

# MINING & TRADE *Review*

ISSUE NO. 92

OCTOBER 2020

Mining & Business News that Matters

Order Price: - MK2000

Proudly Sponsored by



Advertisers



# Gigantic discovery

## • Exploration unveils huge rutile deposit in Lilongwe, Kasiya

By Wahard Betha

**A** SX-listed Sovereign Metals says recent drill results from the Kasiya deposit in Lilongwe have tripled the rutile-mineralized footprint from the previous ~22 square kilometres to ~66 square kilometres.

Sovereign's MD Julian Stephens says: "These new drill results show a step-change increase in the potential size of Kasiya and highlight that it could well develop into one of the largest rutile deposits in the world."

"In conjunction with the recent exceptional metallurgical outcomes, these results confirm our view that Kasiya is quickly becoming a globally significant rutile deposit."

The new drill results include extensional and infill drilling comprising a further 82 hand-auger holes with 50 for extensional and 32 for infill, for a total of 819m.

The drilling has substantially extended the strike length of the rutile-mineralized envelope to over 16km with widths of up to 6km.

The total number of holes reported from Kasiya to date is 233 with 2,298m drilled.

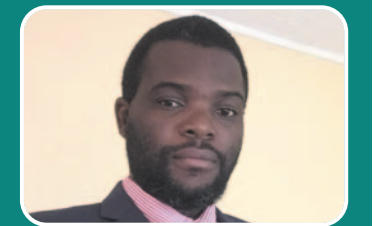
The results indicate that the mineralized envelope at Kasiya continues to remain open along strike to the North and South, and laterally at its widest zone to the East.

*cont. on page 3*



Stephens (Right) and Geologist Samson Mhango

## INSIDE



**Nyasa Mining Cooperative to host ASM Conference**  
Page 4



**Kayelekera community hails miner for construction of health centre**  
Page 6



**Building community trust in the mining sector**  
page 10



# Equipment and Parts Suppliers Ltd

Industrial Mining, Construction Equipment & Spare Parts Distributors  
Also Specialized in Irrigation and Industrial Diesel Engines

**OFFICIAL DISTRIBUTORS**










P. O. BOX 553, LILONGWE, MALAWI. TEL: +265 1 753 806 / +265 1 753 867  
E-MAIL: tcbsales@globemax4g.com / trucks@globemw.net WEBSITE: www.trucksandcar.com



# MALAWI'S BUILDING STRENGTH

**Together** we can  
build a stronger nation



**SHAYONA CEMENT CORPORATION**

## FOR ENQUIRIES

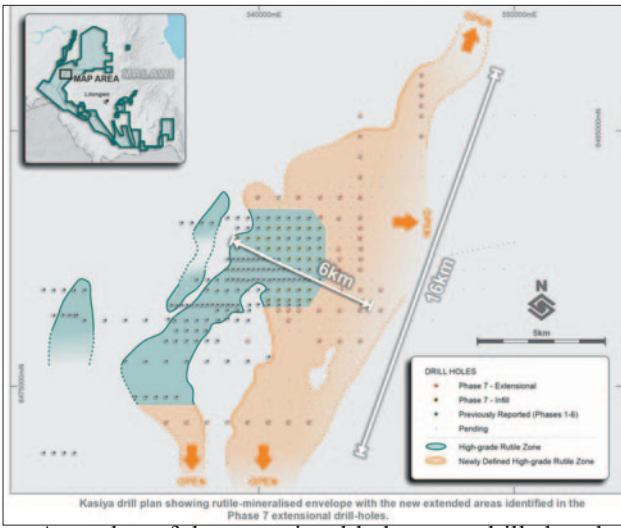
- 🏠 P.O. Box 679, Lilongwe, Malawi
- +265 (0) 990 599 555
- ☎ +265 (0) 885 588 555
- +265 (0) 888 842 084
- ✉ sales@shayonacement.com



**Support proudly Malawian.**  
[www.shayonacement.com](http://www.shayonacement.com)



...from front page



A number of the extensional holes were drilled to the East, North and South-East of the core mineralized zone at a nominal of 400m by 400m drill spacing and fall within the targeted area for the upcoming Mineral Resource Estimate (MRE).

Stephens says the extensional holes have provided a significant expansion to the widest, central core zone of high-grade rutile mineralization where a significant number of high-grade rutile drill intercepts from surface were encountered in these holes.

He says: "The infill drilling results continue to show high rutile grades from surface, as expected, with the infill drill holes limited to the central portion of the main resource target area."



Sovereign's field team hand-auger drilling for rutile.

"The results continue to show high-grade rutile from surface to as deep as 16m."

"Significant rutile enrichment is generally present in the 0-8m from surface range."

Stephens explains that the results continue to validate the Company's geological exploration model and provide a step-change in the potential size of Kasiya.

"It is now clear that Sovereign's geological team has the ability to predict, with some accuracy, new areas of rutile mineralisation prior to any on-ground soil sampling or drilling. If the Company's geological exploration model continues to hold true regionally, the rutile potential across Sovereign's exploration licences in Malawi is immense."

Works still in progress on the Company's large exploration licence package include: reporting of one further batch of mainly infill drill holes over the coming weeks ahead of the maiden Mineral Resource Estimate for Kasiya targeted for fourth quarter (Q4 2020); step-out and extensional drilling at Kasiya and the broader surrounding area to identify extensions and discover new regional mineralized zones; push-tube drilling at Kasiya to twin hand-auger holes and to obtain cored samples for specific gravity (SG) determination and initial geotechnical and mining studies.

Mining and tailings studies continue and will feed into a future Scoping Study targeted for first half of 2021.

The Company has already provided rutile samples to major industry end-users for assessment, the Company will incorporate any feedback into marketing studies in support of the upcoming Scoping Study; and investigation of the potential for a coarse-flake graphite by-product from Kasiya.

Sovereign's Central Malawi Rutile Project features two confirmed, discrete rutile mineralisation styles hosted saprolite (soft, friable weathered material) and sand, and both styles are amenable to conventional processing.

In addition to the flagship Kasiya, the Company has identified numerous other saprolite-hosted rutile prospects and targets. These include the Bua Channel which is the Company's high-grade, rutile dominant, sand-hosted placer prospect along a 50km length of a fluvial channel system. Drilling in the southern part of the Bua Channel over ~8km confirmed excellent rutile grades with accessory ilmenite.

## Sovereign reports exceptional metallurgical results from Kasiya

By Wahard Betha

Sovereign Metals has announced exceptional bulk scale metallurgical test-work results from Kasiya in Lilongwe, which is the Company's large, high-grade, saprolite-hosted rutile deposit.

Sovereign MD Julian Stephens says the results of the metallurgical test-work conducted at the globally recognized laboratory, Allied Mineral Laboratories (AML), in Perth, Australia, demonstrate the ability to produce a high-grade, premium quality rutile product with a high recovery, using simple, conventional processing methods.

