Zambia Chamber of Mines

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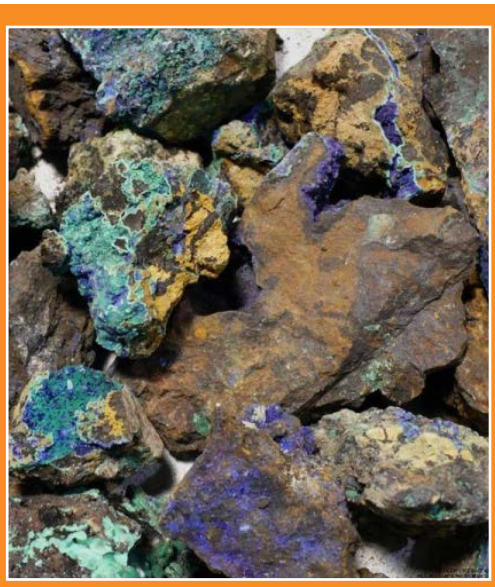
OPEN FOR BUSINESS

How far has Zambia come since 2022? Attendees at the 2023 Mining Indaba share their impressions.

IN THIS ISSUE...



President Hakainde Hichilema opens Mimbula Mine



Anglo goes exploring again in Zambia as the world faces a global copper supply crunch



Call to nationalise the mines, not a solution - "We must learn from the past, not try to recreate it"

Zambia Chamber of Mines,
74 Independence Ave.
P.O.Box 51393 RW,
Lusaka, Zambia.

Email: info@mines.org.zm
Tel: +260 211 258383/4
Fax: +260 211 258383/4

NVUMABARANDA
PUBLIC HEALTH SERVICES

Nvumabaranda General Dealers is a fast growing company with headquarters in Ndola and spanning across Zambia with branches in Kitwe, Solwezi, Kalumbila, Lusaka, Mazabuka and at Lubambe, and Lumwana.

The Company has established Strategic Partnerships countrywide through the Private Public Partnership (PPP) to ensure that the communities are free from communicable diseases such as HIV/AIDS, TB, STI's and Water Borne Diseases. The company as well, does recycling and waste management in line with Zambia Environmental Management Agency (ZEMA) and the local Municipal councils.

In the wake of our changing weather patterns due to climatic change, our organization consistently specialises in the following Public Health and Environmental Management Services, among others;

- **Supply and Installation of Rat Fortress Bait Stations;**
- **Supply and Application of Pesticides;**
- **Larviciding and Mosquito Control;**
- **Pest Control;**
- **Clinical Waste Management;**
- **Solid and Liquid Waste Management (Hazardous & Non Hazardous);**
- **Waste Recycling;**
- **Water and Sanitation;**
- **Supply and Maintenance of Mobile Toilets;**
- **Cleaning services;**
- **Other goods and services that we provide include;**
- **Transport and logistics;**
- **Provision of Accommodation in Kalumbila;**
- **Supply of Agricultural Products;**
- **Supply of auto spare parts:**

"Enhancing Health, safety and Environmental synergies to combat adverse effects of climate change" is a timely theme which is in line with the services that Nvumabaranda provides.

However, it also reminds all of us of the responsibility that we have towards protecting the environment in which we live in.

Nvumabaranda is focused on reducing risks placed on the environment by promoting services that reduce these environmental risks as well as helping to control other environmental threats. These are reduced by recycling waste generated from different sources, which are domestic, cultural, clinical and industry to cite a few.

With business partners and stakeholders willing to come on board and work with our company we strive to reduce environmental hazards that are affecting our environment, the current generation, and the generations to come.

With your support as Chamber of Mines, Nvumabaranda will unwaveringly give priority to environmental matters. This is our core business as well as our strategic focus.

The company has a dedicated marketing department with marketing professionals who are keen to providing the best possible services while keeping in mind the environmental and public health needs for a healthier climate. The Marketing department is streamlined to ensure that all areas of public health and environmental sustainability are covered with advertising information dissemination. This is evidenced by the company's participation at the world health environmental day which fell on 26th September, 2019. At this event, the company promoted recycled products such as color coded bin trolleys that promote sustainable public health practices.

Nvumabaranda also provides corporate social responsibilities by supporting schools with hand washing facilities and helping to keep the surrounding clean by teaching sustainable waste handling, waste segregation and disposal.

The fight to keep our environment clean and healthy needs an inclusive and practical approaches of which all organizations and households must ensure their activities do not cause harm to the environment.

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Editorial & Writers Team

Executive Editor - Talent Ngandwe

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Zambia Chamber of Mines

OPEN FOR BUSINESS

How far has Zambia come since 2022? Attendees at the 2023 Mining Indaba share their impressions

It's been eight months since Zambia used its moment in the limelight at the 2022 Investing in African Mining Indaba to deliver the message that President Hichilema's Administration would be prioritising policy stability and predictability in the mining sector, the country's biggest foreign exchange earner.

Now, with the 2023 Mining Indaba behind us, Mining For Zambia reflects on the impression of unity that Africa's second-largest copper producer created for the investors, political leaders, commodity traders, and companies across the mining value chain who gathered at last week's event. Ministries, parastatals, the Zambia Chamber of Mines, and local and foreign investors all came together to demonstrate that 'Team Zambia' is aligned in its goal to harness mining's potential to drive meaningful and lasting economic development. It was unlike anything seen in previous years, and delivered the unequivocal message that Zambia means business.

***

"This Indaba has been all about consolidating relationships and finding strategic new partnerships," said Ms. Dolika Banda, Board Chair at ZCCM-IH, Zambia's state-owned mining investment company. Since 2022, Zambia's mining industry has seen something akin to "a 180-degree turn," she said.

The spotlight was once again on Mopani Copper Mines – a flagship asset in Zambia's Copperbelt Province, where a lack of working capital has caused production to dry up almost entirely – but, unlike last year, the news circulating throughout Cape Town's convention centre was optimistic. World-class mining houses are lining up to invest in Mopani, said Zambia's Minister of Mines, Hon. Mr. Paul Kabuswe, who expects to secure a new investor by the end of March.

Ms Banda recalls: "When we were speaking last year, Mopani was on the verge of collapse. ZCCM-IH – together with Copperbelt Energy Corporation – had to take the lead in negotiating with different critical creditors to keep the lights on. We had no idea who was going to partner with us to help bring this mine to optimum production. Now we have a short list of potential strategic partners and have reached very high level discussions, especially this week."

Securing investment to bring Mopani to optimum production is just one recent and positive step towards ramping up copper production, one of the current Administration's most ambitious goals. In order to find the minerals of the future, investment in exploration is also essential, and progress is being made here too.

"Investment in exploration is also essential, and progress is being made here too."

"Last year, we were listening to everybody talk about electric vehicles, and sitting on all of this potential not knowing what to do," said Ms Banda. "Now, we've signed an agreement for ZCCM-IH and EMR Capital to partner with [mineral exploration company] KoBold

Metals, to introduce state-of-the-art exploration technology into Zambia. It will be the first time that we're seeing this happen in Africa. It's very exciting!"

Finding the minerals of the future

Zambia is home to several 'critical minerals' that are needed to build renewable energy technology for reducing that world's dependence on fossil fuels. (Think: electric vehicles, solar panels and li-ion batteries for energy storage.) These green technologies rely on copper, cobalt, manganese or lithium, each of which Zambia is endowed with and – as the world moves more decisively towards carbon neutrality and a green energy transition – demand for Zambia's minerals is growing.

"Renewable energy infrastructure is much more metal-intensive than fossil-fuel-based energy," said long-time Zambia watcher Mr Martin Lokanc, a Senior Mining Specialist in the World Bank's Energy and Extractives Global Practice, who was a speaker at the event. "The Energy Transition is a game changer for Zambia's mining industry."

"The Energy Transition is a game changer for Zambia's mining industry."

Zambia's role in the green transition was highlighted, too, by virtue of the fact that KoBold Metals – Zambia's latest major mining investor, whose slogan is 'Finding the minerals of the future with AI' – stationed itself within the Zambia pavilion, beside its new partner, ZCCM-IH. The US-headquartered company is on a mission to reduce the world's dependence on fossil fuels, and is leveraging big data and artificial intelligence – in combination with a top-notch team of data scientists, geologists, entrepreneurs, investors, and a dash of chutzpah – to locate undiscovered mineral reserves, and secure investment in the next generation of mines faster and more efficiently than is typical in this high-risk sector.

Photographers gathered as KoBold's President Josh Goldman and ZCCM-IH's Ms Banda shook hands, with the high-tech explorer attracting its fair share of foot traffic during the four-day event. But KoBold's presence within the Zambia pavilion went beyond optics and photo opps. The company recently announced a $150 million investment to continue exploration at Mingomba in Zambia's North-Western Province, where it has discovered substantial copper-cobalt reserves.

