

# MINING & TRADE *Review*

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# Foreign cement floods Malawi

... Local producers bemoan  
"unfair competition"



Under threat: Bird-eye view of Kasungu-based Shayona factory



Mangochi-Njereza CPL's new clinker plant

By Wahard Betha

**T**here is a growing influx of foreign brands of cement on the Malawi market, whose uncontrolled importation has created shockwaves among local manufacturers of the product owing to stiff market competition posed by the foreign products.

*Mining & Trade Review* has established growing market competition between the imported cement and local cement brands mainly in the major cities of Lilongwe and Blantyre.

The foreign brands available in the shops include Ultra-Semi, PPC, Shuwa Cast and

Sinoma, a product of China National Materials Company Limited Group – a Chinese multinational that has penetrated Africa by establishing branches in a number of countries including neighbouring Tanzania and Zambia.

Malawi also continues to import Dangote Cement, produced by Nigeria's giant Dangote Group through its subsidiaries in neighbouring countries.

Local manufacturers have described the market competition posed by the influx of the foreign brands as unfair since the imported cement is manufactured in countries whose economic conditions are not similar to those

in landlocked Malawi where cost of production is higher.

"The growing quantities of cheap imported cement on the Malawi market are a threat to the survival of local producers like Shayona, which employs a good number of Malawians and substantially contribute to government revenue through various taxes. We call on the Malawi government to regulate the industry in a way that will guarantee survival of local producers," says Shayona Cement Corporation Operations Manager, Prajeesh Padmanabhan in a write-up he presented at the 2018 Annual General Meeting for the ...cont. on page 10

## INSIDE



**ACB gets stakeholder input on corruption fight**

Page 5



**Government backs bulk mineral sample exports**

Page 7



**Sovereign upbeat on Malingunde rutile prospects**

Page 9



**Govt. advances plans to construct new airport in Mzuzu**

Page 11

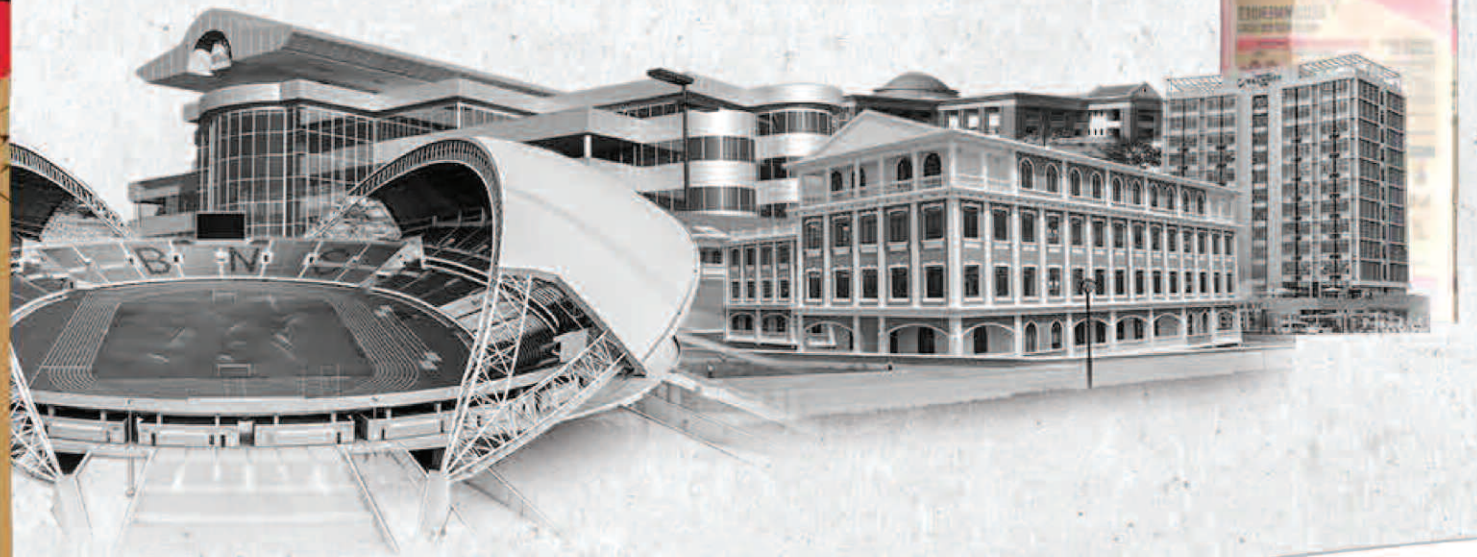


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...from page 3 Malawi Chamber of Mines and Energy.

He says it is unfortunate that, though the country can sustain itself through utilization of local limestone resources for production of cement, every year Malawi is importing clinker and cement worth billions of Kwacha.

Records from the National Statistical Office indicate that in 2017 alone, imports of cement and clinker amounted to MK28.76-billion.

Padmanabhan says: "Such a trend is not viable for Malawi which needs the foreign exchange used for these cement imports for crucial requirements such as procurement of drugs for its hospitals."

"It also has to be noted that the local cement industry is still in an infant stage and requires support from the government by controlling these imports. We are capable enough to supply the country's requirements without the imports."

Managing Director for Shayona Cement, Jitendra Patel, told *Mining & Trade Review* in a previous interview that it is imperative for the government to control cement imports and support local investments such as the expansion of the Shayona factory in Kasungu if the country is to achieve socio-economic development.

He said that besides providing employment to Malawians, the cement companies support the government in a number of ways including the provision of social amenities as part of corporate social responsibility (CSR) programmes.