Stephens says: "To be able to achieve a premium rutile specification with stand-out recovery via simple, conventional 'off the shelf' processing methods is a significant milestone for the Kasiya Project and for the Company."

"This exceptional metallurgical outcome in conjunction with recent spectacular high-grade drilling results consolidates our view that Kasiya could develop into a truly globally significant rutile project."

In the Kasiya area, the high-grade rutile mineralization occurs from surface in soft, free-dig saprolite material and remains open in a number of directions.

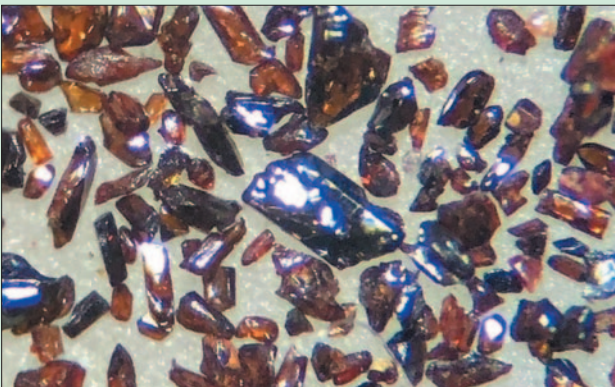
Stephens says the company intends to report the maiden JORC Mineral Resource estimate for Kasiya in the fourth quarter of 2020.

The Company was able to achieve outstanding results from its bulk metallurgy programme performed on 1,000kgs of mineralized material. The mineralized sample was composited from a number of drill holes across the deposit having a combined head grade of 0.96% recoverable rutile.

"On the basis of these premium chemical parameters, rutile produced from Kasiya should be suitable for all major natural end-use markets including TiO<sub>2</sub> pigment feedstock, titanium metal and welding flux markets."

He says a full market assessment of various rutile product specifications for a range of end-use markets is planned as part of Sovereign's upcoming scoping study.

Stephens says though the test-work focused on producing a single heavy mineral product, rutile, visual observations and analysis of data indicate that graphite could be a potential by-product.



Left: Gravity spirals set-up for the processing of the deslimed and screen material & Right: Close-up of the gravity spiral in the early phases of the process

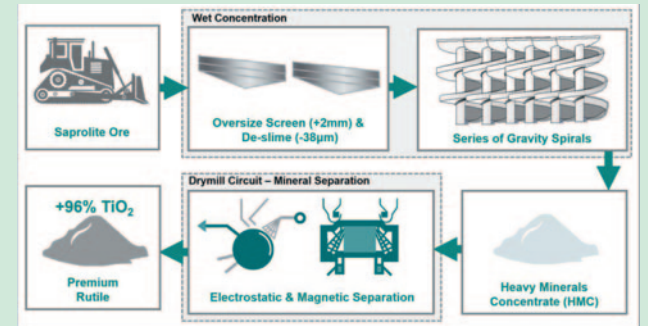
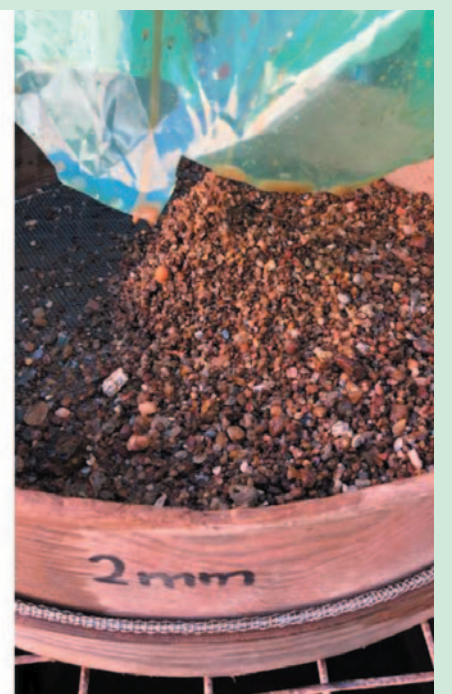


Figure 4. Simplified flowsheet developed for the Kasiya bulk metallurgy program.

Meanwhile, the Company is in the course of establishing whether a coarse-flake graphite product can be recovered in the area.

Materials for the assessment were processed through a traditional mineral sands flow sheet consisting of: screening and sizing; desliming; up-current classifier (UCC) and wet concentration via gravity spirals; attritioning; and mineral separation including electrostatic and magnetic methods.

Sovereign Metals is also prospecting for graphite at Malingunde near Lilongwe, and is in the process of securing off-take partners after it successfully completed pre-feasibility studies.



Left: Trommel screen processing the raw material & Right: +2mm oversized material



## EDITORIAL



BY MARCEL CHIMWALA,  
PUBLISHING EDITOR

## Allocate resources to clear the mess in mining sector

Despite beautiful speeches by politicians touting mining as a priority sector with potential to turn around Malawi's economic fortunes, the situation is that mining remains a neglected sector.

Despite mentioning that Malawi is not poor because it is exporting gold worthy US\$85-million to the Middle East every year, there was no details on how Malawi will deal with such gold smuggling and develop the sector for the benefit of the nation in State President Lazarus Chakwera's state of the nation address (SONA).

Similarly, the budget statement presented to parliament by Minister of Finance Felix Mlusu is silent about the sector. Mining is mentioned in passing as one of the sectors government is banking on to create jobs. There are no strategies in the statement on how more jobs in mining sector will be created.

We find this lack of interest to develop the mining sector a lost opportunity for Malawi as neighbouring countries are forging ahead in developing their mineral resources for wealth creation.

In previous years, Malawi made some advances in the sector through the World Bank and European Union funded Mining Governance and Growth Support Project (MGGSP) which financed the introduction of mining related courses in the country's universities and colleges.

The project also included construction of infrastructure to support the growth of the sector including the building to house the cadastral mineral licensing system which remains uncompleted and abandoned in Lilongwe.

We feel the government would have ensured continuity in developing the sector by allocating more funds to the sector to be used for infrastructure development including completing the abandoned cadastral office and construction of modern laboratories that would assist companies conducting exploration activities in the country to test samples within the country other than sending them to other countries.

More funds are also required to formalise the artisanal and small scale mining subsector as it is now five years since gold mining hotspots started emerging in areas such as Makanjira in Mangochi, Machinga, Mzimba, Lisungwe in Neno, Chiwamba and Lundu in Lilongwe, and Dwangwa River area in Kasungu.

The Department of Mines has all along been failing to formalise these illegal mining operations due to lack of adequate funding, and the result is the mass looting of the country's gold resources to countries like United Arab Emirates as alluded to by Chakwera in his SONA.

It is also surprising that in both SONA and the budget statement, there is no mention of the state-owned Malawi Mining Investment Company, which was already registered but is in need of funding to come start operations.

