²²⁷ The DMR requires 26% black ownership for approving licenses. DWS officials have knowledge relating to water which they believed the DMR was uninterested in acquiring.²²⁸ A DWS official remarked, 'Not a single mine has been taken to court since the new legislation [OES] was in place whereas before we had a lot of cases with mines and mining licenses.'²²⁹

A legislative misconception lies at the heart of the OES. It is highly unusual that the department implementing a system, for example under NEMA, does not develop the legislation. One department drafted laws which another department has to implement and neither department understands each other's legal and policy regime. A lawyer commented, 'If you phone one department you get a different interpretation from another.'²³⁰ Thus protection of water resources is neglected and

WUL auditing processes compromised. A DWS official noted,

DMR takes or rejects our recommendations and it makes the final decision on whether a mine can operate. They don't communicate with us in the process. The DMR should make sure all conditions are met before they issue a licence. The DMR promotes mining so it's hard working together. We give our inputs on the EMPL and they must take them into account. Mines get the mining licence before the water-use licence usually. Now with the compulsory 300 day decision there are problems in coordination. You can't just tick the boxes. Sometimes the DMR sits on the application before passing it on to us. We don't have any choice... we have to keep to the days required. We have to comply with the law.²³¹

The mining industry however has greeted the OES favourably with comments such as, 'Government came to our rescue' and 'We support the one environmental system and how quickly water licences are turned around these days.'²³² Some have raised objections however concerning the suspension of mining activity when an appeal is lodged, 'The Department should not suspend licencing without first looking at individual cases... We are the smallest water users as about eighty to ninety percent of water is used by agriculture. A 5% saving on our part would mean we could generate water for use.'²³³ This argument does not take into account that a small amount of water pollution has large downstream impacts especially if the cumulative impact of many mines is taken into account.

The DWS receives little support from the DMR in monitoring mines, in enabling water infringement prosecutions, or in responding to DWS' objections to mining authorisations. On its side the DMR complains that it is unable to develop an effective inspectorate because it is underfunded.²³⁴ In the Supreme Court judgement *Arcelormittal South Africa and Another v Vaal Environmental Justice Alliance* the judge ruled that corporates needed to be transparent and lift the veil of secrecy.²³⁵ But there is little transparency around compliance audit results. The DMR could assist in this goal. Regulations entail that a week after a DMR inspection an audit report should be available and two weeks thereafter should be posted on its website highlighting any non-compliance. But reports are simply filed away.

Additional regulatory interventions or policies will make little difference however correct or sincerely intentioned. The power lies with the DMR as the issuing, monitoring,

compliance and enforcement authority - the implementing agency. Its decisions impact on mine operations and closure. Water Specialist Anthony Turton recently stated that he 'knew of no mining organisation with a proper functioning water-use licence.'²³⁶ If the DMR ignores transformative laws no change will occur on the ground and the polluting of water resources will continue. If political appointees governing water accept the status quo despite for example, the minister's powers to declare mining no-go areas, the pollution of South Africa's water resources and the farmlands they irrigate, will dangerously impact on food security.

Concluding Remarks

Why does the DMR enjoy so much power in the mining regulatory regime despite its destructive impact on water quality and food security? On whose behalf is it exercising power? And who benefits? Does the DMR exert power on behalf of a new black mining elite and favour them over the large white coal corporates with consequences for water quality? Are there less rigorous expectations of compliance from juniors than for the majors and is a dual regulatory system operating?