"The government has to appreciate our role as a partner in development and protect our investments. It has to understand that by encouraging cement imports, it is exporting jobs to those cement producing countries and this is retrogressive at this time when all the countries are fighting to retain jobs," said Patel.

Cement Products Limited (CPL) Chairman, Aslam Gaffar, also expresses concern over the growth in cement imports saying it is high time the government appreciated massive investments by the local producers and protect them from the harsh business environment posed by imported cement.

He says cement producers are keen to continue engaging the government through the Ministry of Trade, Industry and Tourism on the issue.

"We were expected to discuss this issue with the Ministry but the meeting was aborted at the 11th hour due to the recent cabinet reshuffle. We are looking forward to their support as we are sure they are equally anxious on the amount of forex being wasted," he says.

However, spokesperson for the Ministry of Industry and Trade, Mayeso Msokera, says the government gives licences to traders to import some cement to supplement the deficit from local production.

He explains that applications for import licenses for cement are scrutinized and granted upon making an appropriate demand and supply analysis.

Msokera says, "As Government, we have the mandate to balance the needs of both the producers and the consumers with regard to availability of this essential commodity as well as its price and the current cement importation does not amount to an influx."

He explains that it is the government's duty to stabilize supply and prices of cement so that they do not destroy the construction industry, which also employs many people and is an integral part of Malawi's infrastructure and industrial development as it provides a growth impetus to other sectors of the economy through backward and forward linkages.

"We have had situations where cement prices rose to around MK12000 in 2017. Therefore, it is, essential that,



**Msokera: Govt. gives cement import licences to supplement deficit** cement availability and affordability is safeguarded for the healthy growth of the Malawi economy," he says.

He, however, acknowledges the fact that some cement is being smuggled into the country and says, as Government, they are considering additional measures of curbing the problem.

"The Ministry is discussing with other Government agencies such as the Malawi Revenue Authority and the private sector stakeholder institutions so that issues of smuggling are addressed holistically. As a Ministry, we would like to appeal to the private sector to hold hands and collaborate with Government in order to root out this malpractice bedeviling our manufacturing sector," says Msokera.

He also encourages local industries to improve their distribution network to ensure that cement is available in all corners of the country saying there are cases whereby companies undertaking large-scale construction projects in bordering districts prefer to import cement from neighboring countries as it makes economic sense due to transportation problems in sourcing the locally made product.

Msokera says Government is advocating for growth and development of local industries through the Buy Malawi Strategy, which encourages consumers to purchase locally produced products which are equally of good quality.

Coordinator for the Chamber of Mines and Energy Grain Malunga commented in an earlier interview that in



**Padmanabhan: Cement imports threatening local industry** countries like Malawi where cost of production for cement is high due to environmental factors, there is need to guard against unfair competition such as "dumping" of foreign cement products.

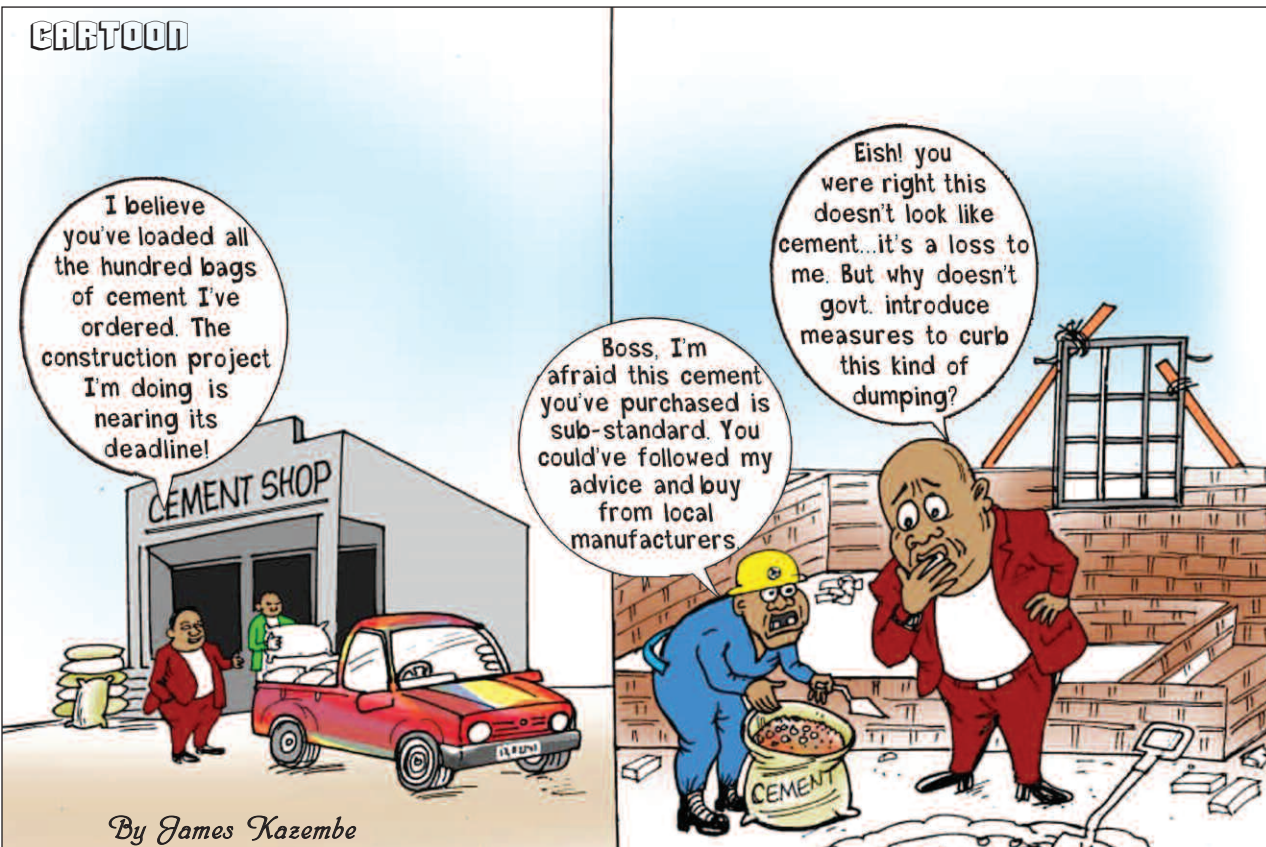
"Profit margin for cement sales are less and there is need to have access to cheap power, high quality limestone and proximity to good markets and other raw materials which are not always readily available in Malawi," he said.