We feel this is an important entity as looking at its concept, it will be buying gold and other precious stones from ASMs which will help in curbing smuggling since the ASMs who sell their raw products to smugglers will have an established market internally.

The concept on the formation of Malawi Mining Investment Company also says the company will partner private companies to develop exploration projects to mining stage. This is very important as the country has a number of companies that are failing to develop their tenements to mining stage due to lack of funds despite that their products have a ready market.

There are companies in coal sector which are failing to develop because of lack of financing despite a proven resource base that can contribute in addressing the country's energy deficit. There are companies with limestone tenements with a sizable resource whose exploitation will help meet the high demand for cement but they are failing to start production due to lack of financing. They need the Malawi Mining Investment Company as a strategic partner.

Let us emphasize that it is now imperative for the country to diversify from overdependence on agriculture whose productivity is at the mercy of climate change related problems such as floods and drought.

Malawi has unexploited mineral potential, and it is through political will and good strategies that we can exploit these resources for the benefit of the citizens.

# Nyasa Mining Cooperative to host ASM Conference



Maleta: We want to advance the cause for ASMs

By Wahard Betha

**N**yasa Mining Cooperative (NMC) will on October 28th, 2020 host a national Artisanal and Small Scale Miners (ASMs) conference at Bingu International Convention Centre (BICC) in Lilongwe.

The conference will be held under the theme 'Smart Mining, Smart Environment, Smart Society – Investing in African Mining.'

Chairperson for NMC Percy Maleta told Mining & Trade Review that the cooperative has organized the conference to brainstorm on how to create a conducive environment for development of ASM subsector which has the potential for wealth creation to boost the national economy.

Maleta said: "The aim of the Nyasa Annual General Conference is to create a platform to advance the cause of small-scale mining, value addition, investment and networking to advance innovation and wealth creation in mining in the country and contribute to the gross domestic product (GDP)."

"We are bringing together 150 to 200 mining SMEs and professionals who are players in the mining industry in the country to the conference."

Malawi remains a virgin land with a myriad of unexploited mining investment opportunities.

Maleta said the conference will facilitate knowledge sharing and increased networking on how mining opportunities can best be exploited through professional investment.

He also said that the conference will provide a platform where key players in the business fraternity can present mining business opportunities and also give the SMEs a chance to market their unprocessed minerals to various mining business gurus and companies.

Maleta said: "The conference will provide an opportunity for participants like Banks to engage the ASMs on financing mining activities, Malawi Revenue Authority on taxes, insurance companies on their products targeting ASMs, non-governmental organisations working or with interest in the mining sector to make presentations on mining issues in the country while also providing the SMEs an opportunity to display

their raw and processed products to the sector representatives.

"We are likely to have over 30 mining cooperatives, associations, individuals showcasing their gemstones, minerals; and also in attendance will be local and international buyers of gemstones, gold and other minerals as produced by ASMs."

Chairperson for the Conference Organizing Committee Peter Jere said apart from creating an interaction platform for SMEs with various experts in the mining sector, the meeting will also reflect on the new strategic plan for NMC including the new business model.

Jere said the conference will give time for the members of the cooperative later in the day to elect new leaders for the cooperative.

He acknowledged that SMEs in mining are facing numerous challenges but assured them that through the new business model they should now see the cooperative as a net buyer of their products and facilitator of their capacity to produce minerals, process them into value added products, and aggregator of their minerals for the secondary market.

Jere also said the cooperative will create readily available market for the SMEs by facilitating the development of a robust business model to support creation of structured market mechanisms modeled on the Auction Holdings Commodity Exchange (AHCX) and international stone auctions in the country.

"This will be done through creation of strategic technical and financing partnership with government, private players and international development partners; and strengthening the resources mobilization, organizational and management capabilities and skills of our cooperative," he said.

Lilongwe based Nyasa Mining Cooperative was established and registered in 2016 to meet the common economic and social needs of its members in accordance with cooperative principles through a jointly owned and democratically controlled business enterprise.

The cooperative has close to 100 registered members from Lilongwe and surrounding districts, 60% of whom are women and the youth.

# MINING & TRADE *News*

For Editorial inquiries

Cell: +265 (0) 888 356 536  
(0) 993 252 656

Email: [marcsmediamw@gmail.com](mailto:marcsmediamw@gmail.com)/[info@miningtradenewsmw.net](mailto:info@miningtradenewsmw.net)

Blantyre inquiries

Tel: +265 (0) 888 335 807

For advertising, subscription inquiries

Tel: +265 (0) 111 744 071

Cell: +265 (0) 993 252 656

Mzuzu inquiries

Tel: +265 (0) 991 460 705

For electronic copy visit: [www.miningtradenewsmw.net](http://www.miningtradenewsmw.net)  
or facebook page: Mining Review Malawi

Subscribe to Mining & Trade Review Readers WhatsApp Forum to get latest news on Mining, Business, Engineering and Trade and expert opinion. Contact: +265993252656



# Chaos on Malawi cement market

## By Our Reporters

Cement prices in the country have drastically shot up by about 33% as local producers and importers continue to struggle to meet the growing market demand which has prompted traders to take advantage of the deficit and overcharge buyers.

A snap survey conducted by Mining and Trade Review in the cities of Lilongwe, Blantyre and Mzuzu revealed that cement is now a scarce commodity in shops and those shops stocking the commodity are selling it at very high prices.

In Blantyre, a 50kg cement bag is being sold within the price range of between K8,000 and K10,000 a hike from K6,500 to K8,000 before August.

In Lilongwe, a 50kg bag which used to be sold at between K6,000 and K7500 is now being sold at between K7,000 and K8,500 while in Karonga and Mzuzu, the shortage of cement has become critical which has forced traders to raise the price of the dominant local brand Shayona's Akshar from K6500 to K7500, the same price they are selling Tanzanian brands of similar strength, 32.5 Newtons.

Consumers and cement traders say they want government to intervene on the shortage of cement on the market which importers attribute to scarcity of foreign exchange to import the product.

Lilongwe based KH Dealer Cement Suppliers Shop Owner Sanjay Savjan told Mining & Trade Review that government needs to facilitate that banks release enough foreign exchange for importation of cement because the shortage of the commodity has affected their businesses as they are selling lesser quantities.

"We are making losses because we are not selling much due to the scarcity of the commodity. This has forced us to raise prices in order to make profits," Savjan said.

MD for Muhamad suppliers Muhamad Ali told Mining & Trade Review that the shortage of cement is a big blow to their customers who rarely find the commodity in stock.

"Customers keep coming to purchase cement but most of them fail due to high prices or that the brands they are looking for are out of stock. We do not know what the problem is with those that manufacture cement including local companies that are now failing to supply us with adequate quantities," Ali said.

But Communications Officer for Lafarge cement Chikondi Ng'ombe said in a separate interview that the company acknowledges the shortage of cement on the market and they are doing everything possible with urgency to resolve the matter.

