



First Quantum Minerals
Corporate Governance
And Social Responsibility:
KANSANSHI MINE



SARW

Southern Africa Resource Watch

Improved human conditions through good
governance of the region's resources.

This report is published by the Southern Africa Resource Watch. Southern Africa Resource Watch (SARW) is an independent body that advocates and promotes human rights and environmental protection in resource extraction activities by monitoring corporate and state conduct in a peaceful and collaborative manner.

Published: December 2020

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Executive Summary

This is SARW's second report on Kansanshi Mine in less than two years. The first one, entitled "Living in Parallel Universe: FQM versus communities", was released in February 2019. First Quantum Minerals (FQM) disputed the findings of the first report, complaining that it was not consulted during data collection. After engagement in the media, both sides agreed to a second research process, and FQM agreed to avail its management to speak to SARW. This report is the result of that arrangement. The report's key objective is to assess the company's corporate governance and corporate social responsibilities (CSR) programme. It makes recommendations to FQM's Kansanshi mine, the government of Zambia, and civil society on how to promote a mutually beneficial relationship between FQM's Kansanshi mine and adjacent communities. As with the first report, FQM disputed the findings of the report. It has responded this time with a lawyers' letter which is reproduced as an appendix to this report. The lawyers' letter was a response from a letter from SARW, which invited FQM to respond to our report findings. It too is published as an annex to this report.

The study adopted a multifaceted methodology and approach which included the collection and reviewing of both primary and secondary data from independent researchers, company sustainability reports and the company website; non-participant observation; field visits (which included project sites); and interviews with key stakeholders (communities, company management, government agencies, civil society organisations, and organised labour) it also includes sampling and laboratory tests.

A point of agreement (possibly the only one) between FQM and SARW is that whether CSR is legislated or not, corporations have a moral obligation to invest in the welfare of surrounding communities in a way that creates positive and lasting impact. Unfortunately, the research found that FQM's CSR interventions are neither transformative nor sustainable. FQM has shown signs of progression from a history of poor corporate governance of mining companies in Zambia, but it still falls far short of expectations, with cases of poorly conceived projects, human rights abuses, and environmental degradation.

This report appreciates and recognises the fact that FQM is a world class multinational corporation whose origins are rooted in Zambia's Bwana Mkubwa mining project. The company mainly specialises in the production of copper, gold, nickel and zinc. In Zambia, the company operates Sentinel (Kalumbila) mine and Kansanshi Gold and Copper Mine, but the interest and focus of this study is on Kansanshi Mine Limited, which operates with five mining licenses (that expire in 2036).

In order to ascertain how conducive, the company's structure is to enable it to execute its objectives, the study examined the different corporate governance tools used by the company. FQM is very eager to demonstrate that it has adopted corporate governance best practices, but a closer look shows that its corporate governance has serious shortcomings, firstly in the composition of the board and its sub-committees. The report finds that there is only one Zambian national on the board. Secondly, the report reveals a lot of gender and race disparities, as management is predominantly male and white, which is a huge contradiction to both the company's claim and the national gender policy. It appears that the company's gender inclusivity is mere rhetoric. Thirdly, the company is silent on the issue of the rights of people with disabilities in all its engagements, sustainability reports and initiatives. Fourthly, and most importantly, the housing empowerment project and the education infrastructure that Kansanshi has branded as innovative and progressive are a business undertaking in the interests of the company, and not in the best interests of the community as these initiatives segregate and create a huge gap between the rich and the poor in the surrounding community.

Like any other mining company, FQM claims total adherence to occupational health requirements, and the report finds that the company does disclose information on employees' health. However, the mineralogy of Solwezi shows the presence of a number toxic substances such as brannerite, silica, arsenic, nitrates and nitrites. Not only does the company not declare their presence in its report, but it also does not consider the impact that these substances may have on mine-workers, the mining community, and the environment.

This report re-examines the company's commitment to environmental management and stewardship. It reveals that there is neglect by the company, as evidenced by persistent and continuous complaints from all the surrounding com-

munities about water and air pollution. Although the government through the Zambia Environmental Management Agency (ZEMA) has commended Kansanshi for being compliant in many aspects of its statutory environmental management obligations, the company has been found not compliant with regards to stack emissions from the smelter. The report has identified several possible impacts of the company's activities could possibly have on the health of surrounding communities; reputable research shows that the prevalence of certain diseases is higher in Solwezi than in other districts in the north-western province. This could be linked to the economic activities of the district, including mining. The proximity to mining communities of both old and new tailing dams remains a source of tension between the company and the communities, which requires real and practical answers from both the government and the company.

Kansanshi mine does a lot of things for the communities through Kansanshi Foundation, which is established, owned and operated by FQM. However, most of the projects are not empowering people. The report reveals that FQM, as part of its CSR, is implementing a number of development projects in the communities where it operates. It is not clear from the available information how much the company spent on these activities. The annual reports provide information, but do not break it down project by project or by locality and beneficiaries. The reports are also silent on the financial value of these projects. This could be counter-productive for a company that claims to be Extractive Industry Transparency Initiative (EITI) compliant.

There appear to be glaring gaps between policy and implementation. The evidence reveals disparities between what the company claims to have done for the communities and what the communities feel about the projects. These disparities can be expressed in terms of quality, impact and sustainability.

Most projects' infrastructure for the poor mining communities is of low quality and compromised. Schools and clinics dedicated to poor communities are poorly planned with little or no hygiene, security, or environmental considerations. The contrast between schools for poor communities and the private school that Kansanshi has built for the mostly privileged students from rich families (from outside Solwezi) is reminiscent of the apartheid education system, only in this case the division is not based on race but on class. This approach takes away the value of the company's investment and exposes its poor understanding of CSR.

The education institutions are not gifts to the community; they are paid for, income generating commodities adding to the profits of the corporation and those subcontracted to operate them. The much-publicised fruit and vegetable project cannot be classified as a CSR project because it is a payback scheme, which makes it essentially a business activity. The company's conservation farming support to the community also reveals a lack of seriousness by the company and is characterised by unsustainability, including irregularities (farm plots located under a high voltage power line, and others located in riverbeds), and the use of genetically modified seeds. The study encountered difficulties in assessing the value of the company's investment in the health sector due to the lack of clear focus. The report observes the occurrence of unresolved misunderstandings and conflicts between communities and the company emanating from a number of disputes, ranging from displacements and compensation, water pollution, and cracked houses as a result of mining blasts. The reasons for this are twofold. First, there is no real platform for interaction between Kansanshi mine and the host communities. In many instances Kansanshi mine designs and executes projects on behalf of communities without adequate consultation. This patriarchal approach suggests that for Kansanshi mine, communities cannot think for themselves and do not know what they want, so most projects are conceived and initiated by FQM without consultation with the beneficiaries. Second, the report points to the absence of a grievance mechanism that would allow communities to raise their problems and grievances with the company.

Most findings in the report contradict FQM's belief that it is doing a great job with its CSR, but one conclusion stands above others: We believe that if FQM does not use the findings of this study to improve its performance, it will simply mean it is a company that cannot improve and perform beyond its current level (which this report characterises as poor). Our hope is that FQM will use these findings to transform its CSR.. In short, CSR cannot be expected to work if it is regarded by the senior management as a costly nuisance, which is the impression we got through our visit to FQM.

Based on this report, the following key recommendations have been offered:

- The Zambian government must consider introducing CSR regulations for mining companies and establish compliance mechanisms.
- QM, in the absence of the CSR regulation, must adopt a more inclusive

and participatory approach to corporate governance and CSR initiatives, taking account of people's needs and culture.

- Civil society organisations, both local and national, must continue to partner with vulnerable and affected host communities, building confidence for self-representation and capacity enhancement.

1. Introduction

On 15 and 17 April 2019, SARW visited First Quantum Minerals (FQM) in Solwezi at the invitation of the company management. The visit was a follow-up to the February 2019 report by SARW entitled "Living in Parallel Universe: FQM versus communities".

Zambia is endowed with minerals (such as copper, gold, cobalt, manganese, uranium and coal) which have attracted exploration by both local and foreign investors, creating a scramble for both land and minerals in the north western region of Zambia, and in particular Solwezi, the provincial capital where FQM is located. The company was established in 1996 and began its first mining operations in Zambia after obtaining the Bwana Mkubwa mining license to mine copper.

This study was motivated by the perceived development role FQM plays in Solwezi and its association with high-level foreign direct investment (FDI) in the mining sector in the past 15 years or so. Although it is generally acknowledged that FDI can play a positive role in the development of a country through its contribution to foreign currency reserves, tax revenue, overall economic growth and social development, there are concerns about the direct impact of some investments on communities. Questions have been raised about the extent to which FDI initiatives are contributing to the uplifting of the welfare of the communities within which they operate. Whilst such questions are always raised about the impact of mining companies in Africa, they are posed with greater urgency in a country which is one of the oldest on the continent in terms of mining.

While this report focuses on FQM, the findings can be applied to all mining companies operating in Zambia (without exception). The study was also motivated as a follow up on the report on South African mining companies corporate social responsibility (CSR) in Southern Africa undertaken in 2010 and 2012, and the study of Chinese-owned companies in Southern Africa. The two studies revealed that the Chinese and South African companies operating in Zambia were involved

in human rights abuses, and that their CSR was of poor quality. This time we thought it would be good to look at a western company, and FQM was selected.

1.1 Objectives

Under the impact of global corporate restructuring it is becoming increasingly necessary for civil society organisations, when assessing the prospects of a company, to go below the financial bottom line and examine the social and environmental policies and practices of the enterprise.

The key objectives of the study were:

- to assess the impact of FQM's Kansanshi Mine social investment on communities within which the mine is operating;
- to examine how the company is mitigating the adverse effects of its activities on employees, local communities, and the environment;
- to make appropriate recommendations to both FQM and the government of Zambia on how to promote a mutually beneficial relationship between FQM's Kansanshi Mine and the environment within which it operates.

1.2 Purpose of the study

This study intends to contribute to the promotion of sustainable coexistence between FQM and its immediate communities. It is an international norm to have companies reach out to the communities in their areas of operation through CSR programmes. However, developing mutually beneficial relationships remains a challenge. The report wants to contribute to sustainable mining through good corporate governance and social responsibility.

Mining companies, whether through legislation, international norms or simply their social license to operate, have the responsibility to create harmony with the communities and protect the environment. Mining companies also have to deal with governance, health and safety of their employees, sharing of benefits with government and local communities, water management and use, pollution of soil, air and water, displacement of people, impacts on the livelihoods of local communities, local economic development, and landscapes and biodiversity both during and after operations (commonly referred to as legacy challenges). While there are some encouraging examples of good practice of CSR in different parts

of the world, in Africa in general (and Zambia in particular) considerable efforts are still needed across the board to improve the understanding and application of CSR. A well-regulated and implemented CSR programme can contribute enormously to the development of the local economy and the sustainable development goals (SDGs) in a rural environment.

The investment in Solwezi's greenfield mines¹ creates fresh hope that Zambia will not repeat the experience of the Copperbelt and its accompanying negative legacy issues. There was initial euphoria around greenfield mining investments, with national and international civil society expressing interest in the new Eldorado Project. This report's investigation came at a time when the euphoria had subsided and many civil society organisations, both national and international, had withdrawn from the area. The research was conducted to analyse the real impact of the mining investments on mining communities around Kansanshi Copper and Gold Mine in Solwezi.

2. Context and background

This is SARW's second report on Kansanshi Mine, after the first one entitled "Living in Parallel Universe: FQM versus communities" in February 2019. The first report found a lot of inconsistencies between FQM's policies on sustainability and the experiences of the host communities. The report revealed that FQM had implemented CSR in the sectors of education, health agriculture. The investments in the communities were found to be inadequate and did not achieve transformation.

The first study report was merely exploratory. Further studies were planned to provide a more detailed understanding of the operations of Kansanshi Mine.

2.1 Disputes

Following the publication of the first report, FQM disputed the findings and engaged in a public relations exercise to discredit SARW's research. FQM mainly argued that it was not properly consulted in the data collection, and did not raise any serious concerns about the contents of the report.

¹ These are newly established mines, wholly owned by multinational corporations

Despite SARW's numerous attempts to reach out to FQM in Lusaka and its head office in Toronto during the field visit, FQM refused to engage in the research. Initially, FQM's Government Affairs Manager at the time, Mr John Gladstone, agreed to SARW's request for an interview on the company's CSR programme but later backtracked. SARW went ahead with the research and met with civil society organisations,² the area councillor at the time (Mr Edward Samwata), and mining communities in Mushitala, Muzabula and Kabwela. The report reflected the views of these stakeholders and observations made by SARW regarding the physical infrastructure provided by FQM to the communities. Civil society organisations and affected communities were sceptical about FQM's contribution and the effect of the company's CSR practices in affected communities.

During the writing up of the research, SARW again approached FQM for comments on the findings but the company was reluctant to engage directly on the matter, instead directing SARW to the sustainability reports posted on its website. Even after requesting the company to respond to a questionnaire, the head office in Toronto would only courier three sustainability reports to SARW's office. Apart from the evidence of aloofness that was displayed by the company, such an approach to external enquiry is likely to be counterproductive in the long run. At the very least, it distorts the methodology (and hence the likely findings) of any research completed and published, to the possible detriment of the company. It also raises the question of whether a company has something to hide, and whether it prioritises the publicity value of CSR over the reality of implementation.

2.2 Publication of the initial report

Before publishing the initial report, in January 2019, SARW shared a draft with Kansanshi Mine and the Planning, Policy and Research Directorate of the Zambian Ministry of Mines and Minerals Development. SARW also shared the draft with FQM, whose response did not warrant changing the content of the report. The report was launched at the Alternative Mining Indaba in Cape Town in February 2019. The event was attended by Zambian civil society activists and Solwezi community members. Fifteen minutes before the launch, an FQM delegation arrived and attempted to stop the event, threatening court action against SARW. SARW argued that the findings were a correct reflection of what was heard and

² North Western Agenda for Development, Youth Alliance for Development, Civil Society for Poverty Reduction, Caritas Zambia and Zambia Land Alliance.

seen, and that there was no exaggeration or misrepresentation on its part. SARW refused to consent to this attempt to stifle the report, arguing that the company had refused opportunities to participate during the research process. SARW proceeded with launching the report, inviting FQM to respond publicly to the findings. The company refused.

After the launch, a summary of the report was published in the media. FQM responded through a number of its partners (local and international) and its public relations and communications consultancy firms Suma Systems and Langmead & Baker Communications, attempting to undermine the credibility of SARW. SARW responded to these attacks and allegations by publishing its version of what had transpired and the main findings of the report.

2.3 Detente

SARW suggested that a second investigation be carried out, giving FQM management another opportunity to participate. FQM agreed to the meeting with certain conditions, which included that SARW remove the first report from its website and stop referring to the report. FQM also proposed to cover SARW's field research cost, an offer that SARW declined. SARW reluctantly agreed to remove the report from circulation, removing it from SARW's website and not tweeting any of its content. This was done to show to FQM and its partners that SARW's intention has never been to ruin company's image.

These conditions paved the way for SARW's second visit to the company's Kansanshi Mine to conduct a second round of research, whose findings appear in this report. Regrettably, SARW has again been met with a hostile response in the form of threatening lawyers' letter.

2.4 Mining companies very seldom accept criticism

SARW has observed that mining companies do not take kindly to being investigated. Over the years, SARW has investigated a number of companies' CSR programmes in Southern Africa. In 2010, SARW carried out a large investigation of South African mining companies [governance and corporate responsibility](#) in the Southern African Development Community (SADC) region. The investigation covered the following companies: Ruashi mining (Metorex) in the DRC, Chibuluma

(Metorex) in Zambia, Zimplats and Mimosa in Zimbabwe, and Sasol in Mozambique. Like FQM, these companies initially rejected SARW's research findings, claiming that they had not been consulted. This was despite SARW's efforts to engage the management of all companies involved. After tense interaction, SARW was invited by the companies for a second research visit. Findings confirmed the initial results and further exposed new issues and problems. The results were shared with the management of all the companies involved at a meeting in South Africa. Some of the companies (such as Chibuluma in Zambia and Zimplats in Zimbabwe) adopted and implemented a number SARW's recommendations. SARW now enjoys good working relationships with the companies that were part of the research.

3. Methodology

The compilation of this report employed a multiple methodological approach which included data collected from field visits (jointly done with Kansanshi management and independent persons), analysis of secondary materials from both independent researchers and company reports, non-participant observation and included sampling and laboratory tests.

3.1 Field visits

While SARW's first visit consisted of two people, the second comprised an eighteen-member team to cover all aspects of the assessment over four days.

- On the first day the SARW team met the FQM management team for presentations and discussions. The FQM team was led by the Public Relations Manager for Kansanshi, Mr Godfrey Msisika, and comprised of Environmental Manager Mr Arnold Malambo, Health Services Coordinator Ms Gertrude Musunka and Corporate Social Responsibility Manager and Director of Kansanshi Foundation Mr Bruce Lewis. Discussions were robust and frank and included all technical aspects such as processing of flotation, smelters, tail-

ing dam management, air and water control to prevent pollution, community consultations, displacements, health, education and agricultural support to mining expansion.³ The information obtained from presentations and discussions was incorporated into the report.

- The second day was set aside for field visits led by the FQM team. The research team split into two, with one visiting the social projects, and the other visiting the mine. The social projects visited included Conservation Farming, Mushitala Combined School, Makole Community School, Kabitaka Primary and Secondary School, the Golf Estate and Trident College. The mine visit team went to the flotation plant, the smelter, and the tailing dams. SARW was interested in these three parts of the mine because of their potential impact on the environment (pollution of air and water).
- On the third day, the teams again divided in two, with one undertaking independent visits to projects outside those that had been visited the previous day. SARW took the opportunity to collect independent views of communities without FQM influence. Despite heavy rains and bad roads, one team was able to visit and interview community members around the Kansanshi mine, including Muzabula Conservation Farming, Kyafukuma Boreholes, Kyafukuma Conservation Farming, Kyafukuma Community Hall, Kyafukuma Community Health Center, Kyafukuma Primary and Secondary School, Kabwela Community School, Kabwela Community Health Centre, and Kabwela community gardens.
- The second team was not able to conduct an independent inspection of tailing dams due to the company's security requirements. The team was accompanied by FQM Corporate Social Responsibility Manager and Director of Kansanshi Foundation, Mr Bruce Lewis.

³ The first communication was presented by Mr Godfrey Phillip Msiska, the Public Relations Manager of FQM. It dealt with FQM's general presentation and specifically that concerning the Kansanshi Mine facilities. In his presentation, it can be seen that Mr Msiska provided the history of FQM's mining activities at Kansanshi, the statistics of copper production, the operating costs with their upward trend, as well as some figures regarding the distribution of cash-flow and the company's contribution towards community development. The third communication was that of Mrs Gertrude Musunka, FQM's Consultant on health plans and projects. This communication gave a general overview of the activities of FQM-Kansanshi Mining in the field of health, centred around the following matters: Why is FQM getting involved in the field of health, and where and how is it getting involved? The presentation gave statistics in terms of the involvement of the population and in terms of the growth of certain pathologies, including sexually transmitted diseases (particularly HIV/ AIDS). The fourth and final communication was that of Mr Arnold Malambo, manager in charge of the environment at FQM. This communication dealt with the environmental impact of FQM's activities. In his communication, Mr Malambo presented the FQM site of Kansanshi, briefly describing the environment and the type of measures which have been put in place in terms of monitoring the environmental impact of FQM's activities. He gave some results with reference to the concentration of dust in the air, emphasising that FQM operates under conditions of "zero dumping" – in other words, no waste is released into the external environment.

- The fourth day was allocated for collection of water samples for testing.
- Besides these four days, SARW organised another visit to Lusaka to interact with key government ministries and civil society organisations, including the Ministry of Mines and Minerals Development, Action Aid Zambia, Norwegian Church Aid Joint Country Program, Alliance for Community Action, USAID's Counterpart International, the Human Rights Commission, the Zambia Environmental Management Agency (ZEMA), and the Zambia Chamber of Mines.

3.2 Secondary data

SARW perused a number of historical and policy documents such as FQM sustainability reports, published research, civil society reports, ZEMA reports, FQM's website as well as the company's published and unpublished reports. SARW's team also studied independent geological, hydrological, economic and social reports on Solwezi.

3.3 Team members' observations

In addition to speaking to respondents, team members made their own independent observations of the environment in and around the mine. In research, non-participant observation is an acceptable method of data collection.

4. Corporate social responsibility in Zambia

The concept of corporate social responsibility (CSR) has been studied many times. However, the practice of CSR continues to be problematic and the interpretation differs from one corporation to another, from one society to another. One area of contestation is whether CSR should be regulated or not. Many governments in Africa have started regulating CSR in order to standardise the quality of investment. Zambia has not done so, although there has been an ongoing debate around the subject between CSOs and the Chamber of Mines, through the Canadian High Commission. The Zambian government has been reluctant to regulate it by way of developing a national CSR strategy.

Zambia has no legal enforcement mechanism for CSR, and as a result most mining houses are not fulfilling their CSR obligations and commitments. Lack of regulation of CSR in Zambia means that companies such as FQM have no legal obliga-

tion to give an account of how they are implementing their programmes and who they are doing it for. It also means that the companies are not obligated to explain their investments and the potential impact on communities to the Zambian government (Masinja, 2019).

