Case study on Extractive Industries prepared for the Lancet Commission on Global Governance

Report from South Africa

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"We must remember the history of mining in South Africa, of cheap black labour, racism and exploitation. This is the model for the rest of Africa too. If we look at Marikana as a microcosm of South Africa and really of mining in Africa, we witness growing discontent, growing inequalities, a widening gap between rich and poor, and all the resultant problems of poverty. The LONMIN workers are victims of structural violence in our society. This is informed by low wages, very bad living conditions, bad nutrition, health and safety problems, HIV and AIDS and no hope for a better life."

–The Right Reverend Dr Jo Seoka - Anglican Bishop of Pretoria and chairperson of Bench Marks Foundation at the Just World Conference 2012 in Johannesburg - 30 October 2012

"Approximately 69 000 miners died in accidents in [South Africa] in the first 93 years of this century and more than a million were seriously injured. In 1993, out of every 100 000 gold miners, 113 died in accidents, 2 000 suffered a reportable injury, 1 100 developed active tuberculosis and of these 25 died; in 1990 about 500 were identified as having silicosis."

–Laurie Flynn - Submission to the South African Truth and Reconciliation Commission. 1998

Figure 1: Ex-mine workers, still seeking compensation for injuries and ill-health

"Few countries in the world are as renowned as South Africa for the sharp contrast between extravagant wealth and luxury on the one hand, and extreme poverty and destitution on the other."

—Prof Sampie Terblanche. A history of inequality in South Africa 1652-2002. 2002

Introduction

The health, socio-economic and environmental impacts of mining occur throughout every phase of its life cycle, from the cradle of exploration to the grave (and beyond) of abandoned mine shafts, disowned mountains of tailings[1] dams and lakes of polluted water. Overwhelmingly, the products of mining are sold into the commodities exchanges of the global capitalist system, physically, and in every other way, remote from the living and working conditions of the workers who produce these commodities. Our case studies of gold and platinum mining in South Africa are exemplars of this process, glimpsed through the experience and words of affected communities and workers. The direct experience of a handful of the interviewees can only reflect a small part of the total reality, but their stories reflect both their dire present circumstances and the ghosts and memories of the past.

The life cycle of mining starts with exploration for exploitable deposits, often preceded by the forced removal (or forced sale) of those who own and /or occupy the land, followed by the construction of mining infrastructure, then the 'productive phase' of the mining of the ore and the extraction and beneficiation of the metal. The final closure of an exhausted mine theoretically includes the rehabilitation of the land, but this rarely occurs. Abandonment is more the norm, leaving a legacy of vast quantities of solid waste in the form of tailings (slimes) dams and waste rock, lakes of polluted water and a devastated environment, both above and below ground.

Health impacts occur during every phase of mining. The health impacts of the displacement of rural communities at the mining site, whether subsistence farmers or farm workers is rarely recognised. In South Africa, historically under colonial conquest and Apartheid, and through to the present under the neoliberal economic paradigm that is beholden to mining interests, this thirst for cheap migrant labour is slaked by destroying the livelihoods of distant rural communities, through acts of omission and commission (Callinicos L, 1980; Terblanche S, 2002). In the platinum belt, farms bought through forced sales resulted in the eviction of farm workers into squatter-camps. The newly acquired farms are enclosed with razor wire and vigorously patrolled by private security personnel, excluding workers from still-arable land and denying them access to crops left to wither through neglect or under the impact of air polluted by smelter emissions.

Figure 2: A sunflower crop behind newly erected barbed wire fence, platinum belt

Figure 3: Ore processing and smelter operation, platinum belt

The exposure of large numbers of workers to hazardous working and living conditions (high dust levels, extreme heat, ergonomic risks, safety hazards and crowded single-sex

[1] Ore is crushed, milled and processed to extract the gold or platinum. The 'tailings' are the waste residue from the extraction process, usually dumped as a slurry (solid/ liquid mixture) in an embankment dam and left to drain and dry out.

hostels or squatter camps) result in a plethora of mining-related diseases that are largely unacknowledged and certainly under compensated (Murray et al., 2011).

The mining, metal extraction and beneficiation phases are accompanied by air and water pollution, the generation of solid waste deposited on tailings dams and waste rock stockpiles, the abstraction of vast quantities of water and the use of huge quantities of energy (Norgate and Haque, 2012; Glaister and Mudd, 2010), all with direct or indirect health consequences. A concomitant legacy is that of huge numbers of unemployed workers and disrupted (mainly rural) societies, and a burden of disease and poverty suffered by both current and former mine workers and successive generations of their families. A much larger population is likely to be affected by the legacy of a devastated environment (Durand, 2012), for decades and centuries after mining has ceased.