Singing from the same hymn sheet

Also exhibiting at the Zambia pavilion – alongside ZCCM-IH and a range of private sector companies – was the Ministry of Mines. It was another clear display of public-private sector cooperation, evident throughout the conference, with both Ministers of Finance and Mines being interviewed by international media alongside the Chamber of Mines to promote 'Team Zambia'.



Mr. Josh Goldman (KoBold Metals President) and Ms. Dolika Banda (ZCCM-IH Board Chair)

"We want to demonstrate that we're taking a multifaceted approach to our aspirations for economic growth through the mining sector," explained Ministry of Mines' Principal Exploration Officer, Mr Chaanza Chifwepa. "I think one of the advantages is that we haven't just come here as the Ministry – we have other institutions on board. Our Zambia pavilion includes Copperbelt Energy Corporation, we have Zanaco Bank showcasing their investment and capital facilities, and we have ZCCM-IH with us, which is the government's mining and exploration investment vehicle. The Zambia Development Agency is represented too."

"It was another clear display of public-private sector cooperation, evident throughout the conference, with both Ministers of Finance and Mines being interviewed by international media alongside the Chamber of Mines to promote 'Team Zambia'."

Zambia was certainly doing something right, and the pavilion buzzed with visitors. Journalists queued up to interview Ms Banda. Investors in one of the country's newest gold mines and offtakers of artisanally-mined lithium on the other side of the country handed out business cards. There was simply no comparison with the 2020 event when the Ministry of Mines opted to exhibit alone.

Mr. Misheck Mkokweza, Acting Managing Director of Ecobank Zambia Ltd, a pan-African banking company, agreed that Zambia had created a more memorable impression at the 2023 Indaba. "Our President made a keynote speech last year, and from then I think the interest in the country has increased. There's more transparency and the macros are better now. About 70% or 80% of foreign currency earnings come from mining in Zambia, and Ecobank provides

financing solutions – mostly to suppliers to the mines. At this Indaba we've met government officials, we've met investors in the country, mining companies, those who want to invest... I've had so many meetings, I haven't had time to sit down!"



Zambia pavilion at the 2020 Investing in African Mining Indaba

Opportunities across the mining value chain

Companies at every stage of the mining value chain were also represented at the four-day event and, naturally, a mining jurisdiction with an expanding sector is where manufacturers and suppliers of mining equipment and services gravitate.

Mr Jones Zulu, who oversees 'Multi-Facility Economic Zones' – or MFEZs – at the Zambia Development Agency also received a surprising number of enquiries. "This year has been so much better than last year for the Zambia Development Agency," said Mr Zulu. "We've seen a lot of interest from people that are wanting to invest in Zambia or looking for partners to work with – in both mining and mining-related opportunities."

The government encourages manufacturing companies to set up in special multi-facility economic zones in exchange for certain incentives, he explained. "Several mining companies have been enquiring about setting up [new] special economic zones. Other people want to set up inside an existing zone, so we've had interest from both angles."

The strength of these Multi-Facility Economic Zones lies partly in the fact that they incentivise 'value addition', encouraging companies to add value to a product before exporting or consuming it locally.

"The massive [climate change-driven] growth in demand for metals is an opportunity for many African countries to seize income opportunities from the booming sector, and drive local and regional development," said Mr Lokanc. "More importantly, this seems to be the moment for countries to extend mineral value chains towards the downstream, adding value to their products and diversifying their economies."

Open for business: beyond the hype

Minister of Finance Hon. Dr Musokotwane personally took the opportunity to encourage investors to come to the country, during his ministerial address.

"It does not require much intelligence to tell you that if your main item of production in the economy [copper] is going down but your population is going up, it means poverty," said Dr Musokotwane, not seeing the need to mince his words. "This is why the President declared that Zambia is back in business when he came to this forum last year."

Zambia has to be open to investment from anywhere in the world, he emphasised. "We also had to examine ourselves: Why is it that we haven't attracted sufficient investment into the country? And one key point to come out was that our mining taxation regime was out of line with the rest of the world. So, for the last two years, we've made necessary adjustments to correct this. We're also changing the regulatory framework to make doing business easy in Zambia."

"Why did we come to Indaba 2023?" he posited. "Our agenda is to continue with the theme of opening up for business. That's not something that you do in one year – it's a continuous process."

He hastened to add that, as part of Government's move to make doing business easier, visa requirements for several countries have been done away with. "Once again, Zambia is open for business! People are coming and we look forward to seeing you!"

Article by Mining for Zambia



PRESIDENT HICHILEMA OPENS MIMBULA MINE

President HAKAINDE HICHILEMA has commissioned Mimbula Copper Mine in Chingola with a call to residents to safeguard the mine.

President HICHILEMA says the mine which has created 900 jobs is key to revenue generation, job creation, and stabilizing the kwacha.

The President also urged workers to resort to dialogue when faced with grievances instead of taking to the streets.

Speaking during the Launch this afternoon, President HICHILEMA praised management of Mimbula which is owned by British Company Moxico Investments to ensure they look after workers.

He also encouraged foreign investors to partner with locals and work with local suppliers.

The President further noted that Mimbula's planned expansion plan to increase production from the current 10 thousand tonnes to 56 thousand tonnes is key for national development.

He said the company's expansion plan of extending to 56 thousand metric tonnes production from the current 10 thousand is key for development of surrounding communities.

President HICHILEMA said his job is to improve the country through hard work and investments such as Mimbula which has created Nine hundred jobs.

And, Mines Minister PAUL KABUSWE said Zambians are now able to experience peace and see development under the UPND.

He said Zambia's economy has for the past 10 years been faced with challenges including the mining sector which are now being resolved.

Mr. KABUSWE urged all mining investors to be serious with their investments because Government is in a hurry to develop the country.

Meanwhile, British High Commissioner to Zambia NICHOLAS WOOLLEY expressed delight with the strides made by the mine so far.

Mr. WOOLLEY said Moxico will invest a further One hundred million dollars bringing the firm's cumulative investment to 180 million dollars.

He said Zambia has attracted significant investments from Britain with over 1 billion pounds by that country's companies in green investments.

The British Envoy noted that the progress made at Mimbula is owing to close ties between Government and the British government.

And, Chingola Member of Parliament CHIPOKA MULENGA said the mine has come with the speed of light implementing various projects and creating decent jobs beyond Chingola.

He however asked Mimbula Minerals to give priority to Chingola residents when employing before looking elsewhere.

Mr. MULENGA said prioritizing locals for skills will promote ownership.

MEANWHILE, Mine Workers Union of Zambia -MUZ- President, JOSEPH CHEWE said Mimbula has given workers in Chingola an opportunity to work.

Mr. CHEWE said the workers are geared to put in their best but called for the engagement of all workers' decent jobs and salaries that will push them to work hard and look after their families.

And Mimbula Chief Executive Officer, ALLAN DAVIES said the company has already engaged about 9 hundred employees within 14 months of operations.

He thanked Government for its continued support to the mine saying the firm now plans expansion in its operations at a new site.

By Brian Mwale - ZNBC News



ZAMBIA: SKILLED MINERS CRITICAL TO MEETING PRODUCTION TARGETS

Skilled miners are critical to Zambia meeting the annual copper production of three million tonnes in the next 10 years.

The country needs to have a workforce with the right skills so that productivity is enhanced.

Training of mine operators is one way of growing the sector as it increases efficiency in the mine and minimise risks especially those that come about due to inadequate skills to handle the equipment.

A combination of safety practices and skills is highly demanded for improved protection of mining infrastructure, equipment, and workers.

It is for this reason that the Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) has signed an K8.2 million mine operator and mine rescue training contract with Bell Equipment Zambia and Mopani Copper Mines (MCM).

The contract is meant to meet national mining sector productivity targets of copper from 800,000 tonnes of copper to three million tonnes.

The funds for the training is from the Skills Development Fund (SDF), which is a financing vehicle that enhances efficiency, productivity, and economic transformation through demand-driven and tailor-made skills training for different economic sectors.

The training will be conducted at Mopani Central Training Centre (MCTC).

TEVETA director general Cleophas Takaiza says the four-year training which will see 240 apprentices being trained per year is focused towards supporting sustainable growth of the mining sector.

Mr. Takaiza says mining is a risky business, so occupational health and safety in the industry play an important role.

"We have to make sure that we increase efficiency in the mine and process but also most importantly minimise downtimes especially those that come about due to lack of adequate skills to service the equipment," he says.

He is hopeful of having more such trainings so that many mining companies are covered so as to standardise the skill levels in the sector.

Speaking during the signing of the contract, Mr Takaiza stated that some skills are scarce especially that the mining sector in the country is growing.

There is also a lot of demand for critical skills such as those repairing big machines, occupational safety and health, which are important to drive productivity in the sector.