He, therefore, advised the government to deal with the issue of cement carefully observing that the industry is very sensitive to legal and regulatory instability.

Both Shayona and CPL have invested in multibillion-kwacha construction of clinker producing plants at their factory areas in Kasungu and Mangochi respectively.

Shayona, which has a workforce of over 1200 mostly locals, has a comprehensive CSR programme which has seen the company constructing school blocks at a primary school close to the Kasungu factory, making drug donations to government hospitals and clinics, and planting trees annually in the factory locality to assist in environmental conservation.

Though its factory is relatively new, CPL also boasts of a CSR programme that has involved donating cooking oil making machines to members of the community in the factory area, constructing school blocks and procuring a transformer to electrify the area that hosts the factory ■



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**Shayona Cement**

**EDITORIAL**



BY MARCEL CHIMWALA, PUBLISHING EDITOR

**Local cement industry needs government support**

The local cement manufacturing industry is under threat due to stiff market competition posed by imported cement.

As reported in our lead article, our visits to major hardware shops in the country have revealed that the shops are stocked with a lot of brands of imported cement.

The foreign brands available in the shops include Ultra-Semi, PPC, Shuwa Cast and Sinoma, a product of China National Materials Company Limited Group – a Chinese multinational that has penetrated Africa by establishing branches in a number of countries including neighbouring Tanzania and Zambia.

Malawi also continues to import Dangote Cement, produced by Nigeria’s giant Dangote Group through its subsidiaries in neighbouring countries.

Local manufacturers have described the market competition posed by the influx of the foreign brands as unfair since the imported cement is manufactured in countries whose economic conditions are not similar to those in landlocked Malawi where cost of production is higher.

They have since called on the government to regulate the industry to ensure its survival since it is an infant industry that cannot withstand competition from loads of foreign cement brands being dumped in the country.

We support the views of the local cement industry captains and join them in urging the government to scale up regulatory measures for the cement industry to ensure that cement imports are controlled.

The response from the Spokesperson for the Ministry of Industry, Trade and Tourism, Mayeso Msokera, is that government gives licences to traders to import some cement to supplement the deficit from local production.

He explains that applications for import licenses for cement are scrutinized and granted upon making an appropriate demand and supply analysis.

Though we feel it is indeed right for the government to employ means to meet cement demand and avoid shortages and unbearable hikes in prices, we feel the government should first engage in dialogue with the local producers to find out if the situation can be addressed before opting to license more importers.

Just to quote Shayona Cement Corporation Managing Director Jitendra Patel, as a country we should not be obsessed with importing goods which we can sourced locally because this is an unnecessary drain on foreign exchange which is vital for procurement of essential items such as drugs for our hospitals.

A feasible way to encourage competition and ensure fair market prices for cement would be to give incentives to existing cement manufacturers to produce more cement and grow in the business which would encourage more companies to invest in cement production and compete on the market.

Surely, as Patel said, by encouraging cement imports, Malawi is exporting jobs to the foreign countries where these brands are manufactured.

Such a trend certainly kills the essence of the Buy Malawi Campaign, which the government is championing to promote consumption of local products to ensure growth of the local industry.

The other point worthy noting is that the local cement producers continue to invest huge amounts of money in expanding their manufacturing plants, and such mega projects are a source of employment to many Malawians.

It is incumbent upon the government to promote these investments by ensuring that there are no unnecessary market distortions, which will enable the companies to grow and eventually start exporting to rake in foreign exchange for the country.

Certainly, it is through support to the local industry that Malawi will satisfy the dream of transforming from a predominantly importing country to an exporting country ■

**ACB gets stakeholder input on corruption fight**



Participants at the workshop in a group photo

By Gloria Mbwana

The Anti-Corruption Bureau (ACB) says it is the duty of stakeholders from all sectors including extractives to help it in curbing corruption by, among other things, reporting to the Bureau all suspected corruption cases.

ACB Director Reyneck Matemba said this during a workshop the Bureau held at Capital Hotel in Lilongwe to engage stakeholders from various sectors of the economy to sensitise them on how Malawi can successfully fight corruption.

Matemba explained that the extractive sector is one areas of interest as it has the potential to substantially contribute to the economy, and corruption is a major vice that can thwart such economic contribution.

“The extractive industry, including mining, is of interest to us as they have been a number of suspected cases of corrupt practices in the sector. You can see in this meeting we have representatives of the sector coming from as far as Mzimba,” he said.

Currently, the Bureau is working hand in hand with the Malawi Extractive Industry Transparency Initiative and there is in place a task force to fight corruption in extractive industry.