Figure 4: Dust storm off a tailings dump, platinum belt

The wealth generated through the mine's productive years accrues mainly to the owners and shareholders, invariably located far away from the site of mining. The meagre wages that accrue to workers are inadequate compensation for their output or for the brutal conditions of work. An ineffective, inadequate and inequitable compensation system for work injuries and death at work or for mining related diseases compounds the social injustice (Ehrlich R. 2012; Ladou J. 2012). Woefully inadequate mine closure funds mean that society as a whole bears the burden and costs of the polluted and damaged environment.

What is the balance sheet of the burdens and benefits – health, socio-economic and environmental – of mining, judged over its whole life cycle?

Gold mining in South Africa (SA)

Gold has been mined in SA for more than 120 years, producing a cumulative total (to 2010) of about 51 200 tons (derived from Short and Radebe, 2008; Chamber of Mines, 2011), about 30% of the cumulative world production (to 2010) of 157 000 to 180 000 tons, about 85% of which remains in circulation (Norgate and Haque, 2011). For several decades South Africa was the largest gold producer in the world, with production peaking at about 1000 tons in 1975, although declining to less than 200 tons/ year in recent years. Newly produced gold is used mainly for jewellery (46%) and as an investment (37%), and other uses (17%). (Chamber of Mines, 2010). In the past and during the current period, gold has played a crucial role in the world financial system (World Gold Council, 2013). The South African mine worker, drawn from the rural areas of South Africa as well as surrounding countries – Mozambique, Malawi, Lesotho, Zambia, Zimbabwe and Angola - can therefore be said to be a world historical figure.

At the current gold price of about US$1 700/oz, the cumulative gold production of 51 200 tons may be valued at 2.8 trillion US$, about seven times South Africa's current annual Gross Domestic Product. Yet, what residue remains of this enormous wealth extracted from the soil and toil of hundreds of thousands of workers? Employment in gold mines peaked at 531 000 in the 1985 (Short and Radebe, 2008) but declined to about 157 000 in 2010. An ex-mine worker is typically unemployed, poor, suffering from one or a combination of mine related diseases (TB, silicosis, HIV-AIDS and/or physical injuries), with a shortened life span,

a poor quality of life, surviving on a government pension or grant (if SA) or, in the absence of a pension, with the support of his family.

South African gold mines are among the deepest in the world, with a depth of up to 3.9 km (SPG Media Group, 2013). Underground working conditions are arduous if not brutal. Rock face temperatures are up to 55°C, humidity levels are high and poor control of exposure to dust, coupled with poor health surveillance systems, give rise to a high incidence of dust related disease.

Figure 5: Superdump for gold mine tailings and partially treated effluent water

The recent high price of gold and development of new extraction technology have enabled the increased re-mining of tailings dams. This process increases the emission of wind-blown dust from tailings dams and the dust exposure to surrounding communities.

The burden of disease bequeathed by the gold mining industry is best illustrated by the following (Murray et al., 2011):

> “Importantly, the proportion of black gold miners found to have silicosis at autopsy increased from 3 per cent in 1975 to 32 per cent in 2007. [Under apartment black mine workers were hardly ever diagnosed with silicosis.] Biologic and social factors combine to create a ‘perfect storm’ for the interaction among silicosis, TB, and HIV. Silicosis substantially increases the risk of TB to a magnitude similar to that of HIV infection. Importantly, silica exposure is associated with TB even in the absence of silicosis and the increased risk is life-long. Risk factors such as migrancy and single-sex compounds increase high-risk sexual behaviour, and thus HIV rates, which are close to 30 per cent among these miners. The TB risks of silicosis and HIV infection combine multiplicatively. Consequently, the highest recorded rates of TB worldwide have been reported in South African gold miners. Mortality from TB is higher than that from mine accidents. The prevalence of TB in gold miners has increased from 806 per 100 000 in 1991 to 3821in 2004. HIV prevalence rose from less than 1 per cent in 1987 to 27per cent in 2000."

Social disruption caused by the labour practices of the industry

> “Although well below the half million employed in the 1990s, South African gold mines still employ approximately 160 000 people. The industry is characterized by male cross-border and internal rural-urban migrants who leave their families and live mostly in single-sex mining compounds, returning home for variable periods. These social circumstances and stabilization have contributed to serious interrelated epidemics of silicosis, tuberculosis, and HIV infection in miners, in surrounding communities and in labor-sending regions. Post-apartheid reforms deracialized legislation, but race remains an important determinant of occupation, salary, housing, and disease burden.”