The state has had some success in unbundling corporates although five companies still provide Eskom with the bulk of its coal. The DMR has historically favoured two groups in the coal licensing regime: large black politically connected companies and large white corporates. Such deals overseen by the DMR ensured the rise of black elites and environmental concerns were backgrounded in this ownership race to carve up rich coal allocations.²³⁷

As corporate extraction escalated, the DWA/DWS and DEA witnessed mining's deleterious impacts on the environment and water resources. However despite early successful challenges the Water Tribunal has been largely toothless. Prolonged regulatory messiness has exacerbated these impacts owing to licence delays whilst mining continued; murkiness on the powers, limits and competencies of new laws; conflicting mandates and failure of cooperative governance across departments including in the OES regulatory regime; poorly drafted licences accompanied by a failure of mine compliance, state enforcement and accountability; underfunding of rehabilitation trusts; promotion of mining over water laws by state officials and politicians; and dominance of the DMR in the regulatory system favouring mines at the expense of water security and food production.

In this regulatory fog large companies continued to mine without licenses with majors such as Shanduka, Exxaro, BHP Billiton and Anglo all being offenders.

New coal juniors have also transgressed but not because they are especially favoured. Although benefiting from BEE laws and Eskom's preferential allocation of contracts²³⁸ the state has provided little else to promote them. If anything coal majors have been preferred

benefactors owing to their ability to concede 26% ownership to black companies. It can be argued that Eskom discriminates against the majors by providing juniors with preferential CSAs but despite the expiry of many majors' Eskom contracts they have turned this into an opportunity by expanding their more lucrative export market, largely inaccessible to BEE companies.²³⁹

Some argue that coal juniors are favoured by the DMR and DWS which ignore their excessive pollution of water resources.²⁴⁰ However most mines have experienced delays in obtaining WULs and in this vacuum both majors and juniors have mined without fear of closure. It is true that on certain licencing conditions, such as the lining of PCDs, juniors struggle to meet costs and may be less compliant however some majors, although not operating outside the law, continue to use poorly or unlined PCDs arguing that the 1956 Water Act still applies in respect of previous infrastructure. With regard to noncompliance, both juniors and majors have infrequently been issued with pre-directives and directives, no mine has been closed for breaking permit conditions, while only one has had its licence rescinded for extracting without a WUL.²⁴¹

The argument that BEE companies are mainly responsible for AMD impacts is too simple. A trend has emerged whereby majors have sold on mines to BEE companies without first rehabilitating especially as their operations often predated post-apartheid laws and the requirement for rehabilitation trust funds. Thus the responsibility is transferred to new owners who do not have the resources to remediate. Further regulations have been poorly policed by the DMR allowing both juniors and majors to avoid closure responsibilities. There are some exceptions such as Anglo American's *eMalahleni Mine Water Reclamation Plant* but uncertainly remains on its continuation after mines close.

Both juniors and majors elude the regulatory system but not always in the same manner. The Kuyasa and Masemani juniors indicated that a grey zone operates below the formal licensing regime. The majors also operate in this substratum but in a different manner. They have the resources to traverse the formal requirements but this may not be sufficient to ensure mining rights. They are vulnerable to a changing political climate and so they cultivate patronage relationships where

favours and counter favours are traded. Such relationships reach into the upper echelons of state departments and beyond into the top political structures of the ANC. The majors negotiate this terrain through their economic power to dispense black ownership, mergers, joint ventures, equity stakes, royalties and other financial benefits and in this way bypass water regulations. They collude with the DMR's agenda and seldom protest at favouritism, lack of accountability or manipulative deals as ultimately their silence allows for a profitable relationship.²⁴²

What does this regulatory failure, legal or illegal, mean? The outcome of cooperative governance should be responsible mining which protects clean water resources and ensures food and water security. Yet the opposite was unfolding in Delmas as juniors and majors mined rapaciously, the municipality moved towards desertification, and further pollution of the already compromised water quality of the Olifants River catchment area was underway.²⁴³

Environmental laws are problematic in some respects but in the main individual pieces of legislation, as many in Delmas asserted, are sound but compliance, monitoring and enforcement was lacking. No party except the farmers and a small band of township members had a real interest in ensuring water regulations worked. The water licensing system was defective and its failure was due to extractives' negligent and uneven compliance with the law, legal activities which failed to uphold the spirit of water laws, and the state's weak monitoring and enforcement. On the one hand mines in Delmas were in possession of mining and water licences and were thus observing the official regulatory system. On the other frustrated or remiss extractives had previously mined without water licenses or obtained licenses through underhand means. Moreover where the official system was observed and WULs obtained, certain licence conditions were not heeded or unlawful conditions were included by the DWS in favour of the mine.