“We need to do more because the task force has been dominant literally but we want to use these consultations to revamp it,” he said.

Matemba urged private sector representatives to join government, civil society representatives and small scale miners in the revamped task force to ensure a successful battle against the vice.

There have been media reports on suspected corruption cases in mining especially in the awarding of licences.

Corruption Prevention Officer (DCPO), Mary Phombeya said the Bureau through the National Anti-Corruption Strategy (NACS) is working with the private sector as well as the government to ensure that mining licences are granted in accordance with the laws.

“I believe that that government will be implementing proper Anti-corruption Strategies to offer licenses in a transparent manner as the



Matemba: Extractives sector is one areas of interest



Phombeya: Be transparent when offering licences strategy empowers the private companies to play a role in the fight against corruption by demanding accountability from public institutions,” said Phombeya.

The workshop gave the participants a chance to engage in group discussions to look at areas where corruption hurts most, why corruption happens and ways on how to improve on the situation.

NACS came into force in 2008 as a five year strategy but the bureau still uses it because the principals that are contained in the strategy are still applicable up to date.

The strategy’s main objective is to promote integrity, transparency and accountability, and improve service delivery in all sectors.

The other objective is to promote the involvement of the general public in fighting corruption ■

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# Illegal gold mining resumes in hotspot areas

By Gloria Mbwana

Illegal miners who were forcefully evicted by the government from various mining sites across the country have returned to the sites, where they are mining alluvial gold and other precious minerals.

The government evicted the miners as a result of an outcry from Malawians that the practice had resulted in a number of problems including environmental degradation, health concerns and accidents that led to injuries and death of some miners.

Protest against the malpractice reached its climax last year when the Norwegian Church Aid and Natural Resources Justice Network backed members of the community in Mangochi- Makanjira in a march which culminated into the presentation of a petition, urging the government to forcefully kick out the miners in Makanjira and Namizimu Forest Reserve, to the District Commissioner for Mangochi.

In response, State President Arthur Peter Mutharika deployed the Malawi Defence Force to chase the miners and guard the area.

In other areas such as Nanthenje and Lundu in Lilongwe, the Malawi Police Service also moved in to evict the miners.

However, since the Malawi Defence Force completed their mission in Makanjira, the illegal miners who include foreign buyers have returned to the sites.

The miners have also returned to other hotspots including Nathenje and Lundu where they are continuing with their gold panning activities.

Responding to the development, Government says it is in the process of formalizing the sector to do away with illegal mining.

Writing in the Draft ASM Handbook for Malawi produced by the Pan-African Support to the EuroGeoSurveys – Organisation of African Geological Surveys Partnerships

(PanAfGeo), Senior Mining Engineer in the Mineral Rights Section at the Department of Mines in the Ministry of Natural Resources, Energy and Mining Gibson Nyirenda says there is need for all the miners to acquire licences or face the arm of the law because no ASM is permitted to carry on prospecting, mining operation or any dealing in precious or semi-precious stones without a licence.

“This clearly means that no minerals shall be removed from any land from which they have been obtained, or disposed of, in any manner, without authorization issued under the Mines and Minerals Act,” says Nyirenda.

In order to formalize ASM activities, the Malawi Cabinet has approved an ASM policy which calls for the formation of ASM cooperatives that will legally conduct mining activities.

Meanwhile, local ASMs have welcomed government’s plan to formalize the sector saying it will help bring sanity in the sector in which smuggling is rampant.

Chairperson for Nyasa Mining Cooperative (NMC) Percy Maleta suggests that in order to end illegal mining, the Department of Mines should start issuing licenses to the illegal miners right at the mining sites, provide them with training and a formal market.

He says it would be easy for the Department to trace the miners and license them if it works hand in hand with the District Commissioners and traditional leaders who have knowledge of the illegal mining hotspots.

Maleta says: “Creation of a formal market for the minerals is of utmost importance. For instance, we do not have a proper market for gold and other precious minerals in Malawi serve for few Chinese who normally smuggle the precious minerals. In the actual sense our country does not have any laid down procedures on how one can export gold.”

“The government should create and establish market



Nyirenda: No licence no mining



Maleta: Issue licences at mine site

centres in all hotspot areas where gold and other precious minerals are produced.”

He says it is important that Malawi emulates countries such as Tanzania to empower local ASMs with capital, equipment, technical knowledge and market for their products so that they are in a position to compete with foreigners who are taking advantage of the poverty of the local ASMs to buy their minerals at very low prices.

Though illegal gold panning activities have proliferated across the country, Malawi has strict laws on the export of reserved minerals such as gold hence most of the gold from these hotspot areas is smuggled to countries such as Tanzania where the Central Bank buys gold ■



Illegal miners at Lundu area T/A Chimutu Lilongwe



Illegal gold panning at Nanthenje River

# Government backs bulk mineral sample exports

## ...Companies not taking too much for lab testing

By Chiku Jere

The Malawi Government has moved in to quell misconceptions that have been making rounds in public domain, particularly on social media, insinuating that exploration companies are ripping off the country of its precious minerals through exports of high tonnage of ores disguised as samples.

The issue has come to light after three companies namely Globe Metals and Mining, Sovereign Metals and Mkango Resources announced that they were shipping substantial amounts of samples from their respective exploration sites for metallurgical tests in specialised laboratories abroad.

ASX-listed African-focused specialty metal and rare earths company Globe Metals, which is prospecting for niobium in Malawi's Northern District of Mzimba's Kanyika area, announced that it was to send 40 tonnes of mineral samples to China for a metallurgical pilot plant programme in 2014.