Mr. Takaiza adds that the current state of 'poaching' of staff from one company to the other demonstrates that the country does not have sufficient human resources to meet the needs of all companies in the mining sector.

"Our vision is that while we start placing apprentices on this programme, we look at possibilities of having

similar programmes coming so that we continue pumping more skills into the sector until we reach a point where more mining companies have at least sufficient numbers of those critical skills that they require," he says.

The contract will give an opportunity to the youths that want to be trained hence the need for them to take the opportunity seriously.

Zambia Chamber of Mines deputy chief executive officer Talent Ng'andwe says the contract signed will see an increase in the number of rescue divers in the mining industry which has been an area of concern from the mining houses and the community around them.

Mr Ng'andwe highlights that the chamber presented the training programme for mine rescue training to TEVETA in 2017 and was approved in 2018.

"This was done in order to standardise the mine rescue training in Zambia," he says.

A total of 541 brigade men were trained between 2021 and 2022.

Zambia Mine Rescue president Abraham Kachonka thinks that the training will help the organisation achieve the desired international standards.

Mr. Kachonka explains that every year as rescue managers, they meet to formulate the training calendar and that each mine submits the number of people to train.

"The mining industry is growing and at the same time we anticipate more members who are going to join the Zambia Chamber of Mines as more mines will be opened where we need to train more members so that we can render rescue services to all the mines in Zambia," he says.

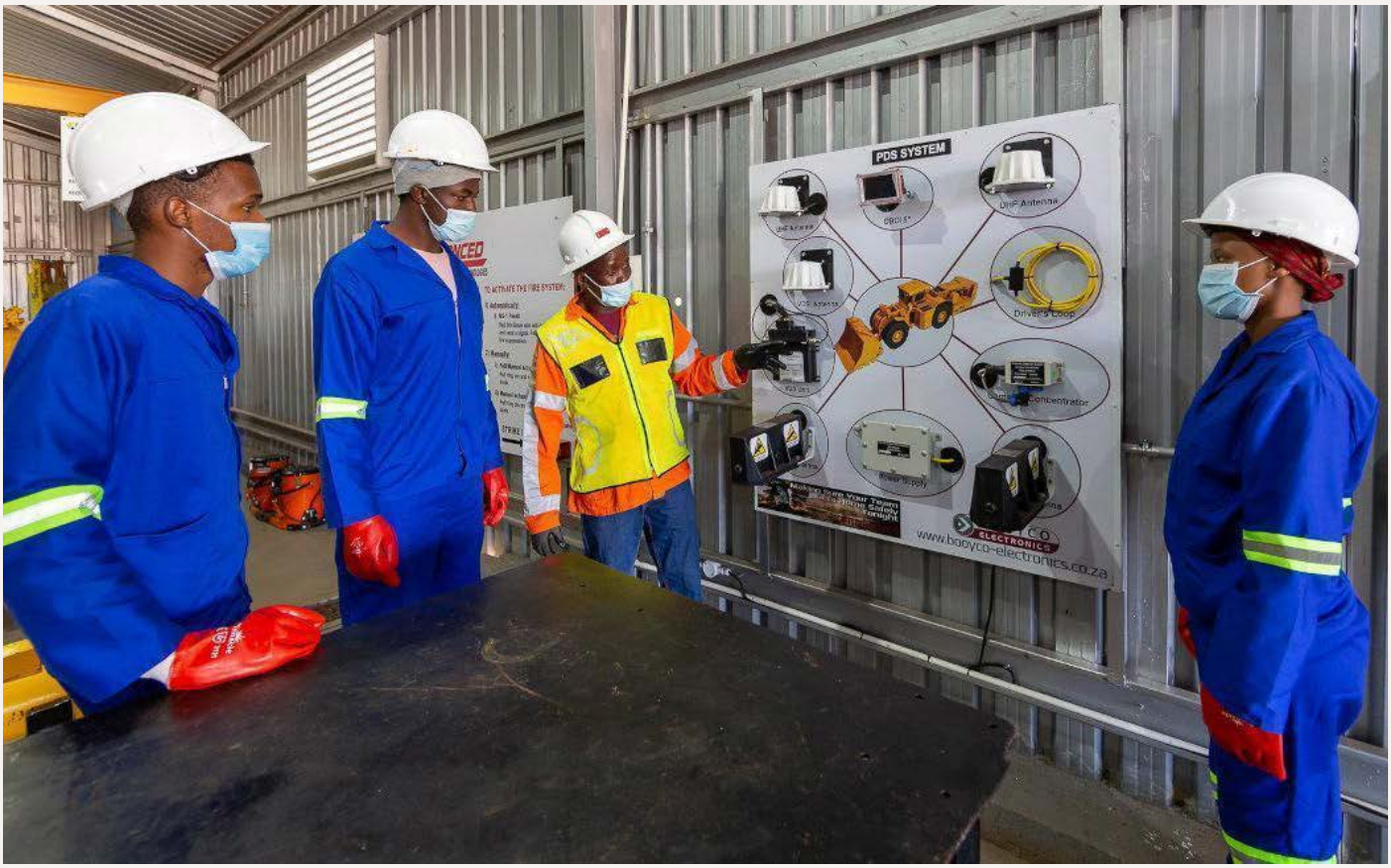
Bell Equipment Zambia managing director Samson Chingozho says the training of heavy equipment repair and qualified technicians would improve productivity in the mines by reducing machinery downtime.

The programme will also enable the employability of the youths and fills the skills gap in the mines worldwide as there is pronounced skills flight to other countries from Zambia.

"This programme comes at a time when the demand from our mining industry is outstripping our resources to train. So, we are excited and appreciative of the opportunity to partner with TEVETA and believe that together we will make a real difference in the lives of young Zambians, our communities, and our mining industry," he adds.

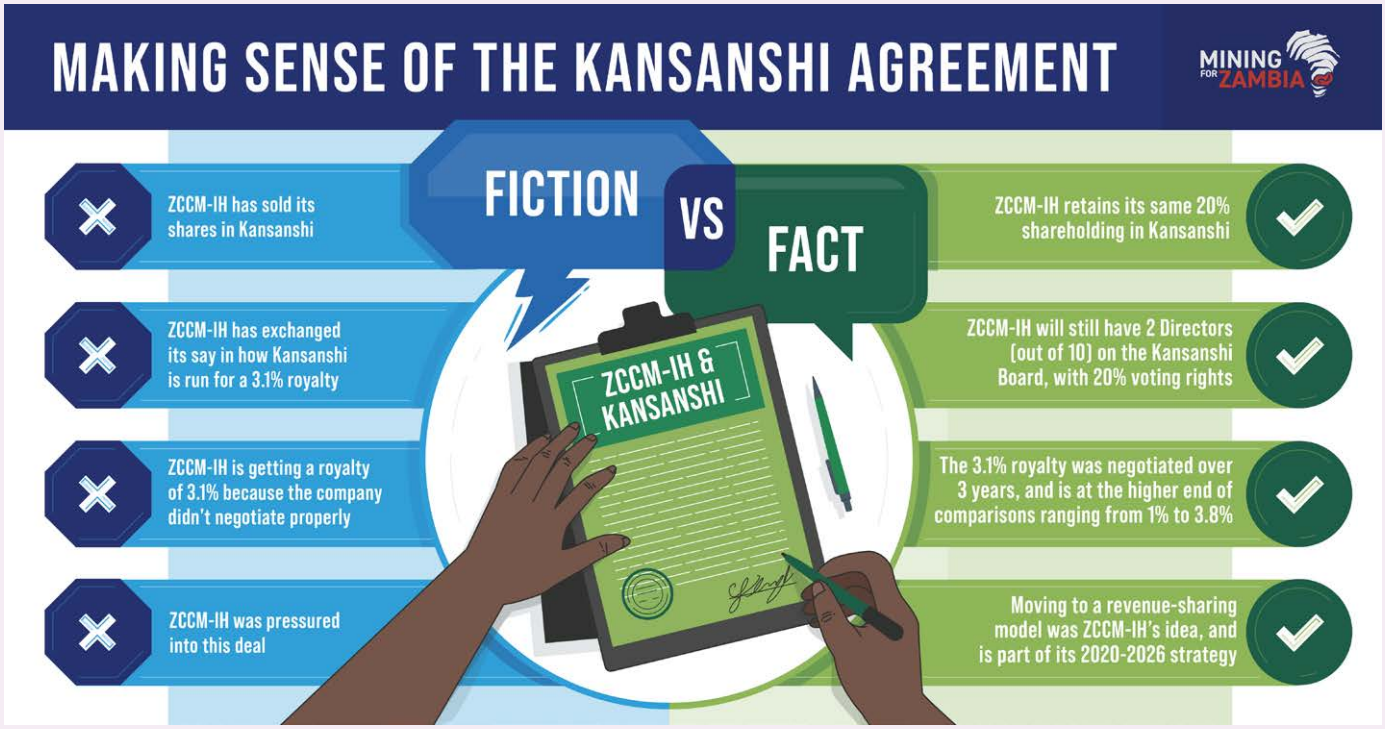
The mining industry presents unique challenges to safety such as accidents that have huge cost implications on the mine and the lives of people.