"Our prices remained largely flat with average increase of 3% recently in August to partially offset the kwacha devaluation against the US dollar. The excessive increases in prices being felt on the market are from traders



**Gaffar: Traders profiteering from our lower prices**

unfortunately taking advantage of the supply constraints," she said.

Ng'ombe also denied claims that part of the firm's machinery had a technical fault which led to the shortage of cement on the market as alleged by other traders.

Executive Chairman for Cement Products Limited (CPL) Aslam Gaffar also said his company has not raised cement prices attributing the development to the weakening of the US Dollar which has resulted in the rise of cement prices in Zambia where Malawi mostly imports the product.

Gaffar said; "Zambian cement prices are high because prices have also gone up there. With such higher landed prices, traders can only make a margin of K100 per bag, which is not attractive to them, hence the rush to get local cement, with higher profits."

"Imported Cement was being sold at very low prices, now this has changed and imported cement is selling at very high prices. Since our prices, as local producers, are still low, traders are scrambling for our cement and selling at the same price as the imported brands of similar strength thereby making profits in excess of K2000 per bag."

"The problem is the traders, not us the producers. They are creating a shortage so as to make huge profits."

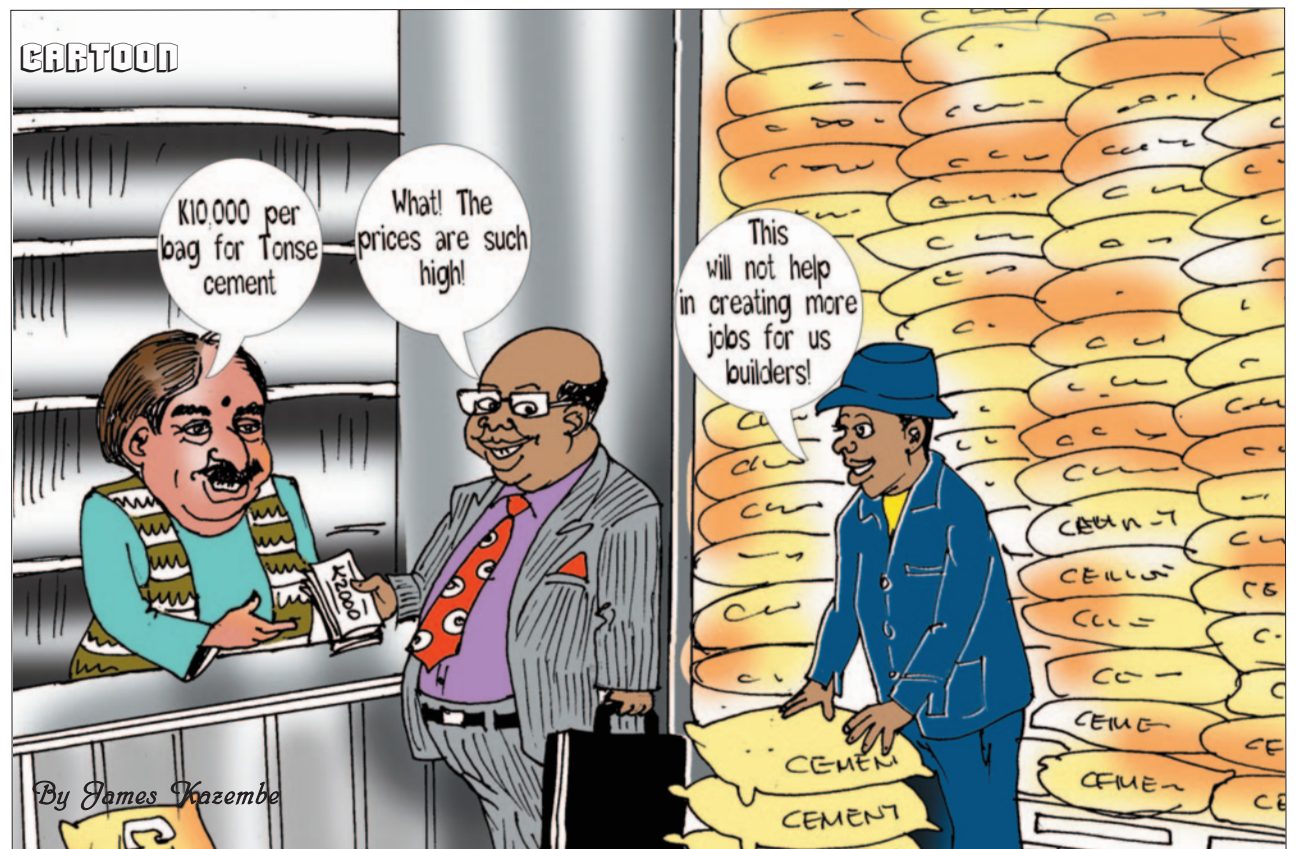
MD for Shayona Cement Corporation Jitendra Patel said there is a need for the government to facilitate arrangement of finances for limestone license holders to bring new cement plants on stream because it is a risk to be relying on neighbouring countries.

"There should be regular monitoring of illegal practices and ensure that any local industries - not only cement - are given total fair support - Then Malawi has a good future," Patel said.

Coordinator for the Chamber of Mines and Energy Grain Malunga also called on government to provide incentives to local manufacturers such as facilitating provision of low cost and long term loans to increase production capacity other than relying on imports which has resulted in the current market challenges.

Minister of Trade Sosten Gwengwe, however, said his Ministry is holding discussions with the Reserve Bank of Malawi to prioritise issuing forex to cement importers to deal with the shortages.

Lafarge imports clinker from neighbouring countries while Shayona Cement has a clinker plant in Kasungu and CPL in Mangochi.



Where professionalism is the order of the day

P. O. Box 251, Lilongwe Malawi  
E-mail: casonecontractors@gmail.com

**SERVICES on OFFER:**  
Concrete Ring Moulds (600mm & 900mm),  
Hiring off of equipment such as  
Concrete Mixers, Vibrating Pokers,  
Water Pumps, Plate Compactors & Lorries

+265 (0) 999 684 226/ 995 447 585

**craton resources consultants**  
Specialised in coal, industrial minerals and base metals  
exploration and assessments; projects supervision,  
mineral rights acquisitions and negotiations.

Craton Resources,  
P.O. Box 320, Zomba City, Malawi.  
Mobile: +265 993 003 408. E-mail: cratonresources@gmail.com



# Kayelekera community hails miner for construction of health centre

By Tawonga Nyirenda

Members of the Kayelekera community in Karonga have hailed Kayelekera Uranium Mine owner Lotus Resources and previous owner Paladin Energy Africa for the construction of a Health Centre in the area which has helped them to access health services within the locality.

Lotus and Former Employees of Paladin Company (FEPAC) have completed construction of Kayelekera Health Centre which includes a Clinic and Maternity Wing.