The legacy of environmental impacts of mining in the world's largest gold and uranium mining basin, with the extraction of more than 50 000 tons of gold (and more than 80 000 tons of uranium) over 120 years include about 400 km^2 of mostly unlined mine tailings dams and 6 billion tons of tailings containing 430 000 tons low-grade uranium. (Mine Closure, 2008) In the Witwatersrand Gold Fields region the growing threat of flooding of abandoned mine voids and the decanting of the resultant Acid Mine Drainage into groundwater resources, used for agricultural and human consumption, has been raised with increasing urgency by NGOs and academics (see, for example, Liefferink (FSE), 2012; Durand, 2012). The SA government finally appointed an inter-ministerial committee to report on the matter (DWAF, 2010), although a response commensurate with the magnitude of the problem is still awaited.

Because of the low grade of South African gold ores (about 5.2 g/ton of ore in 2006 declining to about 2.80 g/ton in 2011), at the latter grade about 500 000 tons of ore have to be crushed and milled to produce a ton of gold or about 16 tons ore per ounce of gold. (Chamber of Mines, 2012). Additional environmental impacts include electricity consumption (average 140 GJ/kg gold), water usage (average 700 m^3/kg gold) and CO_2e emissions (average 12 t CO_2_e/kg gold) (Glaister and Mudd, 2010). The South African government has been singularly ineffectual in holding mines past and present to account for the environmental damage caused, including radiation risks, caused by their activities (van Eeden et al, 2009).

Figure 6: Gold mine tailings re-mining operation of exposed (vegetation removed) tailings dump

Gold Mining Interviews

We feel it is critical to hear directly from miners and those living in mining communities in order to convey the depth of difficulty this population faces on a daily basis: of extreme poverty, multiple co-morbidities driven by mining and the social conditions surrounding mines, the social damage and fear they experience, and the lack of pathway out. We interviewed over two dozen individuals in four mining communities near Cape Town, South Africa in January 2013. Interviewees included miners, ministers, health workers, and others. We talked to the disabled and to entrenched workers, community residents experiencing illness due to gold mine dust, trauma counselors and community workers. We hope these testimonials help to paint a realistic, true picture of mining in contemporary South Africa.

Interviews with TUDOR Shaft Community Members - 17 January 2013

About 2000 residents continue to live in shacks on a gold mine tailings dump. A recent soil sample analysis requested by the Federation for a Sustainable Environment showed elevated levels of aluminium, arsenic, cadmium, cobalt, copper, mercury, manganese, nickel, zinc and uranium. An independent international expert in 2011 found radiation levels 15 times higher than

Figure 7: Tudor Shaft Informal Settlement

the regulated level. He advised on the immediate relocation of the community. The National Nuclear Regulator of South Africa confirmed the grounds were indeed radioactive and Parliament recommended relocation of the community in 2011. The majority of them are still living here. No health outcome studies related to the exposure of the community to high levels of radiation is as yet available.

Here is what community members had to say.

We have been living here for up to 10 years. Our children are sick from birth with flu and chest problems. I have to take my 9 month old son to the clinic almost every week with a runny nose and cough. The water is not good and there is only 4 taps for all of us. Children commonly have vomiting and diarrhoea.

Figure 8: Children of Tudor Shaft Informal Settlement

Toilets are broken and never clean and too few for all of us living here. Itching of the skin is common and worse for children. TB is getting worse. The dust from the new mining on the dumps makes coughing worse. We attend the clinic but the treatment for TB is not helping anymore.

We have no electricity for cooking. Cooking with paraffin and coal is bad for the flu and dangerous for fires. In winter it is worse when it is very cold.

We have toyi-toyi'd and have attended many meetings. We get promises for new stands but we are still here. Our story have (sic) been in the newspapers. A few families have been given houses near Kagiso. This is the start of a new year and we are hopeful for new homes.

An elderly woman next to the TUDOR dam explained that mining now started right next to her home. She worked for about 45 years as a domestic worker and now lives next to the mine dumps. She is suffering from high blood pressure and has very poor eyesight. She has no running water in her home and no electricity. The future is uncertain. No-one has come to talk to her about the new mining or the relocation. During the interview we heard the deafening sounds of nearby mine blasts.