The availability of skilled persons in mine rescue enhances safety in the mines.



MAKING SENSE OF THE KANSANSHI AGREEMENT

Since ZCCM-IH announced its decision to take a share of Kansanshi's quarterly revenues in lieu of dividend payments, there's been no shortage of uncertainty about what this really means. Confusing media reports haven't helped, and often the truth gets buried along the way. Here, Mining For Zambia cuts through the noise to lay out the facts that you ought to know about this agreement.



MAKING SENSE OF THE KANSANSHI AGREEMENT
MINING FOR ZAMBIA
FICTION
VS
FACT
ZCCM-IH has sold its shares in Kansanshi
ZCCM-IH has exchanged its say in how Kansanshi is run for a 3.1% royalty
ZCCM-IH is getting a royalty of 3.1% because the company didn't negotiate properly
ZCCM-IH was pressured into this deal
ZCCM-IH & KANSANSHI
ZCCM-IH retains its same 20% shareholding in Kansanshi
ZCCM-IH will still have 2 Directors (out of 10) on the Kansanshi Board, with 20% voting rights
The 3.1% royalty was negotiated over 3 years, and is at the higher end of comparisons ranging from 1% to 3.8%
Moving to a revenue-sharing model was ZCCM-IH's idea, and is part of its 2020-2026 strategy

By Mining for Zambia


Zambia Chamber of Mines

CALL TO NATIONALISE THE MINES, NOT A SOLUTION. WE MUST LEARN FROM THE PAST, NOT TRY TO RECREATE IT!

Reading Azwell Banda's recent article in The Mast[1], I was reminded of the timeless words of the American journalist H.L. Mencken, that "for every complex problem there is an answer that is clear, simple and wrong".

According to Mr Banda, all Zambia's problems will be resolved if we just re-nationalise the mines. He appeal to the emotions of Zambians, those who are suffering and are angry at the current state of the nation. All over the world, we see the aggrieved masses sold the same simple diagnoses and solutions. Trump's "Make America great again!" and the "Take back control!" slogan of the United Kingdom's Brexit campaign appealed to the same sense of aggrievement and offered the same simplistic answers.

I do not doubt Mr Banda's integrity, or his desire for Zambia's upliftment. He and I both – and you, the reader – wish to see "a qualitatively different, prosperous and peaceful future for Zambia". However, I do doubt his capacity for objective analysis and his ability to produce fresh ideas.

His diagnosis is tainted by his deep ideological left-wing bias, in which the root of all ill lies in private ownership and elimination of the same delivers a utopia . His contaminated analysis therefore not only hinders our proper understanding of events, but it pushes us in the direction of his personal choosing rather than what is right for Zambia.

His call for nationalisation has been tried, tested and discarded many times over. Even though many older Zambians will remember the days of ZCCM with fondness, the experiment ended ultimately in failure. The facts speak for themselves: our national copper production peaked shortly before nationalisation at close to 750 000 tonnes and collapsed to 250 000 tonnes by the end of the nationalised period. It wasn't until the mid-2010s – more than forty years later – that production recovered to its former levels[2]. Mining employment also followed the same trajectory, falling to around 22 000 by the 1990s, and rebounding to more than 74 000 by 2012.[3]

My point is not that Zambians cannot run mines. They have in the past and they can and they are. My point is rather that mines should not be run on a political basis. It simply does not work. For Mr Banda to suggest that "this time around" the outcome would somehow be different is pure wishful thinking. Over the last few years, we have seen what political intervention in mining produces, and the fallout from the expropriation-in-all-but-name of KCM should be enough to close this chapter for good. It has been a painful exercise in value destruction. Despite valiant efforts at the operational level, the lack of sustaining capital coming into the business means that KCM's operations are currently idling with no copper being produced, and at a time of high copper prices when we should be reaping the benefits. The investment needed to now de-water and reboot KCM's underground operations has deterred all potential investors, as has

1 Halt the dangerous madness in the entire mining sector, nationalise it and free Zambia from debt, underdevelopment and poverty, The Mast, 29 March 2023)

2 ICMM 2014 report, Zambia copper production 1963-2011 on p40

3 Labour Force Survey, 2012 (table 10), quoted in ICMM report on p50

the legal mess over ownership. Whatever your views of Vedanta, one cannot condone the colossal waste of the last few years, and the damage done to Zambia's reputation on the international stage.

We must learn from the mistakes of the past, not repeat them. Nationalisation failed in that it bankrupted our country, but neither was the privatisation process without blemish. We must be alive to the perils of corrupt and self-interested government, and we should not take the bona fides of every corporate at face value.

The answer in both respects is to insist upon transparency and good governance, from both investors and our government. Today, there is more publicly available information than ever before to evaluate such all-important questions as, how much tax is paid and by whom. Although, we have far less information on how those taxes are spent.

The Zambia Extractive Industries Transparency Initiative (ZEITI)[4], our local chapter of the international governance standard, is an organisation of which we can justly be proud. Its purpose is to document and verify all taxes paid by mining companies and received by the Government, and any discrepancies, all for public view. It publishes annual reports that are independently audited.

Mining companies that are listed in Canada also have additional reporting requirements. They are subject to the Extractive Sector Transparency Measures Act (ESTMA), which requires them to document taxes paid in all jurisdictions that they operate in.

First Quantum Minerals Ltd. goes further than the requirements of ESTMA in publishing its annual Tax Transparency and Contributions to Government Report[5]. Its 2021 contributions were published last year and show a sum of more than US$ 1.25 billion – approximately ZMW 26.6 billion – paid over to Zambia in public contributions, through taxes and royalties, infrastructure spending and social investments. If you read this report, together with FQM's reported financial statements and production data, you have a full window into the finances and operations of the company. Ultimately, this is the level of transparency that we would like to aim for across our membership, accepting of course that some mining companies have far greater internal resources than others.

The Chamber of Mines wholeheartedly supports the Government's mining vision of increasing copper production to 3 million tonnes within the next decade. Mining production increases and GDP growth have been strongly correlated for the last two decades, going to prove the adage that when mining does well, so does Zambia. So, if we can achieve this ambitious target, mining expansion would be the flywheel for broader economic growth across the economy. This is the "qualitatively different, prosperous and peaceful future for Zambia" that I believe we can achieve.

However, to add more than two million tonnes to annual production would require in the region of US$ 30 billion of investment, in exploration (for minerals to 'germinate') and mine development (to bear fruit). Infrastructure and additional power supply would add to this immense price tag. We do not have the domestic savings or the capacity for domestic revenue generation to meet even a fraction of this amount. Make no mistake, we need foreign direct investment, and plenty of it.

After years of silence from the investor community, the first signs of renewal are now showing. The long-awaited expansion of Kansanshi mine was announced last year, even though it will take some years to complete. More immediately, the Enterprise nickel mine near Kalumbila in North-Western Province will start producing later this year; it promises to be a global top 10 nickel mine when fully operational. We have also seen recent major investments in the Copperbelt too, through Kobold's $100 million investment to develop a major resource at Mingomba, and a further $100 million from Moxico Resources to expand the Mimbula copper project, outside Chingola. Musamu Resources, founded by mining industry stalwart Dr Sixtus Mulenga, has recently opened the Luongo manganese mine, near Chipili. This is the first ever large-scale Zambian owned and operated open pit mine. Furthermore, the intention is to refine the manganese locally, as part of the bi-lateral agreement with DRC to build a joint EV (electric vehicle) battery plant. Lastly, ZCCM-IH, which is a partner in Kobold's Mingomba venture, also looks set to become an active local investor in the Zambian mining value chain. Thanks to a combination of dividend income from Kansanshi, and its new royalty income, it has amassed a significant war chest and we look forward to seeing how this investment capital will be deployed.

To nurture these first green shoots of renewal we need a policy, governance and regulatory environment that is conducive to responsible investors, whilst also ensuring that the people of Zambia experience the fruits of this investment. We do not need outdated and destructive ideologies fostered by people who can't change their minds and won't change the subject.

Every writer writes to inform the reader. This is the due respect every journalist, every columnist owes the reader. To misinform the reader who might be generally ignorant of such important national discussions is not only wrong, but plainly immoral.