Speaking when Mining and Trade Review editorial team visited the clinic, Village Headman Kayelekera and other community leaders said the Health Centre is of much help to the members of the community as in the past they used to travel a distance of 16km to seek medical care at Wiliro Health Centre.

“We had problems in the past because we had no Health Centre in the area. Expectant women were finding it difficult to travel to Wiliro Health Centre. Let me happily say that these problems are now history with the Clinic and Maternity Wing operational,” said Village Headman Kayelekera, whose real name is Mathias Mtambo.

Group Village Headman Loti Mweso also hailed Lotus for completing and furnishing the Health Centre but urged government to assign more medical personnel to the facility, construct additional toilets, guardian theatre and additional houses for medical personnel.

Mweso said: “The hospital has one Medical Officer, his assistant, a nurse and the Health Surveillance Assistant (HSA) so with such inadequate staff, it does not function to its full capacity.

“Even if the government decides to assign extra medical personnel, it is not a possibility because there are no houses here, and they cannot rent the grass thatched houses in Kayelekera.”

“Furthermore the Health Centre has no guardian shelters so it is always difficult for guardians.”

Kayelekera Health Centre Committee Chairperson Maneno Milanzi also praised Lotus for completing the health centre project but urged government to connect electricity from the national grid to the area.

“The absence of electricity which is needed in sterilizing medical equipment is a problem,” he said

The community leaders also commended Lotus for involving them in decision making on corporate social responsibility projects it wants to carry out in the area, and said they are looking forward to signing a Community Development Agreement (CDA) with the Company as stipulated in the new Mines and Minerals Act.

“Lotus invited us to a meeting and told us to come up with development projects that we need as Village Development Committee (VDC) so we are now meeting with members of community to come up with the projects which will be included in the CDA,” said Secretary of Kayelekera VDC Blessings Fweta.

He said currently they are compiling projects to be



Credit to Kayelekera mine: Community leaders captured at the clinic

tabled with Lotus and the government as part of CDA, and they include electricity connection from national grid, construction of tarmac road from Karonga-Chitipa road junction to the area, building of staff houses at Kayuni Community Day Secondary School and at Kayelekera Health Centre.

Fweta said as a matter of urgency, the community is requesting the Miner to donate one of the cars it is auctioning to the Health Centre to be used as an ambulance.

Country Manager for Lotus Theo Keyter commented that the Company will continue to engage with the local community on corporate social responsibility and CDA.

Kyter said: “Completion of the Health Centre is just our starting point. We want to maintain open lines of communication so that the community is kept fully

informed about our operations and contributions to local community. This is fully documented in our community engagement plan.”

“In all our meetings with the community, we have committed to developing and signing a Community Development Agreement.”

He said besides the local community, the Company has engaged various key stakeholders including Karonga District Council to map the way forward on how the mine can benefit locals.

The Kayelekera Uranium Mine, now on care and maintenance, is Malawi’s largest mining investment and contributed up to 10% to the country’s gross domestic product (GDP) at its peak production period.



Kyter: Completion of the health centre is just our starting point



Kayelekera mine



## Chiwandama Geo-Consultants

Experts in geological mapping, mineral exploration and evaluation, geotechnical assessments, mine design and environmental impact assessments for mining and quarrying projects.

Located in Capital City Lilongwe CALL: 0888 825 277, 0999 288 441 Email: johnkhoma@yahoo.com



# Chakwera's gold mining remarks draw mixed reactions

By Wahard Betha

State President Lazarus Chikwera's remarks that Malawi is not poor because it is exporting gold worthy US\$85-million to the Middle East every year has drawn mixed reactions from stakeholders in the mining sector.

Chakwera made the remarks when he delivered the State of Nation Address (SONA) during the official opening of the budget meeting of the National Assembly.

Chairperson for Nyasa Mining Cooperative (NMC) Percy Maleta concurred with the president saying though the country has not yet conducted a survey to explore potential of gold, from his findings perceived from visits to illegal gold artisanal and small scale sites, the country holds more than estimated.

Maleta said he has visited almost eight different illegal gold mining sites in the country, with some sites hosting over a thousand people at any given time and roughly producing well over a kilogram of gold per day.

He said Chakwera's remarks should translate into political will to arrest the challenges that illegal gold mining has brought in the past five years for the country to start benefitting from its gold resources.

Maleta said: "For the first time since the gold rush in the country I had said to myself now is the time we start appreciating that there is gold in Malawi."

"One would have expected the leadership to work on making sure Malawi maximizes benefits from its resources especially gold by putting enough regulations on gold business in Malawi currently in a mess," he said,

Coordinator for Chamber of Mines and Energy Grain Malunga challenged the government to formalize the Artisanal and Small Scale Miners (ASMs) in the country in order to achieve the gold dream.

Malunga said the issue should not only be the amount of the gold that the country can produce but also to find ways to end gold smuggling currently at its peak due to an increase in gold sites.

"Malawi alone is capable of producing US\$10.0 million worth of gold from ASM. The government should start issuing licenses for gold buying and selling," he said.

The recent Malawi Extractive Industry Transparency Initiative (MWEITI) report indicates that there has been no survey conducted to establish if the gold deposits or informal gold activities would potentially have any significant contribution to Malawi's economy.

National Coordinator for Natural Resources Justice Network (NRJN) Kennedy Rashid said Chakwera's remarks was contrary to what the MWEITI has been reporting, and that the body is waiting for further clarifications from the president as to where and how the figure of USD85 million was arrived at as the MWEITI is silent on the development.

Rashid: "The recent MWEITI report states that gold resources in Malawi remain unexplored even though exploration licenses of the same have been issued, a case in point of the Makanjira gold fields which were initially licensed for gold exploration to a company but no report is available even though the exploration license expired."

"But if the figure given in SONA is to go by, parliament and the executive must institute a commission of inquiry to formally study the illegal gold mining and marketing activities in order to come up with sustainable solutions to the issue."

Rashid said though government came up with the figure, no concrete solution was given to curb the challenges that the sector is facing.

He said the government should also look at revising the Reserve Bank Act on its gold buying function.

"The Reserve Bank needs to be active in the gold sector to start buying gold or it should give up its powers to a proxy. Up to date no declaration has been made by the bank on the amount of gold it has either bought or sold," Rashid said.

Few days after delivering SONA, Minister of Finance and Economic Planning Felix Mlusu tabled the 2020/21 National Budget pegged at K2.2 trillion in the Parliament.

Commenting on the newly presented budget, Maleta expressed concern that the budget has ignored mineral sector development amid illegal mining chaos.

Maleta said the budget neglected mining sector despite



**Chakwera: Malawi is not poor**

being crucial sector in the Malawi Growth and Development Strategy (MDGS), and instead pumped billions of kwachas on consumption and a little on investment.

"Almost 100% of gold is mined by artisanal and small scale miners, there is no large mining operations on gold in the country and it beats me to see the government giving a blind eye to the sub sector."