Last year, ASX-listed Sovereign Metals Limited also announced that it was sending 40 tonnes of samples from its Malingunde Graphite Project in Lilongwe to Canada for testing as part of feasibility studies, and last month Canada-listed Mkango Resources published a statement in the local press that it was ferrying a 60-tonne bulk sample from its Phalombe-based Songwe Hill Rare Earth Project to Australia for pilot plant testing.

Such developments have triggered an outcry from some Malawians who have shown their wrath on social media as they suspect foul play by the companies "that they are stealing from the country as they are exporting such huge mineral quantities for commercial purposes in the guise of feasibility studies."

However, in a presentation made during the 2018 Alternative Mining Indaba held in Mangochi, Mining Inspector for the Department of Mines in the Ministry of Natural Resources, Energy and Mining, Mphatso Kapokosa said Malawians should not get alarmed on this issue because government makes sure that any amount of sample exported for testing should conform to the authorised required volumes.

Bulk sampling is an advanced part of a feasibility study which involves taking samples of minerals to chemical laboratories to determine content of the required elements.

The engineers and metallurgists use bulk samples extracted from a particular deposit site to design and develop a suitable mining and processing plant for a particular mineral.

"Among major things, the bulk sample testing assist to ascertain the quality and quantity of the mineral as well as determine the right plant to be used in actual mining," said Kapokosa.

The justification is that pilot plant consists of small scale equipment similar to what will be used in the processing plant for the main project and the testing is undertaken to provide key design information for the



This haul truck carries over 200 tonnes

actual processing plant and to demonstrate the achievable product quality.

He explained that samples vary with type of minerals as some require very small samples while others, such as copper, graphite, granite, gold, rare earths, niobium among others, require considerably large bulk samples, especially



Kapokosa: Samples for export conforms to authorised volumes

during advanced stages, to test and optimise processing methods.

Kapokosa explained that one haul truck (tipper) can pack over 200 tonnes in one go which means a 50 or even 100 tonnes sample is less than one truck.

"Imagine large mines can mine up to over 200,000 tonnes of material per day with a single truck carrying 200 or even 300 tonnes per trip, then 40 tonnes, 60 tonnes or even 100 tonnes is not that huge a sample" he said.

He also said companies pay royalty for the exported samples as they do with any mineral exports hence there is

no profit made in exporting materials as samples.

Kapokosa also said a bulk sample may only contain 5% or even >0.5% of the mineral with the rest being wastes, so in transporting of the sample, which is very expensive, the company cannot obtain any tangible return for the value of the mineral extracted from the sample.



Samples being prepared at Malingunde graphite project site

In an earlier interview with *Mining & Trade Review* on the same issue, Department of Mines Director Jalf Salima explained that among many other factors, the laboratory tests involves establishing volumes of minerals likely to be extracted from the bulk, nature of the land on which the mining activity will take place and the design of the plant that will suit extraction of a particular mineral.

"So you need huge quantities of the sample in order to achieve the required results with almost 100% certainty to avoid loss of capital investment," said Salima ■

# MINING

## & Social Issues

with Ignatius Kamwanje



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# Exploration Drilling in Mineral exploration(Geology) and Mining

**A**n *Exploration Drilling* is a process of mineral exploration in the mining industry through extraction of rock quantity to probe the contents of known ore deposits and potential sites by withdrawing a small diameter core or chip of rock from the orebody so that geologists can analyse the core/chip by chemical assaying and conduct petrologic, structural and mineralogical studies of the rock. Mineral exploration companies are often broken down into two categories namely; greenfield and brownfield.

*Greenfield Exploration* refers to unexplored areas, where mineral deposits are not already known to exist which can also be subdivided into grassroots and advanced projects while *Brownfield Exploration*, also known as near-mine exploration, refers to areas where mineral deposits were previously discovered. Exploration companies search globally for mineral deposits that can be economically mined and processed and mineral exploration is made up of a variety of different activities and techniques of which drilling is one of them, that are used to find a potential discovery which eventually may one day become an operating mine.

### The goal of Mineral Exploration Techniques

Many different types of exploration techniques are used in conjunction in order to get enough information to accurately define a mineral deposit. Once enough high-quality geological data has been gathered from exploration activities, a project can be analyzed for economic feasibility.

Management will use this data to make a decision on whether to continue exploration, establish or update a mineral resource estimate, proceed with mine feasibility studies in order to reach production, or pursue other strategic initiatives with the property. The data obtained and used must pass through QAQC (Quality Assurance Quality Control) and thereafter highly validated to give well reliable and informed output for successful mining. Going from a previously unexplored piece of land ("greenfield exploration") to a well-defined mineral deposit can take years and years of work and huge sums of money can be pumped in though in the first instance the chances of success are very slim such that an exploration company can attempt to withdraw. An example of our own Kanyika Niobium Project and Mkango Resources Songwe Hill Rare Earth Project are living testimonies of how long they carried out their exploration activities. However, the Kayelekera Uranium Project did not take that much years to commence mining since there was already exploration data that existed from the 1980s and was done previously by CEGB (Central Electricity Generating Board) of UK before Balmain Resources took over and was granted an EPL in 1997/98 and later entered into agreement with Paladin Resources to have 90% interest and the remaining 10% equity stake in the project was granted in 2005.

There are many techniques that may be utilized during mineral exploration programs, depending on the mineral deposit type and stage of exploration that is being pursued – as well as the location and budget of the program of which among them is **Drilling**.