FQM considers its CSR to be philanthropic rather than an integral part of its responsibility towards the Zambian people. The question then arises: Does it mean, when a country has not enacted laws regulating CSRs, that companies are exonerated from their social, environmental and economic obligations towards communities whose land they have acquired and who bear the negative impact of mining activities? Whether a country has a law on CSR or not, corporations surely have the moral obligation to invest in CSR and do it in a way that maximises positive impact and minimises negative effects on mining communities and society at large. This assertion is vindicated by FQM's own acceptance through a press statement issued by Rudi Badenhorst, Director of Operations at First Quantum Minerals, when he notes:

It must be borne in mind whenever one speaks about good corporate governance, you have to understand that organisations have duties and responsibilities towards their shareholders and other stakeholders and hence they must be governed in accordance with the law, while keeping in mind the interests of the stakeholders and shareholders. (Langmead, 2019)

From an ethical point of view, social responsibility refers to behaviours and activities expected of or prohibited by organisational members, the community and society. These behaviours and activities may or may not be codified as law. Ethical issues have to do with what is fair or just.⁴ For Lord Holmes and Richard Watts (200),

Corporate Social Responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.⁴⁵

⁴ <http://www.mallenbaker.net/csr/definition.php>

⁵ Holme, L. and Watts, R., 2000. Making good business sense. The World Business Council for sustainable development. Geneva: World Business Council for Sustainable Development. <http://www.wbcsd.org/web/publications/csr2000.pdf>.

At the heart of CSR is accountability: accountability of mining companies (and notably their boards), not just to their shareholders, but to wider stakeholders including their employees, the host government, affected communities, and (in an impersonal sense) to the global community through their impact on the environment. No longer can it be said that the business of business is merely business.⁶ If there is any such thing as responsible capitalism, then CSR is the link that helps companies to serve collective welfare beyond their pursuit of maximum profit. CSR might be a relatively new concept, but the impetus behind it — a recognition of the wisdom as well as the inherent virtue of a devotion to social justice — is nothing new. History shows that there has long been:

a wider recognition amongst certain capitalist strata that 'fair' treatment of workers and their families (communities) was not only just, but that it was wise, and that the survival of industrial capitalism required a social accommodation with the working class if radical and socialist challenges were to be diverted.⁷

There has been a proliferation of international norms and standards in accordance with this recognition. This means that in the absence of national laws or regulations on CSR (as in Zambia), companies are guided by international norms and standards, and by the company's own moral fabric. Companies are expected to adhere to global labour, social and environmental standards while responding to local pressure from state and society. CSR fulfils a vital public relations role, persuading company executives themselves, shareholders and other stakeholders that a firm is operating responsibly. First Quantum Minerals itself recognises these international norms and standards.

The Universal Declaration of Human Rights of 1948 guarantees dignity and equality for all. This also forms the basis for freedom, justice and peace across the world.

The Universal declaration of Human Rights calls on every organ of society to guarantee, by progressive measure, that human rights be recognised and complied with. Corporations, as organs of society, are under obligation to comply wherever they may be operating in the world.

⁶ SARW (2010) South Africa, Mining Companies in Southern Africa: Corporate governance and Social Responsibilities, Johannesburg, 316.

⁷ Ibid, p 317.

When it comes to environmental obligations, at the Earth Summit in Rio de Janeiro in 1992, the United Nations adopted the Rio Declaration on the environment and development, and Agenda 21. It deals partly with the responsibilities of corporations regarding the effects of their processes, products and services on the quality of air, water, soil, climate, biodiversity, biosafety and health. After the Rio Declaration, various protocols have been signed, such as the Cartagena Protocol on Biosafety (2000), the Kyoto Protocol, and the Stockholm Convention on Persistent Organic Pollutants (2001). The OECD has also passed guidelines for multinational enterprises.⁸ Every human being has the right to the highest possible standard of health. Even though the signatories to international treaties on health are member states, corporations have an obligation to enforce the right to health. Similarly, corporations’ obligations include: ensuring access to a minimum of food, a basic level of shelter and sanitation and an adequate supply of safe drinking water; non-discrimination in ensuring the right to access to health facilities, goods and services and providing education and access to information on the community’s main health issues, including methods for preventing ill health and checking whether appropriate measures are taken (Chapman, AR, 2010).

According to Dr Jewette H Masinja, global standards such as these are adequate but limited and not enforceable at the local level.⁹

Many African countries often relax their own regulations or disregard international standards to attract foreign investment and create what is now commonly known as a conducive “invest friendly” environment for such investment. They wrongly believe that relaxing labour laws, environmental laws and tax and royalty policy will attract real investment.

Many of the social gains conceded to labour and to communities through these regulations are being ruthlessly eroded by the relaxations forced upon African governments as the only way to attract foreign investments. It is this phenomenon which has driven African governments to become involved in what has been termed “a race to the bottom” as they try to outcompete each other to attract

⁸ A number of principles have emerged from these protocols, such as:
 i. The principle of preventive action (Art. 174 (130 R, section 2) EC Treaty)
 ii. The precautionary principle (Rio Declaration, Art.15 and Art. 174 (130 R, section 2) EC Treaty)
 iii. Tackling environmental damage at the source (Art. 174 (130 R, section 2) EC Treaty)
 iv. The polluter pays’ principle (Rio Declaration, Art. 16, Art. 174 (130 R, section 2) EC Treaty)

⁹ Dr Jewette H Masinja is an accomplished Zambian mining expert and academician, who worked as the ZCCM Head of Group Environmental Services (1984-1998), and Permanent Secretary from 1998 to 2002. He prepared the Zambian Government Mines and Minerals (Environmental) Regulations governing environmental protection in the mining sector in Zambia, and currently works at the University of Zambia as a Lecturer in Metallurgy and Mineral Processing (2006 to date).

foreign investment by offering favourable conditions to investors.

In the current situation, where the Zambian government is in no position to provide full social services to its entire population, it is clear that CSR can fill in some of the holes left by the withdrawal (or failure) of government social services, and provide for the wider social conditions of life (in terms of education and health etc). These conditions are conducive to overall profitability (as unhappy, uneducated and unhealthy workforces may prove as inefficient and unproductive as they are intractable) and securitisation of investment.

5. First Quantum Minerals

5.1 Establishment and expansion

First Quantum Minerals Ltd is a Canadian mining company, established in 1996 by Philip Pascall, Martin Rowley and Clive Newall to develop the Bwana project, one of Zambia’s oldest mines, acquired by FQM from the government at the time of privatisation. From a humble beginning with only a license to reprocess the waste or tailings from other mines, the company has now grown to having assets and operations in nine countries on five continents, and is currently among the world’s top ten copper producers which engage in extensive mineral exploration, development and mining. The company mainly produces copper, gold, nickel and zinc (FQM, 2012). It has finally opened the world-class Cobre Panama project. The table below (Table 1) provides a list of FQM projects, ownership and production figures.tee

Table 1: First Quantum projects, ownership and production (2018)

Project/ Mine	Shares	Country	2018 Production
Kansanshi Mine and Smelter	80%	Zambia	Copper (251 522 tonnes) Gold (130 019 ounces)
Sentinel Mine	100%	Zambia	Copper (223 656 tonnes)
Guelb Moghrein	100%	Mauritania	Copper (28 137 tonnes) Gold (45 974 ounces) Magnetite concentrate (425 389 WMT)

² North Western Agenda for Development, Youth Alliance for Development, Civil Society for Poverty Reduction, Caritas Zambia and Zambia Land Alliance.

Project/ Mine	Shares	Country	2018 Production
Las Cruces	100%	Spain	Copper (19 896 tonnes) Zinc (4 091 tonnes)
Pyhasalmi	100%	Finland	Copper (11 904 tonnes) Zinc (22 716 tonnes)
Ravensthorpe	100%	Australia	Nickel and cobalt (Care and Maintenance)
Cayeli	100%	Turkey	Copper (19 896 tonnes) Zinc (4 091 tonnes)

Source: compiled by SARW, 2019

5.2 FQM Zambia Operations

First Quantum Minerals in Zambia operates two mines: Kansanshi and Sentinel mine.

The Zambian Ministry of Mines and Minerals Development (MMMD) is mandated through an Act of parliament to oversee the issuance of mining licences as provided for in accordance with clause 11: “An application for a mining licence shall not be made for an area in excess of the area of mineralisation and additional areas reasonably required for development of infrastructure relating to the mining licence” (GRZ No. 11 of 2015).

5.2.1 Sentinel Project: Kalumbila Minerals

First Quantum acquired Kalumbila Minerals Ltd (KML) in the North Western Province in February 2010. Kalumbila Minerals owns five mining licenses, which include the copper-sulphide Sentinel deposit.¹⁰ The Sentinel copper operation is 100 per cent owned by KML (FQM, 2018), a First Quantum subsidiary. Sentinel is approximately 150 kilometres west of the town of Solwezi. In January 2010, First Quantum acquired 100 per cent of Kiwara PLC. Kiwara’s main asset was a controlling interest in the Trident prospecting license area, which included the Kalumbila project copper deposit. The entire project was renamed the Trident project in 2010. The license area includes the Sentinel copper project (see FQM Sentinel, 2018).

¹⁰ The environmental and social impact assessment for the Sentinel deposit was approved by the Zambia Environmental Management Agency (ZEMA) in July 2011.

5.2.2 Kansanshi Mine

The company’s Kansanshi mine, which is located 8km north of Solwezi, is one of the oldest mines in Zambia and the largest copper and gold mine in Africa according to information on the company’s website profile. It is owned and operated by Kansanshi Mining PLC which is 80 per cent a subsidiary of First Quantum (FQM, 2018). The remaining 20 per cent is owned by Zambia Consolidated Copper Mine Investment Holdings (ZCCM-IH).

Mining is carried out in two open pits (main and northwest) using conventional open-pit methods and employing hydraulic excavators and a fleet of haul trucks (FQM, 2018). Oxide ore is treated via crushing, milling, flotation, leaching and the SX/EW process to produce a sulphuric and gold bearing flotation concentrate as well as electro-won cathode copper (FQM Profile, 2018). The oxide treatment capacity was increased to 14.5 million tonnes per annum with the installation of equipment from Bwana Mkubwa copper SX/EW plant in 2012 and the commissioning of additional leach, solvent extraction, electro-winning and CCD thickeners during 2013 and 2014.¹¹

Kansanshi crushes about 2 500 tonnes of ore per hour, which then moves from the crusher to the smelter. Currently, it has two licensed operating tailings storage facilities (TSF). TSF1 is a cross-valley type dam situated at the head of a small tributary stream inside the mining license area. This dam was originally designed to provide enough tailings storage capacity for the first 16 years of mine life at a production rate of between 6 and 8 million tonnes per annum, and eventually cover an area of approximately 6.5 km² (FQM, 2018).

Gold recovery by gravity was expanded by the addition of four new gravity concentrators in April 2010, thus providing two concentrators per milling train, and increasing gold recovery from all ore types (FQM, 2018). Gemini tables were installed to treat the gravity concentrates and produce a high-grade concentrate for direct smelting to gold bullion (FQM, 2018).

All surface rights necessary to develop and operate the project have been obtained and include four leases governing in excess of 7 000 hectares, which secure access to active mining areas.

¹¹ Kansanshi Our Business, www.first-quantum.com , 3/06/2019

Kansanshi Mine Limited (KML) is the holder of five large-scale mining licences, for which current terms run to April 2036. 15868 HQ-LML covers the Sentinel deposit, processing plant and supporting infrastructure, whilst 15869 HQ-LML covers the Enterprise deposit. 15870 HQ-LML, 15871 HQ-LML and 15872 HQ-LML cover exploration areas, sites for project.

In terms of production, Table 2 provides 2017 and 2018 information from the Zambian government.

Table 2: FQM copper and gold production (2017-2018)

Copper Production (tonnes)		
Mine	2017	2018
Kansanshi Mining	250 803.96	249 532.07
Kalumbila Minerals	190 913.23	223 655.12
Kansanshi Gold Production (Kg)		
Total (kg)	4 564.43	3 730.15

Source: Government of the Republic of Zambia (2019): Ministry of Mines and Minerals Development, Lusaka.

When FQM acquired Kansanshi Mine the gold price was less than US\$400 per ounce and the company is currently producing at a price greater than US\$1300 per ounce (Gold Price Hub, 2019). SARW questions the fact that the major part of the presentation by FQM was devoted to the projections for copper production with a downward trend, and the prediction of an increase in production costs. They emphasised that, in the feasibility study, the drop in production and the increase in production costs is data which was known in advance and which was taken into account at the time of the decision to invest in a mining operation. SARW is concerned over the lack of transparency in terms of disclosure of the cost of production of copper by First Quantum. Why the secrecy? Why is FQM unable to provide such important information.

Equally, FQM managers during our engagement repeatedly complained about the low-grade of ore and the escalating costs of production, creating the impression that Kansanshi is a marginal mine and that FQM is doing Zambia a favour by mining there.

6. Corporate Governance

The King Report on corporate governance defines corporate governance as “simply the system by which companies are directed and controlled” (King I, 1994: 1). It relates more specifically to the structures and processes associated with management, decision-making and control in organisations. Tricker (1984: 7) describes corporate governance processes in terms of four principal activities: direction – formulation of strategic direction for the future of the company; executive action – involvement in crucial executive decisions; supervision – monitoring and overseeing of management performance; and accountability – recognising responsibilities to those making a legitimate demand for accountability. It can then be said that corporate governance provides the structure through which the objectives of the company are set, and how the means of attaining those objectives and monitoring performance are determined.

6.1 Kansanshi’s labour relations

The mine has created about 5000 direct and indirect jobs for Zambians. According to SARW’s assessment, most of the skilled labour does not come from the surrounding Solwezi District, due to lack of availability of the required skills. Unlike in South Africa, in Zambia the racial composition of the labour force and management is not recorded.

Six per cent of Kansanshi’s directly employed staff at the time of data compilation was expatriate and all in management and supervisory positions.

SARW raised questions regarding silicosis, cancer and tuberculosis (TB). These questions are pertinent to the labour force employed by FQM. However, much of its health impact on employees will be hidden by the fact that many of them are contract workers, who by all accounts do not have access to company health services and therefore would not reflect in company health and other statistics. Respondents to the International Organisation for Migration Research complained that the Kansanshi mine emergency clinic is only accessible to full-time mine employees and not to contractors (ILO ,2016). According to the Zambian Chamber of Mines, Kansanshi employs 4781 (56,2%) mineworkers directly, and another 3731 (43,8%) indirectly through sub-contractors and labour brokers (Meeting with Zambia Chamber of Mines May, 2019). The sub-contracted labour would not share the same union, housing, pension and health benefits as direct employees, and their health and well-being would not be reflected in company statistics.

6.2 Management composition

Zambian operations do not have separate websites, but are reflected on the company’s global website. Local management names or positions are not cited on the website. According to LinkedIn, the company’s local top management structure is as reflected in Table 3:

Table 3: Top management structure of FQM Zambia

Name	Position	Gender	Race	Local/Expatriate
Kingsley Chinkuli	FQM Zambia Country Manager	Male	Black	Local
Rudi Badenhorst	Kansanshi General Manager	Male	White	Expatriate
Anthony Mukutuma	Kansanshi Assistant General Manager	Male	Black	Local
Mike Davey	Chief Mining Engineer	Male	White	Expatriate
Paul Weston	Supply Manager	Male	White	Expatriate
Etiene Haasbroek	Drill and Blast Supervisor	Male	White	Expatriate
Gary Trembath	Engineering and Maintenance Manager	Male	White	Expatriate
Mike Corken	Agricultural Manager	Male	White	Expatriate
Bruce Lewis	Corporate Social Responsibility Manager	Male	White	Expatriate
Godfrey Msiska	Public Relations Manager	Male	Black	Local
Mark Maimbo Silimi	Human Resources Manager	Male	Black	Local

Source; LinkedIn.

The top management is predominantly male, foreign, and white. This is not good for the image of the company. During the course of finalising the report, FQM appointed a new general manager who is a Zambian national, replacing Mr David de Vries. SARW [responded](#) to the change. The question arises whether FQM is unwilling or unable to find capable Zambians to lead the company?¹²

Philip KR Pascall is the global CEO of FQM and his relative Matt Pascall was until recently the Director of Operations of FQM in Zambia (Mining, Energy and In-

¹² Most big mining companies in Zimbabwe are fully managed by Zimbabweans. Why is a company like First Quantum unable to find qualified Zambians to manage the company?

dustry, 2014). Should any African government or company decide to employ the close relative of a head of state or CEO of a company in a senior position, the charge of nepotism would be splashed all over the media.

Matt Pascall left Zambia under a cloud of local discontent as reported by the Lusaka Times as a result of his ‘public letter of departure’:

Reading his farewell message, Pascall finds it ‘odd’ that the most rewarding part of his experience in Zambia is the Corporate Social Responsibility (CSR) aspect of his job. For a leader who has the right set of values, corporate or otherwise, there should not be anything ‘odd’ about finding fulfilment in corporate social responsibilities.

As a matter of fact, a true transformational leader finds fulfilment in the impact she or he has on all stakeholders, especially employees and the surrounding community. It is abundantly clear that Pascall is a transactional leader who instinctively cares about the bottom line, trying his hardest to pay lip service to CSR. (Patriotic Zambian Miner, 2019)

The employment code (part three) emphasises the need for giving priority to Zambians when there is a vacancy of employment in any given establishment “Subject to the other provisions of this Act relating to the employment of an expatriate, an employer shall, in filling an employment vacancy, employ a citizen, except where a citizen does not possess the skills required for that job or a citizen does not apply for that job.” (GRZ.2019) This piece of legislation clearly outlines the procedure and reasons for employing an expatriate.

6.3 Gender considerations

During their presentations, the company representatives placed great emphasis on the claim that the company favours women in their job appointments, training and other programmes. It indicated that “with modern technology, there is no job on a mine that a woman cannot do.” However, in a detailed study about gender representation at Kansanshi Rodrick Bwalya found that “Annual human resources statistics for the company study revealed that in 2006, the total formal workforce was 502. Of this number women accounted for 32 (6.4 %) and 470 (93.6 %) was accounted for by men. In 2014, the total workforce at the time of the study was 2, 560. Of this total workforce, women constituted 160 (6.3 % compared to 2, 400 (93.7 %) males” (Bwalya, 2015). It would be interesting to see if FQM Kansanshi can provide the latest gender statistics for its workforce, and if the gender imbalances have significantly changed in the meantime.

Considering that there is no woman in the management, the company clearly does not have an adequate gender mainstreaming policy. The responses provided by the management demonstrated a lack of basic understanding of gender mainstreaming concepts as well as tools that can be utilised by the company for its human resources strategy. It is of great concern that a company of this importance does not adequately pursue gender mainstreaming as one of its key vehicles for social investment through its workforce.

There is absolutely no reference to any policy concerning disabled people in any of the company's corporate social responsibility reports and discussions. Disabled people were not mentioned in any of our discussions with the company managers during the field visit.

6.4 Employee housing – a discriminatory approach

FQM should be commended for having an employee housing policy. Providing proper family housing is one of the most effective ways to contain HIV/AIDS and other epidemics.

In August 2012 FQM committed to construct 3500 houses in Solwezi (ZNBC, 2012, August 5). FQM employs 4781 permanent staff and 3731 contract workers, making a total of 8512 workers at Kansanshi mine. If FQM meets its housing commitment, that still leaves 5012 employees without company accommodation.

FQM prides itself on having built a new town for its workers, called Kabitaka Hills. Of the 3500 houses promised it has so far only constructed 600 (Zambia Daily Mail, 8 September 2014) as well as 86 houses in the exclusive Kalumbila Golf Estate (although these belong to the company). The houses in Kabitaka Hills belong to the workers who qualify for loans to purchase them. Rather than being a corporate social responsibility initiative, this is a business opportunity for FQM. Rita Kesselring describes Kabitaka¹³ as “just another enclave settlement for middle income employees of FQM, who are supposed to purchase the houses but are unable to afford the bank loan conditions” (Kesselring, R. 2017).

If Kabitaka¹⁴ is for middle managers, where do the workers live? They live in Solwezi. The Centre for International Migration Southern African Mining Sector Report (2010) in referring to Solwezi indicates a town with a rapidly expanding population, struggling to cope with housing, water reticulation, sewage, road and other infrastructure demands. This includes housing for mineworkers. The authors report finding as many as 18 workers living in a single room (International Organisation for Migration of Migrants and Mobile Populations in Southern Afri-

¹³ Rita Kesselring is editor-in-chief of the journal *Anthropology Southern Africa* and the JJ Bachofen Lecture Series, and author of the book *Bodies of Truth: Law, Memory and Emancipation in Post-Apartheid South Africa* (Stanford University Press 2016).

¹⁴ Our visit to Kabitaka also revealed there was a dispute between property developers of the suburb and the local community who were displaced to make way for the housing project.

ca, 2010).

In Solwezi, the stark contrast between rich and poor is glaring. Compare the poverty seen when passing through the mining communities' houses and the sprawling surroundings of the gated communities of Kabitaka and the exclusive gated community of Kansanshi Golf Estate (where the managers live).

Kabitaka and the Golf Estate are enclaves where outsiders are fenced out. Security is tight, visits must be bureaucratically approved, and taking photos without permission is an offence.

The Kansanshi Golf Estate is where I started my time here. It's where the majority of Mine Managers live and where the Prep school is situated. It includes a Club House and restaurant; gym with pool, tennis courts and squash courts; bowling courts; cricket pitch; and of course, a golf course. It's a beautiful little bubble and includes some impala, sable and a few other antelope breeds. We used to have a small herd of zebra, but they have been recently moved. The housing here is provided and life is quite comfortable. It is controlled by gate access and members must sign in their visitors. It also features few dams which provide good catch and release fishing for the various competitions they hold. There are also annual cycling and sports competitions. (Kesselring, R. 2017).