"My expectation was to see the budget talking more on regulating and formalizing the ASMs, so they contribute systematically to the country's development through jobs,

taxes and forex earned after sales of gold and other minerals produced by the sub sector," he said.

Maleta also said it is inappropriate to see foreign nationals owning a mine that the Malawian themselves can manage to operate.


He said Malawians only require financial support which is not impossible to get from the banks.

Maleta said the ASMs could have been rescued from the financial problems if the Government could allocate funds in the budget to the newly established Malawi Mining Investment Corporation (MMIC) to commence its work.

He said: "The ASMs would have greatly benefited through the establishment of state of the art Gems Processing Centre by the new company but also off take support."

"Just like we have waited the past five years, it seems we should brace ourselves for the next five years of no action as well – it's really a sad development because we will continue losing \$85million in gold exported through uncharted routes yearly, we will continue with illegal mining across the country, we will continue being taken advantage of by foreigners running small and medium scale mining operations which would have been run by Malawians, all these foreigners are here to make money through mining and develop their countries.


Out of the proposed K2.2 trillion budget, K58.7 billion was allocated to sectors of energy, tourism, environment, natural resources, and forestry.



**COMPLETE COMPRESSED AIR SYSTEM SOLUTIONS**

**MINING & ROCK DRILLING EQUIPMENT**

EX FACTORY PRICING



**SUSTAINABLE PRODUCTIVITY**

**ATLAS COMPRESSORS & TOOLS LIMITED**  
PO BOX 578, BLANTYRE  
MALAWI

**MANAGING DIRECTOR**  
+265 999 96 39 44



# MINING & SOCIAL ISSUES

with Ignatius Kamwanje



The Author is a Consulting Geoscientist with experience in Mineral Exploration, Mining Geology, ESIA, Ground Water Resources and Occupational Safety, Health and Environment.

Contact(s) on: [igkamzy@yahoo.com](mailto:igkamzy@yahoo.com) - 0999216869

# An Overview of Data Mining Techniques and Practical Applications

Data mining may be defined as the science of extracting useful information from databases. It is a process of extraction of useful information and patterns from huge data, using a combination of machine learning, statistical analysis, modeling techniques and database technology. Data mining finds patterns and subtle relationships in data and infers rules that allow the prediction of future. The development of Information Technology has generated large amount of databases and huge data in various areas through the use of sophisticated knowledge in Statistics and Mathematics. The research in databases and information technology has given rise to an approach to store and manipulate this precious data for further decision making. As a result, data mining is a logical process that is used to search through large amount of data in order to find useful data. The goal of this technique is to find patterns that were previously unknown and once these patterns are found they can further be used to make certain decisions for development of their businesses.

## 1. Knowledge discovery Process of data mining

There are three steps involved and these are;

- Exploration
- Pattern identification
- Deployment

### (a) Exploration:

In the first step of data exploration, data is cleaned and transformed into another form, and important variables and then nature of data based on the problem are determined.

### (b) Pattern Identification:

Once data is explored, refined and defined for the specific variables the second step is to form pattern identification. Identify and choose the patterns which makes the best prediction possible ever.

### (c) Deployment:

Patterns are deployed for desired outcome.

## 2. Examples of Data Mining Techniques

Various algorithms and techniques are used in data mining but the notable ones are Outliers detection, Associations, Neural Networks, Decision Trees, Genetic Algorithm, Classification, Clustering, Regression, Artificial Intelligence, Tracking Pattern, Prediction, which are all used for knowledge discovery from databases.

For the purpose of this page, I will not go into details for some techniques because they involve mathematical formulae and calculations that are very difficult for a layman to decipher. Concentration will be on those techniques that can easily be well understood and the following are the selected one;

### (a) Tracking pattern

One can recognize a certain type of pattern when data is collected for processing. It will usually happen at intervals and will have a certain variable that will be given at a fixed time. This in essence tells you that something is happening. For example in Kayelekera Uranium Deposit, it was discovered that high grade readings were associated with a reduced arkoses matrix than oxidized. So a careful understanding of tracking this pattern deuced that where one found the reduced matrix, the pattern showed higher uranium oxide grade than the oxidized by computation. But remember this was not always the case. High grades could be found in oxidized matrix but did not outweigh the reduced matrix.

### (b) Outlier detection;

Anomalies or outliers in a data set are also an important aspect of data mining technique. Although recognizing a certain pattern, the data set might identify some data that is lying within your boundary of scope but not necessarily telling you something. This is treated as an anomaly and is very important because it acts as an overarching aspect of the real data set. For example in processing data for copper mining, one may discover that there are huge spikes of molybdenum in the data set. This is an anomaly and there is need to investigate these spikes.

### (c) Prediction

One of the most data mining techniques. This is because the data is used for future projections of data. This is based on understanding of historical trends and when extrapolated, an expert can predict what comes in future. For example, there might be a historical review of a mineral like zinc that was mined, that data can be used to predict whether the same pattern can be experienced elsewhere where zinc is mined having the same geological formations and history.

### (d) Clustering

Involves grouping different data sets together but based on their similarities. For example by using clustering techniques we can further identify dense and sparse regions in object space and can discover overall distribution pattern and correlations among data attributes

### (e) Classification

A complex data mining technique. It involves a collection of data of different attributes together and put them into categories and one can then use them to draw further conclusions. It uses a set of pre-classified examples to develop a model that can classify the population of records at large. For example, in evaluating data from computed grades like in uranium mining, depending on the cut off grade, it can be classified as low, medium, high, super high grade. Mineral resource classification is important to mining companies, investors, and financial institutions, as investment decisions are usually based on grade, tonnage and confidence assigned to deposits This classification can then be used to group them in stockpiling by classification based on grades. In short it is used to estimate the risk.

### (f) Association

This relates to tracking the pattern that one got from the data set. Specifically, it is restricted to variables that are not independent. The expert looks for a specific attribute that is correlated to another event. For example some minerals like gold and silver can occur in association in the veins. To extract one mineral for processing, a different technique might be needed to be employed.

### (g) Regression

This is primarily used for mine planning and modelling. It uses the probabilistic tendency to identify a certain variable given the presence of another variable... For example it can be used to project the metal price based on other factors like current market value, availability, competitive advantage. Regressions' main focus aims at uncovering the exact relationship between two or more variables in a given data set. In data mining

Independent variables are attributes already known and response variables are what we want to predict. Unfortunately, many real-world problems are not simply prediction. For instance, sales volumes, stock prices, and product failure rates are all very difficult to predict because they may depend on complexity.

## 3. Practical Applications of Data Mining techniques

Data mining techniques are used in various fields and industries such as Healthcare, to improve health systems, manufacturing industries including engineering to run simulations, Fraud detection, financial banking, Market analysis etc.

The following are some of the applications that are applied only selected for mining and exploration of minerals for the sake of this page.