Interviews with disabled and retrenched gold mineworkers in Johannesburg - 17 January 2013

The ex-mineworkers are unemployed, they have no income, they are sick and have limited access to public health facilities. Several of them had papers indicating the abysmal retrenchment packages they received. They are desperate for some form of employment. They have a strong sense of injustice and betrayal and are looking for help to obtain proper compensation for the injuries they sustained. Several have signed up for either the international or national court cases where human rights lawyers have filed lawsuits against Anglo American SA in the UK and against 30 gold mining companies here in South Africa. Combined they represent about 20,000 ex-miners. They accuse the gold mining companies of neglecting to protect gold miners from serious lung diseases particularly silicosis and silico-tuberculosis. The court cases will take time and many have already died.

An elderly man shared his retrenchment papers. He lost 4 fingers in an underground accident. He says he was not compensated. The paper shows he was retrenched after 22 years of underground service and received R11, 000 (about 1,400 US$).

They would like to have medical examinations to enable them to resubmit compensation claims and to get proper treatment.

Interviews with Community members exposed to gold mine dust in Johannesburg - 18 January 2013

We were presented with health records including X-rays of community members who live within a few hundred metres of several enormous gold mine tailings dumps. They complain of chronic cough, sleepless nights and tight, wheezing chests. Their conditions have significantly worsened since new mining of the tailings dumps have started. There is dust everywhere in their homes. Daily treatment is required to breathe properly and some require steroids to reduce the tightness of their chests.

They have made many attempts to address their concerns with the mining companies but it is an ongoing struggle over many years with no success.

Platinum mining

The platinum mining industry employed much of the same social and economic practices of exploitation and dispossesion described above for gold mining. South Africa is the world's largest producer of platinum, supplying about 75% (151 tons in 2011) to the world market; about 38% of platinum is used for vehicle emission control devices (catalytic converters), 31% for jewelry, 25% industrial uses and 7% for investment. (Johnson Matthey, 2013a) In 2011, Amplats, Impala Platinum and Lonmin, the three largest producers, produced a total of 158 tons in 2011, and employed a total of 160 000 employees (Amplats Annual Report, 2011; Implats Annual Report, 2012; Lonmin Plc Annual Report, 2011).

Over the last decade the platinum price increased from US$474/oz (January 2002) to $1586/oz (December 2012). The value of the cumulative production of 3900 tons for the years 1975 to 2012 (Johnson Matthey, 2013) is, at the December 2012 price, about US$200 billion.

Average platinum grades are low, about 4.4g/t thus about 18 tons of ore have to be processed to produce an ounce of platinum, about 10 tons per ounce of total platinum group metals (PGMs), or about 58 0000 tons of ore per ton of platinum (Glaister and Mudd, 2010). The environmental impacts include high waste rock and tailings generated (about 98% of the ore becomes tailings), high electricity consumption (average 175 GJ/kg PGM), water usage (average 400 m^3/kg PGM) and CO_2e emissions (average 40 t CO2_e/kg PGM) (Glaister and Mudd, 2010).

Interviews with community workers and mineworkers in platinum mining areas - 16 January 2013

Land ownership is a major concern in platinum mining communities. Land was taken away from the African people during colonisation and apartheid. Communities are not consulted when new mine shafts or open cast mines start up. We are relocated at the last minute to barren sites and facilities much poorer than we had before." We are victims of mining relocation in pursuit of the white gold called platinum." The mine provides inferior zinc housing, few communal taps and no electricity. No refuse removal or adequate sewage systems are put in place. Many toilets overflow and create major health hazards, especially for children.

Through outsourcing and contract labour the mining industry cuts health costs and transfers the costs to the public sector, to workers and to communities. Thousands of workers at the mines are contract labourers. The mine does not provide health services for contract workers. Wives and families join workers at the mines. A public clinic meant for about 1000 local people have to address the needs of up to 8000.

Mining thrives on cheap labour! They do not employ local community members. Unemployment is rife. They organise for workers to come here through the apartheid migrant labour system.

Communities have no electricity and have to use paraffin. One young woman was severely burnt. The stove was supplied by the mining company. Endless problems with paraffin cooking and some houses burnt down.

Work clothes, heavy with chemicals are brought back to our homes. Dusty work overalls are washed by non-working family members. Broken work helmets are put into the fire and the plastic and chemicals pollute the air.

The underground air is sick because of frequent blasting. The dust and heat is too much. They sometimes blast while we are still underground. Supervisors continue to move us around underground. We may have learnt how to better protect ourselves in one environment just to be moved to an unknown area.