7. Environmental and health impacts of Kansanshi operations

SARW essentially sought to know to what extent Kansanshi Mining Company was complying with the environmental rules, laws and regulations, and the environmental licensing conditions issued by government.

Despite the company assurance of “zero discharge” from its operation, there are persistent and sustained complaints from the communities of dust, air and water pollution from the mine.

SARW had discussions with FQM-Kansanshi management on the impact of its mining activities on the environment and the local people. During the presentations, Kansanshi reaffirmed that its operations involve zero discharge and that there are no environmental or health concerns.¹⁵ Kansanshi management is convinced that it continues to demonstrate environmental stewardship through various initiatives aimed at environmental compliance and best practice.

¹⁵ Discussion Kansanshi Mine management and SARW, Solwezi, 15/04/2019

Meanwhile the Report of the Office of the Auditor-General on the Management of Environmental Degradation Caused by Mining Activities in Zambia, confirms that mining companies (although it does not name them) are not complying with the environmental rules, laws, regulations and environmental licensing conditions set by government (OAG Management of Environmental Degradation, July, 2014).

To understand the potential negative impact of Kansanshi operations on the health of people (workers and communities) and the environment, one needs to first understand the mineralogy of Solwezi and how minerals are treated. SARW invested in understanding the mineralogy of Solwezi to know what type of problems mining operations could potentially have on the environment.

7.1 Understanding the mineralogy of Kansanshi

According to the FQM reports, the company extracts only gold and copper at its Kansanshi operation. We know that both gold and copper extraction can have an impact on the environment and on the health of people. However, beyond these two commodities, the mineralogy of Kansanshi shows the existence of other substances that might be extracted in the process of extracting gold and copper. These include brannerite, silica, arsenic, nitrates and nitrites. Several research reports¹⁶ confirm the presence of these toxic minerals at Kansanshi, but FQM does not refer to these substances in its sustainability reports or on its website.

If these substances end up in the tailing dams, and if not properly treated, they can have serious negative impacts in the long run on the environment and on the health of communities living near the mine. If these minerals are part of the mineralogy of Kansanshi, the company must answer two questions:

- Why does it not report on these substances, which are dangerous to the environment and hazardous to the health of communities?
- What measures does the company have in place to mitigate the impact of these substances when released into the environment?

7.1.1 Brannerite and its potential impacts

This refers to the chemical formula: (U⁴⁺, Ca) (Ti, Fe³⁺)₂O₆, uranium calcium

¹⁶ such as The micropolitics of mining and development in Zambia: Insights from the Northwestern Province(R Negi - African Studies Quarterly, 2011), The Impact of Mine Effluents on the Water Quality and Macrophyte Plant Communities in the Kifubwa Stream, Solwezi, Zambia (KM Namwanja, SM Siachoono, AM Yambayamba... - Natural ..., 2018), The private sector in climate governance: opportunities for climate compatible development through multilevel industry-government engagement (J Leventon, JC Dyer, JD Van Alstine - Journal of Cleaner Production, 2015), Copper and vegetation at the Kansanshi Hill (Zambia) copper mine (B Leteinturier, AJM Baker, L Bock, J Matera... - Belgian Journal200).

¹⁷ Kansanshi copper mine, North West Province, Zambia, Technical report for the update of mineral resources and reserves of the Kansanshi Mine (selected excerpts, amalgamated): in NI 43-101 Technical Reports prepared for First Quantum Minerals Limited, www.sedar.com, 31p.

titanium iron oxide; class: oxides and hydroxides. Several expert reports (Eglinger, et al., 2012) from a number of universities and institutions, including one report by a former manager of Kansanshi mine and the International Atomic Energy Agency (IAEA, 1979) indicate the presence of brannerite in the Solwezi dome (Gregory J, Journet N, Cameron A and Titley M, 2012, and Gregory J, Journet N, Cameron A and Hanssen G, 2010)¹⁷. However, there is no mention of this mineral in the public reports of First Quantum. The company insists that it only mines copper and gold from the sulphidic and oxide formations (FQM.2019)¹⁸ at Kansanshi (note that brannerite is an oxide).

It is impossible to take out the copper and gold without also removing the brannerite. If the brannerite is not processed and sold, it most likely ends up in Kansanshi's tailings. The uranium in this mineral will decay and produce radon gas. Radon (the second leading cause of lung cancer) is a naturally occurring radioactive gas. You cannot see or smell radon. Testing is the only way to know your level of exposure.

Radon-induced lung cancer costs the United States over \$2 billion dollars per year in both direct and indirect health care costs (Jaromir Kolejka .2002). If Brannerite ends up in the Kansanshi tailings, it will be important to determine wind direction from the tailings and the extent of dust pollution from those tailings for communities. There is no reference to this in the FQM air quality reports. Brannerite could also impact on water quality. In South Africa, cerebral palsy is widespread among communities living in the proximity of mine tailings (van Wyk, 2017). We also need to find out about the extent of lung cancer and other cancers in the communities.

Glencore, operating in Kolwezi in the DRC, announced in November 2018 that it had suddenly "discovered" that some of its cobalt was radioactive (Reuters 2018, November 9). Both the DRC government and Glencore had for years denied the presence of uranium in the ores exported by Glencore, even though Wikileaks exposed the illegal shipping of uranium to Iran through Dar es Salaam from sources in the DRC (Biorger & Karen, 2010). Big corporations are often less than honest about what and how much they mine. During our discussion with Kansanshi management, none of the FQM managers spoke about the presence of brannerite in their presentations to us¹⁹.

¹⁸ <https://www.first-quantum.com/English/our-operations/default.aspx>

¹⁹ Meeting with Kansanshi on 15/04/2019, Solwezi.

²⁰ In any case various studies, including the mine's own, contradict this, "The dominant vein orientation in the Main Zone is a north-south set of metre-scale veins that have been traced over a strike length of up to 1.8 km, and were exploited in the old underground workings. The vein mineralogy is predominantly quartz-carbonate-sulphide with occasional molybdenite and magnetite. A secondary set, with a similar mineralogy, are oriented NNE-SSW, distinctly crosscutting the north-south veining and merging with them in places. A third, and final vein set occurs as spatially limited radial veins around the central dome of the Main Zone mineralisation, and are only present on the western side of the dome where they appear to be restricted to the Middle Mixed Clastic tectono-stratigraphic unit (Gregory et al., 2010; 2012). The first two vein sets are chalcocopyrite rich and contain minor molybdenite, while the third has relatively abundant molybdenite with significant monazite, brannerite and minor chalcocopyrite (Torrealday et al., 2000)" And... "The veins are characterised by chalcocopyrite-pyrrhotite-pyrite, with minor to trace amounts of brannerite, monazite, uraninite, pitchblende, molybdenite and rare bornite.

What was puzzling was that the presenters indicated that they do regular radiation and radon readings, yet they denied the presence of uranium or any other radio-active minerals in the mineralogy of the mine. Why test for something that is not present in the mineralogy?²⁰ Do they also test for radon in the community? Are employees informed of its dangers?

7.1.2 Silica and its potential impact on health

Silica is widely present in the mineralogy of Kansanshi Mine (Jacobs T.T, 2016), Although the mine is no longer an underground operation, the loading and transportation of ore in the pits and to the smelter and processing plants could expose loaders, drivers, general workers and the public to silica-containing dust which could give rise to silicosis. Although FQM mentions silica in its reports, there is no mention of silicosis anywhere. A number of international and government health reports indicate that tuberculosis (TB) is as much as five times higher than the national average in Solwezi and other copper-mining towns (Lebina, Martinson, Milovanovic, & Kinghorn, 2010) Silicosis is very often misdiagnosed as TB.

First Quantum has a lung policy in place. What is the function of this policy? What does the Zambian Health and Safety Act say about lung function and compensation for workers and communities whose lungs have been damaged by workplace and general dust and air pollution?

During the meeting with Kansanshi management, we asked FQM Kansanshi several times about the presence of silica or siliceous materials in the mineralogy, and if they observed the impact thereof on mineworkers and nearby communities. These questions were never answered.

FQM Kansanshi runs a laudable tuberculosis programme in its operation and in the community, but one wonders if those who are being treated are not suffering from miner's phthisis or silicosis. Ngulube, Chongo, & Paquot (2015) quoting a paper presented by FQM employees at Copper-Cobalt Africa, incorporating the Eighth Southern African Base Metals Conference Livingstone, Zambia, 6–8 July 2015 organised by Southern African Institute of Mining and Metallurgy, argue that

All the copper minerals constituting the alteration sequence from pri-

²⁰ (cont.) Gangue minerals, which are dominated by quartz and/or carbonate, include quartz, ferroan carbonate minerals, rutile and biotite. Veins range from a few mm's to 6 m thickness and are dominantly vertical to sub-vertical with a number of orientations, although overall, they form a NW-SE trending zone. Minor vein constituents, such as anhydrite and magnetite, as well as trace uraninite, appear to increase with depth." Significantly, "This summary is largely drawn from Technical Report by Gregory et al. (2010; 2012) for First Quantum Mineral Limited (Porter Geo Consultancy, 2013). This is confirmed by a report of the International Atomic Energy Agency which notes "Two boreholes, located on a radioactive anomaly, intersected leached uranium mineralisation at a 40 m depth (Edwards, 1974). Uraninite, brannerite, metatorbernite, monazite, molybdenite, and gold occur in quartz-carbonate veins at the Kansanshi copper mine (C Legg, in Arthurs, 1974) (MENEGHEL L., 1984).

mary sulphides to carbonates or silicates are present in various proportions (Table I) in the Kansanshi transitional.

But according to Kansanshi Mine, issues of silica in Zambia are adequately taken care of as the law provides that all mining companies are subjected to the Pneumoconiosis Act (as amended by No.15 of 1955), which law subjects all employees of any mining company regardless of work nature and station to regular silicosis examinations. While Kansanshi confirmed to SARW that all its workers are tested regularly, it failed to provide evidence.

7.1.3 Arsenic and its potential impact on health

There are reports of the extensive presence of arsenic in the mineralogy of Kansanshi Mine.

The presence of arsenic within copper ores reduces the economic value of the ore because of the penalties imposed on the smelting of ores with high arsenic content. The high concentrations of arsenic within the quartz-carbonate vein sample is of concern because copper production is subjected to extensive environmental regulation related to air and water quality, and materials handling and disposal practices (Matschullat, 2000, Jacobs TT, 2016).

This is because atmospheric arsenic emissions from copper smelting make the largest contribution to the amount of arsenic associated with the mining industry. Consequently, it has become the focus of pollution controls technological advancements (Matschullat, 2000).²¹

In a study done on the presence of arsenic in Riverlea located among the mine dumps south of Main Reef Road, Johannesburg, the Medical Research Council (MRC) of South Africa and the National Institute of Occupational Health (NIOH) found that:

The derived exposure index (CEI) (mine dust exposure) was significantly associated with; Upper respiratory tract symptoms, Chest wheezing, Emphysema or COPD (smoker's lung), Chronic obstructive pulmonary disease (on LFT).

The longer a person lives in Riverlea and the closer he lives to the mine dump makes the person at increased risk for the above-men-

²¹ There is a weak positive correlation between the Cu:Au within the quartz carbonate vein sample. The gold values greater than 1600 pm as seen in the breccia (MN-003 A) and oxidised phyllite (MN-014 C) are anomalous and statistical outliers, because the average gold grade Kansanshi is much lower than 1.6 g/t Au (Figure 4.14 c). The highest arsenic values are present with the quartz-carbonate vein sample (14.4 d).

tioned conditions (Tahira Kootbodien, 2017).

FQM Kansanshi officers in general, and their health manager in particular, said absolutely nothing in their presentations about the presence of silica or arsenic as threats to either employees or nearby communities. They did, however, allude to TB; silica and arsenic are closely associated with TB, silicosis and lung cancer. According to the World Health Organisation, in addition to skin cancer, long-term exposure to arsenic may also cause cancers of the bladder and lungs. Other adverse health effects that may be associated with long-term ingestion of inorganic arsenic include developmental effects, diabetes, pulmonary disease, and cardiovascular disease (World Health Organisation, 2018). The FQM Kansanshi officers promised to avail the statistics generated from a household health survey that they conducted in Solwezi, but SARW had not received the information at the time of finalising this report.

7.1.4 Nitrates and nitrites: potential environmental and health impacts

Nitrates and nitrites are widely referred to in the literature on the mineralogy of Solwezi. They are also referred to in the national water report "Evaluation of potable water in five provinces of Zambia" by K Nachiyunde et al (Nachiyunde, Ikeda, Tanaka, & Kozaki, 2013). The presence of nitrates and nitrites in the water leads to the early termination of pregnancies in both humans and animals. It also leads to early deaths of infants, commonly referred to as "blue death".

SARW interviewed community clinic staff members and community members who spoke about unnatural early termination of pregnancies, infant death, and a few instances of babies born with deformities.

Nitrates and nitrites prevent oxygen from being transported through the bloodstream to various organs in the body, so the person suffocates (McCasland, Trautmann, Porter, & Wagenet, 2012).

Nitrate and nitrite sources are not just geological; they are also from human waste contamination of water supplies. Solwezi has a large number of shallow wells, boreholes and well fields that add to the extent of nitrite and nitrate present in the water. Often wells are located close to pit latrines, and many wells and boreholes are located within the tailings plume of the Kansanshi operation. Nitrate and nitrite presence could also explain the incidence of cerebral palsy. Nitrous oxide (NO3 or NOx) is one of the gases emitted by the Kansanshi smelter (First quantum Minerals Ltd, 2017), so the problem could also be airborne.

As noted above:

high levels of nitrate can pose a risk to babies less than six months who are formula-fed and the unborn foetus of pregnant women. Adults with specific rare metabolic disorders may also be at risk. Nitrate is converted into nitrite by bacteria in the gut. This nitrite combines with foetal haemoglobin in the foetus or infant less than 6 months old, preventing oxygen from binding and being distributed around the body. Symptoms include blueness around the mouth, hands and feet – hence the name ‘blue baby’ syndrome. In severe cases, it can affect breathing and be life-threatening (Te Mana Ora District Health Board, 2017).

SARW raised this issue in the engagement with FQM managers, but neither the health nor the environmental officer commented on the matter. SARW held a separate meeting with Zambia Environmental Management Agency (ZEMA, 2019). ZEMA informed SARW that Kansanshi copper mine is compliant in many areas, based on the bi-annual reports submitted by Kansanshi Mine to ZEMA and the periodic inspections conducted by ZEMA. However, ZEMA was quick to point out that Kansanshi mine has been non-compliant with regards to stack emissions from the smelter. The question remains, does ZEMA control include testing for the presence and impact of toxic substances, and if not, why?

NW Province: Top 10 causes of mortality	Case fatality per 1,000 population	Solwezi distict: Top 10 Causes of mortality	Case fatality per 1,000
1. Severe malnutrition	212	Severe malnutrition	438
2. Sepsis	185	Tuberculosis	393
3. Cardio-vascular diseases	166	Sepsis	260
4. Tuberculosis	125	Cardio-vascular diseases	240
5. Confirmed malaria	123	Abortion	104
6. Respiratory infections, pneumonia	81	Anaemia	86
7. Anaemia	79	Digestive system, non-infectious	79
8. Abortion	67	Pneumonia	67
9. Diarrhoea, non-bloody	24	Diarrhoea, non-bloody	47
10. Respiratory infections, non-pneumonia	13	Malaria	33

7.1.5 Possible impact of mining activities on health

The Mining Health Initiative study referred to above found the following top ten causes of general mortality in North West Province compared to Solwezi (Mining Health Initiative, 2013), as outlined in table 4 below.

Table 4: Causes of mortality in Solwezi District

Table Annex B-4. North Western Province and Solwezi District: Top ten causes of mortality, per 1,000 admissions, all ages.

From the above table (Table 4), death from severe malnutrition is double in the Solwezi district compared to the rest of the province. Tuberculosis is almost three times higher in Solwezi than in the rest of the province. In the global scientific literature, there is a strong causal correlation between silica and tuberculosis (Rees D, 2007). Abortion and diarrhoea are almost twice as high in Solwezi as in the rest of the province. Malaria and pneumonia do not feature in the top ten causes of death in the rest of the province, but they do in Solwezi. There is a similar strong causal correlation between uranium, radium, radon and pneumonia (Environmental Protection Agency, 2000). Cardio-vascular disease is also significantly higher in Solwezi than in the rest of the province. Johnson and Dupont have reported possible causal linkages between radon and cardiovascular (heart) diseases (Johnson, J. R., & Dupont, P. (2004, May).

There is also a strong causal correlation between arsenic, abdominal pain, diarrhoea and abortions, besides causing cancer and skin lesions (World Health Organisation. (2019). The significant differences between the top ten causes of mortality in Solwezi and in the rest of the province raise the question: "What makes Solwezi unique or different from the rest of the province?" Surely this is a question worth deeper investigation? Maybe the government of Zambia should probe this further.

7.2 Concentration, smelting and tailing dams

With regard to the follow-up on the quality of soil and water, no quantified results were presented; not even the list of parameters analysed was presented. For SARW either the checking was incomplete, or the results were withheld.

7.2.1 Visit to the Kansanshi concentrator

The mining, crushing, loading, and transportation of ore generates dust, the most dangerous being PM_{2.5} and PM₁₀. This dust presents a huge risk to the environment and to living creatures (including humans) in the surrounding area.

SARW's visit to the concentrator deepened the understanding of what ends up on the tailing dams. We visited the concentrator in the company of Mr Godfrey Phil-

lip Msiska, Public Relations Manager of Kansanshi Mine. The explanation about the process was provided by Mr Aston Tshibanda. The purpose of this visit was to understand the operations in order to assess the impact of the process on the environment. The visit to the concentrator demonstrated that FQM mines three kinds of copper deposits: oxidized ore, sulphide ore, and mixed ore. After the comminution stage (crushing and milling), the ore is concentrated by floatation method. The oxidised concentrate is sent to the leaching facility where copper cathodes are produced after electro-winning (EW). At the concentrator and the hydrometallurgical plant, wastewater from floatation and the hydrometallurgical plant is pumped into the storage ponds or tailings storage facility (TSF), where it can settle, permeate and evaporate, leaving solid waste. The water balance in the floatation circuit and the hydrometallurgical plant were not provided. The same applies to the volume of freshwater that fed to the plant or discharged into the TSF.

SARW requested to take water samples which were running around the concentrator for testing, but permission was denied.

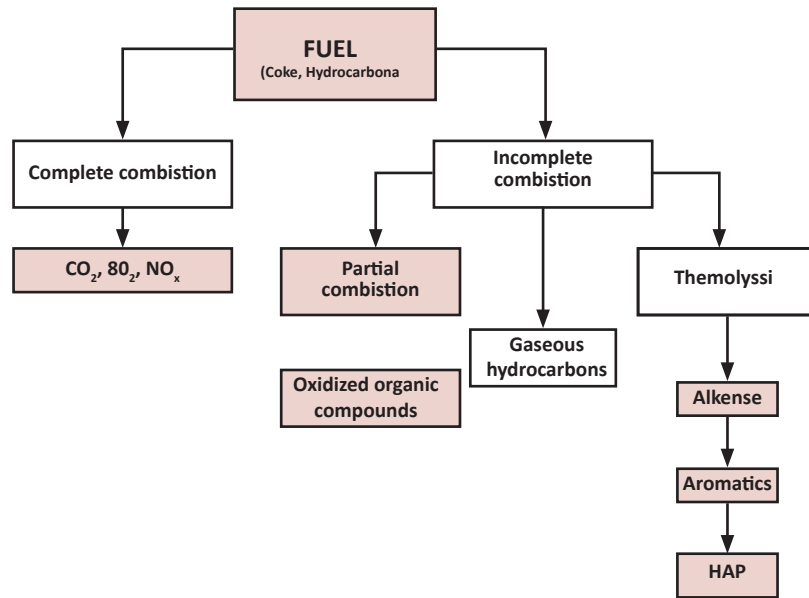
The drainage water from the site and the wastewater (mine drainage water, process water, maintenance water, cooling water and run-off water) which leach and flow into the surface water with suspended solids are a potential risk of pollution. Floatation generates a significant amount of water loaded with residual chemical reagents (xanthates, foam, etc.). This water must be stored in a waterproof pond, recycled through the process or treated before being released into the natural environment. At Kansanshi, the storage of wastewater is in non-waterproofed ponds that discharge wastewater and drainage water into the natural environment without prior treatment.

7.2.2 The Smelter: impact on the environment and health

Pyrometallurgy and the movement of machinery are both operations during which the combustion of coke or hydrocarbons occurs. During combustion, several phenomena occur (incomplete combustion, pyrolysis, etc.) that could lead to the release of acid or toxic gases (or both) into the atmosphere (including NO_x, SO₂ and HAP).

The pyrometallurgy plant with the feeding of sulphide ore generates fumes which contain SO₂, volatile metals (Pb and Zn if there is any in the material fed) and suspended solids which could be deposited on the ground, in surface water, or on vegetation, or which could be breathed in by living beings.

Figure 1. shows the components which are likely to form during the combustion of coke and hydrocarbons. HAPs (Polycyclic Aromatic Hydrocarbons) have the



reputation of being toxic and carcinogenic. There is also accidental pollution, serious but of limited duration. This relates to pyrometallurgy, for example where occasionally an irritant gas is released (SO₂). This pollution can be contained in order to limit disasters, but the operator clearly does not show the will to contain it. Figure 1: Pollutants likely to be released during the combustion of coke and hydrocarbons.