The legal system and the underbelly grey zone appeared to work seamlessly alongside each other but were also in continuous contestation and the OES was the emblem of this tension. It took from 2006-2014 for this cooperative governance system to emerge while the DEA and the DMR locked horns over mining's special environmental status. The compromise was that the DEA would formulate regulations and policy and be the arbiter of environmental disputes while the DMR would hold the power to issue mining licences and monitor mine environmental compliance and enforcement. Yet, as many have underscored, it is not South Africa's

aspirational laws that are mainly at fault but rather the manipulation and inefficiencies that accompany their implementation which lie at the heart of broken regulations. This places the DMR centre stage. However it has not employed its power to equally benefit mining and the environment (including water use).

The DMR has a contradictory mandate. The Constitution and subsequent case law, in a disquieting fashion gives equal weight to developmental and environmental concerns.²⁴⁴ The DMR has the dual role of both promoting the transformation, development and growth of mining as well as protecting the environment from its ravages. Historically it was given the former as its prime mandate thus when the law was amended it was not equipped with the expertise or the incentive to enable the latter. The DEA conversely had been better prepared and trained to perform the latter role and in the past had some success in calling extractives to account but this is no longer its directive. The DEA does assist the DMR but this is on invitation alone. The Delmas research showed a weak monitoring and enforcement presence from all related departments demonstrating the DMR's disproportionate promotion of the mining economy with a disregard for its social footprint.

The parallel politico-legal system appeared to operate as beyond the DMR's developmental mandate lay political imperatives driving its disregard for mining's water use. Cargill has written on DMR officials and their personalised intervention in BEE deals to favour powerful black individuals in the ANC making patronage and cronyism a feature of everyday life. DMR officials' motivation for favouring the mining sector seemed to vary from cronyism favouring particular individuals or mines; to securing jobs in the industry or becoming mining bosses themselves; to a nationalist class formation agenda buttressed by a BEE mandate to promote black capitalists (the white dominated agricultural sector where water concerns were primary was a much less attractive vehicle for black elite empowerment as an Exxaro shop-steward noted, 'Agriculture is a long term investment but with mining you can earn a lot more very quickly.'²⁴⁵); to the enjoyment of wielding power in an industry where big capital trumps all other economic sectors and coal is central.²⁴⁶ However the nationalist sentiment aiming to promote black juniors was curtailed by laws of supply and demand and it was the coal majors which still supplied Eskom with 80% of its needs. Taking into account foreign ownership, black juniors provided 15% or less of Eskom's requirements and even less to the export sector while many aspirant black miners faced obstacles to entering the industry.

The DWS stood in the DMR's shadow where it once had an independence from the mining lobby. It has been weakened by the OES and the power relations it embodied. The system requires that a composite mining and water licence be issued within ten months. The DMR initially vets the licence request but frequently leaves insufficient time by design or ineptitude for the DWS to conduct a thorough water investigation before issuing a WUL. In consequence under pressure from the DMR it frequently capitulated to its recommendations. Although the DWS administers its own inspectorate it was largely absent from water contamination sites in Delmas and its response to complaints from farmers was inadequate. This reflected a political and structural impotence (particularly in accessing rehabilitation funds and appropriately trained staff and state adjudicators) demonstrating that where mining is concerned the node of power lay elsewhere in the state and a demoralisation had developed in the face of an excess of newly licensed mines.