By Dr. Godwin M. Beene

President - Zambia Chamber of Mines

4 https://zambiaeiti.org/

5 https://www.first-quantum.com/English/sustainability/esg-analyst-centre/tax-transparency/default.aspx



MOPANI
A ZCCM-IH Subsidiary







MOPANI COPPER MINES PLC HAS SUNK THREE NEW EFFICIENT WORLD-CLASS SHAFTS, BUILT A NEW CONCENTRATOR AND UPGRADED THE MUFULIRA SMELTER AND REFINERY TO:

- Access ore reserves at deeper depth & improved grades
- Increase hoist production capacity
- Improve productivity efficiencies
- Improve concentrate grades and recoveries
- Improve concentrator capacity to support new shafts production
- Increase smelting capacity
- Improve atmospheric environment in the area previously affected by So2 emissions for over 70 years
- Improve quality of finished copper cathodes and operational efficiency via ISA Refinery Technology
- Safeguard various business interests linked to mining in Kitwe, Mufulira and the nation at large
- Sustain Mopani's contribution to national development

MCM EXPANSION PROJECTS: INVESTING IN THE FUTURE OF COPPER MINING IN ZAMBIA

SAFEMINING



CONGRATULATIONS

On behalf of the Mining Industry in Zambia, the Zambia Chamber of Mines extend its sincere congratulations to Ms, Mfikeyi Makayi a distinguished Zambian Mining Engineer on her appointment as Chief Executive Officer of KoBold Metals Zambia, a major mineral exploration company.

KoBold Metals is currently conducting advanced exploration works at its Mingomba copper project in the Copperbelt region of Zambia. It is a joint venture with Australian private equity firm EMR Capital and Zambian state backed miner ZCCM-Investments Holdings (ZCCM-IH).

The industry is confident and trusts that Ms Makayi's, rich experience and exemplary leadership will greatly benefit the mining industry and the country, as we strive to boost copper production.

The Zambia Chamber of Mines assures KoBold Metals of support and cooperation.

As a representative of major registered mining and allied companies operating in Zambia, the Chamber of Mines aims to safeguard the mining industry to continue being a source of investment, employment, economic growth and sustainable mining.

Dr. Godwin M. Beene
President
Zambia Chamber of Mines



KOBOLD'S AI-ENHANCED MINERAL EXPLORATION METHODS ARE BEING PUT TO WORK AT ZAMBIA'S NEWEST MAJOR MINERAL DISCOVERY

Since minerals exploration and development company KoBold Metals announced it was investing $150 million in developing a copper deposit in Zambia's Copperbelt Province, the media has been abuzz about the role that "artificial intelligence" and "machine learning" played in discovering what is estimated to be a reserve containing 247 million tonnes of copper with an average grade of 3.6%.

Mining For Zambia sat down with the company's co-founder and President, Josh Goldman, to get an update on the project and find out how this mystical technology works.

***

KoBold's innovative approach to mineral exploration recently led to the discovery of a significant copper deposit at Mingomba in Copperbelt Province. In December 2022, you announced an investment of $150 million to advance the project in partnership with ZCCM-IH and EMR Capital. What's been happening on the ground at Mingomba since then?

We're on-site and drilling! If you go to Mingomba today, you'll see two drill rigs spinning – and three more are on the way. You'll see a camp under construction for another drilling contractor and a lot of drill pads [a base on which a drill rig sits]. From an aerial view, you'd be able to see several roads that have been rehabilitated and, on the KCM tailings storage facility, you'd see a causeway that we built out of crushed rock so we can access pads that we've built on the pile. We've also got new drill rigs arriving over the next few weeks, so we are rapidly ramping up!

We're building the team as well, and hiring a whole range of people – geologists and technicians, and people in finance and human resources and community engagement – with the majority of them on-site at Mingomba Mining, the joint venture between KoBold, ZCCM-IH, and EMR Capital [Lubambe Copper Mine's majority shareholder]. We're also building a Zambian company which will be led by a Zambian CEO.

Mingomba is KoBold's most significant project, and the furthest along. Still, our aspirations in Zambia are to make many discoveries and contribute multiple new mines to grow copper production in the country.

One of KoBold's goals is to boost discovery rates 20-fold, compared with traditional field exploration efforts. How is that possible?

Deep collaboration between our geoscientists and data scientists is key to our approach. We make predictions about mineral resources using various types of data, from public and historical data to data collected during AI-guided field programs. We use techniques to look for signals that heuristic [hands-on] or conventional industry methods can't detect. If we detect a geological anomaly that's of interest using this array of data, we then come up with a probability distribution for how far beneath the ground it is.

We're always trying to quantify our uncertainty. We ask ourselves: What do we know, how do we know

it, how precisely do we know it, and how can we test for it? These methods are used to guide each of our exploration decisions.

Geoscience meets data science

Is this approach different from what conventional explorers do?

Yes. Common practice in the industry is to come up with one's best estimate of the rocks below the surface and their properties. However quantifying one's uncertainty about what's underground is not common practice. But by quantifying our uncertainty, we can design exploration programs that most effectively reduce it. This means we can reach a higher confidence level faster and cheaper – enabling us to define resources more quickly and at lower cost.

"By quantifying our uncertainty, we can design exploration programs that most effectively reduce it (....) enabling us to define resources more quickly and at lower cost."

Does this approach bypass the need for 'traditional' mineral exploration methods?

No, we undertake the same field activities as traditional explorers. This isn't a case of simply shoving a bunch of data into a machine and getting a treasure map out! There are many decisions that we have to make throughout an exploration program, such as where in the copper belt to focus, how to select targets for further ground investigation, and how to design surveys. Our objective is to improve each of these decisions by generating rich data quickly. Improvements at every stage of decision-making compound to produce better exploration outcomes in the aggregate.



KoBold Metals co-founder and President Josh Goldman with ZCCM-IH Board Chair Ms Dolika Banda at the 2023 Mining Indaba

What are KoBold's next steps?

Our objective is to get Mingomba to the point where it's ready to become a mine as rapidly as possible. From a technical standpoint, the most important activity we're focused on is resource definition. This involves defining the resource to a much higher level so we understand how much copper there is and how it is distributed in space. The average grade of the resource is 3.6%, but portions of the deposit are greater than 5%. So there are opportunities to improve on that significantly: in grade, tonnage, and confidence levels.

Other components of our work at the moment are metallurgical and geotechnical. We need to ask questions like: 'If we can get the rock out of the ground, how much copper and cobalt can we recover, and what kind of process is required?' These questions help us think about the mine's design and, ultimately, build a business case for its construction, which will likely be a $1 billion-plus capital investment.

"We need to ask questions [that] help us think about the mine's design and, ultimately, build a business case for its construction, which will likely be a $1 billion-plus capital investment."

Tell us a bit about what defining a resource entails at KoBold, and how your methods differ from what a standard explorer would do.

Essentially, we make predictions about the nature of the resource in the places we haven't drilled yet – that could be one metre, ten metres, or 800 metres away from the nearest drill hole. Then we target drill holes in places with the highest uncertainty to most rapidly improve our understanding of what lies below the surface.

Instead of drilling where we already have high confidence in the resource definition, we strategically collect data from areas that will provide the most information, to help us decide where the next hole should go – and the one after that, and so on. It's a sequential planning exercise. We're applying techniques rooted in Decision Science – widely used in fields like aviation navigation – to guide our decision-making. We need to consider: How can we get the most information out of this dollar and this time so that we get the best possible understanding of the resource to support the development of a mine in the shortest time frame?

Suppose you design a mine plan for one chunk of resource. In that case, you may discover that the mineralisation is actually much better two kilometres away, and your mine plan is no good anymore. You will have designed a very suboptimal mine because your shaft is in the wrong place. Or, if you're wrong about the boundaries of the resource, you might miss out on something really valuable. False negatives can be very expensive. That's one of the reasons that an



Aerial view of Mingomba in Zambia's Copperbelt Province

aggressive exploration program here is so important: we need to know where the deposit's centre of mass is.

Approximately how long do you anticipate the resource definition phase will take?

The ore body at Mingomba is more than 1,200 metres below the surface in most locations, so these are difficult, time-consuming holes to construct. Historically, less than half of the holes drilled on this property succeeded in reaching that target depth. When things go well, it takes three months to construct one hole, and, as you can imagine, it requires dozens of holes to define a resource. So, one hole – essentially one new data point – takes three months of work and, in round numbers, a million dollars.

Our goal is to create the most valuable, sustainable resource possible so we can set up a long-lived and successful mining operation. So we need to do really high-quality resource definition. But that doesn't take weeks or months. We're talking about a few years, which is actually very fast when it comes to mineral exploration.

Also, a great resource alone is insufficient to support the development of a mine. One has to study the system's hydrology – particularly with a very deep resource like this, where there's a lot of water. We'll be conducting that work in parallel with the resource definition.