The mixed and sulphide concentrates are processed by pyrometallurgy in an electric furnace operating at about 1200°C. After preparation of the load and loading,



Figure 2: Combined SARW-FQM mine inspection of the Kansanshi smelter with, from left to right: Dr Marriot Nyangu (Policy Centre, Zambia), Head of the Pyrometallurgical Plant (FQM), Dr Claude Kabemba (SARW), Godfrey Phillip Msiska (KML), and Prof. Arthur Kaniki (UNILU, RDC).

the copper is poured in the form of an anode intended for export.

The SO₂ which is released is collected, liquefied and sent to the acid plant where it is converted to SO₃ to make sulphuric acid. The dust and gases which escape from the pyrometallurgical plant are sucked up and released through a chimney. The slag, which is waste from the metallurgical plant, is cooled, milled and floated in order to recover the gold which it contains.

Kansanshi reported to SARW that it has installed an acid plant designed to convert approximately 99.8 per cent of the smelter off gas to sulphuric acid, and continues to report sulphur-dioxide compliance within statutory ambient limits. However, monitoring reports were not made available to the team for verification despite the team requesting them. The company reported to the SARW team that in order to improve ambient air quality measurement, in 2017 Kansanshi installed a solar powered continuous ambient air quality monitoring station in the immediate community, downwind of the smelter. Our main contention is that the results collected are never shared with the community to allay their fears.

The static air quality monitoring technology shown on the slide by the FQM environmental officer during his presentation “located in the yard of sub-chief Wangabanyi of Kyafukuma Village” north-west of the mine operation is no longer in place.

While carbon dioxide emission reporting is important for greenhouse gas and climate change impacts, sulphur dioxide and nitrogen oxide (NO_x) reporting is critical for the respiratory health of employees, residents in Solwezi and the general population of North West Province. The question is why does FQM omit this in its report?

Although the mine has made significant efforts to reduce the maximum emission from its smelter, there is still emission released into the atmosphere and the company ought to report on this. There are some fumes from the smelter, which was confirmed by Lawrie, the superintendent of the smelter. He said that there is a need to do some more work to ensure the zero discharge.

First Quantum sustainability reports refer only to carbon dioxide emissions from its smelter and processing plant in Solwezi. The company claims in its 2018 environment report that it “currently measures other significant emissions including sulphur oxides (of which sulphur dioxide (SO₂) is the most significant) and metal dust from static point sources only... Absolute emissions of SO₂ and nitrous oxides (NO_x) from fixed points are provided” (First Quantum Minerals Ltd. (2017). While FQM provides SO₂ and NO_x emissions (in tonnes), it does so as a cumulative figure for all its operations globally, not by operation. At the operational

level, it provides only annual greenhouse gas emissions (in kilotonnes CO₂ E) First Quantum Minerals Ltd. (2018).

SARW suspects that sulphur dioxide emissions from the Kansanshi smelter may be the reason for the low pH (acidity) of rainwater to the west of the mining operation, for the leaf burn on plants, and also for the prevalent rust on metallic roofs, structures and poles everywhere. SARW also believes that inhalation of nitrous oxide in the emissions from the smelter could account for community claims of premature births, foetal deaths, and infant deaths.

So long as there is no independent, transparent testing and oversight of water and air quality in communities living close to the mine, no one can say with certainty what the causes might be of particular health problems. The communities on the west of the operation where the smelter is located are clearly exposed to airborne silica, arsenic, sulphur dioxide, nitrous oxide and carbon dioxide. We found community members suffering rasping coughs in every community that the team visited. An interview with the head medical officer in one of the community clinics confirmed that the biggest health problem in the community was respiratory (coughing, asthma, wheezing etc). Hardly any of the people randomly interviewed in communities visited responded positively to the question, “Do you, or anyone in your family smoke?”

Community members living in villages to the west of the mine complained about emissions from the smelter. Although questions were raised during the presentations made by FQM Kansanshi managers about the abundant presence of silica indicated in academic and technical literature, the questions were not answered by either the health or the environmental presenter (Meeting with Kansanshi, 15-04-19). However, the environmental officer spoke of a static emissions monitoring point located in the yard of the sub-chief Wangabanya of Kayafukuma. A slide with a photograph of the monitoring equipment was shown during his presentation (Meeting with Kansanshi, 15-04-19). SARW’s visit to the site did not find the equipment in place, although there was an indication that it used to be there. Figure 3 below illustrates the empty structure for the monitoring equipment at sub chief’s house.



Figure 3: Static emissions monitoring site at sub-chief Wangabanya’s house, without the monitoring equipment. (Source: SARW, April 2019)

7.2.3 Tailings dams management, water and air quality

Mined ore is crushed into powder form before processing and smelting. Once the minerals are extracted,

the waste ends up in tailings waste facilities. Those who design and manage tailings know that these mountains of muddy waste must be dried out as quickly as possible because tailings dam disasters can flood nearby communities in toxic tailings mud, as recently happened at Vale mines in Brazil. ZEMA has acknowledged having interacted with the Kabwela community, especially when the tailings storage facilities were newly constructed.

According to ZEMA, Kabwela community is located about 1 km from Tailings Storage Facility No. 2, and 1.8 km from Tailings Storage Facility No. 1. In the unlikely event that tailings storage No. 2 failed, the discharge would be away from the community settlements into the Kifubwa River, while the failure of tailings storage No. 1 would also not affect the community because of the Kansanshi stream valley.

However, SARW is of the view that there is a misrepresentation of the distance between Kabwela community and the mine. Our estimation is that the distance between the community and the mine is less than 1 km, which clearly indicates some level of reactivity (as opposed to proactivity) by ZEMA, compromising the safety of the community in any eventuality of pollution. ZEMA interacted once with the community, but despite this interaction the community continues to feel the effect of the tailing dams. In discussion with members of the community, it transpired that ZEMA has limited interaction with the surrounding communities, thereby failing in its obligation to protect the people of Zambia on issues related to environmental pollution. The institution has concentrated more on the issuance of the license. The lack of a clear stakeholder’s feedback system by ZEMA is a fertile breeding ground for disputes and misunderstandings among the affected parties, especially nearby communities.



Figure 4: Tailings plume impact zone

Dry tailings, if not managed well, will carry fine particles of toxic dust into nearby communities. Limpitlaw writes: “Tailings dams generally sterilize land by covering it with valuable topsoil and may also contain deleterious compounds.” (D Limpitlaw, 1998). The tailings dams on the Copperbelt often contain compounds of copper and cobalt. When not vegetated, such residue deposits are highly susceptible to erosion due to steep slopes and the presence of fine, dispersed particles. Eroded material from the dumps is deposited in neighbouring streams or on adjacent farmlands, reducing the economic potential of these resources. The tailings generally have adverse effects such as poor physical sample properties, toxic substances, nutrient deficiencies, high acidity or alkalinity, and salinity. Toxic materials can contaminate rainwater passing through the tailings. All the substances found in Kansanshi mineralogy (including brannerite, nitrates and nitrites, which we presume end up in the tailings) could have an impact on water quality. Arsenic impacts on both water and air quality. All the mineralogical and hydrological reports refer to the extensive presence of pyrites in the Solwezi dome. The presence of pyrites, copper and sulphides all result in chemical reactions with oxygen and water when disturbed and produce acid mine drainage.

During the presentation by FQM, with reference to the results of dust concentration in the air quality, the participants noted values of more than 600 mg/m² per day, which greatly exceeds the threshold of 250 mg/m² per day set down by Zambian regulations.

The auditor’s report on environment affirms that mining companies were failing to produce monthly returns or biannual reports on gas emissions into the environment. As a result, the quantity of dust, sulphur dioxide (SO₂), arsenic (As), copper (Cu) and lead (Pb) emitted by the mines into the environment was way in excess of the limits set by ZEMA. (OAG,2014)

Communities living to the west of the tailings dams complain about the dust from the tailings. The dust problem is particularly bad during the dry season (May to October). Meanwhile those living on the east and south of the tailings complain about the impact of water seepage.

During our visit to the tailing dams, we asked FQM if we could take tailing samples for testing. At first, our hosts agreed without hesitation. They then called to ask if it was correct to let us collect a sample from the tailings. After a few minutes, we were told we were not allowed to take samples from the tailing. Our argument that this was necessary to establish what is contained in the tailing dams was rejected. Despite our efforts to convince our host to let us keep the samples, we were forced to throw the samples away. FQM’s refusal to allow this elementary testing was regrettable.



Figures 5 and 6: Taking of samples on one of FQM tailings storage facilities by Prof. Arthur Kaniki (UNILU, RDC). The SARW team was not allowed to keep these samples for analysis.

Communities on the west also complained about the impact, not only on their own health and that of their livestock, but also on the vegetation. They complain that the soil fertility is declining, and that their crops are burned by acid rain (Interviews with Community Members 17.04.2019).

We tested rainwater on the western side and found the pH to be 4, the same level of acidity as orange juice.

Villagers showed us what appears to be leaf burn on cabbages (Figure 7), bananas, and other plant and tree leaves. This finding corroborates the auditor-general’s findings that both surface and groundwater was also being polluted, and that the pH value may be as low as 3 (i.e. more acidic) near some mines instead of the recommended 6 to 9.



Figure 7: Vegetables from Kyafukuma village, suspected to be damaged by waste from the mines. Source: SARW, April 2019

Communities on the east of the mine have noticed that trees have started dying. Dust which pollutes the air ends up being deposited on the surface of the soil and polluting it. Polluted water which flows onto the surface of the soil or which could overflow during storms could pollute the soil. The movement of machinery and accidental spillages could damage the quality of the soil.

ZEMA confirmed having received complaints about suspected damage to crops in Kyafukuma area west of the mine. The problem of fumes was reported a few years ago. A lot of work was done to investigate the alleged pollution, which affected the crops of a named farmer. However, the investigations were not conclusive, and it was not proven that the fumes from the mine caused crop damage. (Meeting with ZEMA, 04-06-19)

It is important to note that ZEMA does not have its own independent laboratory facilities but relies on other laboratories to analyse samples. The absence of its own independent laboratory makes its technical decisions unreliable; it also portrays the institution as weak and lacking in capacity to execute its regulatory responsibilities. Further, ZEMA's reactive approach to perceived pollution, which in most cases takes place over a period of time after the occurrence is reported, disadvantages and worsens the situation in the affected communities, as the inspection might not give the accurate information due to time-lapse.

The poor management of the tailing dams poses a problem to water quality in the area. Communities continue to complain about the quality of the water. Universal access to clean water is a basic need and a human right, as recognised by the UN General Assembly in July 2010 (UNGASS, 2010). Water constitutes an objective for the millennium development goals (MDGs). It is posited that water and sanitation are basic necessities and hence a prerequisite to achieving a minimum standard of health and well-being, enabling people to undertake productive activities

and build secure livelihoods (Mehta, 2014). For this reason, a concerted global effort has been dedicated to having commitments to the goal of securing water for all in a sustainable manner. During the meeting with SARW and community members, it was argued that the community is occupying a forest reserve, making it an illegal settlement, despite its being a recognised settlement under chief Kapijimpanga (which makes it legal under Zambian customary law).

SARW only conducted field water tests with elementary electronic testing devices for total dissolved solids (TDS), alkalinity (pH) and some strip tests for heavy metals copper, lead, iron, nitrates and nitrites on streams, wells and boreholes on the north-western side of the operation. Given the direction of the flow of streams towards the mine in this area, it is not surprising that all the results came up negative, TDS never exceeded 150ppm, while pH was 7 and above. (is this good or negative

The water also flows from the FQM site via a drain and pours into the Kifubwa River, situated to the south of Kabwela village (see Figure 9). This observation allows for the definitive rejection of the allegations of "zero discharge" made by FQM management.

Two samples were taken from the Kifubwa River and from FQM's water discharge drain, respectively, before the point at which it mixes with the waters of the Kifubwa River.



Figure 8: View of the position for the taking of sample 2 from the drain for the discharge of water from FQM's site.

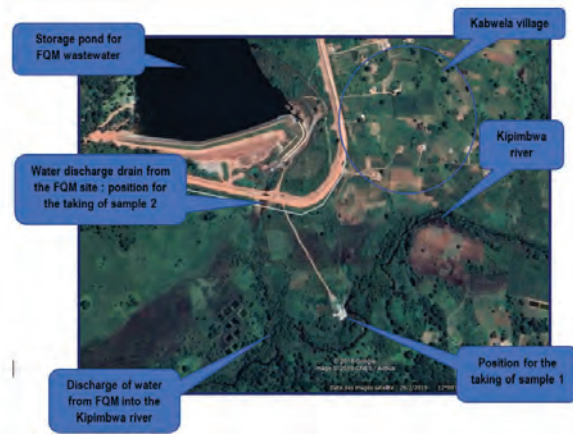


Figure 9: View of the point of the discharge of water from the FQM site into the Kifubwa River to the south of the Kabwela village and the points for the taking of samples.

Table 5: Analysis of water samples

N ^o	Parameters	Units	Samples	
			Sample 1 Water from the Kipimbwa river	Sample 2 Water from the drain of the FQM site
1.	pH	mg/l	7.78	7.61
2.	TDS	mg/l	11.89	1019.77
3.	Total suspended Solids (TTS)	mg/l	3.00	206.00
4.	Conducivity	µS/cm	225.78	2052.38
5.	Redox potential	mV	278.47	286.02
6.	Salinity	mg/l	0.11	1.04
7.	Fe	mg/l	0.141	1.534
8.	Zn	mg/l	<0.01	<0.01
9.	Co	mg/l	<0.01	<0.01
10.	Cu	mg/l	<0.01	0.064
11.	Pb	mg/l	<0.01	<0.01
12.	Mn	mg/l	<0.01	0.042

Analysis done by Professor Kaniki, University of Lubumbashi, May 2019.

The results of Table 6 show that the water from the drain for the discharge of water from the FQM site is highly mineralised; it is thick with suspended matter and has a high concentration of iron (which is yellow colour).

This spillage into the natural environment presents a significant danger for aquatic flora and fauna. FQM’s slogan “zero discharge” does not match reality. This is chronic pollution, which can have devastating effects on the environment. Our finding is in line with the auditor-general’s finding on environmental management that “total Suspended Solids (TSS) and Total Dissolved Solids (TDS), and in cases sulphates, in the effluent were also found to be high. Dissolved solids are an indicator that the chemical content of the waste-water released to the environment is high.” (OAG, 2014). If our observation is correct, it raises serious questions about ZEMA’s conclusion. According to ZEMA’s records “the sulphide TSF, the Kansanshi Smelter and the Slag dump extension, has approved EISs. The performance of these approved projects is satisfactory.” (ZEMA, 2019). SARW is of the opinion that the issues raised by communities in the first report remain, including possible soil and water contamination from the mine dumps.

7.2.4 Tailings and community access to water

The location of FQM well fields around its operations could also be causing the shallow wells and boreholes in the community to dry up. Community members on the west complained that their wells are drying up. These complaints could possibly be tailings related.



Figure 10: Testing of borehole water at Kabwela Community School.

In Zambia, it is mandatory through the Zambia Environmental Management Act No. 12 of 2011, the Statutory Instrument No. 112 of 2013, and the Environmental Management (Licensing) Regulation of 2013, for mining companies to control air and water pollution resulting from their operations. The Act subjects mining op-

erations to environmental impact assessments (EIAs). EIA requirements also cover additional development projects that may be undertaken by the mining sector, such as housing development, waste treatment and disposal, power transmission, and water supply. Companies are required to hold emission licenses to comply with set standards for dust, smoke, gas and fume emissions.

It seems, with what the communities are experiencing, that Kansanshi Mine has neglected both its own policy and the country's legislation. There appears to be neglect on the part of the mining company when you consider that it has failed to monitor the impact of its activities or to follow up on people's complaints. It has failed to take steps to demonstrate that it is not polluting water and that its activities are not affecting agricultural productivity of the surrounding land. The company does not provide in its sustainability reports meaningful information on the impact of its activities on biodiversity and the ecosystem.

It is possible that the dewatering of the opencast pit to ensure safe, dry working conditions by lowering the water table through constant pumping of water through the boreholes that compose the well-field around the mine causes the shallow community wells and boreholes to dry up, which also causes the shallow-rooted trees to die of thirst (Braun, Eberts, Jones, & Harvey, 2004).



Figure 11: Aerial view of FQM's mining site at Kansanshi.

²² ZEMA's role is to provide for integrated environmental management and the protection and conservation of the environment and the sustainable management and use of natural resources; provide for the preparation of the State of the Environment Report, environmental management strategies and other plans for environmental management and sustainable development; provide for the conduct of strategic environmental assessments of proposed policies, plans and programmes likely to have an impact on environmental management; provide for the prevention and control of pollution and environmental degradation; provide for public participation in environmental decision making and access to environmental information; establish the Environment Fund; provide for environmental audit and monitoring; facilitate the implementation of international environmental agreements and conventions to which Zambia is a party.

In 2017, the environmental regulator (ZEMA) issued Kansanshi with an approval letter following an environmental impact assessment study to extend the smelter slag dump. The existing slag dump has the capacity to store 2 million tonnes and was designed as a transitory dump awaiting a retreatment facility to recover the residual contained copper. Slag deposition for 2017 was 0.75 million tonnes bringing the total slag deposition to 1.94 million tonnes.

It is inappropriate for FQM and ZEMA²² to continue avoiding what the impact on the environment is. We need to learn from the Copperbelt. The impact of tailing dams on the Copperbelt is one of the evident examples of what the impact could be. On the Copperbelt, tailings are currently disposed of in valley dams or dambos (wetlands). Long retention times are supposed to ensure that solids are settled out and organic compounds have decomposed before releasing into the environment. Despite this, seepage from tailings disposed of in these wetlands has been reported, resulting in contamination of soils and groundwater with heavy metals and acids" (Limpitlaw, 2019).

ZEMA and Kansanshi must be alerted that keeping communities and the environment safe from tailings dams has become a human right issues following recent collapses of tailing dams. The collapse in 2014 of tailings dam at the Mount Polley gold-copper mine operated by Imperial Metals in British Columbia, Canada, dumping 24.4 million cubic metres of tailings into the Fraser River watershed, a group of lakes and rivers that bear salmon and sustain the livelihoods of local First Nation

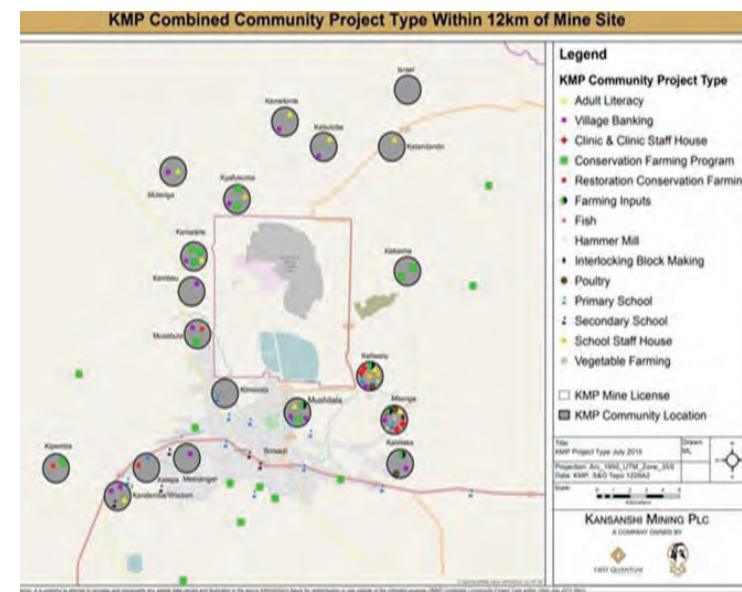


Figure 12: View of FQM's mining site at Kansanshi, showing the location of the surrounding communities and FQM's projects.

communities; and the collapse of tailings dam near Brumadinho, Brazil, which killed over 250 people and obliterated houses and buildings for kilometres before flowing into the Paraopeba River are just few cases to remind us of the danger that badly maintained tailings dams pose to the environment and communities

8. Kansanshi's corporate social responsibility

In corporate governance, CSR is the decision-making and implementation process that guides a company's activities in protecting and promoting international human rights, labour and environmental standards and compliance with legal requirements within its operations and in its relations to the societies and communities in which it operates.

During the one-day workshop held with FQM, the company informed SARW that it has established an entity called Kansanshi Foundation that guides its social interventions.²³ The company is working with the local communities in the fields of agriculture, education, health, development of infrastructure, and local business.

Kansanshi Foundation is a full project of the company. One initial observation is that, ideally, a foundation is supposed to be owned and controlled by the community, as it is supposed to be community needs driven. This is the case of Tenke Fungulume Foundation in the DRC – it is run and managed by the community. In Solwezi, many members of the communities don't know of the existence of the Kansanshi Foundation

The FQM foundation has the appearance of a image-building tool. But it lacks any sustainability mechanism in the event that the company should close, and there is no guarantee that any initiative will continue thereafter.

8.1 Infrastructure

FQM claimed to have built the Solwezi-Chingola Road, but when SARW enquired, it was revealed that the road was constructed by the Zambian government through the Ministry of Housing and Infrastructure Development. FQM involvement in the construction of roads in the community of Solwezi was based on a swap or barter arrangement according to a memorandum of understanding (MOU) between the Solwezi Municipal Council and Kansanshi Mine through the FQM Roads Department.²⁴ This was done in such a way that instead of paying rates to the council, Kansanshi worked on the roads so that the bills were written off.