Although some individuals within these state departments attempted to check mines' impunity, they were blocked, overwhelmed or surrounded by indifference. Competing mandates, the absence of a unity of purpose, a surfeit of mines, opaque and confused directives emanating from subterranean levels of cronyism and political power mongering, undermined their actions. In this environment a breakdown of the aspirational principles in water laws was inevitable. The regulatory system could not resolve this impasse or enforce compliance as politics and power trumped the legal mandate. This paralysis favoured those with economic power - the mining companies both majors and juniors.

Where impunity exists there is also resistance. In Delmas this fight back was mainly conducted by white commercial farmers. Unlike the Sanco group from Botleng, these farmers have some power. They have economic power and contributors' power in that they pay taxes, own land and are large consumers and have the past experience of being elite citizens under apartheid which gives them confidence. Although weakened by a lack of participation by farmers in the area, an articulate and knowledgeable Delmas group harassed and challenged the DMR and DWS through persistent complaining and legal means to enforce their rights. They have had some successes but mainly relentless mining continues with impunity together with the destruction of land and water resources. Mining is a land issue²⁴⁷ and swathes of rich agricultural land have gone over to mining bringing heightened risks of water resource pollution.

Although seemingly powerful white farmers were regarded by state officials and the mines as marginal. Farmers have rights in the formal regulatory system - the constitution and enabling laws around the environment, water, food, property and human rights - but these are trumped by substantive rights in the informal grey zone. It had become a privilege to obtain what by law was a right. Mines ignored complaints and paid lip service to consultation, so farmers were forced to rely on state officials to view their complaints favourably. This personalisation of rights meant that their citizenship depended on the discretion of an official. Thus farmers despite their wealth lacked the political power to lobby for the enforcement of water rights. Ironically this partly stems from the weak transformation of agriculture and redistribution of land ownership to black holders where if this had occurred water rights may have been taken more seriously. Privileged white farmers are pushed to the margins in the same manner that the less advantaged Botleng Sanco members and their township constituents are marginalised. That farmers produce food does not lend them power. A jostling, confusion and repositioning of class fractions is occurring post-apartheid which weakens those who had illegitimately previously held political and economic power even if they now adopted a principled, legal standpoint. As it stands white farmers are on the right side of the law but the wrong side of history and this dissonance renders laws that prevent life threatening water-use extremely fragile.

Meanwhile mines demonstrate their impunity by manipulating, breaking or selectively implementing water laws where convenient and if this fails patronage and accessing political influence is a means of wielding extra-legal power. They ignore farmers' complaints partly as a means of forcing them to sell up coal rich farmland. Thus a coercive encroachment dispossession is made legal and regulations have become a means of humiliation and a bureaucratic ordeal. South Africa's democracy runs parallel with corruption and impunity exposing citizens to the unpredictable exercise of power and the uneven and incoherent application of laws.

But does it matter if Delmas becomes a mining town? Delmas and its surrounds are contributors to the Mpumalanga food economy, especially maize and sorghum, although it is not special in this. Mining has impacted on the whole Mpumalanga Highveld's productive capacity. Premier David Mabuza remarked in 2015 that agriculture's contribution to the province's economy had declined from 27% to 3% and that, 'Mining companies have taken vast pieces of land that was originally used for maize production... if you view the

area from the air heaps and heaps of mined soil are visible.²⁴⁸ The agriculture department, powerless in the face of the state's determined pursuit of coal mining, views the raiding of Mpumalanga's food productive capacity as so serious that it is considering removing massive quantities of top soil before mining begins to an area with similar conditions - a huge, desperate, expensive and uncertain strategy to protect the rich soils of Mpumalanga.²⁴⁹ DAFF appears powerless to insist that government pursue a programme of alternative power generation such as wind or solar which would leave land available for food production.