### Drilling Techniques

Drilling is the most expensive method of exploration and typically occurs in the later stages of exploration after other methods have already identified a potential deposit (anomaly). As drilling is an expensive undertaking, detailed study of the area must be made before starting the project. Core logging forms an important aspect of an exploration geologist job and an important stage in the follow up work to an exploration target. There are many different types of drilling methods and all have their place in the universe. Drilling programs are used to collect rock samples at greater depths than surface methods allow. Among others, this page will highlight some of the drilling methods used.

#### (a) Diamond Drilling (DD)

This method produces a continuous core of rock (in theory) and allows a solid piece of rock core to be collected in such a way that an interval of core allows for much more data to be accurately interpreted. It consists basically of a hammer unit which is driven by compressed air. This hammer unit imparts a series of short, rapid, blows to the drill steel

or rods and at the same time slowly rotates them and sometimes known as down-the-hole hammer and as the name implies, the hammer unit is lowered down the hole at the end of the rods and the diamond drill bit on the end of the hammer unit consists of a large number of chisel ends. Drilled samples are then assayed, and the results will help build a model of the entire deposit. This type of drilling can eventually lead to the entire resource being defined within the boundaries of a chosen cut-off grade but based on the recovery percentage of the core.

#### (b) Reverse Circulation (RC)

Reverse circulation drilling produces rock chips which can be sampled under the assumption that they come to the surface in the order in which they were produced and this method returns rock samples in the form of chips that allows sampling but at greater depths. Air is blown down the outside of the drill steel (between it and the wall of rock) and the air and rock chips are carried to the surface on the inside of the drill steel. As the air exits the drill with great blows of dust the rock chips are captured and put in bags for subsequent assaying. In this instance a very large truck is loaded with a tower, drill head, compressor and motor is used. The drill bit is usually of a tri-cone construction (3 cone shaped bits) and a bunch of air blown into the hole to capture the rock chips. This type of drilling is usually a fraction of the cost of diamond drilling but there is controversy surrounding the validity of the samples that are obtained and the method limits the amount of information that can be derived from the sample. Unfortunately, there is no way of knowing what the recovery of chips is and usually it is must be over 100% because the wall of the drill hole caves back a bit and extra rock chips are created and prone to contamination.

#### (c) Auger Drilling

This method uses an auger as a drilling device. It usually includes a rotating screw helical blade called a "flighting" to act as a conveyor so as to remove the drilled-out material. The rotation of the blade causes the material to move out of the hole being drilled. auger drills are used for semi-consolidated soils and produce a core (hollow core) or loose samples (solid core)

#### (d) Churn drilling

A drill whose cutting action is achieved by raising and dropping a chisel bit. Under this operation, drilling is performed by a heavy string of tools tipped with a blunt-edge chisel bit suspended from a flexible cable, to which a reciprocating motion is imparted by its suspension from an oscillating beam thereby causing the bit to be raised and dropped. It is used to sample gravels by pounding a steel pipe into the ground and then pulling out the material trapped inside the pipe. In churn (cable tool drilling)- heavy chisel like steel is repeatedly jerked up and down by a cable wire.

#### (e) Sonic Drilling

Cutting or shaping materials with an abrasive slurry driven by a reciprocating tool attached to an audio-frequency electromechanical transducer and vibrating at sonic frequency. This method uses sound waves to consolidate wet deposits like tailings ponds and capture the soils in a tube.

So far, the most common methods which are used in modern day exploration drilling are diamond and reverse circulation drilling methods. The other types of drilling are for fairly specialized cases and because a solid sample is obtained directly can be quite accurate. Of course, it often happens that the sample won't come out of the pipe sometimes wholly as anticipated by the geologist. The mining industry lives and dies on the accuracy of the samples taken. And the most important samples are taken by drilling so it is important to understand the drilling process ensuring that good questions can be asked. As with anything in life, it is best to find out a bit about the company doing the drilling to decide as to the validity of the sampling results. Now that there is a lot of data collected and some interesting mineralization has been discovered, it is time to try and represent the data accurately in space. So the concept of a geological model is produced ■



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# Sovereign upbeat on Malingunde rutile prospects

By Wahard Betha

ASX-listed resources group Sovereign Metals says it is coming up with encouraging results in its exploration work for rutile in the Malingunde area in Lilongwe where it is also conducting a definitive feasibility study (DFS) for graphite mining.

The firm explains in a Press Release that it has identified high-grade rutile mineralization, with lesser leucoxene, over large areas within the Malingunde tenement.

The results have been demonstrated through re-assaying of historical hand-auger holes drilled in the area.

Nature rutile is the highest quality and best source of titanium feedstock used for production of titanium metals; and of titanium dioxide products used in specialist applications including welding electrodes, commercial aerospace and military applications; and is also a best source of titanium pigments useful in manufacturing paints, coatings and plastics.

Sovereign Metals MD Julian Stephens says: "Sovereign Metals is focused on developing a world-class, low-cost flake graphite operation at Malingunde with the 50t pilot plant work set to commence shortly as we ramp-up DFS activities."

"This discovery of large areas of high-grade rutile suggests the potential also for significant rutile deposits within Sovereign's large grounding holding. Given the currently strong fundamentals of the titanium feedstock market, the Company intends to undertake further exploration and metallurgical studies to advance this potential rutile opportunity."

The results demonstrate that rutile mineralization is likely to be present over vast areas and is hosted in soft free dig, near surface saprolite materials.

This has been discovered through a broad regional spread of 125 historical hand-auger drill holes which were selected for re-assay to assess the overall rutile potential across Sovereign's large tenement holding in the area.