²³ Kansanshi Foundation is fully owned and operated by First Quantum and managed by Kansanshi Copper and Gold Mine .

²⁴ FQM Roads Department is a private commercial entity owned by First Quantum. It operates independently and its relationship with any developer is purely commercial and not for charity.

8.2 Education

The mine is contributing to the social upliftment of the communities through education. It has contributed with 20 per cent of infrastructure; it has trained 260 teachers in teaching methodologies; and it has provided over 75 000 textbooks, which the Solwezi District Education Board Secretary (DEBS) verified were compliant with the current school curriculum. FQM also has a feeding scheme for children in 13 of the 27 schools surrounding the mine. At the time of the research, the company had awarded 220 bursaries to vulnerable children, paying school fees for those in government secondary schools. The company intervention and support in education can be divided into three types: education for the poor, education for workers' children, and education for the rich. The company has segregated the schools by class, with the poorest receiving the lowest quality of education. This segregation diminishes the value of the company's intervention in education and exposes Kansanshi's poor understanding of CSR. This is the first time that SARW has encountered a divisive type of education being provided by mining companies as part of their CSR.

8.2.1 Education for the poor

Some education is exclusively for poor communities surrounding the mine. SARW visited five schools. Three schools were visited together with the FQM management: Mushitala Secondary School, Makole Primary Community School, and an early learning centre located at Mushitala. Two schools were visited in the absence of the FQM: Kyafukuma and Kabwela schools.

Mushitala Primary School

Mushitala Primary School is owned by the government and located along the main road between the town and the mine site. It provides visibility to Kansanshi's CSR programme.

The school has 2000 learners, 51 teachers, and 12 classrooms. Kansanshi Mine contributed to the school by constructing a 1 x 5 classroom block as a way of



Figure 13: Kansanshi Foundation Education Manager Dr Onward Mandevu explaining to the team at Mushitala School during the visit.

decongesting the overcrowded classrooms, by increasing the number of classrooms from 7 to 12. The school accommodates 50 pupils per class per session. In addition to providing classrooms, the mine painted the school, and also provides high-protein porridge to the learners through the school feeding programme. The head teacher confirmed that the feeding scheme has improved learner attendance at the school.

The classroom: pupil ratio at the school, which is now at an average of 1:58, is still higher than the standard ratio of 1:45. This is Kansanshi Mine's best investment in education for the people of Solwezi.

However, there are issues with this support. Firstly, the alterations to the school building did not meet the required standards set by the Ministry of Education. The change was done by negotiating with the ministry headquarters in Lusaka, and without any consultation with the end-users or rights holders, which limits the role of the District Education Secretary (DEBS) and community. This has weakened the sense of ownership by the community and the local governance structure. It is good to provide buildings, but you also need better school infrastructure to boost student learning.

Secondly, this is a basic school. The school has to offer ICT lessons, but it can only offer theory because the school has no computers. Thirdly, there are still not enough toilets to cater for all the learners. (Field visit with FQM, 16-04-19). One would expect that the true essence of social responsibility is for communities to have access to good quality education (which includes good toilets, and sufficient infrastructure to ensure that classes are further decongested to the standard 1:45 ratio).

It appears the investment in this school is part of the company's public relations policy. The company's investment in the school is based on its location and proximity to the mine site, and it is visible to all visitors on their way to either the mine site or the Golf Estate.

If Mushitala School constitutes the best investment in education by FQM in the communities' education, then there must be a problem with the company's philosophy and conceptualisation of CSR interventions. Much more could and should be done.

Makole Community School

SARW had an opportunity to interact and engage with both the learners and school management at Makole, unlike on its initial visit (described in the first report). The school is situated in the Kankasa area of Mushitala and has been recently converted into a public school managed by the Education Ministry. The school was built by the community with support from the World Bank. It caters

for orphans and vulnerable children (OVC) in the community. It has 18 teachers (16 women and 2 men).

The school only has five classrooms with a population of 424 learners (227 girls and 198 boys). This gives an average of 85 learners per class, when the government policy recommends 45 learners per class.

The classrooms are almost half the size of a standard classroom, and it is hard to imagine how learners can fit into such a small classroom. The classrooms only have one window, providing insufficient ventilation to the learners.

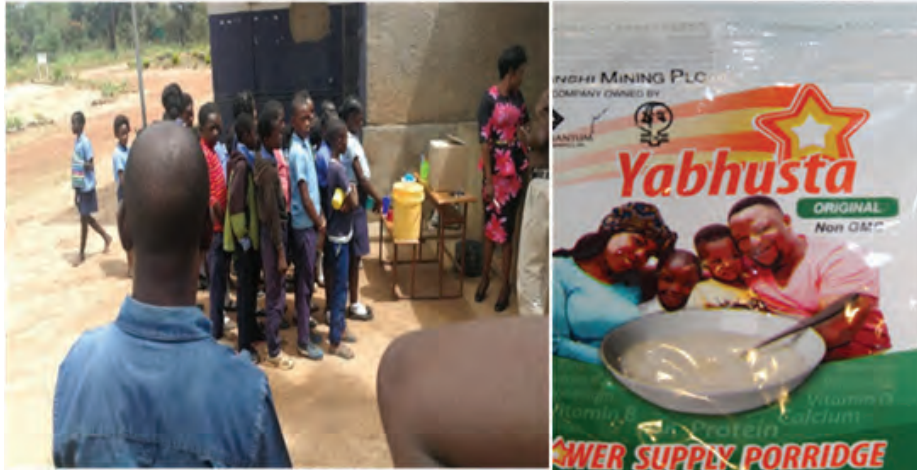
The school has only four toilets to cater for the whole population of learners – two toilets for girls and two for boys. This means that 113 girls share one toilet, and 99 boys share one toilet, when the standard toilet: pupil ratio is 1:20 for girls and 1:25 for boys. Because of girls' particular need for menstrual hygiene, the standard for every school is to have enough girls' toilets, which should include a washroom. The girls' toilets at Makole do not have any washrooms. The toilets are in a deplorable state.²⁵ They are ventilated pit latrines, and there is no access to running water anywhere at the school.



Figure 14: Main school building for Makole Community School

At this school, Kansanshi provides meals to all the learners. The feeding scheme consists of one daily meal of instant porridge made up of soya, wheat and maize imported from South Africa. It is alleged that none of the children are gluten or soya intolerant. The school head stated that feeding schemes had improved school attendance to 90 per cent from 60 per cent. The FQM representatives that accompanied the group were asked why FQM did not source the nutritional supplement meal from local suppliers. They responded that this was under consideration.

²⁵ For further information consult SARW first report



Figures 15 and 16: (Left) Pupils lining up for the meal provided by FQM. (Right): A sample of FQM branded imported porridge.

The children stood quietly in three or four lines waiting for the food to be served. The only noise emanating from the group was the frequent coughing that seems prevalent all over Solwezi.

Kansanshi must be commended for its feeding scheme. In addition to this, the mine has engaged community members to help them grow food, which will help to sustain the school feeding programme. The school also has a vegetable garden, which they want to contribute towards feeding the children. However, the conditions in which the children learn leaves much to be desired. Kansanshi has been requested by the community through the school management to build a school block and some toilets. It is yet to respond. The District Education Board Secretary, the representative who attended the meeting with Kansanshi, appealed to the company to be realistic in its approach and in the identification of community needs, and further emphasised that quality of infrastructure must be given priority attention. Children in poor communities need more than textbooks and porridge. During the discussion with Kansanshi, SARW was told by one member of the management team that:

the poor children from the communities surrounding the mine do not deserve quality education; they will fail anyway if they were to be included in modern structure education. What they need is just some sort of classroom and food.

Whether this perception represents the view of the company is not known. It is clear in our view that company could and should more to support the educational needs of the surrounding communities.

Kyafukuma School

The community of Kyafukuma has a population of over 7000 inhabitants. The secondary school introduced three years ago, has about 200 pupils with 14 teachers. According to information obtained from community leaders, the company has "no interest and no intentions" to support secondary education. The company offers literacy, learning material, and school feeding support to the primary school. In terms of infrastructure, the head teacher of Kyafukuma Secondary School bemoaned the lack of corporate support for his school. As some of the challenges faced by the school, he cited lack of water, shortage of textbooks, big classes with unacceptable teacher: pupil ratios, inadequate sports facilities and laboratories. After many requests, the company completed the building of a teacher's house which was started by the community, although its interior is still to be completed.

Members of the community informed SARW that the mining company has offered to help build a 1 x 5 classroom block for the upcoming secondary school as compensation for losing land to the company.



Figure 17: The windows of one of the classrooms at Kyafukuma Secondary School.



Figure 18: The desks inside one of the senior classrooms at Kyafukuma Secondary School.

FQM appears to implement projects without adequate consultation with the community. SARW was informed that the company had built a hall which is still to be handed over to the community, but the community does not want it. The community said they want the company to invest in a well-equipped clinic, and to provide adult education. They want a well-equipped modern school and a tarred road to transport their agricultural produce to market.

They felt these areas will improve their livelihoods. Access to Kyafukuma is a nightmare, as the only road is in a deplorable state and is considered a death trap for motorists.



Figure 19: Kyafukuma Secondary School head teacher's House, possibly damaged by mine blasting.

The head teacher claims to have written many letters to FQM Kansanshi management requesting assistance, but to no avail. He explained how the entire school reverberates every time there is blasting at the mine. He claims that the age of the school buildings and lack of maintenance causes the buildings (including the teachers' houses) to crack during blasting. The company denies that the blasting is the cause of the cracks in the teachers' houses.

Kabwela Community School

The Kabwela school has 408 learners and eight teachers. It has only a 1 x 3 classroom block which was built by Kansanshi Mine in 2008, along with two teachers' houses. The new classroom block replaced a dilapidated mud-and-pole structure. The classroom: pupil ratio is 1:58 because of double streams. The head teacher donated his house as a classroom to the Grade 8 learners, and the remaining house is shared by the deputy head and two other teachers and their families. Information and Communications Technology is a compulsory examinable subject in Grade 9 but the school does not have a computer lab. The head teacher conducts the ICT lessons using a disused computer. For some pupils, the first time they see a real computer is in the examination room.



Figures 20 and 21: An improvised classroom at Kabwela School.

8.2.3 Education for mineworkers' children: Kabitaka School

The Kabitaka school comprises a primary and high school. It is in a gated community owned by Kansanshi Mine. This is not a public school but a private school in which FQM has invested US\$40 million. FQM further supports the Kabitaka school with an annual subsidy grant of US\$2 million per year. The secondary school has 283 pupils, while the primary has 340 pupils. According to the school management, the company offers ten scholarships to children from less fortunate communities to pursue higher education at Trident College.

The fees are too expensive for most parents in the area. Only middle-class families can afford to send their children to Kabitaka. This means that most of the FQM workers do not send their children to this school.

Table 6: School fees for Kabitaka Primary and Secondary School

Fees	Junior Phase	Middle Phas	Senior Phase
Application Fee	ZMW 540	ZMW 540	ZMW 540
Registration Depost	ZMW 1.080	ZMW 1,350	ZMW 1.620
Annual Tuition Fee	ZMW 21.660	ZMW 24,660	ZMW 26,730
Termly Fee	ZMW 7,200	ZMW 8,220	ZMW 8,910

The school fees may be adjusted in the course of the year, subject to inflation or specific justifiable economic circumstances. Costs for residential and international trips, medical costs and exam fees are charged separately (Educore Services, 2016).

Educore service is based on what is known as the “user-pay principle”, which means that the project is run at no cost to FQM as the parents of learners foot the education bill. This cannot be justified as CSR even if Kansanshi gives a grant of US\$2 million to the school.

SARW feels that this investment is deception, as even most middle management employees from Kansanshi Mine cannot afford the fees. The school’s governance structure comprises only foreign staff, implying that Zambia has no qualified academics to run this kind of investment.

8.2.4 Education for the rich: Sentinel and Trident Colleges

The mine management gave SARW’s team a tour of the two private schools run by Educore Zambia and subsidised by FQM. They are located in the serene Solwezi rural community and equipped with state-of-the-art infrastructure and high-quality teaching and learning materials. The schools, which absorb only a small percentage of the poorer Solwezi children through scholarships, offer a British curriculum and enrol learners from affluent families in Zambia and outside the country. Both schools have fully equipped science and computer laboratories, something that remains a pipe dream for the government schools visited.

The school fees for these two schools are pegged in US dollars, putting them out of reach for children of the mineworkers and the people living in surrounding communities. Kansanshi mine invested over US\$14 million in building and equipping Trident College.

This kind of approach to CSR is ill considered and inappropriate. CSR is supposed to target mining communities. In this case, the bulk of FQM intervention is reserved for rich children. The schools are run as businesses and thus fall under the classification of social enterprise and not social responsibility. This is because the costs at the schools are astronomical (at least K30 000 per year). No member of the mining community can afford to send his or her children there.

The company denies that the subsidy awarded to these elite schools is part of the CSR, although during the meeting held with SARW the subsidy was reported to be part of CSR. The amount of money given annually to these private and exclusive facilities, compared to the meagre investment in poor schools, shows clearly the moral ineptitude of Kansanshi mine. The company scholarships to poor children of the nearby communities to attend this school amount to less than one per cent of the overall enrolment. In SARW’s discussion with the headmaster of Trident College, the latter recognised that the situation is not sustainable in the long run. The school needs to increase the uptake of children from poor communities. SARW noted the contrast with Zimplats and Aquarius education initiatives in Zimbabwe (for example), where the mining companies pay the school fees of all their employees’ children.

8.3 Health

It is an undeniable fact that mining usually comes with adverse effects on human health, and so one cannot meaningfully discuss mining investment without considering the aspect of health for both employees and the surrounding communities. FQM accordingly invests in the health and wellbeing of its workers and surrounding communities.

FQM claims to run four clinics that serve its mining communities, including Kansanshi Mine Clinic and Mary Beg Community Clinic and two unnamed ones (FQM, 2016). The two named clinics serve mostly full-time FQM workers. SARW investigated and concluded that the two clinics not named by the company are Kabwela Health Centre and Kyafukuma Clinic, which serve the mine-affected communities. These two clinics are dilapidated and understaffed. Kabwela Health Centre appears abandoned with inadequate sanitation facilities. There are no toilets and no running water. Kyafukuma Clinic is in a similar state, with inadequate provision of essential medical supplies and only one staff member.

Community members are charged fees to access these health services. FQM’s sustainability report describes the fee as affordable, but many who cannot afford the fees are excluded from using these health facilities. The next closest medical facility is three to four hours away by car.

Within the Solwezi district, FQM is presently involved in the following health sector initiatives: the redevelopment of Solwezi General Hospital; HIV programme and malaria PPP through community roadshows and a mobile health unit; and the education of health professionals (Mining Health Initiative. (2013).

The HIV and Malaria programmes are laudable, and much has been achieved. The manager for health programmes, Mrs Gertrude Musunka, cited tuberculosis and malnutrition as two of the company's CSR health interventions. During the round-table discussion, through its coordinator of health programmes, the company shared a presentation on its health focus and priorities. The following governance and policy documents were referred to as being the guiding tools; National Malaria Communication Strategy (2011 to 2015), Zambia Demographics Health Survey (2015), National Health Strategic Plan (2011-2016), National HIV/AIDS Strategic Framework (2011- 2015), National HIV/AIDS/STI/TB Policy (2010), Zambia National Educational Policy, Adolescent Health Strategic Plan (2011-2015), National Strategy to end Child Marriage and Teenage Pregnancy (2014/15-2019/20), In-house Baseline and follow-up surveys and home-grown data sets.

Disappointingly, most of these policy and strategic documents are outdated, and some issues have become moot. As most of these policies have subsequently been revised by the government, the company apparently does not engage with the government line ministries responsible of health matters on a regular basis. If they did, they would have been aware of the changes to these policies.

The extent of FQM's activities in the field of health is difficult to assess given that their value is neither quantified nor presented in terms of objectives to be attained as noted in terms of social impact.

SARW believes that the company focuses mostly on public health awareness, which makes it difficult to quantify direct or indirect impact on targeted beneficiaries. 8.4 Agriculture

8.4.1 Fruit and vegetables project

The FQM Langmead and Baker press release of 23/03/2019 leads with "FQM targets 200 Kalumbila families for household-level agribusiness investment." The lofty target of the project is the household kitchen. The project would, therefore, be better described as a household nutrition supplement project. If the project was truly entrepreneurial, then a visit to any of the South African retailers in Solwezi (like Spar or Pick 'n Pay) would see the fruit and vegetables of these community projects competing with the imported fruits and vegetables from South Africa.

The project is really a loan for the inputs which households pay back to FQM, making it community funded and not a CSR initiative (as FQM claims it is). In our view, for community fruit and vegetable projects to make a real impact on community health and wellbeing in a market economy, the project should not be just another micro-project, but a project utilising economies of scale, with off-take agreements with the wholesale and retail sector in Zambia and linkages with the export market.

FQM Kansanshi officials noted that the fruit, vegetable, and broiler chicken projects were not intended as commercially viable projects of any economic scale, but as projects to raise the nutritional levels of households. The North West Province is renowned for its bean production, honey, mangoes and pawpaw, all of which could be commercially produced by the community if it received meaningful investment and support from FQM.

8.4.2 Conservation farming raises serious ethical questions

FQM Kansanshi management took the SARW team to the conservation farming training centre in Solwezi, where we were informed of the benefits of conservation farming and how it replaces ploughing with planting seeds in mulched earth, with a few practical demonstrations thrown in. According to the *Zambian Eye*:

with crop rotation and sound agricultural practice [conservation farming initiatives] have helped farmers under FQM's community support projects to avoid the scourge of armyworms. More than 3,700 farmers are trained and supported by the conservation farming projects surrounding the company's Sentinel and Kansanshi mines in North-Western Province (*Zambian Eye*. 2017, February 15).

The Mining Review Journal echoes the sentiments of FQM, indicating that "Early distribution of farming inputs is essential to improving agriculture productivity each farming season – which helps ensure food security for rural areas (FQM)" (*Mining review Journal*. 2019, January 1).

The SARW team insisted on visiting some of the farms where conservation farming is being practised. SARW queried the location of the maize field it visited, given that it the electromagnetic radiation reader they carried often flashed "harmful" warnings because the site was located directly under Zambia Electricity Supply Company (ZESCO) power pylons. A government official indicated that there were regulations prohibiting farming activity around ZESCO zones, but that these were simply being ignored. This raises ethical questions about FQM promoting "conservation farming" and training in a prohibited zone.

SARW visited a conservation farming site in a riverbed (see Figure 22), despite Zambian laws prohibiting that kind of farming. SARW notes that, in contrast, Zimplats Ngezi mine in Zimbabwe trains people to avoid soil erosion and degradation when practising conservation farming along riverbeds. Zambian environmental officials present on the site visit indicated that there were regulations and laws prohibiting riverbed farming in the country, but that these laws and regulations were being ignored by FQM. In our view it is appropriate for Kansanshi to support farming that is contrary to the laws and regulations against riverbed farming.



Figure 22: SARW team visiting a farm located in a riverbed.

There are several other concerns about the manner in which the conservation farming project is being implemented:

The seeds used are hybrid seeds obtained from the South African seed producer Pannar, and the individual maize plants all grow to the same size. The maize cobs are all uniformly similar in size. Pannar is a major producer of genetically modified (GMO) maize. On its webpage, Pannar markets itself as a producer of glyphosate-tolerant GMO maize that kills birds, worms and weeds.

In March 2019, a US jury found Bayer AG's glyphosate-based weed killer to be a "substantial factor" in causing a man's non-Hodgkin's lymphoma, allowing the trial to proceed into a second phase on liability and damages. Bayer recently acquired Monsanto (Reuters. 2019, March 2)

In February 2016, Pannar announced that it was extremely proud to launch the Zambia Advanced Maize Seed Adoption Programme (ZAMSAP) in Solwezi, which received a fantastic response from the community. This programme is a partner-

ship of DuPont Pioneer, Pannar and Musika²⁶, the Ministry of Gender and Child Development and the Ministry of Agriculture and Women, Gender and Youth Affairs. ZAMSAP is aimed at increasing the productivity and profitability of small-holder farmers, by leveraging innovative technologies in maize production and access to markets.

During the field visit it was observed that the maize patch in the riverbed had absolutely no weeds, the cobs were uniform, and there was no sign of either worms or birds in the uniform stalks and cobs, possibly indicating the presence of glyphosate?

The following was observed:

- (i) Trainee farmers are supplied with maize seed and chemical fertiliser, and further "inputs" are purchased from FQM on a loan basis. Farmers are gradually being turned from self-reliant subsistence agriculturalists into small-scale market farmers, too small to be competitive with agribusiness, but still dependent on expensive market inputs.
- (ii) FQM Kansanshi hosts also informed the team that they promote the planting of pine and eucalyptus trees by conservation farmers. In South Africa, pine is a prescribed tree that can only be grown in plantations, while eucalyptus trees are considered an outright invader.

When the SARW team questioned the FQM Kansanshi hosts about this, there were different responses. Firstly, we were told that the trees absorb heavy metals from the soil and water, a tacit admission that the mine tailings seepage and dust do indeed contain heavy metals. Secondly, the team was told that these trees could translate into money for small farmer households, although these trees are only economically viable in huge plantations.

Economically, Zambia has been trying to shift away from dependence on mining to agriculture and other more viable sectors of the economy. It seems that FQM Kansanshi is contributing to this. The company claims to have trained about 34 000 farmers on conservation farming, half of whom are women. It is not clear though what percentage of the 34 000 farmers are from the local communities. It also has 6000 farmers on its input subsidy scheme. This is a laudable initiative.