In South Africa food security is not seen as a basic right in the way other rights such as education, housing, water and healthcare are, yet child stunting rates of 25% exist due to malnutrition.²⁵⁰ Malnutrition results in poor health and learning difficulties which will be financial burdens on the state and will further entrench inequality. The country can generate sufficient food to feed its population if production, redistribution and strategic government planning is undertaken. However local government lacks food planning systems, present in many countries, and while IDPs (Integrated Development Plan) plan for the basics of life and the state provides services such as shelter, water, transport, education, health and sanitation, it does not consider food an essential.²⁵¹ The Southern African Development Community recognises a food/energy/water nexus arguing for integrated policy development²⁵² but South Africa has not developed a strategy to manage its power, water and food security contradictions which it cannot do until the state recognises the severity of an impending food and water crisis.

The short termism of state officials and mine capital in pursuit of power, influence and accumulation threatens the livelihoods of all South Africans both now and for the next generation who will inherit wastelands. The economic disempowerment inflicted by apartheid and the limited redistribution of wealth has produced a post-apartheid generation greedy for opportunities to acquire power and rapidly accumulate regardless of consequences. In 2017 DMR deputy director-general Joel Raphela underscored the ANC government's policy incoherence when he stressed the need to mine coal more intensively because of its importance in the country's energy mix and in its ability to generate foreign exchange.²⁵³ Mining is a decision about land and water use and the state has permitted mining and energy security to trump the protection of water resources, agriculture and food production and does not seriously engage with the choices that exist.

The Delmas case study demonstrates a disjuncture between policy and practice. The MPRDA dramatically increased mining activity and unintentionally its negative social and environmental impacts. Coal mining companies however have used the state's policy incoherence and failed regulation systems to their advantage. Farmers point to state-buttressed water grabbing²⁵⁴ by extractives using legal, illegal and extralegal means. A conclusion has to be made that the failed cooperative governance system with its poor enforcement is a deliberate strategy by the state to support mining activity over the concerns of the agricultural sector and clean water resources.

This coal study is a microcosm of the state's priorities in South Africa more generally. The ANC has given birth to new laws and institutions which it is now undermining. There is some movement forward but this is accompanied by retrogressive steps and fragmentation. The countervailing forces of stabilisation, solidarity, inventiveness and less insular and parochial ways of engaging with problems have not yet come to the fore. Old apartheid constructs such as black poverty and the grip white farmers have on commercial agriculture are still present and under pressure and collapse. This social breakdown, including ecological collapse which will seriously impact on people's lives, cannot yet be properly engaged with by the state which is focused on the upward mobility of a black elite in mining. South Africa is still in transition to a stable democracy and needs to make a break with history. Elite capture of the means of wealth generation by an aspiring black elite is still in process. The state capture exemplified by President Zuma and the contestation it engenders is routinized at top and bottom levels. Some renewal is present in this contention but only after this contested transition has exhausted itself can a process of development strengthen. However the problem with ecological breakdown is that it cannot sustain a lengthy period of collapse and renewal because it imposes severe time constraints on the earth's ability to restore itself.

It would be wrong to dismiss new laws as unworkable because of weak implementation. Regulations have expanded the possibility of water rights and extractives are being held to account where once nothing stood in their path. The discourse has altered, contestation is underway, and a simultaneous expansion and erosion of rights is occurring in South Africa's democracy. The Constitution and the laws it has engendered remain a weapon and site of struggle for change because from conflict and exclusion a redefinition of the law and justice can emerge to more accurately reflect what is happening on the ground.

Guidelines towards action

The cumulative impacts of coal mining on water resources described in the Delmas case study have not been investigated in this manner before, and it gives concrete evidence of the failure of post-apartheid regulations to protect water, food resources and agriculture. The research allows for viable interventions to be itemised that could stem this destruction which would however need to be further researched in consultation with activists, lawyers and other experts. These suggestions are not exhaustive but are rather think-points that could stimulate the deliberations of those working in the area.

Given political and other obstacles which mitigate against an anti-coal lobby, rather than attacking the government's contentious energy policies, a strategy of emphasising food and water security could be useful. Alternatives to coal power and a just transition could also then be raised.