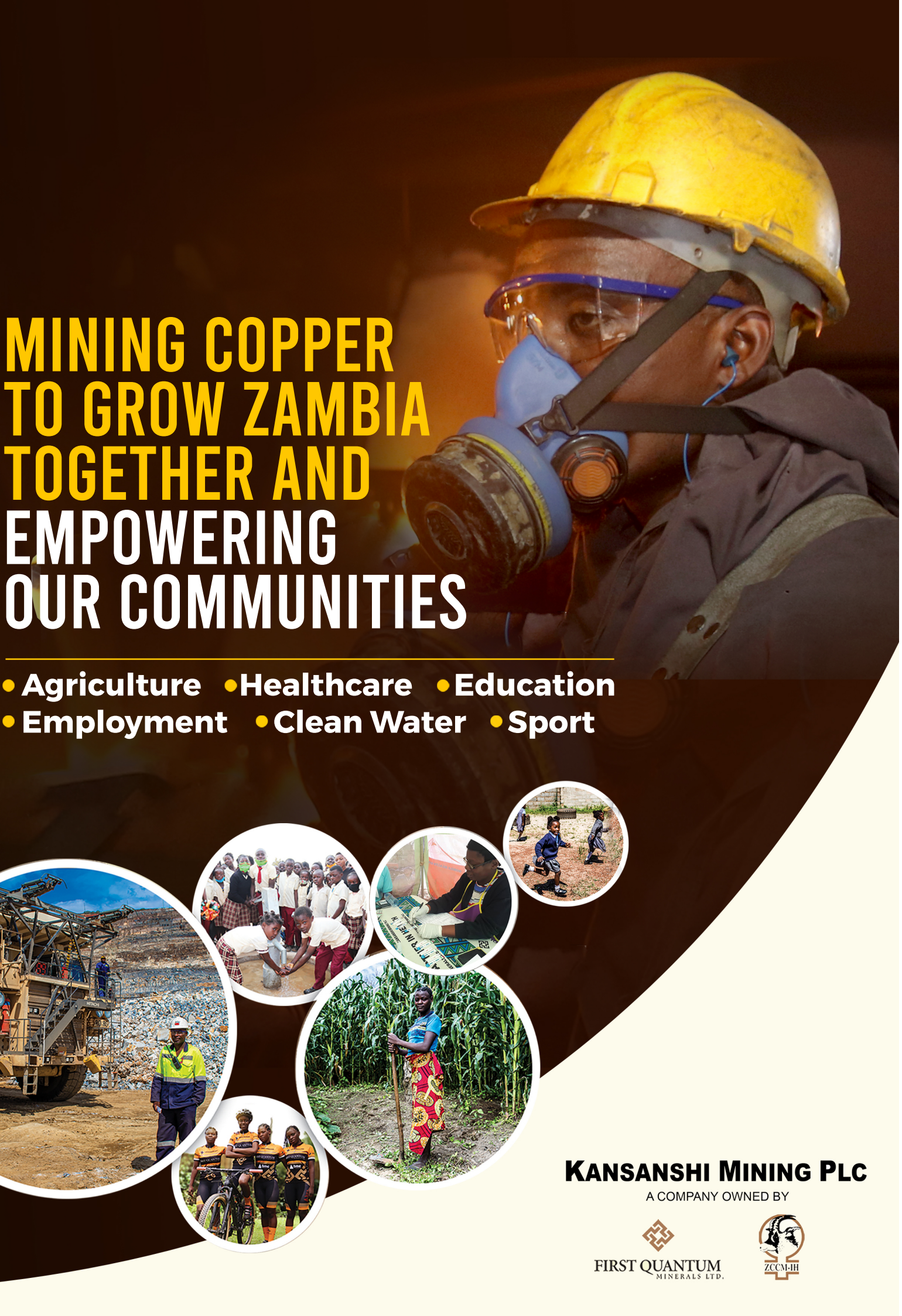
How confident are you that Mingomba is an 'economically viable reserve' with the quantity and quality of minerals that will justify the investment necessary to develop it into a mine?

Our confidence that Mingomba is an economically viable project is reflected in our enthusiasm to make a substantial investment [$150 million].

It sounds like KoBold's approach to mineral exploration is truly cutting-edge, which puts the company ahead of the curve.

I should point out that a continuous process of considered experimentation is key, and it takes resources to embark on a project like this. Small companies may not have the resources, and larger companies may not see these levels of innovation emerging from already well-established ways of working. We're very fortunate to have amazing sponsors who have enabled us to build our team and this set of capabilities. They are aligned with our vision to reduce the world's dependence on fossil fuels and, like us, are committed for the long term. Because we're confident in our approach, we can press the gas pedal.

Article by Mining for Zambia



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ZCCM-IH



Zambia Chamber of Mines

SIXTUS MULENGA - THIS MINING STALWART'S LONG JOURNEY TO DISCOVER NEW MINERALS IS AN INSPIRATION TO EVERY ZAMBIAN

How many people would leave a prestigious job, their home, their family, and the lifestyle that they'd worked incredibly hard to build for a tent in rural Zambia, in pursuit of a dream? That's what Dr. Sixtus Mulenga did.

His dream was to make a new mineral discovery in an unexplored part of Zambia.

Fourteen years later, having parted with most of his hard-earned savings, he's still living in a tent in rural Luapula. But, having discovered substantial manganese deposits, Dr. Mulenga is now the owner of Zambia's first wholly and privately-owned large-scale, indigenous mining company: Musamu Resources Limited. This is his story.

***

Dr. Mulenga has been a trailblazer since the outset of his mining career. He was among the very first Zambians to qualify as a geologist back in the 1970s, when he attended North London Polytechnic, now University of North London. Next came a Master's and then a PhD at Imperial College London's Royal School of Mines. He returned to Zambia and became the first Zambian mining geologist to be employed at Bancroft – today's Konkola Copper Mine (KCM) – which was then operated by Anglo American.

Dr. Mulenga rose to Chief Geologist at the mine, which had been renamed as KCM, under the ownership of Zambia Consolidated Copper Mines Limited (ZCCM Ltd). "I had to work hard to move up the ladder. It took focus, dedication and consistent performance," he said. In time, he became Consulting Hydro Geologist for the ZCCM Ltd group. "So, for five years – from 1995 until 2000 – I was the 'top guy'." During this same period, he also served as a member of the ZCCM Ltd Technical Team on the privatisation of ZCCM Ltd.

After privatisation – and with Anglo American running KCM – he spent a few years as Vice President of the company's Safety, Health, Environment and Quality (SHEQ) portfolio. "That was one of the highlights of my career," says Dr. Mulenga. "I learned a lot about sustainable economic development during that time, which really strengthened my zeal for what was a relatively young concept in the mining world."

It was during this chapter of his career that Dr. Mulenga began providing mining consultancy and technical advisory services to the World Bank. "The experience exposed me to the global mining industry, and I started to see sustainable development in action. That's when I knew I needed to go out into the world and put these concepts into practice for myself one day."

"I started to see sustainable development in action. That's when I knew I needed to go out into the world and put these concepts into practice for myself one day."

The next frontier

It was January 2009 when Dr. Mulenga began the long and very risky process of starting his own self-funded mineral exploration project. He pored over geological maps and scoured geophysical data for clues, focusing on parts of the country which showed high potential for mineralisation but had not been explored. He settled on an area in the north of the country, in Luapula Province – home to several large geological basins, where part of the Central African Mineral Belt rolls over Zambia's borders – and decided on a 1000-square-kilometre swathe of land within what's called the Lufilian Arc, in Luapula's Chipili District. "I had a sense this spot was rich in minerals, but I went with an open mind. I wasn't looking for manganese in particular – I was looking for everything."

Dr. Mulenga took the coordinates of the area, applied for a mining exploration licence, left his home in Kalulushi, and drove north.

"I went with an open mind. I wasn't looking for manganese in particular – I was looking for everything."

"I come from Northern Province, but we speak broadly the same language as people in Luapula Province. I went to the Chief and introduced myself. I told her: 'I've got this licence that covers your area, and I'd like to set up a camp.' I needed three things: water, a road and, if possible, a cellular network. And I needed them to be as close to the centre of my licence as possible."

This was, in some sense, a 'make or break' moment. Buy-in from traditional leaders is key for an exploration plan to progress from vision to reality.

"'Welcome, my son,' she said to me. 'I'm so happy that you've come here because if you find minerals, my area will be developed.' She gave me her guide and asked him to take me to a nearby village, Chulu Luongu." Together with a small team, Dr. Mulenga began building a camp about two kilometres from that same village – and that's where he's been living ever since.

"That first night in the camp was special. I slept under a big tree. I felt I was free with nature."



Aerial view of Mingomba in Zambia's Copperbelt Province

Solving the puzzle

Dr. Mulenga had one exploration geologist working with him. "After that, I started building a team, and I paid them from my own pocket. I had about seven technicians and I recruited around 100 of the local villagers. There was a lot of physical work to do: cutting clearings in the bush to collect soil samples, for example."