However, many of the farmers interviewed by SARW reported that they were dissatisfied with conservation farming methods and their impact, arguing it is too labour-intensive and time-consuming. To them, it is a disempowering farming technique because they contend that it reduces the potential income that they

²⁶ Musika is a Zambian non-profit company with a mandate to stimulate and support private investment in the Zambian agricultural market, with a specific focus on the lower end of these markets.

could make. In Kyafukuma, many have abandoned it in preference for traditional farming methods.

The company's conservation farming appears to focus on maize instead of promoting diversification in which farmers are still able to expand on their more nutritious and traditional crops such as beans and potatoes. Solwezi is well-known for growing beans and Irish potatoes, and SARW observed many people transporting bags of beans and potatoes on their bicycles to markets in Solwezi town.

8.4.3 Broiler chicken project FQM

Kansanshi Mine also introduced a boiler chicken project, with each selected household in Kyafukuma and Muzabula provided with 25 chickens. This again is not a commercial farming project but a household nutritional project or subsistence farming.

FQM could have considered other livestock rearing such as goats, pigs and rabbits. We did not get to visit a chicken broiler project and are therefore unable to make any further detailed comments.

FQM Kansanshi officials noted that the fruit, vegetable, and broiler chicken projects were not intended as commercially viable projects of any economic scale, but as projects to raise the nutritional levels of households.

8.5 Gender equality

The company conducts a girls' mentorship programme which has been widely publicised and has received positive media coverage in Zambia. Praising the progressive gender attitude of FQM Kansanshi, on 19 March 2018 the Daily Nation newspaper reported "42 girls land Kansanshi mine scholarships" (*Daily Nation, 2018*). Zambian newspapers lauded FQM for its commitment to gender equity because the girls' camps included mentorship, entrepreneurship and hands-on business skills to help address poverty. Poverty is cited as the major cause of transactional sex, early pregnancies, and child marriages. At the camps, girls are also taught how to make fritters and doormats and maintain a tree-planting nursery.

At the end of the mentorship camps, the girls are handed fritter-making business starter packs to help them to support themselves and pay for their schooling (Kandimba, 2015). While some may argue that there is nothing necessarily wrong in engaging girls in traditional gender roles if it enables them to complete school, there have been calls for more girls to study Maths and Science, and one would

have thought that a mining company could be an ideal organisation to help in this regard.

9. The land question

The issue of land has created conflicts and misunderstanding between the mining company and the surrounding communities. There are several unresolved land and displacement issues between Kansanshi Mine and the people who live near to where it operates (Cheelo, KH, 2008). These problems were explained in the first SARW report "Living in Parallel Universe: FQM versus communities".

The most recent land question is the one involving Kyafukuma, where the company moved 60 families off land that they have occupied for decades. Not only were they moved without adequate consultation, but they were also poorly compensated. The land in question is forestry land, which was used for farming by the community since 1965. FQM acquired the land and wanted to use it for its mining development projects. The problem is not only with FQM, but also with the government that has given the company authorisation.

The associated privatization of land will ultimately reduce land available to the poor while at the same time pushing local communities into marginal lands. This deal is controversial as it involves a lease or concession that is already occupied and used by local communities for farming.

In Zambia, all land is vested in the president, in trust for the people of Zambia. This land is classified as state land or customary land. Section 7 of the Lands Act specifically provides for the recognition and continuation of customary land holdings. This law allows for perpetual communal ownership of land by the indigenous local people.

9.1 Displacement and compensation

Until the year 2017, the land in question was part of Mbonge National Forest No.58, which was degazetted by the government through Statutory Instrument No. 61 of 2017: The National Forest No.58: Mbonge (Alteration of Boundaries) order issued on the 11 August 2017. This forest land has been part of Kyafukuma village since 1965.

The process of the alteration of boundaries was driven and initiated by an application by First Quantum, owing to its planned new mine development projects and extensions which required more land. The land was therefore degazetted and was made available to First Quantum. The government could have exercised

other options including not degazetting the forest land but let us suppose that government was right in degazetting the land. The question is why it did not give the opportunity to the community to apply for the acquisition of the land before offering it to First Quantum? Did government do a cost analysis of its action?

With authorisation from government, FQM proceeded without adequate consultation to move people off the land. This was farmland which people used to produce food, and also to produce crops for trading.

The forced removal (the company brought in the national army to move people out) has affected the well-being of the surrounding community. The people cannot understand how government could give away the land without consultation, since they were allowed to occupy and utilise the land by past governments since independence, even though they have never received title deeds (since the land is surrounded by customary land). FQM, on the other hand, claims that its actions are based on government directives, and that the occupation of land by the 60 families was illegal.

First Quantum initially paid the people K500 as compensation. Besides the meagre amount involved, people are further angered by the violence they were subjected to, and the way they were handled by the army. Community members say that they were forced to accept and sign the payment under duress, due to the presence of the army and police to be present.

This dispute was taking place at the time when the SARW team was engaged in meetings with community members and Kansanshi management. The issue was discussed with Kansanshi, and the company subsequently adjusted the compensation upwards from US\$50 to US\$250 per affected household. SARW still sees this compensation as being inadequate for a household that has lost its land.

When asked why it paid such a meagre amount to the people affected, the Kansanshi Mine spokesperson responded:

the company is worried that if it pays larger amounts, the males' tendency in these villages is to marry many wives. We are concerned [that] paying a lot of money can contribute to the destruction of marriages.

SARW found this argument by the company to be paternalistic, insulting, arrogant, and totally unacceptable. The behaviour of the men in that community cannot be the basis for social injustice. The company could always have found other ways of ensuring that the money is properly used.

9.2 Critiquing the role of government

The question that many people are raising is why the government never considered engaging with the peasant farmers before accepting the application for extension from FQM? The community should have been given priority when offering the said degazetted land. It is clear that government is to blame, the major problem being the approach taken by the government when dealing with customary land. In this case, which relates to the enjoyment of indigenous people's land rights and protection from forced removal from their source of livelihoods, the government seems to have overlooked its obligation to protect indigenous people; instead, government purposefully followed the investor's wishes. Where is the government when people's rights are being abused? Why were the interests of the community disregarded? Whose right to land is more important: FQM or the indigenous villagers?

9.3 Interpreting the law

In Zambia according to the enactment of the Constitution (Amendment) Act²⁷, the constitution prescribes principles of land policy²⁸ that were not previously contained in Zambia's supreme law. It is now a constitutional requirement under the aforesaid article that there should be (inter alia) equitable access to land and associated resources; security of tenure for lawful land holders; recognition of indigenous cultural rites; and sustainable use of land. The constitution further requires that management and administration of land and settlement of land disputes should be transparent, effective and efficient. It is also an established principle under the constitution that investments in land should benefit local communities and their economy, and that plans for land use should be formulated in a consultative and participatory manner.

These constitutional provisions and principles on land use and administration are of general application. However, the 2015 National Resettlement Policy addresses specific issues relating to voluntary or involuntary resettlements. The policy which primarily aims at protecting resettlement schemes envisages that land, as a natural resource, should (among other things) be economically productive, socially secure, and environmentally sustainable. This requirement has guided the review of the National Resettlement Policy. The 2015 policy provides guidance and protection on how the resettlement programme for agricultural purposes should be managed.

²⁷ Kansanshi Foundation is fully owned and operated by First Quantum and managed by Kansanshi Copper and Gold Mine.

²⁸ Article 253 of the Constitution.

According to FQM, the issue of this land was a closed chapter, and could not be discussed further.²⁹ However, Brigadier Siachitema in his book *Protecting rural Zambian communities from displacement resulting from land-based investment*,³⁰ refutes such position, arguing that the amended constitution and the Lands Act recognise customary land rights. These rights, just like those applicable to state land, can only be taken away or lost to pave the way for land-based investments in accordance with the legal requirements set out by law. Failure to follow mandatory procedure renders compulsory taking of customary land for land-based investment illegal and a nullity. The taking of a property interest or property right by the state without the owner's consent amounts to compulsory acquisition.

According to ZEMA, it approved the resettlement action plans (RAPs) for projects that had a resettlement component, and it also carried out monitoring to ensure that commitments in the RAPs were followed (Meeting with ZEMA, 04-06-19). But the community of Kyafukuma denies having been part of the process.

Customary land is convertible to statutory tenure, and this is not reversible. For example, FQM's area of land extension is believed to have been a forest reserve, and according to the requirement the Ministry of Mines should not have allowed for the extension of the license, especially given that there were people who depended on the same land. The extension of the mine's surface rights by the government shows clear disregard for indigenous people's rights.

According to most government ministries consulted on the issues around the displacement, relocation and compensation of the affected communities, the company claimed that the due diligence process was followed in terms of, for example, the extension of Kansanshi surface rights towards the community of Kyafukuma. The company argued that the complainants had no rights whatsoever to complain as the land in question used to be a protected forest reserve, which was degazetted and allocated to Kansanshi Mine.³¹

The Forestry Act no. 4 of 2015 provides for the participation of surrounding communities in the protection and management of forests, by the establishment of a community forest joint management system (GRZ, 2015). The question then is: did the government accord the community this opportunity to establish the community forest joint management? It is the responsibility of the government, through the Department of Forestry, to ensure that vulnerable but viable communities such as Kyafukuma are given adequate information on important matters such as land.

²⁹ Roundtable Meeting (SARW-FQM)-Date: 15:04:2019.

³⁰ Women's Land and Property Rights Programme Lawyer, Southern Africa Litigation Centre; legal practitioner in Zambia; LL.B (University of Zambia), LL.M and Certificate in Arbitration and Dispute Resolution (Georgetown University).

³¹ Interview with Provincial Forestry Officer Mr Max Phiri, on 27.05.2019.

In discussion with community representatives, a possible reason was suggested for why the company can relocate people with so much ease. They suggested that part of the problem was that the local councillor has no power vis-a-vis the company and can't take community issues to the company. They also pointed to weak leadership of traditional leaders. The company relies on the opinion of local traditional leaders to create some level of legitimacy within the community.

Any well-meaning and right-thinking African can question the rationale of these displacements and ask whether a Zambian will have land rights anywhere apart from their country of origin. Morally, it is wrong for First Quantum to continue creating the unending tension and conflict with the inhabitants of the land, using its financial muscle to grab land in the name of foreign direct investment. The government in this instance needs to relook at its position as a custodian.

9.4 Community engagement and consultations

All the relocation cases in Kansanshi and surrounding communities have been characterised by lack of consultation with and participation by affected communities.³² This was confirmed by Van Alstine, Ngosa, Manyindo et al. (2011)³³ in their research paper entitled "Seeking benefits and avoiding conflicts: a community-company assessment of copper mining in Solwezi, Zambia". They argue that:

From the myriad of projects, initiatives and engagement processes it appears Kansanshi is approaching its community engagement/investment haphazardly. Kansanshi takes a predominantly top-down approach to community initiatives.³⁴

One major gap discovered in the entire process of displacement, resettlement and compensation is the absence of a credible and participatory approach that allows the contribution of the people affected to the decision-making, so as to minimise on the gravity of conflict between the company and the community. Decisions are made without any formal consultations or engagement with the community concerning the best way forward on the issue of land. It is clear that there has been cooperation between the company and the government on the issue of land, which has disadvantaged the local people, especially in Kyafukuma village.

³² Jessica Chu, Kathleen Young and Dimuna Phiri, (2015) Policy Brief on Large-Scale Land Acquisitions, Displacement and Resettlement in Zambia; PLAAS Institute for Poverty, Land and Agrarian Studies Faculty of Economic and Management Sciences (UWC) and Zambia Land Alliance. P.1.

³³ Seeking benefits and avoiding conflicts is a community-company assessment of copper mining in Solwezi, Zambia. Research Report. University of Leeds and London School of Economics.

³⁴ Van Alstine, J, Ngosa, F, Manyindo, J et al, 2011.

Going forward, the company needs to conduct baseline research to help identify the priorities and needs of the community. Kansanshi mine has no clear exit strategy from the communities it supports. This problem goes beyond the company, because the national policy on mining does not consider exit strategies by mining companies after the life of the mine.

10. Recommendations

10.1 To the government of the Republic of Zambia

In order to address some of the problems evident at Kansanshi Mine and elsewhere, the Zambian government needs to:

- define and provide a clear framework for corporate social responsibility and investment.
- empower ZEMA to have a strong and efficient internal institutional capacity to effectively execute its regulatory mandate and to produce reliable and timely technical reports;
- provide ZEMA with adequate resources to enable it to engage stakeholders, and to allow the agency to develop an environmental grievance management mechanism or framework which should be mandatory for all mining project license holders;
- ensure that companies implement a procurement policy that empowers communities through an enabling local content policy – CSR on its own cannot build communities;
- enact a law that clearly lays out compensation procedures, and which criminalises relocations before the full settlement of required compensation;
- consider two critical principles in all legislation: “Free, Prior, Informed Consent” and “The Polluter Pays”.

10.2 To FQM and other mining companies

Mining companies such as FQM need to:

- ensure that corporate social responsibility (CSR) initiatives are participatory and inclusive;
- revisit land compensation mechanisms in order to ensure that the human rights of relocated communities are being upheld and respected.
- ensure that CSR initiatives are designed to respond to local realities, and contribute to long-term sustainability;
- stop discrimination against poor children from mining communities by providing the same quality education and health infrastructure that is

- available for richer children;
- promote and respect Free Prior Informed Consent (FPIC) processes;
- adopt and ensure the safety of surrounding communities as the first priority in tailings storage facility design, construction and management by making the process more participatory and receptive to non-technical concerns;
- put in place proper measures for the treatment of hazardous waste and reduce solid waste buildup and leaching of toxic chemicals into waterways;
- increase efforts to provide more classroom blocks to existing public schools, based on the school-going age population in the area.

10.3 To civil society organisations

Civil society organisations must ensure that they:

- play their watchdog role fully, and remain independent of both companies and government.
- continuously provide capacity building to communities to ensure self-representation in dealing with companies and government, to mobilise, advocate and sustain local voices in full and meaningful participation in decision-making processes;
- engage in training programs for communities in order for them to understand their human rights and lobby for themselves;
- advocate effectively for the people in the communities.

11. Conclusion

First Quantum Minerals (FQM) remains a key player, critical to the economy of Zambia. This study recognises FQM's interventions in its quest to uplift the welfare of local communities in a number of key areas such as infrastructure, education, health, agriculture, and gender. However, the broad thrust of this report is that FQM is falling short both in its commitment to CSR and in its implementation.

Despite the multitude of interventions, this report shows a lack of trust between the mine and the community, and from experience we know that a company can never hope to successfully implement CSR initiatives unless it is trusted. There are companies that have managed to gain the trust of communities. This takes time, effort, dedication and expense. Our key finding in this second report is the same as in our first report; the overwhelming sense drawn from this study is that the implementation of CSR is top-down, with disregard for the principle of free, prior and informed consent. Most CSR interventions are designed by the company and imposed on communities.

The study has revealed that FQM Interventions such as the girl's mentorship programme, conservation farming, and chicken rearing are not effective taking poor mining communities out of poverty; in effect, they maintain them in survival mode. The only project that seems to have made a positive impact is the school feeding scheme, but even here there are concerns about the quality of the imported GMO food provided.

The company's intervention in the education system is problematic, displaying a lack of confidence in poor childrens' ability to rise to the occasion when better study conditions are available. Trident College and Kabitaka are private businesses, and cannot be classified as part of CSR. Provision of services such as housing, education and health has largely been for the primary benefit of the company's own workers, few of whom actually originate in the community.

There is evidence in this report that the effect intention behind FQM's CSR programme is not to change the material conditions of local communities, but to serve a public relations function, showcasing the results of highly visible projects which skate over the surface of community-defined social needs.

On the environmental front, this report found evidence that FQM pollutes through the discharge into the surrounding communities of effluents from its smelter, concentrator and tailing dams. Prominent diseases could well be linked to the mining activities. The lack of transparency is of particular concern. Some of the substances found in the ore body of Solwezi are highly radioactive and hazardous to humans and the environment.

The lack of any national CSR policy in Zambia is the biggest problem, encouraging inconsistencies and superficial CSR interventions by mining companies. FQM made it clear that it is government's responsibility to provide education, health, water, and electricity. The absence of binding CSR regulation is a factor why companies are failing to observe the human rights of local communities. Most CSR projects analysed in this report are not sustainable and cannot survive beyond the life of the mine or any withdrawal of the company's support. The CSR initiatives simply perpetuate the company-community dependency syndrome. There is a real risk from the findings of this study, that Solwezi will be a ghost town when FQM closes its doors after it has extracted all the copper and gold.

It is a growing concern in SADC that mining companies do not invest in long-term projects which can survive after the mining. What FQM will leave behind for the people of Solwezi is the tailing dams which will continue to pollute the land, air, rivers and underground water. The government has clearly not learned from the consequences of mining activities in the Copperbelt, allowing foreign mining activities to proceed and reproduce the same social and environmental consequences. SARW does not support the call for keeping minerals underground, but the impact of Kansanshi Mine on surrounding communities weakens our argument that there is such a thing as "responsible mining".

What all this suggests is that CSR must be premised upon the notion of a firm's social accountability and social justice. This cannot happen without independent monitoring and evaluation of mining companies' behaviour, which is a duty of the government, supported by civil society.

SARW ran serious risks when it published its first research report, which FQM refused to participate in. It seems that FQM initially thought that the political cost of brushing SARW's efforts aside would be minimal. The road we travelled with FQM to produce this second report has taught us two important lessons. First, civil society must remain faithful to their values and purpose. Second, their resistance to external enquiry is likely to be counterproductive in the long run.

FQM and other mining companies in Southern Africa need to be prepared to open themselves up to rigorous scrutiny by government agents, civil society organisations, and research institutions.

People closely associated with FQM keep asking why SARW is so obsessed with the company. The answer is simply "social justice".

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Appendix 1: Participants and stakeholders

List of Participants at the SARW-FQM roundtable discussion (15/4/2019)

Name	Organisation	Contact
Victor Nsana	FQM Kansanshi Mine	+260 96543055
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Name	Organisation	Contact
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Mumba Kolala	Water Resources Management	+260 977397305
Febby Manda Kilele	Ministry of Education	+260 977397305
Edward Lange	SARW	+260 966533874
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Shikamo Eliake	Youth Alliance for Development	+260 967181743
Jean Mwakwa	Caritas Solwezi	+260 978 161787
Namwaka Mukunyandela	Ministry of Health	+260 979151563
Bruce Lewis	FQM Kansanshi Mine	Bruce.lewis@fqm.com

List of participants: Kyafukuma community stakeholders consultation (17/04/2019)

Name	M/ F	Position
William Kipenduno	M	Community Member
Victor Malasha	M	
Nicholas Kawayo	M	
Graham Kipapa	M	
Millan Kipapa	F	
Pephias Mwanza	M	
Silvester Mwanautu	M	
Peter K . Kabelenga	M	
Geoffrey Lukalanga	M	
Mabenga R. Laston	M	Group Leader
Kainda Evason	F	
Mr. Pala	M	
Mwanautu Misitele	F	
Kachinda Mufunte	F	
Micheal Kinshetela	M	
Mobela Lano	F	
Muleya Rabson	M	
Coster Mumba	F	
Tebox Lokota	F	
Muzabe Jonathan	M	
June Kabamba	F	
Peter Mfumbo	M	

List of key stakeholders interviewed

Name	Designation	Institution
Laura Mithi	Executive Director	Alliance for Community Action
Nalucha .N . Ziba	Country Director	Action Aid Zambia
Jeston Lunda	Head of Programs	Action Aid Zambia
John Msumuko	Director-General	Zambia Environmental Management Agency
Dr Jewett Masinja	Lecturer	School of Mines – UNZA
Mwelwa Muleya	Chief Information	Education and Training Human Rights Commission
Kims Banda	Chief Investigations and Legal	Human Rights Commission
Florence Chibwasha	Director	Human Rights Commission
Bernadette Mwakacheya	Acting – Permanent Secretary	Ministry of Mines
Maxwell Phiri	Provincial Forestry Officer	Department of Forestry -Solwezi
George Chibwana	Head of Programs	Council of Churches in Zambia
Fr. Emmanuel Chikoya	Secretary-General	Human Rights Commission
Munalula	A/Head of Department	Dept. Development Studies -UNZA
Matenga Chrispin	Lecturer	Dept. Development Studies -UNZA
Valentine Kalonje	Lecturer Dept.	Development Studies -UNZA
Mtonga Marian	Post- Graduate Student	Dept. Development Studies -UNZA
Felix Ngosa	Project Officer – Joint Country Program	Norwegian Church Aid
Kalen Banda	Director Legal Services	Zambia Environmental Management Agency
Morrison Songwe	Principal Inspector	Zambia Environmental Management Agency
Simon Mwansa	Director of Finance	Zambia Environmental Management Agency

Name	Designation	Institution
Irene Chipili	Manager of Corporate Affairs	Zambia Environmental Management Agency
Talent Ngandwe	Deputy Chief Executive Officer	Zambia Chamber of Mines

Appendix 4:**KANSANSHI MINING PLC / SOUTHERN AFRICA RESEARCH WATCH****Southern Africa Research Watch**

Attention: Claude Kabemba

Email: claudek@sarwatch.org

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9 June 2020

Dear Sir

KANSANSHI MINING PLC / SOUTHERN AFRICA RESEARCH WATCH

- 1 We refer to the above matter and confirm that we have been instructed to address this letter to you on behalf of First Quantum Minerals Limited / Kansanshi Mining plc ("**FQM**" or "**our Client**").
- 2 We confirm that we are *au fait* with the relationship between you and our client, which commenced during the beginning of 2019, and in terms of which you have published, or have threatened to publish, untrue defamatory statements of and concerning our Client and its mining operations in Solwezi, Zambia ("**the Mine**").
- 3 We have been instructed further by our Client that –
 - 3.1 during February 2019 you published, or caused to be published, an article in the Lusaka Times which contained untrue defamatory statements ("**your Statements**") of or about our Client;
 - 3.2 our Client subsequently advised you that your statements were untrue and defamatory, and requested you to have the article removed;
 - 3.3 you observed our Client's request and the article was removed, and you accepted our Client's invitation to visit the Mine in order to, in your own words, "*conduct a joint validation mission to verify the findings*" of your statements, and which visit took place during April 2019; and
 - 3.4 notwithstanding the above, our Client received a letter from you dated 18 May 2020 ("**your Letter**") requesting our Client's response to certain 'key findings' and allegations made by you

Werksmans Inc. Reg. No. 1990/007215/21 Registered Office The Central 96 Rivonia Road Sandton 2196 South Africa
Directors D Hertz (Chairman) OL Abraham C Andropoulos JKOF Antunes RL Armstrong DA Artero T Bata LM Becker JD Behr AR Berman MNM Bhengu Z Blieden HGB Boshoff GT Bossr TJ Boswell MC Brönn W Brown PF Burger FG Cieland JG Cloete PPFJ Coelster C Cole-Morgan JN de Villiers R Driman RS Forgan D Gevier JA Gobetz R Goolkin ID Gouws GF Griessel N Harduth LD Hirzman J Hollisen MGH Honiball VR Hosposky BB Hotz T Inno HC Jacobs TL Janse van Rensburg G Johannes S July J Kallmeyer A Kenny R Killoran N Kirby HA Kotze S Krige PJ Krusche K Lalla P le Roux MM Lessing E Levenstein JS Lochner K Louw JS Lubbe BS Mabasa PK Mabaso DD Magidson MPC Manaka JE Meiring H Michael SM Moerane C Moraitis PM Mosebo KO Motshwane NPA Motsiri A Ngidi JJ Niemand BPF Olivier WE Oosthuizen Z Oosthuizen S Padayachy M Pansegrouw S Passmoor D Pisanti T Potter BC Price AA Pzykowski RJ Raath A Ramdohn MDF Rodrigues BR Roothman W Rosenberg NL Scott TA Sibida FT Sikhavhakhava LK Silbermann S Sinden DE Singo JA Smit JS Smit BM Sono CI Stevens PO Steyn J Stockwell JG Theron PW Tindle SA Tom JJ Truter KJ Trudgeon DN van den Berg AA van der Merwe HA van Niekerk JJ van Niekerk FJ van Tonder JP van Wyk A Vatalidis RN Wakefield DC Walker L Watson D Wegierski G Wickins M Wiehahn DC Willans DG Williams E Wood BW Workman-Davies Consultant DH Rabin

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Appendix 4:**KANSANSHI MINING PLC / SOUTHERN AFRICA RESEARCH WATCH**KANS40913.1/#6918105v1
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in respect of our Client's mining operations and which key findings and allegations you intend to publish in a report ("**the Allegations**").