### (a) Important in visualization and probabilistic modeling.

Visualization techniques present information to the brain in ways that allow patterns to stand out and be more readily perceived by our own human intelligence. Combined with geophysical inversion, these techniques make it easier to integrate multiple data sets and to build geologic models with current knowledge and understanding. These models can then be passed among, and visually shared by, workers from all the exploration disciplines. Probabilistic modeling techniques provide an estimate of the probability that some location with given

exploration characteristics hosts a deposit, based on a set of known examples. The weights of evidence approach, which has already been used for this purpose, can provide useful results, but is limited by its basic assumptions.

### (b) Models allow the results for individual data sets to be analyzed separately for Pit Optimization

Geophysical data, for instance, may have little significance as point values, and need an encoding that represents the pattern of data in the neighborhood of a given station. The same is true of regional structure and, to some extent, of geology. The number of inputs to the model can grow in this way into the thousands, so that efficient optimization and regularization are required. The model allows the results for individual data sets to be analyzed separately.

The data sets can then be combined to produce an integrated target favourability map.

### (c) Research analysis

Data mining is helpful in data cleaning, data pre-processing and integration of databases. The researchers can find any similar data from the database that might bring any change in the research. Identification of any co-occurring sequences and the correlation between any activities can be known. Data visualization and visual data mining provides a clear view of the data.



**TATA MOTORS**  
Connecting Aspirations



# THE WORLD-SMART TRUCK

Now with 18 cub box body

TATA Prima LX 3123 K



## Contact us


**TATA ZAMBIA LTD**  
**MALAWI BRANCH**

Tel: + 265 1 751 919 | Cell: +265 991 41 52 77 - +265 999 22 37 93

LILONGWE CENTRE: Bwaita, Plot 4/407, Off Paul Kagame Road, P/Bag 156

BLANTYRE CENTRE: Plot No. S0597, Kengatta Drive | P.O Box 31958, Chichiri, Blantyre 3

 +265 8858 706 77

 [facebook.com/TataMotorsMalawi](https://facebook.com/TataMotorsMalawi)

[www.tatamotors.com.zm](http://www.tatamotors.com.zm)





# TECHNICAL FILE

by Dr. Grain Wyson Phillip Malunga FIMMM

Minerals, Geology, Environment & Corporate Affairs Consultant

## Building community trust in the mining sector

### Abstract

Free Prior Informed Consent (FPIC) and Social Contracts offer opportunities for building community trust in the mining sector. During mining project development cycle, mining companies need to acquaint themselves with the environment in which they are going to operate. They become neighbours of local communities and for them to be welcomed, they need to identify interest groups whose rights and way of living needs to be protected or improved through benefit sharing and protection of the environment.

This paper is trying to encourage all stakeholders to work together to build community trust for obtaining social contract through FPIC.

### 1. Introduction

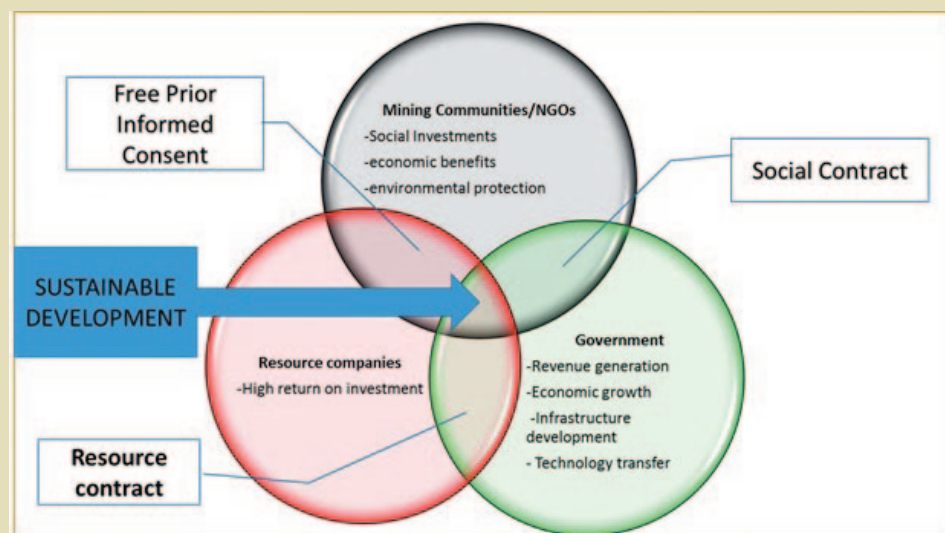
The global perception about mining is mostly negative. Resource rich poor countries are characterised by corruption and lack of transparency in the management of mining revenue. Mining communities feel there is lack of equitable benefit sharing of mine revenues and governments lack transparency and accountability. Environmental issues are not adequately addressed. The above issues have led to lack of trust between mining communities and mining companies. The only solution to this is to undertake community engagement to address issues that will lead to obtaining of "Social Contract" or what OXFAM prefers to call "Free Prior Informed Consent (FPIC)". This Social Licence leads to smooth and orderly implementation of mining projects through endorsement of local communities.

This looks at ways in which FPIC directly benefits local mining communities from mineral resources.

### 2. Factors that build community trust in mining

Governments should come up with pro-poor mining policies that protect local communities and empowers them to have better livelihoods. Improving rural livelihoods requires provision of infrastructure, public utilities and promotion of local content through stimulation of entrepreneurship to support provision of goods and services in the mine. Bryan et. al., 2007, confirms this by stating that mineral resources can be used as a basis for industrialization, job creation, poverty eradication, capacity building and community empowerment and improvement of people's lives.

Government, mining communities and mining companies form a tripartite relationship that promotes this trust and this tripartite relationship leads to sustainable development



(Figure 1).

Mining communities expect social investments, economic benefits and environmental

protection from mining companies under monitoring by government. Social investments include provision of water, health services and education facilities. These should be reasonable enough and should not replace government obligations. Communities are happy where mining companies contribute to local economic development such as employment, partnerships with local communities on programs that empower local people to supply agriculture produce and other services. Electricity and roads open up rural areas to industrialisation, urbanisation and access to markets. Environmental protection helps local communities to avoid pollution to water, air and land. Compensation and minimum deforestation build long lasting relationship with local communities.

Government is trusted by its people when it is transparent and accountable. Access to information on mine revenue generation and use are of paramount importance. Pre-agreed Benefit Sharing with local communities helps projects to be implemented smoothly without any disruptions. Community engagement at all levels of project implementation must have the presence of government officials too.

Mining companies are attracted by projects that offer high return on investment. This encourages them to engage communities on benefit sharing. Community engagement should dwell on benefit sharing, infrastructure provision, economic empowerment and environmental protection. These should be the basis for FPIC. Sustainable development is a product of the three stakeholders working together in a transparent and accountable manner driven by mutual respect for each other.