For the next three years, Dr. Mulenga busily went about soil sampling, mapping, and surveying the geophysics of the area, using whatever ground level and airborne data he could find. "Mineral exploration is like a puzzle," he said. "You have an idea in your mind and when you're doing your mapping, looking at the geological structures, and doing your sampling and your chemistry, you're looking for a pattern. We call that an 'anomaly'." Soon enough, he had found one.

One day in July 2012, as he approached his sixtieth



Clearing the land with the local community in Chipili District, Luapula Province, Zambia.

birthday, Dr. Mulenga experienced one of the most memorable moments in his long and illustrious mining career. Suddenly, at the bottom of a trench – about two meters deep – he saw it: manganese. What does manganese ore look like? "Black," he smiled.

"That was a really, really exciting day!" said Dr. Mulenga. "The next big moment came a couple of years later when I drilled the first hole," he explained, eyes bright. "It was just after midnight. At that time, we were drilling into the night because, once you start, you don't want to stop. I was too eager! I had to see what was there... And out of that hole came manganese."

He phoned his wife in the small hours and told her what he'd found. "Oh, thank God!" she replied, more than three years after her husband had embarked on what was ultimately an extremely costly endeavour, with no guarantee of finding any minerals at all.

"I couldn't sleep, he said. "My brain was so happy! For 24 hours I was wide awake."

Walking your talk

What came next was "drilling, drilling, and more drilling," explained Dr. Mulenga, as the team explored the size and shape of the deposit. By 2017, Dr. Mulenga had hired an environmental consultant to do an environmental impact assessment. Again, an abundance of patience was required, a trait without which Dr. Mulenga could never have achieved what he has.



Dr. Sixtus Mulenga and his daughter with a diamond-drilled core in 2015

"The environmental impact assessment took three years because it was a greenfield project, so I repeated the assessment for each season. That was another very interesting period because it gave me direct communication with the community. It gave me an opportunity to explain what the project was about, what impact it will have on them, and how it will create employment."

From day one, he'd encouraged the villagers working for him to look to the future. He presented the two possible outcomes of his exploration project: "Either I am successful and I find minerals, or I fail. I told them they should plan for the latter. If I don't find anything, for me, it's just my ego and the money I've spent. But they'd have nothing to show for the time they'd spent working for me." Every one of his long-standing employees took his advice: his technicians built new houses in their hometowns, and around ten of the villagers who'd stayed on built modern, metal-roofed houses in Chulu Luongo village.

From sustainable foundations to growth

With the environmental impact studies approved, in March 2020 Dr. Mulenga applied for a mining licence. "The President of Zambia, Mr. Hakainde Hichilema, officially opened the mine on 3 November 2022," he said, smiling widely. "And, all these years, I've been funding it – and I'm still funding it. But now I require investment partners to take this project to the next level."

"All these years, I've been funding the project – and I'm still funding it. But now I require investment partners to take this project to the next level."

The resource in Chipili District has approximately 40 million tonnes of manganese, which will be further quantified during the resource definition phase. "In the location where I've started the mine, there is a certified reserve of one million tonnes," said Dr. Mulenga. "The whole idea of building this project is to have a fully-integrated mining business, where we will do mining and value addition. We plan to build our own processing plant and beneficiate the manganese to the stage where we can feed it into the electric car battery-manufacturing value chain."

Manganese is a critical metal used in two of the world's most prominent types of rechargeable battery, and as the world moves more decisively towards a green energy transition, demand for manganese is rising each year. But Dr. Mulenga has his sights set far higher than battery metals alone. Manganese is also an essential alloy that helps to convert iron into steel. The potential for Zambia to tap into opportunities for value addition are far-reaching, and extend into several sectors. But above all, perhaps, Dr. Mulenga wants to lay the groundwork for economic diversification around his new mine. One source of inspiration has been Kalumbila – a mining town that was designed to outlive the mine for which it was established. Dr. Mulenga's mind is brimming with ideas for creating an ecosystem in which mining operations catalyse development in sectors like agro-processing and manufacturing that can sustain themselves beyond the life of mine.

"Looking to the future is an integral part of what I'm doing, and it's what I believe in. I've always felt that mining can do more."

***

Dr. Mulenga dreams big. After all, he founded Zambia's very first wholly and privately-owned large-scale, indigenous mining company. The name he chose is 'Musamu Resources'.

"'Musamu' means 'medicine' and it also means 'tree'," explained Dr. Mulenga. "But from a philosophical point of view, a musamu signifies growth and development, which speaks to the Green Revolution we're embarking on. You'll notice there are two trees in my logo: there's a bigger tree and a smaller tree. The bigger tree signifies the world. And me? I'm a small tree that's part of a bigger forest – the forest of global development."

Article by Mining for Zambia



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ANGLO GOES EXPLORING AGAIN IN ZAMBIA AS THE WORLD FACES A GLOBAL COPPER SUPPLY CRUNCH

ANGLO American is returning to full-scale exploration for copper in Zambia after signing the provisional JV agreement it struck with London-listed junior Arc Minerals in May last year.

In terms of the deal, Anglo will own up to 70% of the JV company in return for the investment of up to $88.5m including up to $14.5m in cash. Arc – through its subsidiary, Unico – will retain a meaningful 30% stake in any exploration discovery made by the joint venture.

According to John Meyer – analyst at London broking and research firm SP Angel – "the historic agreement marks the return and restoration of relations between Anglo-American and the Zambian government. The settlement is a meaningful event for both Zambia and Anglo with both parties working to ensure mutual respect and co-operation."

Meyer added, "Anglo appear to have a definite plan for development of copper to the west of Zambia inspired by Dave Wood, the discovery manager for Anglo in Zambia.

"The sheer scale of the investment, as indicated in the JV agreement, should enable Anglo to fully explore Arc's large and highly prospective package of licences in the west of Zambia.

These are in the Domes region of the Zambian Copperbelt which supports the giant Kamoa, Sentinel, Lumwana and Kolwezi copper mines. Arc claims two significant early discoveries at Cheyeza East and Muswema North.

"We understand all parties want to finalise the transaction as soon as possible and for drilling to begin at the start of the imminent dry season."

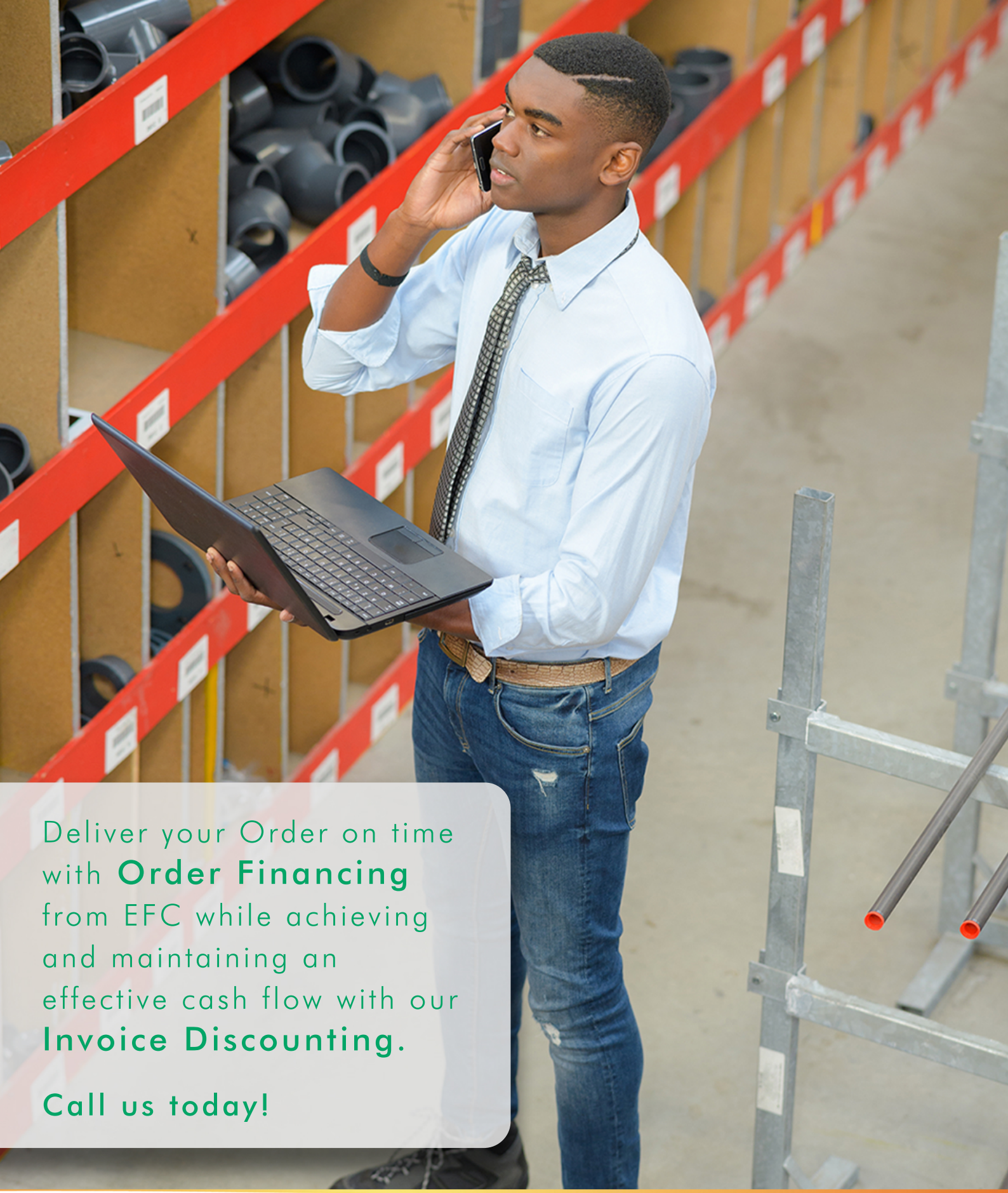
Anglo's move is taking place against widespread predictions of a looming supply crunch in copper which is a metal essential to the energy transition with huge amounts needed for the construction of electric vehicles and in renewable energy equipment such as wind turbines.