- 4 We have considered the Allegations, and our Client's response thereto, a copy of which is attached as an annexure to this letter, and we hereby place on record the following –
 - 4.1 Our client has, from the outset, notified you as to the substantial factual, scientific and legal inaccuracies of your statements and the research conducted by you in respect of the Mine, which inaccuracies have nevertheless been alleged and included in your Letter.
 - 4.2 Whilst our Client has endeavoured to address each of the allegations made in your Letter, our client does not consent to, nor approve of, the basis on which the allegations are made, or the publication of any report.
 - 4.3 We are of the opinion, and have accordingly advised our Client, that the allegations made in your Letter –
 - 4.3.1 are untrue and extremely defamatory of and concerning our Client; and
 - 4.3.2 appear to be underpinned with bias and predetermined ideas of our Client, which opinion is supported by the statements made on your website, for example, that one of the main functions of what you do is "*Monitoring FQM's Activities in Zambia*".
- 5 In the premises, we have been instructed to inform you, as we hereby do, that should you publish a report which contains the Allegations regarding our Client which are untrue and defamatory, despite the detailed response thereto by our Client in the annexure to this letter, we have been instructed by our Client to issue a summons against you and this letter will be placed before the court in order to prove that you were fully aware of the fact that the Allegations were based on facts which were not true and which could not reasonably have been thought to have been true and request the court to award a punitive costs order against you.
- 6 Our Client's rights in this regard remain strictly reserved.
- 7 Kindly acknowledge receipt hereof.

Yours faithfully
WERKSMAANS ATTORNEYS

J G THERON

General

Kansanshi Mining plc (“KMP”) has had the opportunity to review the contents of the letter dated 18th May 2020 (the “Letter”) from Southern Africa Resource Watch (“SARW”) relating to KMP’s mining operations in Solwezi, Zambia.

From the outset it is critical to point out that KMP has noted substantial factual, scientific and legal inaccuracies in the research conducted by SARW and ultimately the Letter. While KMP offers a response to the Letter, this response is not a validation of SARW’s “work” in arriving at the Letter and the eventual report. SARW’s motives and impartiality is, at best, questionable as demonstrated further in our response.

Nonetheless, KMP has offered responses to the Letter in order to provide clarification to SARW and to ultimately ensure that the general public is provided accurate information.

In our responses, we have set out the specific statements from the Letter alongside KMP response to the issues raised in the specific statements.

Labour Relations

SARW Statement: *six percent of Kansanshi’s directly employed staff at the time of data compilation was expatriate, all in management and supervisory positions*

You will note that Kansanshi Mining plc (“KMP”) maintains a labour force that is in full compliance with the applicable laws in Zambia. Expatriate staff (who are actually 2%) are engaged to bring in skills that are otherwise unavailable on the local market. Expatriates are hired with a view to provide these skills for a limited time while transferring the skills to Zambian employees as a value addition. Because of the very nature of and rationale for obtaining specialised skills, it follows that expatriate labour would only be required to fill in supervisory or managerial roles as these are the roles requiring the specialised skills we seek. You will note that we have more Zambian supervisors and managers than there are expatriates. This demonstrates the success of the process of skills transfer.

SARW Statement: *Contract workers do not have access to company's health facilities. They are not reflected in the company's health and other statistics on the general health of the work force*

We assume that by "contract workers" you mean contractor employees i.e. the employees of companies that are contracted to do work for KMP.

KMP has a health policy that provides healthcare to all of its employees as part of their terms and conditions of service. This extends to employees regardless of whether they are permanent employees or engaged on time limited contracts. As an employer, KMP ensures that its employees are provided healthcare in a manner consistent with KMP's policies as well as the policies of the broader FQM group.

As regards contractor employees we cannot comment since KMP does not provide healthcare to employees of other organisations. You will note that various companies provide services to KMP, some on site while others provide services remotely from all over the world. In the same way that SARW does not provide healthcare for people who work at its internet service provider or who work at its printing press, KMP does not provide healthcare to people who work for other companies. Insinuations that KMP has engaged in any wrongdoing in this regard are grossly misplaced.

SARW Statement: *Phillip KR Pascall is the global CEO of FQM. Until recently his relative Matt Pascall was the Director of Operations of FQM in Zambia. We consider this to have been a case of nepotism.*

Mr. A.M. Pascall has been a core member of the FQM Group from its inception and has vast knowledge and experience in the mining sector. His appointment, which has always been a matter of public record, was based on merit. To KMP, and the FQM Group's, knowledge there has never been any objection to his appointment.

Gender and Disability

SARW Statement: *There is no woman in the top management of the company. This indicates that FQM does not have a progressive gender policy. During our conversation, the responses provided by the management demonstrated a lack of basic understanding of gender mainstreaming concepts as well as tools that can be utilised by the company for its human resources strategy.*

KMP prides itself on being on the frontlines of promoting gender equality. KMP maintains a strong and robust policy of actively promoting the empowerment of women both within the mainstream employment channels as well as through the various CSR platforms. The nature and effect of such interventions are a matter of public record and knowledge.

SARW Statement: *We also found that there is absolutely no reference in company policy to disabled people.*

SARW is referred to corporate policies that are applicable to KMP and the FQM group in general. KMP does not tolerate any discrimination on the basis of disability.

https://s24.q4cdn.com/821689673/files/doc_downloads/policies/CORPP001-Code-of-Conduct-English.pdf

SARW Statement: Can the company share segregated information on labour by race, gender, and positions? We could not find this on the company website.

KMP does not segregate its employees by their race. It is part of KMP's culture (as learnt from the FQM group in general) that classification of persons by their race leads to racial discrimination in the workplace. KMP is an equal opportunity employer that will provide employment to suitably qualified persons irrespective of their race or ethnicity. Accordingly, KMP will not be providing SARW with segregated information on the race and ethnicity of KMP employees as this goes against KMP's core values of non-discrimination.

Employee Housing

SARW Statement: *FQM prides itself for having built Kibitka Hills for its employees. The houses in Kibitka belong to those workers who qualify for loans to purchase them. Rather*

than being a corporate social responsibility initiative, this is a business opportunity for FQM. If Kibitka is for middle managers, where do the workers live? If they live in Solwezi, is this CSR?

Kibitka and the Golf Estate are enclaves where outsiders are fenced out. Security is tight, visits must be bureaucratically approved, and taking photos without permission is an offense. Is this FQM's approach to social cohesion for workers and their families?

Kabitaka Estate was developed in response to the needs of employees living and working in Solwezi. Due to a general unavailability of affordable, quality housing, KMP took the initiative to construct modern, quality housing at affordable prices. Kabitaka is fully equipped with tarred roads, quality schools, medical facilities, a six million litre water storage facility, a million litre gravity feed water storage facility, a sewerage treatment facility and light commercial facility, all within the housing complex. This provides a higher quality of life for residents and contributes to the general improvement of living standards in the community. KMP, and its related companies, constructed Kabitaka at a cost of over \$57 million. However, in an effort to ensure that the price of the houses is affordable to employees, the full cost was actually subsidized by over \$25million by the FQM Group.

Every employee of KMP is eligible to live within Kabitaka and to purchase a housing unit. There is no segregation of any kind in terms of what employee level can move into Kabitaka. In fact, there are all levels of employees living within Kabitaka from senior managers, junior managers and non-management staff. Additionally, several former employees of KMP who have maintained housing in Kabitaka post leaving KMP's employment. KMP is also mindful that, eventually, the mine will close and the scheme is designed to preserve home ownership. This will avoid massive internal displacement of people.

In terms of access to Kabitaka and to the golf estate, please note that every housing complex is permitted by law to set rules for access. Because this is common practice worldwide, we are certain that SARW will find a lot of examples of housing complexes that have various rules of entrance to the housing complex. Additionally, as with every housing complex in the world, the homeowners and/or property developers are free to

set the rules of conduct within the housing complex. KMP will not be drawn into SARW insinuations relating to the rules that homeowners have set for the housing complexes they occupy.

Impact of Mining Activities on Health of Communities and the Environment

SARW Statement: *The company claims “zero discharge” from its operation. How does FQM explain persistent and sustained complaints from the communities of dust, air and water pollution from the mine.*

To begin with, this statement is one of many examples of vague and opportunistic statements that SARW makes in the Letter which makes it almost impossible to provide a complete response. We remain unclear on the source of the “persistent and sustained complaints” which SARW claim to have. By whom have the complaints been persistently made? To whom have the complaints been made? The Zambia Environmental Management Agency (“ZEMA”), the statutory authority mandated to environmental pollution complaints, has no active complaints against KMP.

All of KMP’s tailings storage facilities (“TSF”) are operated pursuant to a permit granted by ZEMA. As part of the licencing process to obtain these permits, KMP discloses information about the design, construction, operation and overall management of the TSFs. The licencing of the TSFs has been in place since the commencement of KMP’s operations at Kansanshi. This is part of the ongoing compliance requirements that KMP is mandated to undertake by law.

Due the superior quality of the TSFs, there has never been a need for KMP to discharge any effluent into the surrounding rivers and streams. All effluent from KMP is properly contained within the TSFs. In technical language, KMP has “zero discharge” because KMP does not discharge any effluent into the surrounding environment. ZEMA conducts regular inspections as part of the licencing requirements.

SARW has not provided any details on which areas and which communities the complaints of dust are allegedly emanating from. Without that clear and additional

detail, KMP is unable to fully comment, however, please note that KMP constantly monitors dust levels and reports are sent to the relevant authorities.

As part of KMP's policies, we deliberately take proactive steps to ensure that any grievances are adequately addressed through the proper channels (either internal KMP channels or regulatory channels). As an operator of the largest copper mine in Africa we would expect that there will also be persons that will have grievances, founded or unfounded. Accordingly, any community members who have grievances are always welcome to raise them and the grievances will be addressed. However, let us repeat, that KMP is a "zero discharge" facility and releases no effluent into the environment.

SARW Statement: *According to the FQM reports, the company extracts only gold and copper at its Kansanshi operation. However, the mineralogy of Kansanshi shows the existence of other substances (including brannerite, silica, arsenic, nitrates and nitrites) that might be extracted together with gold and copper. We are concerned that if these substances end up on the tailing dams, and if not properly treated, they can have serious negative impacts in the long run on the environment (land, water) and on the health of communities living near the mine. Can you confirm the existence of these substances? If the answer is yes, then:*

a) Why does the company not report on these substances, which are dangerous to the environment and hazardous to the health of communities?

As with everywhere in the world, the composition of soil includes water, organic matter and minerals. The minerals in soil will vary from place to place but it is extremely unlikely that soil would contain only a single mineral. In the case of KMP, the processing plant is designed to extract the commercially viable minerals at the mine, namely gold and copper. All other elements that are not targeted for extraction either form part of the tailings (waste) that KMP stores at the TSFs or are contained in the final gold/copper products and treated as impurities due to their miniscule amounts. If recovery of these other elements was commercially viable, then we would have done so. A simple check by SARW will show that this is not peculiar to KMP.

The TSFs that KMP operate are subject to very strict regulation by ZEMA and other GRZ regulatory organs. This is in addition to the internal regulations applicable at KMP and at a broader level within the FQM group. The TSFs were designed by internally recognised experts and industry leaders in the field and information on the design and specifications of all of our TSFs is available on our website. The TSFs operated by KMP are regularly checked by GRZ and other independent, internationally recognised third parties. As has been previously demonstrated, KMP is a “zero discharge” facility and as such the tailings are contained within the TSFs and not released into the environment.

On the Concentrator

SARW Statement: *The management informed us of frequent tests of water and soil. However, the results of these tests on the quality of soil and water are not publicly available and were not presented during the research visit; not even the list of parameters analysed were presented. It seems that either the checking is incomplete, or the results are deliberately hidden.*

KMP performs thousands of analyses annually. The analysis is done both on site and at international laboratories selected because of their international quality accreditation. Statutory parameters are clearly prescribed by the GRZ in the law and the various licences that KMP has. KMP has met its legal requirements to disclose all relevant information to statutory bodies since it started operating in 2005.

SARW creates the unfortunate impression that KMP is hiding information from them. KMP provides sample results as required under the applicable Zambian and international law. The results are provided to the various regulatory institutions that have the mandate to analyse and utilise the results. KMP is under no obligation or commitment to provide the result of any testing to SARW as there is no evidence whatsoever that SARW has the technical or scientific ability to analyse such results. The results are therefore not deliberately hidden; they have simply not been made available to SARW.

SARW Statement: *At the concentrator and the hydrometallurgical plant, wastewater from floatation and the hydrometallurgical process is pumped into the storage ponds*

or tailings storage facilities (TSF), where it can settle, permeate, and evaporate, leaving solid waste. The water balance in the floatation circuit and the hydrometallurgical plant is not provided. The same applies to the volume of freshwater that is fed into the plant or discharged into the TSF.

Detailed Information on the volumes of water withdrawn, discharged and recycled is available on our website here:

https://s24.q4cdn.com/821689673/files/doc_downloads/environmental-health-and-safety/2019-Environment-Safety-Social-Data-Report-FINAL.pdf

SARW Statement: *SARW requested permission to take water samples around the concentrator for testing. Why was permission denied?*

SARW's website, and the previous statements and actions by its senior officers, clearly indicate bias against KMP. It is also important to underscore that SARW has a proven track record of making speculative and opportunistic claims without any evidence as seen from SARW's last report on KMP and the contents of the Letter. KMP did not allow SARW to sample around the concentrator and associated industrial infrastructure, because it is never clear how the results are going to be interpreted or what standards the results would be compared against. During SARW's visit to KMP, the SARW officer attempted to "sample" by placing soil in ordinary plastic shopping bags demonstrating a lack of knowledge and capacity on testing protocols. Zambian legislation is very clear on what environmental standards are relevant and where they are relevant. In addition to the broad legal requirements governing mining activities, all mining operations in Zambia are provided with environmental permits. The permits provide specific guidance to operational activities and require reporting against a number of standards at specific locations at specific times. The permits are site specific. Taking a water or air sample in a random drain or pond near the concentrator will have no relevance to have any Zambian standard or specific permit condition. SARW did not provide any information or reference on specifically where they wanted to take samples other than "near the concentrator". Furthermore, SARW made no reference to any standards or permits conditions. No advance information was provided. Without any information, it was unclear what the motives are, what the comparable standards are and how any meaningful results or conclusions were going to be drawn.

Once again, we reiterate that KMP fully complies with the applicable legislation and operates within the parameters determined by the GRZ and international standard. SARW has demonstrated that it does not have scientific capability to adequately analyse, or even sample, data of a scientific nature.

SARW Statement: *SARW researchers believe that the drainage water from the site and the wastewater (mine drainage water, process water, maintenance water, cooling water and run-off water) which leach and flow into the surface water with suspended materials are a potential risk of pollution.*

This would be a good assumption to make for many thousands of industrial installations around the world. It is because of this potential risk that these issues are described in great detail when evaluating the project in the Environmental Impact Assessments (“EIA”). The EIAs contain a number of control measures to ensure that the potential risk of pollution stays as a potential. The EIA is then approved by regulators and the proponent is then required to implement the control measures. Prior to commencement of operations at KMP, an EIA was conducted and approved by the Zambian regulatory authorities after a full analysis of the potential issues and the measures in place to ensure that they remain as potential issues and never pose any danger. KMP has incorporated these control measures into their operations. In fact, there is ongoing GRZ monitoring to ensure that KMP adheres strictly to the provisions contained in the EIA. As an example, suspended solids are typically removed by passing all runoff through large settling ponds. From these ponds, the water can then be re-used elsewhere or can be safely discharged off site. As part of the operational controls, solids are periodically removed from the ponds. KMP has to make sure that when the water is discharged off site, it meets the required discharge standards. This is standard practice in Zambia and most of the world. A fuller research by SARW would evidence KMP’s full compliance with all applicable regulatory standards.

SARW Statement: *How safe is drainage water from the site and the wastewater from the concentrator?*

As previously demonstrated, any discharges from KMP are designed, constructed and managed to ensure full compliance with all applicable laws and standards.

The Smelter

SARW Statement: *The company reported to the SARW research team that in order to improve ambient air quality measurement, in 2017 KMP installed a solar-powered continuous ambient air quality monitoring station in the immediate community, downwind of the smelter. Our main contention is that the results collected are never shared with the community to allay their fears. SARW's visit to the site did not find the equipment in place, although there was an indication that it may have been there before.*

There are three solar powered continuous ambient quality monitoring stations to the west of KMP. SARW's assertion that the equipment was not in place is wrong. With respect to sharing results, as has been made categorically clear in previous responses herein, the results relating to environmental checks are made available to the proper legal authorities. Any legitimate concerns from members of the public will be adequately addressed if they are presented through the proper channels.

SARW Statement: *Although the mine has made significant efforts to reduce the maximum emission from its smelter, there is still emission released into the atmosphere and the company ought to report on this. FQM employees confirmed that more work is needed to ensure the zero discharge.*

This once again demonstrates SARW's preconceived ideas and a lack of basic understanding of the fundamentals around mining. It is impossible to operate a smelter without atmospheric emissions. What is essential is to keep those atmospheric emissions within the permissible levels as guided by ZEMA and other GRZ regulatory agencies. KMP has consistently operated its smelter in accordance with the applicable standards. To this end, KMP reports on emissions to ZEMA every month.

SARW Statement: *SARW suspects that Sulphur dioxide emissions from the KMP smelter are the reason for the low pH of rainwater to the west of the mining operation, for the leaf burn on plants, and also for the prevalent rust on metallic roofs, structures and poles.*

SARW is concerned that inhalation of nitrous oxide from the smelter could account for community claims of premature births, foetal deaths, and infant deaths.

SARW has regularly accused KMP of not sharing data on their operations or allowing SARW to collect data. In previous articles and in the Letter, SARW often follows this up with opportunistic and speculative claims which have no underlying scientific basis or evidence. This is another typical example of this trend. Before considering these opportunistic claims, KMP requests that SARW themselves provide scientific evidence of the low pH rainfall (and baseline data to compare it to), leaf burn and the prevalence of rust on these roofs, structures and poles. As always it would be important to adopt a scientific approach to gathering this data and making conclusions not relying on questionable anecdotal evidence. KMP has not received any complaints from the community or from the relevant authorities relating to premature births, foetal and infant deaths. Accordingly, KMP cannot even begin to respond to the SARW allegations because there is absolutely no scientific proof that a problem exists, or if the problem existed that there is a link to KMP. It is reckless for SARW to make assertions that have no basis in fact and in science.