Of a total 125 hand-auger holes assayed, 26 holes (21%) average 2.34% titanium oxide using a 2.0% lower cut; and 96 holes (78%) average 1.89% titanium oxide using lower cut.

The combined total drill is between 3-m and 12-m in depth and in areas across the broader Malingunde area mainly outside the main graphite deposit area and also



"We have some rutile here" Kruger disclosed during a visit organised by Malawi Extractive Industry Transparency Initiative across the broader Lifidzi area some 40km to the South-East of Malingunde.

At the broader Malingunde area, a zone of approximately 7km strike by 1.5km lateral width of near surface, high-grade titanium oxide mineralization has been identified.

This zone is open to the North-West and South-East along strike, and open laterally to the North-East and titanium oxide is shown to occur throughout the saprolite profile and is open at depth.

At Lifidzi area, three separate zones were re-assayed and resulted in 0.5km, 1.2km and 2.0km across strike widths of high grade titanium oxide being identified.

At Lifidzi, no mineralogy or metallurgy has yet been undertaken on the samples, however, the geology is broadly the same as at Malingunde, so rutile as the dominant titanium mineral is considered likely.

Stephens, therefore, says mineralogical and metallurgical

test-work is required in order to ascertain mineralogy of regional samples and further optimize the flow-sheet to improve rutile recoveries and concentrate grades.

"A work program to further assess the scale, grade and rutile recoverability of prospects and to generate new targets across the Company's substantial ground position is to commence shortly," says Staphens.

These chemical assay results have exceeded the company's expectations as they have demonstrated much higher titanium oxide values than occurred in the initial metallurgical and assay samples conducted in 2018.

On the issue of graphite which is Sovereign's prime target at Malingunde, the Company says Malingunde project's bias to large, jumbo and super-jumbo flake concentrates has attracted significant interest from potential purchasers of these high-value graphite products.

Sovereign is pursuing credible sales agreements with the potential buyers to support the project's development ■



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# TECHNICAL FILE

by Grain Wyson Phillip Malunga FIMMM  
Minerals, Geology, Environment & Corporate Affairs Consultant

## Malawi Country Report for June 2018

### Introduction

This report serves the purpose of informing the activities of the Chamber of Mines and Energy (CMEM) members on the developments in the minerals sector in 2018.

### Legislative/Regulatory issues

Parliament passed the Mines and Minerals Bill into an act to be accented to by head of state before being gazetted into law.

The main components of the new law relate to benefit sharing with mining communities. The law now mandates mining companies to enter into community development agreement (CDA) on benefit sharing. Corporate Social Responsibility (CSR) continues to be voluntary.

Unique additions are retention licence for holding on to a Mineral Right due economic reasons, small scale licences for Malawian Citizens only (Individual, Corporate and Associations), establishment of the office of Commissioner for Mines and Minerals and Mineral Resources Committee; fiscal provisions and free equity ownership of up to 10% by government for special projects.

### Tax Matters

Government introduced a stability period for taxation, ring fencing of projects and addressing issues of illicit financial flows revision of double taxation treaties.

### Infrastructure

The mining industry continues to face an energy crisis that has affected launching of new mining projects. Interconnection with Southern Africa Power Pool (SAPP) is at an advanced stage and Malawi has started importing 20 MW from Zambia.

Access to mining projects poses a challenge where low value minerals are in remote areas and capital expenditure on roads and energy makes projects not viable.

### Environmental Issues

The minerals sector in Malawi faces an environmental challenge in artisanal and small-scale mining in the areas of gold panning, coal mining and aggregate quarrying. Government intervened in areas of artisanal gold mining in Lilongwe and Mangochi in order to contain illegal mining, environmental degradation and social decay. Efforts are being put to formalize the sector through cooperatives and market establishment.

### Advanced Exploration Projects

The country is geared to be a significant exporter of niobium, rare earths (lanthanides) and graphite. Globe Metals and Mining completed techno-economic and environmental feasibility study for production of niobium concentrate.

The company is busy mobilising financial resources and forming strategic technical alliances to develop the deposit at Kanyika in Mzimba. The company will be a significant supplier of niobium in steel and space industry.

The Table 1 below gives an inventory of resources so far achieved:

CLASSIFICATION	Tonnes (MT)	Nb <sub>2</sub> O <sub>5</sub> (ppm)	Contained Nb <sub>2</sub> O <sub>5</sub> (t)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	Contained Ta <sub>2</sub> O <sub>5</sub> (t)
Measured	5.3	3,770	19,981	180	954
Indicated	47	2,860	134,420	135	6,345
Inferred	16	2,430	38,880	120	1,920
Total	68.3	2,830	193,281	135	9,219

The Company has so far achieved the following:

- EIA Certificates issued
- Development Agreement (DA) almost concluded
- Fiscal stability period of 10 years

**Mkango Resources** has completed detailed definitive drilling of 10,900 metres and is undertaking an Environmental and Social Impact Study for production of rare earths at Songwe in Phalombe. It has a strategic partner for financing and marketing in the name of Talaxis. The company is ready to be an important supplier of heavy lanthanides for the electronic and renewable energy industry.

The company released a prefeasibility resource assessment as summarised below (Table 2)

Total ore mined and processed	tonnes	8,482,603
Average strip ratio	x	4.5
Total waste mined	tonnes	38,441,726
Average life of mine TREO grade	%	1.60%
Mine life	years	18
Total REO recovered to concentrate	tonnes	48,275
Annual ore processed <sup>2</sup>	tonnes	500,000

The resource is expected to be improved with the recent concluded drilling and metallurgical tests.