The dust causes a lot of chest pain. When we go to hospital they tell us we have TB and HIV. At the mine hospital we are not treated well. Staff want to know which trade union we belong to. Irrespective of your ailment - stomach-ache, chest pain or backache - you all get the same treatment. Disposable ear plugs meant to be used only once are given to use of one month. These give no protection after 3 days. Many workers become deaf. Rock drillers cannot hear the moving equipment such as locomotives because of the noise and accidents happen.

We have no knowledge of health and safety training programmes by the mine and no knowledge of risk assessment reports or of medical surveillance reports. We have no knowledge of any efforts by the mines to prevent our ill-health.

Mine and environmental inspectors told us they have no capacity. They do reports from their offices in favour of the mine. How can you do an inspection sitting in an office? The environmental and mining laws are not implemented. We see no monitoring and no enforcement. The contract labour system worsens health and safety.

We have been exposed to terrible violence and many of our fellow workers have died. Death is with us every day underground.....

The mine bosses are so greedy.

They are so evil and do not care whether we are dead or alive.

They are controlled by greed.....

Interviews with 10 Trauma Counsellors and Community Workers -16 January 2012

Following the Marikana Massacre the Trauma Centre was established. Training and counselling sessions take place in the local church. We met 9 women and a young man who were trained as counselors.

HIV and AIDS and TB amongst are amongst the biggest health problems the communities face. In addition they come across asthma, sinusitis and many eye problems because of the dust and chemicals from the smelters and the dumps. "The dump smell is so bad especially in the afternoon that you cannot even open your door." There is still stigma and denial linked to HIV and TB. Very difficult to deal with the denial as workers fear for their jobs. People often only get treatment when they are too sick to benefit from it.

Blasting in the mines take place on a regular basis - "you can feel the whole house shaking and cracks appear in the walls - it is very traumatising...."

The mine smelters burn day and night. The smoke affects our eyes and lungs.

Sex work is common **-** "Young girls go to town just to get something to put on the table." There are problems with teenage pregnancies. Young women sleep with older men. Men tend to leave them when they are pregnant. This has resulted in some suicides.

"Suicide here is very high. For young people there are no jobs and they lose hope. What can I do for my family? If I cannot help my family with something to eat I feel useless.

A young 24 year old man burnt himself to death with paraffin last week. I saw that ball of fire and I also saw the remains. He was unemployed and was trying to build a business. Each morning it was broken into. He had to start afresh. His father is a mineworker on contract which means a very low income.

Another young man hanged himself. He wanted to further his studies and his parents could not help because of low wages. He passed grade 12 with flying colours but unfortunately no financial help...."

We have provided career guidance to18 youths from different schools who studied mathematics and science. We applied to the mines to support these very promising scholars with bursaries. We have had no response from the mines.

Since the massacre many people do not sleep well at night. There are talks about retrenchments. Women worry about income from the men (migrant workers) who are going home or who are being retrenched. Many people are developing hypertension. "At work we are having a sick nation."

Hypertension is a common problem and when people have strokes we as counsellors support them with feeding and movements of the paralysed arm and leg. Very hard work.

"Drilling operations causes deafness. Those affected may get some compensation and then the mine gets rid of them."

Health and Safety information and talks are mostly in English and not accessible to most workers. The toolbox talks on health and safety are usually done by supervisors who also unfairly discipline workers. This is not a good learning environment.

There is a total lack of recreational facilities for adults and children. They swim in water that accumulated in an abandoned open cast mine. No signs erected to warn of the dangers. An 8 year

old child drowned in November 2012.

We would like to do counselling on a full-time basis. We would like to have a special trauma centre with computers and other facilities. We would like to get more training and an allowance for our work.

Interview with Reverend Sakhumzi Collen Qiqimana - 16 January 2013

"I am Reverend Sakhumzi Collen Qiqimana, resident pastor of Wonderkop, Marikana for the past 7 years doing ministry in this place.

We acquired the Trauma Centre just after the Marikana Massacre but it does not focus on the massacre only. Any trauma, any pain, can come to the Trauma Centre.

There are men and women who are afraid to go to clinics and hospitals. They are traumatised because of HIV and AIDS. At the clinic people with HIV and TB are treated in a different section. They are afraid because of that stigma. When you hear about them they are already dead! They could have been helped, they could have been counselled. This is a critical issue for us. In this mining area we find that those who are HIV positive, also have TB and are quick to die. The places where they work are making it difficult to be healed.