SARW Statement: *Does KMP Mine release any emissions into the atmosphere, and if it does?*

- a) *What measures has the company employed to protect surrounding communities from these emissions?*
- b) *Does the company or government take any samples for testing, how often, and are the results shared with the community?*
- c) *Are the 2019 results of any tests publicly available?*

You are referred to previous explanations dealing with this issue.

Tailings Management

SARW Statement: *SARW is of the view that there might be misrepresentation of the distance between Kabwela community and the mine, which we estimate to be less than 1 km, compromising the safety of the community in any eventuality of pollution.*

We are unclear on the basis of this assertion. In any event, it is not possible to misrepresent distances between places. Distances are matters of fact and cannot be misrepresented.

SARW Statement: *Our visit to the tailing dams revealed that tailing dams are not well maintained. The poor management of the tailing dams could pose a problem to water quality in the area and may explain the continuous complaints from the communities. If not managed properly, dry tailings will expose nearby communities to fine particles of toxic dust.*

SARW is challenged to provide a basis for this assertion, KMP cannot be drawn to comment on an unsubstantiated and speculative assertion by an organisation that has no demonstrable knowledge in management of tailings and TSFs. If SARW has a scientific basis and evidence for the assertions, then these can be provided to KMP for comment.

SARW Statement: *Two samples were taken from the Kifubwa River and from FQM's water discharge drain, before the point at which it mixes with the waters of the Kifubwa River. The results of the tests show that the water from the drain is highly mineralised; it is thick with suspended matter and has a high concentration of iron.*

It's not possible for KMP to respond to claims where no data or evidence is provided to back them up. It is not clear where the samples were taken, how they were taken, where they were analysed or what the results were. It is also not clear what reference SARW is using when drawing conclusions on high mineralisation, what benchmark was used. SARW seems to miss the fact that the geological structure of the area that KMP operates in is highly mineralised and the presence of minerals is a natural occurrence. In any case, KMP has already adequately provided a response on these issues in the responses above.

SARW Statement: *This finding is in line with the auditor-general's overall finding on environmental management that "total Suspended Solids (TSS) and Total Dissolved Solids (TDS), and in cases sulphates, in the effluent were also found to be high in many mining areas. Dissolved solids are an indicator that the chemical content of the waste-water released to the environment is high." (OAG, 2014).*

SARW is of the opinion that the issues raised by communities in the first research report remain, including possible soil and water contamination from the mine dumps.

SARW is referred back to previous comments on the issues around environment and the baseless insinuations of potential pollution. It is not possible for KMP to respond to comments where no data or evidence is provided to back up SARW's statements. Without evidence, these claims remain speculative, and opportunistic.

SARW Statement: *The location of FQM well fields around its operations could be causing the shallow wells and boreholes in the community to dry up. Community complaints (especially west of the mine) could possibly be tailings related.*

SARW has not brought up any information whatsoever to demonstrate that KMP's well fields around its operations are causing shallow wells and boreholes in the community to dry up or that the wells and boreholes are drying up at all. Additionally, SARW has also failed to demonstrate what community complaints (especially west of the mine) are being referred to and/or that they are tailings related. SARW has instead made a baseless assertion without any factual or scientific backing. As a matter of fact, KMP continues to actively assist communities with provision of water through drilling boreholes and installing wells where appropriate.

SARW Statement: *It seems that KMP Mine has ignored both its own policy and the country's legislation. SARW considers FQM negligent for failing to monitor the impact of its activities or to follow up on people's complaints. The company has failed to demonstrate that it is not polluting water and that its activities are not affecting agricultural productivity of the surrounding land. The company does not provide in its sustainability reports meaningful information on the impact of its activities on biodiversity and the ecosystem.*

KMP strongly objects to these comments as they are untrue. SARW has failed to demonstrate that KMP is polluting the water and that its activities are affecting the productivity of the surrounding land. This renders these claims irresponsible, wildly speculative and opportunistic.

SARW Statement: *SARW was refused permission to take a sample from the tailing dams for testing. Testing could have helped to understand the mineralogy on these tailing dams and to alleviate fears from communities that these tailing dams might be a risk to their health.*

Please refer to previous responses on this issue.

Corporate Social Responsibility

SARW Statement: *The company is working with local communities in the development of infrastructure, education, health, and agriculture, through the Kansanshi Foundation. SARW found that a number of these initiatives are helpful but not sustainable in the long run. The Kansanshi Foundation has the appearance of a deceptive image-building tool and lacks any sustainability mechanism. If the company should close today, there is no guarantee that any initiative would continue thereafter.*

Who owns Kansanshi Foundation, and how are developmental decisions (CSR) made?

a) What role does the community play?

b) Who participates on behalf of the community?

c) What sustainability measures does the company put in place?

The Kansanshi Foundation is a voluntary, charitable initiative that functions as the CSR arm of KMP. The Foundation works closely with communities and community member in the various programs. Engagement and participation between the Foundation and the communities is at all levels from individual citizens, traditional leadership, elected officials, community groups and business leaders. The Foundation's offices are open to the public and the Foundation receives an average of 64 visitors per day all spread out among the various contact groups.

People from Solwezi, Mushindamo, Kalumbila and Chingola districts actively participate in engagement activities and community programs. Through conservation farming, village banking, education, health, education and infrastructure initiatives communities are able to participate in the design and implementation of programs. Through this participation, communities have been able to contribute to their success. With consultation from stakeholders all programs are designed by professional CSR and sustainability practitioners that the Foundation either employs or contracts. All programs are thoughtfully implemented by experts in collaboration with program participants.

[https://s24.q4cdn.com/821689673/files/doc_downloads/policies/SPER_L1_Cor20021_911010-\(1\).pdf](https://s24.q4cdn.com/821689673/files/doc_downloads/policies/SPER_L1_Cor20021_911010-(1).pdf)

Infrastructure

SARW Statement: *FQM claims to have built the Solwezi-Chingola road, but when SARW enquired, it was revealed that the road was constructed by the Zambian government through the Ministry of Housing and Infrastructure Development. Is this a misrepresentation?*

Apparently, FQM involvement in the construction of roads in the community of Solwezi was based on a swap or barter arrangement according to a memorandum of understanding (MOU) between the Solwezi Municipal Council and Kansanshi Mine through the FQM Roads Department. This was done in such a way that instead of paying rates to the council, Kansanshi worked on the roads so that the bills were written off. Is this a correct assessment? if so, this activity cannot be listed as CSR.

KMP has never claimed to have built the Solwezi-Chingola Road. Rather, KMP has been actively involved in the routine maintenance of the road. In this regard, KMP has spent immense resources (both in time and money terms) ensuring that there is routine maintenance of not just the Solwezi-Chingola road, but other roads within the area of KMP's operations as well. The MOU with the Solwezi Municipal Council gives the Council the opportunity to leverage the expertise and equipment of the Roads Department for municipal projects. This gives the Council the distinct advantage of being able to get projects done at a fraction of the market cost. Additionally, assistance in road maintenance is given to the Council on a continuous basis resulting in proper road maintenance at a very affordable price.

Education

KMP holistically disputes all statements made under this heading. Schooling in Zambia is divided into GRZ run public school and private party run private school. It is the preserve of parents to select which schools they intend to send their children to. KMP, and certainly the Foundation, has no say on which schools a parent will choose to

send their children to. The Foundation does not pay private school education of any kind for any individual.

Private schools, by their nature, have their own funding mechanisms. This has nothing to do with the Foundation. On the other hand, public schools are GRZ funded and the Foundation supports 28 public schools. The support is in terms of materials, support programs, school lunch programs, training and scholarships. This support is greater (both in terms of monetary value and results attained) than what any other private sector actor in Zambia provides.

Health

SARW Statement: *The extent of FQM's activities in the field of health is difficult to assess given that their value is neither quantified nor presented in terms of objectives to be attained as noted in terms of social impact. It seems that the company focuses mostly on public health awareness, which makes it difficult to quantify direct or indirect impact on targeted beneficiaries. This makes it look like a populist approach rather than an issue-driven intervention.*

During SARW's visit to KMP, SARW was provided with concrete and verifiable data on KMP's health efforts in the communities. It is unfortunate that SARW has chosen to neglect or ignore the data, presumably because it clearly shows the good works being undertaken by KMP.

As previously explained, KMP operates in a broad general community and cannot set its own health objectives for members of the public. Accordingly, KMP's objectives on health are embedded within the Ministry of Health's objectives. KMP follows the World Health Organisation's indicators, which are adopted (with modification) by the Ministry of Health. These become the indicators that KMP adopts and follows as part of the an "on the ground" response to those indicators. KMP's contribution as relates to HIV interventions, Malaria programs, support to under-5 immunity and Covid-19 interventions are a matter of public record. All these underscore the issue-driven approach that KMP takes in supporting the GRZ achieve its objectives on health within the communities that KMP operates in.

Agriculture

Once again, SARW has made bold, sweeping statements without any evidential backing whatsoever. Conservation farming is endorsed by both the Ministry of Agriculture for Zambia and the World Food Programme. As with all programs undertaken by the Foundation, participation is entirely voluntary, no farmer is forced to join the program. Our program capacity is 7,000 farmers and in 2019, every single farmer earned a profit on their harvest and this has transformed their livelihoods from subsistence to emerging commercial farmers. While a small percentage of farmers will sometimes opt to leave the program, their slots are always quickly filled up with other individuals who are eager to learn the conservation farming technique.

The Land Question

SARW Statement: *With authorisation from government to acquire land used by communities, but without consultation, FQM moved people from Kyafukuma off the land. This was farmland which people used to produce food, and also to produce crops for trading. One major gap discovered in the entire process of displacement, resettlement and compensation is a total disregard for the principle of free, prior and informed consent. Decisions are made by the company without any formal consultations or engagement with the community concerning the best way forward on the issue of land. It is clear that there has been collusion between the company and the government on the issue of land, which has disadvantaged the local people (especially in Kyafukuma village). What rationale did the company use to apply for the extension of the land into Mbonge Forest towards Kyafukuma?*

KMP, and the FQM Group in general, adhere to all government regulations on land acquisition and resettlement. This is in addition to adherence to the IFC Performance Standards on Land Acquisition and Resettlement. The GRZ will not approve any land acquisition without strict adherence to national laws, including regulations relating to consent. SARW is advised to get a better understanding of the processes and approvals involved in the delineation of land before making baseless allegations.

SARW Statement: *b) Is the company comfortable with the existing mistrust and conflict over land with the community?*

KMP and the FQM Group actively participate in an open dialogue process with community members and all regulatory and GRZ authorities. This open dialogue is a principle interwoven in the governance policies (<https://www.first-quantum.com/English/about-us/governance/governance-policies/default.aspx>). This feedback is always value. Community members are always free to utilise the grievance mechanisms put in place, both by KMP and by GRZ, to raise any concerns over KMP's activities especially in the area of land. As already demonstrated KMP has an open door policy with the foundation receiving over 23,000 visits from community members annually.

Appendix 5:

Right of reply letter to FQM



18 May 2020

Dear Mr Bruce Lewis,

This communication serves as an official request for a response to our research findings on your company's corporate governance and social responsibility. The details of some key findings are below. We seek your response to these findings and some questions regarding specific issues.

Please provide an official reply in two weeks, by 31 May 2020, as we plan to publish the report in June 2020. Your response will help adjust our findings where necessary.

Research Findings**On labour relations**

Six per cent of Kansanshi's directly employed staff at the time of data compilation was expatriate, all in management and supervisory positions.

Contract workers do not have access to company's health facilities. They are not reflected in the company's health and other statistics on the general health of the work force.

Philip KR Pascall is the global CEO of FQM. Until recently his relative Matt Pascall was the Director of Operations of FQM in Zambia. We consider this to have been a case of nepotism.

On gender and disability considerations

There is no woman in the top management of the company. This indicates that FQM does not have a progressive gender policy. During our conversation, the responses provided by the management demonstrated a lack of basic understanding of gender mainstreaming concepts as well as tools that can be utilised by the company for its human resources strategy.

We also found that there is absolutely no reference in company policy to disabled people.

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Right of reply letter to FQM



Can the company share segregated information on labour by race, gender, and positions? We could not find this on the company website.

On employees' housing

FQM prides itself for having built Kibitka Hills for its employees. The houses in Kibitka belong to those workers who qualify for loans to purchase them. Rather than being a corporate social responsibility initiative, this is a business opportunity for FQM. If Kibitka is for middle managers, where do the workers live? If they live in Solwezi, is this CSR?

Kibitka and the Golf Estate are enclaves where outsiders are fenced out. Security is tight, visits must be bureaucratically approved, and taking photos without permission is an offense. Is this FQM's approach to social cohesion for workers and their families?

On impacts of mining activities on the health of communities and the environment

The company claims "zero discharge" from its operation. How does FQM explain persistent and sustained complaints from the communities of dust, air and water pollution from the mine.

According to the FQM reports, the company extracts only gold and copper at its Kansanshi operation. However, the mineralogy of Kansanshi shows the existence of other substances (including brannerite, silica, arsenic, nitrates and nitrites) that might be extracted together with gold and copper. We are concerned that if these substances end up on the tailing dams, and if not properly treated, they can have serious negative impacts in the long run on the environment (land, water) and on the health of communities living near the mine. Can you confirm the existence of these substances? If the answer is yes, then:

- a) Why does the company not report on these substances, which are dangerous to the environment and hazardous to the health of communities?
- b) What measures does the company have in place to mitigate the impact of these substances when released into the environment?

FQM Kansanshi officers promised to avail the statistics generated from a household health survey that they conducted in Solwezi, but SARW had not received the information at the time of finalising this report. Is it possible to have access to this report?

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Right of reply letter to FQM

**On the concentrator**

The management informed us of frequent tests of water and soil. However, the results of these tests on the quality of soil and water are not publicly available and were not presented during the research visit; not even the list of parameters analysed were presented. It seems that either the checking is incomplete, or the results are deliberately hidden.

At the concentrator and the hydrometallurgical plant, wastewater from floatation and the hydrometallurgical process is pumped into the storage ponds or tailings storage facilities (TSF), where it can settle, permeate, and evaporate, leaving solid waste. The water balance in the floatation circuit and the hydrometallurgical plant is not provided. The same applies to the volume of freshwater that is fed into the plant or discharged into the TSF.

SARW requested permission to take water samples around the concentrator for testing. Why was permission denied?

SARW researchers believe that the drainage water from the site and the wastewater (mine drainage water, process water, maintenance water, cooling water and run-off water) which leach and flow into the surface water with suspended materials are a potential risk of pollution.

How safe is drainage water from the site and the wastewater from the concentrator?

The Smelter: potential impact on the environment and health

The company reported to the SARW research team that in order to improve ambient air quality measurement, in 2017 Kansanshi installed a solar-powered continuous ambient air quality monitoring station in the immediate community, downwind of the smelter. Our main contention is that the results collected are never shared with the community to allay their fears. SARW's visit to the site did not find the equipment in place, although there was an indication that it may have been there before.

Although the mine has made significant efforts to reduce the maximum emission from its smelter, there is still emission released into the atmosphere and the company ought to report on this. FQM employees confirmed that more work is needed to ensure the zero discharge.

SARW suspects that Sulphur dioxide emissions from the Kansanshi smelter are the reason for the low pH of rainwater to the west of the mining operation, for the leaf burn on plants, and also for the prevalent rust on metallic roofs, structures and poles. SARW

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Right of reply letter to FQM

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Right of reply letter to FQM



It seems that Kansanshi Mine has ignored both its own policy and the country's legislation. SARW considers FQM negligent for failing to monitor the impact of its activities or to follow up on people's complaints. The company has failed to demonstrate that it is not polluting water and that its activities are not affecting agricultural productivity of the surrounding land. The company does not provide in its sustainability reports meaningful information on the impact of its activities on biodiversity and the ecosystem.

SARW was refused permission to take a sample from the tailing dams for testing. Testing could have helped to understand the mineralogy on these tailing dams and to alleviate fears from communities that these tailing dams might be a risk to their health.

Kansanshi's corporate social responsibility

The company is working with local communities in the development of infrastructure, education, health, and agriculture, through the Kansanshi Foundation.

SARW found that a number of these initiatives are helpful but not sustainable in the long run. The Kansanshi Foundation has the appearance of a deceptive image-building tool and lacks any sustainability mechanism. If the company should close today, there is no guarantee that any initiative would continue thereafter.

Who owns Kansanshi Foundation, and how are developmental decisions (CSR) made?

- a) What role does the community play?
- b) Who participates on behalf of the community?
- c) What sustainability measures does the company put in place?

Infrastructure

FQM claims to have built the Solwezi-Chingola road, but when SARW enquired, it was revealed that the road was constructed by the Zambian government through the Ministry of Housing and Infrastructure Development. Is this a misrepresentation?

Apparently, FQM involvement in the construction of roads in the community of Solwezi was based on a swap or barter arrangement according to a memorandum of understanding (MOU) between the Solwezi Municipal Council and Kansanshi Mine through the FQM Roads Department. This was done in such a way that instead of paying rates to the council, Kansanshi worked on the roads so that the bills were written off. Is this a correct assessment? if so, this activity cannot be listed as CSR.

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Right of reply letter to FQM



How much did the company spend on the construction of the Chingola-Solwezi road, and in what capacity?

Education

The company intervention and support in education can be divided into three types: education for the poor, education for workers' children, and education for the rich. The company has segregated the schools by class, with the poorest receiving the lowest quality of education. This is an apartheid-style education system. This segregation diminishes the value of the company's intervention in education and exposes Kansanshi's poor understanding of CSR. This is the first time that SARW has encountered a divisive type of education being provided by a mining company as part of their CSR.

The company denies that the subsidy awarded to the elite schools is part of their CSR, although during the meeting held with SARW the subsidy was reported to be part of CSR. Are Kabitaka School and Trident College part of the Company's CSR, and if so, in what way?

School feeding is a very important initiative. However, we are concerned that the food is imported and genetically modified. Are locally produced and natural alternatives not available?

Health

The extent of FQM's activities in the field of health is difficult to assess given that their value is neither quantified nor presented in terms of objectives to be attained as noted in terms of social impact. It seems that the company focuses mostly on public health awareness, which makes it difficult to quantify direct or indirect impact on targeted beneficiaries. This makes it look like a populist approach rather than an issue-driven intervention. **Agriculture** Many of the farmers interviewed by SARW reported that they were dissatisfied with conservation farming methods and their impact, arguing that it is too labour-intensive and time-consuming. To them, it is a disempowering farming technique because they contend that it reduces the potential income that they could make. In Kyafukuma, many have abandoned it, preferring to go back to traditional farming methods. Also, FQM encourages them to grow maize instead of encouraging crops such as potatoes and beans which are compatible with the local soil and climate. This is not sustainable.

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Right of reply letter to FQM



The company's conservation farming approach is problematic in at least two ways. Firstly, it overlooks national laws and policies; secondly, it supports farming in dangerous and prohibited spaces such as under high-voltage power supply lines and in the river basin.

SARW suspects that the seeds used in this scheme are hybrid seeds obtained from the South African seed producer Pannar. Pannar is a major producer of genetically modified (GMO) maize and markets itself as a producer of glyphosate-tolerant GMO maize that kills birds, worms and weeds. Can you confirm this?

What methodology was used to arrive at the decision to provide agricultural support to the community in this particular way (conservation farming)?

The land question: displacement and compensation

With authorisation from government to acquire land used by communities, but without consultation, FQM moved people from Kyafukuma off the land. This was farmland which people used to produce food, and also to produce crops for trading.

One major gap discovered in the entire process of displacement, resettlement and compensation is a total disregard for the principle of free, prior and informed consent. Decisions are made by the company without any formal consultations or engagement with the community concerning the best way forward on the issue of land. It is clear that there has been collusion between the company and the government on the issue of land, which has disadvantaged the local people (especially in Kyafukuma village).

What rationale did the company use to apply for the extension of the land into Mbonge Forest towards Kyafukuma?

- a) Did the company undertake any baseline perception survey so as to understand the traditional value and beliefs of the local inhabitants?
- b) Is the company comfortable with the existing mistrust and conflict over land with the community?

In addition to a formal response to specific questions relating to the research findings, we would be grateful for your responses to the following questions regarding production and profits at your operations at Kansanshi:

1. Is there any relationship between your production levels, profits, and the taxes that FQM pays to the government of Zambia?

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2. What closure plan is in place for the development of surrounding communities after mining operations have ended?

Thanking you for your time.

Yours sincerely,

Claude Kabemba
Executive Director



SARW Objectives

Monitor corporate and state conduct in the extraction and beneficiation of natural resources in Southern Africa, and assess to what extent these activities uplift the economic conditions of the region's communities.

- Generate and consolidate research and advocacy on natural resource extraction in Southern Africa.
- Create informed awareness of the specific dynamics of natural resources in Southern Africa, building a distinctive understanding of the regional geo-political dynamics of resource economics.
- Provide a platform of action, coordination and organisation for communities, activists, researchers, policy-makers, corporations, regional and global governing bodies in the watching and strengthening of corporate and state accountability in extractive industries.
- Engage with and support government on building accountable and transparent management of extractive resources.
- Build capacity for communities, civil society, parliaments, and media to hold governments and corporations to account, and to participate in decisions about resource management.
- Advocate and promote human rights and environmental protection in resource extraction activities.
- Support efforts to legislate mandatory public disclosure of and access to financial, social, environmental and regulatory compliance information in the extractives industry.
- Promote extractive industries that create wealth for local communities.

Southern Africa Resource Watch

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