Given the weakness of the coal environmental lobby suggestions also focus on strengthening the Push Back Coal initiative. Building a capable state, strengthening citizen agency, and working for transparent governance are the backdrop to these recommendations which advocate for improved monitoring and enforcement of regulations, as well as pushing back the use of coal for energy and export purposes.

Guidelines

- A Push Back Coal coalition and research initiative already exists but needs to be strengthened and extended to deepen understandings, and formulate modes of resistance. Disparate research initiatives need to be consolidated and an advocacy dimension needs to be considered.
- Initiatives are underway to undertake litigation but this needs to be extended to consider what the most strategic interventions would be. Access to targeted research would strengthen litigation, and the coalition could focus on how regulatory failure could become the focus of a Constitutional case. This could be brought on the basis that access to food and water

security is deeply compromised by an implementation gridlock, the 'misrule of law' and grey zone activities, together with a failure of co-operative governance. Such a case could rest on a directive to government to unblock the paralysis and properly resource and strengthen the water, agricultural and environmental departments.

- Concurrent with constitutional action legal challenges should be multiplied and directed at mining companies and government departments. However in isolating the practices of particular mines, the cumulative impact of coal mining on a region should not be lost.
- Pressure should also be sustained through the education of coalition, labour and fenceline community members on coal, water, food, air and other issues with a view to mobilising collective action. This would bring white farmers, specialist NGOs, trade unions, communities, small scale farmers and other interested and affected parties into a united front to protect agriculture, and ensure food and water security. Research on a just transition away from coal, for example alternatives to coal jobs, should run concurrently with such education initiatives.
- Networks of 'citizen monitors' should be facilitated locally and regionally (Benchmarks Foundation is a good model) through the formation of mining, environment, water, local government and agricultural committees. Such committees should demand apposite corporate consultation and access to mines to monitor regulatory transgressions and work in tandem with government inspectors.
- The Push Back Coal coalition, armed with appropriate research, should lobby parliament regarding the institutional strengthening of regulatory oversight and enforcement. This is necessary given that the DMR has issued numerous licences without proper consultation with the DWS. Parliament needs to consider amplifying relevant budgets to enable the employment and thorough training of sufficient inspectors. Water laws do not require public participation in the water licensing process and lobbying for its inclusion could feed into the ongoing review of the NWA.

- Monitoring representatives could meet with environmental, water, agricultural and mining Ministers and Directors General to alert them to regulatory failure particularly of the OES, as well as to educate them on the danger that coal mining holds for food and water security. This could be done through the presentation of research and offers of assistance in strengthening government's oversight capacity. The environmental minister should be urged to declare critical water and agricultural areas, such as the headwaters of water catchment areas like Delmas, as no go zones under the enabling legislation of Nempaa.
- Local monitoring committees could demand regular joint citizen/municipal consultation committees to push local government into using its powers of land rezoning through Spluma, as well as to encourage the use of municipal by-laws to contain other destructive impacts such as air pollution. The South African Local Government Association (Salga) should be brought into discussions on land use planning at local and provincial levels. Push back coal initiatives and a just transition away from coal should be integral to this discussion.
- A workshop of different stakeholders concerned with mining's impacts on water, environment, and agricultural land should meet to plan taking forward the initiatives suggested above.

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Organisation officials: Vusi Nkosi, Moses Tshili, Philip Nyakalle & Ernest Mafoho - K Forrest & L Loate 11/07/2016

Joint interview Delmas farmers: Jan Boshoff, Peet Bezuidenhout, Magda Kleyn, Johann Gericke and Hardu Prinsloo - K Forrest & L Loate 12/07/2016

Interview Chief Fire Officer Victor Khanye Local Municipality, Frans Bolton - K Forrest 20/7/2016

Interview Chamber of Mines Environmental Officer, Stephinah Mudau - K Forrest 11/05/2016

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