Meyer commented, "We can see other majors following Anglo-American into Zambia and other highly prospective regions as they ramp up exploration to discover the next generation of copper and nickel mines. While automotive manufacturers struggle with efforts to thrift valuable commodities the world still looks to be a very long way short of the metal tonnages required to meet the demands of the EV revolution."

Arc executive chairman Nick von Schrinding said the deal was a major turning point for Arc Minerals and commented, "Upon closing this will see the recommencing of the exploration campaign by the Joint Venture under the management of Anglo American whom we are delighted to be partners with going forward."

This will be Anglo-American's third venture into the Zambian copper industry. The group's original mines were nationalised in the 1960s after the country became independent under former President Kenneth Kaunda.

Anglo returned in the 1990s after Kaunda left office to help revitalise the country's collapsed copper sector under a new government more interested in foreign investment. The group then pulled out again when subsequent governments proved to be more hard-line in attitude to the country's mining business.



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CHAMBER OF MINES SHE COMMITTEE VISITS CNMC LUANSHYA COPPER MINE

The Zambia Chamber of Mines, Safety, Health and Environment Committee (SHE) Committee visited CNMC Luanshya Copper Mine in their first quarterly meeting held on 17th February, 2023.

Welcoming the SHE Committee, CNMC Luanshya Copper Mine Deputy CEO Technical, Mr. Robert Kamanga, said the Committee was welcome to CNMC Luanshya and gave a brief background about mine operations. He said the mine begun operations in the early 20th century and that Baluba underground mine was in the process of being decommissioned and that the Environmental Impact Assessment (EIA) for the closure was underway. He disclosed that CNMC Luanshya Copper Mine was mainly treating oxide ore from its open pits. He added that Shaft 28, which was flooded, is known to have ore reserves, and a feasibility study was underway to look at the the possibility of reopening the Shaft to continue mining Sulphide Ore.

CNMC Luanshya Copper Mine, Manager Safety and Environment, Mr. Stanley Chama reinstated that the decommissioning process was underway and the CNMC Luansya was working with all stake holders to ensure the process was well carried out according to the law. He invited the Committee to the Muliashi Leach Plant tour.



SHE Committee members posing for a photo with CNMC officials

Mr. Yoram Chulu, Mines Safety Department (MSD) Principal Inspector of Machinery, thanked the Zambia Chamber of Mines for being consistent in Health, Safety and Environmental programmes. He said these programmes were recognised by the MSD under the Ministry of Mines and Minerals Development. He commended gatherings such as the SHE committee meetings, inspections and the HSE Conference, as platforms that provided synergies and alignment with the mining industry. He assured the Committee that the strategic approach for the regulatory body (MSD) was that of being more engaging with the industry as opposed to reinforcing regulation in order to effectively achieve the main objective of having every employee return home safely and in good health.

Dr. Mieke Mulenga, Chairperson of the Chamber of Mines of Zambia Council for First Aid (CMZCFA) assured the Committee that the Occupational Health and Safety Institute (OHSI) was available to help industry with all their occupational health matters and share relevant knowledge and information aimed at improving the wellbeing of employees in the mining industry.

The Committee, led by the Chairperson, Mr. Dean Mwelwa and Secretary Mr. Teza Kasengele, was later taken to Muliashi Leach Plant for a tour to appreciate the investment made by CNMC at Luanshya Copper Mines.

At Muliashi Leach Plant, the SHE Committee members were received by the Plant Manager - Mr. Richard Mumba, Plant Metallurgist – Mr. Christopher Mwansa and Coordinator Surface Plant - Mr. Joseph Mulenga. The Committee was inducted on possible hazards associated with the operation such as acid, falling objects, dust and mobile equipment. The team was then led to the heap leach process.

Mr. Mumba explained that the process has two routes namely Heap Leach and Agitation Leach. The Oxide ore is crushed and screened. The oversize is heaped and leached with sulphuric acid (Heap Leach), while the undersize is milled, dewatered and leached in the agitated leach tanks (Agitation Leach). The product from the agitation leach goes through the subsequent unit operations in order to separate solids from the leach resultant solution (Copper Sulphate Solution). These stages are Counter-Current Decantation (CCDs) and Pin Bed Clarifiers (PBCs). The Copper Sulphate Solution from both the Heap Leach and Agitation Leach is enriched through the Solvent Extraction Process to produce concentrated Copper Sulphate Solution and Raffinate. The Raffinate is used for Heap Leaching while the Concentrated Copper Sulphate Solution is further subjected to electrowinning to produce Copper Cathodes (Copper Metal).

Muliashi Leach Plant was commissioned in 2012 and produces up to 118 tonnes of Copper Cathodes per day. It has 299 full time employees.

Article by Yewa Kumwenda and Teza Kasengele



Muliashi Leach Plant tour in pictures

7TH NATIONAL CONFERENCE ON OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT

CALL FOR PAPERS

The **Zambia Chamber of Mines** will be holding its 7th OHSE National Conference from **26th – 27th October, 2023** at Protea by Marriot Hotel, **NDOLA**.

CONFERENCE THEME:

The theme for the Conference is: **"INNOVATIONS TO CHALLENGES IN OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT (HSE) TO ACHIEVE ZERO HARM IN MINING."**

SCOPE AND TOPICS

This high-level Conference will provide an ideal forum, for sharing, ideas, experiences and best practices for experts in mining Occupational Health Safety and Environment, from academia, research institutions, regulatory bodies and industry.

Occupational Health, Safety and Environment issues in the mining industry have continued to be a subject of debate and scholarly enquiry globally.

Interested authors are hereby invited to submit articles based on original research work, projects, surveys and industrial experiences relevant to **Occupational Health, Safety and Environment**, in mining and related industries in line with the theme.

Paper Submission

Abstracts of papers should be submitted to the Organising Committee by email on the address given below by **Wednesday 31st August, 2023** for consideration. Submissions must be original and should not have been published previously or be under consideration for publication while being evaluated for the Conference.

Successful Authors will be requested to submit full papers not exceeding 15 pages in length, inclusive of illustrations. The papers must be in MSWord, produced on A4 paper size in 12 Point Times New Roman font, single line spacing, and in a single column format. The margins should be 35mm on the left and 25mm on the other three sides of the page. The text must be fully justified and paragraphs must be separated by single line spaces.

Submitted papers must contain the following sections as a minimum requirement:

I. Title
II. Name of author(s) and affiliation with the e-mail address for lead or corresponding author
III. Abstract not exceeding **300** words
IV. About five (5) **keywords** (which must also appear in the abstract)
V. Main body of the paper
VI. Conclusions
VII. References (Harvard style)

REVIEW PROCESS AND PUBLICATION

All papers submitted will be reviewed with respect to overall quality of content, presentation, potential for future impact of the presentation on the practice of OHSE in the mining industry relevance to the target audience. All accepted papers will be published in the Conference Proceedings Report.

CONTACTS:

	Stream/thematic area	Addressee
1	Occupational Health	Dr. Mieke Mulenga: mieke.mulenga76@gmail.com
2	Safety	Roy Mwamba: Roy.Mwamba@mopani.com.zm
3	Environment	Victor Sichamba: Victor.Sichamba@mopani.com.zm

Kindly copy:

Yewa Kumwenda. Email: kumwenday@mines.org.zm; Phone: +260 211 258383)

Dean Mwelwa. Email: dmwelwa2007@yahoo.com; Phone: +260 966-942830)





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