I was traumatised myself. I have a younger brother who came to work here. After only one year of work he found out he had TB and he died. We realised the place he was working in was dangerous for him. There was a lot of dust. He worked in a place where they load the platinum underground. So from that time I take it upon myself to search and help and counsel people like him - those who are afraid to go to clinics.

We have children who killed themselves last year. Young children from primary and high schools. The church has adopted about 20 children from these schools and buy their school uniforms.

We have a big problem of Child Headed Families**.** Amongst the 20 children we support for school some have lost both parents, some 1 parent and for some the parent have no jobs. Some young women sleep with older men for money because they are taking care of their siblings.

We are providing information on how to get out of debt and was successful with five families. We saw a change and healing in their lives. We need people with financial knowledge to provide support on this issue.

Entertainment facilities are non-existent for adults and children. The only exception is that mine management ensures there is a bar in every hostel. Children have no place to play. Young children drowned last year in an un-rehabilitated open cast mine now filled with water. There is no swimming pool.

Workers are traumatised by the violence we encounter but they are afraid to show as they are men. They talk about the trauma on the mountain. Those injured on the mountain have not received any salaries since the tragedy.

I spoke to management about the widows of the miners who died on the mountain. They said they will go to each and every family in Eastern Cape, Lesotho or elsewhere and sort out schooling for the children. I asked what about food since they do not need schooling only.

As a man of God I believe that things will get better. That the Lord will help us. But only if we really have a willing management who participate and help workers and communities. Only

then will things be well. When people care about those who work for them. Only when people are not just looking for the power of a man but also looking at the social issues.........then we can have a better community. "

Some conclusions and suggestions for the way forward

Very low wages coupled with the migrant labour system and systemic exploitation characterise the mining industry from its inception. Decent work, job opportunities especially for young women and men and appropriate wages will go a long way towards addressing the most pressing problems of grinding poverty. The recent strikes are merely part of the quest to earn a living wage.

The extractive industry should be compelled to comply with national and international regulations and standards to *prevent* the exposure of workers, communities and the environment to toxic and disease causing hazards. The overall focus should be much more on *prevention.*

The mines should pay into an Independent Fund on which local communities are fully represented to ensure the fund is used for jobs and to redress the major impacts of gold and platinum mining. The Truth and Reconciliation Commission referred to the need for a wealth tax.

An international spotlight should focus and assess, with their full participation, the working and living conditions of women in mining and mining communities.

The woefully inadequate compensation system which deny compensation for pain and suffering and which still protects mine bosses from being sued by sick and injured workers (in spite of a recent court ruling) should be changed as a matter of urgency. This will assist in holding the mining industry accountable and will do a great deal to prevent work injuries and diseases. This constitutes one important component of prevention.

Government Departments to administer the compensation system in a much more efficient and effective manner as a basic service towards greater social justice and to help redress the gross inequalities of the past.

Physical insecurity, threats of violence, and actual violence are major health hazards resulting in physical and psychological health problems. These are major concerns for mineworkers and for mining communities and should be addressed as a matter of urgency.

The mining sector externalise the health and environmental cost of their industries to the public sector, to workers and to communities. They deny and suppress the evidence demonstrating the causal relationship between exposure to mining hazards and adverse health outcome. They deny the huge contribution that the mining industry makes to the high burden of disease in the public health sector. These include silicosis, silico-tuberculosis, HIV and AIDS, water-borne diseases, numerous cancers related to radiation and chemicals, noise induced hearing loss, dermatitis in all its forms, heat stress, asbestosis and asbestos related cancers, reproductive health problems, occupational asthma, bronchitis, neurological problems, repetitive strain injuries, work related stress and the numerous ergonomic problems of mining.

Health workers, globally, are not effectively trained to recognise, diagnose and prevent occupational and environmental diseases even when they work right next to the mines and factories. A great opportunity in PREVENTION is lost.

The all important Occupational Health and Safety Programmes of both the World Health Organisation (WHO) and the International Labour Organisation (ILO) have been systematically starved of adequate resources. These programmes have become smaller and less effective. Many think this is in the interest of the corporate world. Strengthening these programmes will greatly contribute towards the achievement of equal global international standards for all countries in health and safety and the environment.

The mining houses should be challenged to go beyond mere corporate social responsibility which they trumpet about, and to invest in young women and men in mining communities through bursaries for studies of their choice in secondary and tertiary institutions.

The systematic, ongoing and equitable sharing of knowledge about human rights, constitutional rights, environmental rights and workplace rights across countries and continents with and amongst communities will go a long way towards empowering those exposed to systemic exploitation and dispossession.

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