### 3. Benefits of FPIC

FPIC is a process that helps mining companies identify interest groups whose rights must be protected. These groups or communities are first identified and participatory approach is used to understand socio-demographics, economic activities, political and cultural dynamics that are essential in building community trust during mining project implementation.

It is imperative that the mining sector should undertake inclusive participation throughout all stages of exploration, development, mining and post mining closure activities in order to obtain consent, minimize misconception and risks such as disputes and conflicts.

### 4. Civil Society Organisations (CSOs)

The role of CSOs in promoting FPIC rests in them working with local communities and mining companies as mediators not instigators of social conflicts and violence. The more CSOs act on non-evidence based issues the more they will become irrelevant to mining communities, government and mining companies.

Mining is capital intensive, highly technical and does not generate super profits as communities think. This is why government has a special tax called resource rent to also benefit from super profits. Similarly arrangements can be made for local communities to benefit from such revenue. Mining companies expect CSOs to be responsible, respectable and relevant to all stakeholders in mining.

### 5. Bibliography

1. Bryan, S and Hofmann, B.2007. Transparency and Accountability in Africa's Extractive Industries: The Role of the Legislature. Washington DC: National Democratic Institute for International Affairs.
2. Malunga, G. W. P. 2016. Sustainable development, Mining and EITI. Paper presented to media experts on 28th October 2016 in Blantyre.
3. Wise, H. and Shtylla, S. 2007. The Role of the Extractive Sector in Expanding Economic Opportunity. New York: Harvard University and John F. Kennedy School of Government.

**AM AKATSWIRI MINERAL  
RESOURCES**

**SERVICES: Geology, Geotechnical, Mining, Environmental & Construction**

Headquarters: Akatswiri Mineral Resources, PIJO House, P.O Box 1042, Zomba, Republic of Malawi  
E-mail: [contact@akatswiri.com](mailto:contact@akatswiri.com)





# PROUDLY MALAWIAN UTILIZING LOCAL RESOURCES

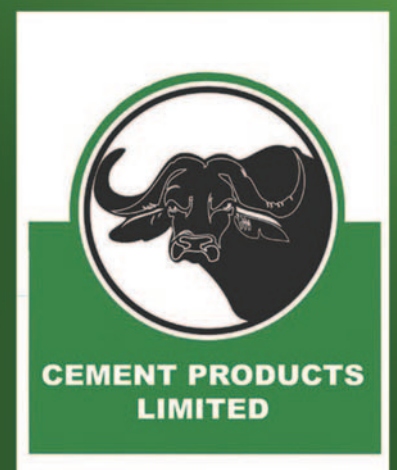
TARZAN - 42.5 MPA  
 NJATI - 32.5 MPA  
 NKOPE - 24 MPA

## Strength to Build a Nation

Blantyre:  
0999 260 815

Mangochi/Monkeybay:  
0994 535 133

Lilongwe/Mzuzu:  
0991 024 383





# Local banks under fire for shunning minerals sector

By Tawonga Nyirenda

Players in the mining sector have lashed out at local banks for their continued unwillingness to finance mining projects despite government including the sector as one of its priorities in Malawi Growth and Development Strategy (MGDS III).

Veteran geologist and MD for Craton Resources James Chatupa commented in Mining Review readers Whatsapp group that it is important for banks to look at economic linkages when making decisions on financing mining projects other than just ruling out the sector as of high risk.

Chatupa said: "For instance, a mineral like limestone, which Malawi has in large quantities can significantly impact on agricultural model as limestone is an important chemical in the production of fertilizer and pesticides. They are an important feedstock in the production of animal feeds and used for manufacturing of cement which is required for concrete in construction of dams for fish farming and irrigated agriculture. Limestone is also in construction of roads and other infrastructure."

"Lastly, we talk about water for irrigation and electricity. The Nkula and Tedzani dams are heavily affected by siltation. These slits are a source of important mineral resources, let's mine them."

He said it is unfortunate that though Malawian tertiary institutions are producing a good number of graduates every year, the country is failing to direct financial resources to advance technologically as it was done by advanced Asian countries including China, Taiwan, Singapore, South Korea and India.

Seasoned geologist Ignatius Kamwanje said failure by the banks to finance mining sector has resulted in foreigners who access loans from their countries investing in simple technologies such medium scale quarry mining which would have been done by locals.

Renowned Mineral Sector Consultant and Director of Akatswiri Mineral Resources Hilton Banda said the problem with local banks is that they do not employ



**Chatupa: Banks must consider economic linkages**

competent mineral sector professionals to scrutinize funding proposals from the sector.

"Our banks do not have the capacity to review mining projects, this is why foreigners take advantage of the sector," said Banda.

But Investment Banker Bernard Masi said local banks are ready to finance small to medium scale mining projects but cannot finance big mining projects due to capacity constraints.

"Commercial banks do not have long term capital to finance long term projects as is the case with large scale mining projects," he said

Masi, an official for NBM Development Bank, cited that the reliance on short term customer deposits to finance lending operations as one of the reasons why banks fail to finance long term mining projects.

He said that financing small to medium scale mining operations is workable as long as there is assurance on the abundance of the natural resource in that mine to last the life time of the loan.

"For small mining operations with an offtake agreement with a reliable offtake tied to the length of funding should be workable as long as there is assurance on the abundance of the quantity of the natural resource in that mine to last the life time of the loan," he said.



**Banda: Banks lack capacity to review mining proposals**

Coordinator of the Chamber of Mines and Energy Grain Malunga, however, said there is a need for local banks to have other lines of credit with external banks and add a mining section like what was done with the agriculture section.

He also said that the Reserve bank needs to release pension and insurance funds at low interest rates to the mining sector which will not only support growth of the sector but also help the funds grow.

South Africa's Standard Bank and NEDBANK provided off-take financing to the Kayelekera Uranium Mine in Karonga, which is Malawi's largest mining investment.

Currently, feasibility studies have been completed at Kanyika Niobium Mining Site in Mzimba, and the miner, ASX listed Globe Metals & Mining, is currently negotiating with the Malawi Government for a development agreement while seeking about US\$450-million in off-take financing.

ASX-listed Sovereign Metals also completed feasibility studies for Malingunde Graphite Project in Lilongwe and is currently seeking financing to start mine construction.

Malawi has also a number of limestone, coal, quarry and gypsum miners struggling to acquire financing from banks though the market for the minerals is locally available.



Weichai Generator



Liugong Back Hoe



HC Forklift



Liugong Wheelloader



SHACMAN Tipper



LOVOL Tractor

**CAMCO EQUIPMENT LIMITED**

LILONGWE HEAD OFFICE: Plot No.338, Along M1 Rd., Area 47, P.O Box 2626, Cell: 0999-888678 or 0999-737783  
BLANTYRE BRANCH: L/C 13 Mkulumadzi House, Churchill Rd., Limbe Cell : 0996 913737 or 0882 160513  
E-mail: malawi@camco.cn