**Bwanje Cement Company** is at an advanced stage in the preparation of a bankable document for production of cement and chemical grade lime at Golomoti in Ntcheu. The company is busy talking to potential and technical partners to develop the deposit.

Sovereign Metals is undertaking a Bankable and Environmental/ Social Impact Study for production of flake graphite at Malingunde in Lilongwe. The company has touted it as a world class flake graphite found in saprolite and easy to mine and process.

Table 3 below shows the current mineral resource estimate of the company.

MALINGUNDE ORE RESERVE						
	5.3		19,981	180	954	
	Tonnes (Mt)	Grade (%C)	Tonnes (Mt)	Grade (%C)	Tonnes (Mt)	Grade (%C)
Inferred	31	9.5%	5.3	8.9%	8.4	9.1%
Saprock	-	-	1.2	12.3%	1.2	12.3%
<b>Total</b>	<b>3.1</b>	<b>9.5%</b>	<b>6.4</b>	<b>9.5%</b>	<b>9.5</b>	<b>9.5%</b>

### Conclusion

Malawi continues to take advantage of the existence of renewable energy resources as projects with potential to bring about economic development. Rare earths, niobium and graphite have the highest potential to be developed. Malawi government needs to solve the energy crisis as a matter of urgency.

The Mines and Minerals Act 2018 will help bring stability and manage people expectation through community development agreements as a means of benefit sharing. Resource companies expect a stable fiscal regime to be able to meaningfully come up with a reasonable cash flow projection for their projects ■



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# Govt. advances plans to construct new airport in Mzuzu

## ...Chileka Airport earmarked for major facelift

By Gloria Mbwana

Government is progressing with preparations to construct a new airport in Mzuzu to replace the old one which is located right in the middle of city.

Spokesperson for the Ministry of Transport and Public Works, James Chakwera, told *Mining and Trade Review* in an interview that a site for the construction of the new airport was already identified in Lusungazi area in the city.

Chakwera explained that currently government is working on determining amounts of money to be paid as compensation to the people who will be relocated to pave way for construction works.

"Works can only start once the people have received their compensations and relocated. Therefore, the actual date for the onset of the project will be determined in due course," he said.

He said currently the airport project is being financed by Malawi government but the door is open to any investors

who wish to take up the project on Build Operate and Transfer (BOT) arrangement.

Meanwhile, the government says it is also progressing with plans to rehabilitate Chileka international Airport in Blantyre which is in bad shape.

The situation at Chileka recently forced South African Airways (SSA) to postpone flights to the airport.

Chakwera said though some of the improvements have already been carried out such that SAA has resumed flying to the airport, government is advancing plans for medium to long term measures that are yet to be carried out including the rehabilitation of the runway and perimeter fence likely to start in March this year.

He said: "The total project cost to renovate Chileka International Airport is MK3.6 billion, and the rehabilitation of the runway will be funded by government."

"The other envisaged project is the construction of a new terminal for Chileka Airport using a loan from the Chinese Government."



Chakwera: Site identified in Lusungazi

Chakwera also said the Government will soon establish an Airport Company to run all public Airports commercially which will be done by extending the mandate of the Airports Development Limited (ADL).

Currently, ADL manages and operates Kamuzu International and Likoma Airports and will take on board Chileka, Mzuzu and Karonga airports.

"It is hoped that by the second quarter of this calendar year this will have been finalized," he said.

The Department of Civil Aviation in the Ministry of Transport and Public Works is responsible for operations of public airports and it is tasked to oversee some regulations and other aviation activities in Malawi ■

# GSD studies unveil more mineral prospects in Malawi

- Mchinji Dyke has potential for chromium, lead, zinc
- Kayelekera uranium deposit bigger
- Nchalo basin possible petroleum trap

By Wahard Betha

Government says surveys it has been implementing over the years have revealed more potential for various minerals of economic importance in the country.

In a report presented at the 2018 Annual General Meeting for the Malawi Chamber of Mines and Energy in Lilongwe, Acting Director of the Geological Survey Department (GSD) in the Ministry of Natural Resources, Energy and Mining, Kondwani Dombola, explains that more exciting discoveries emerged from the Airborne Geophysical Survey conducted as part of the Mining Governance and Growth Support Project (MGGSP) and the Geological Mapping and Mineral Assessment Project (GEMMAP).

Dombola says, among other discoveries, new data from the World Bank and European Union financed Airborne Geophysical survey dubbed *Kauniuni* shows that the Mchinji Dyke, which is missing from the existing geological map, is more pronounced and shows high potential for valuable minerals such as chromium, lead and zinc.

The Mchinji Dyke which was calculated using automatic inversion called Euler Convolution has depth estimates of between 100 and 200 meters in the north, more than 300 meters in the centre and between 200 to 300 meters in the south.

Dombola says the survey also unveiled exciting data from the Kayelekera area in Karonga which shows that there are more uranium deposits outside the mining block with some uranium further to the south of the area.

The Kayerekerera Uranium mine which is owned by Paladin Africa covers an area of 55 square kilometers.

Dombola says the new geophysical data also indicates that the Nchalo Basin is a possible petroleum trap with thickness of up to 9000m within the threshold of petroleum formation of at least 1500 meters.

The new data also reveals that the basin is mostly concentrated



Airborne geophysical survey plane fly over a village

in the west of Ngabu fault as opposed to the old data which depicted the basin as mostly in the eastern part of Ngabu fault, and with an estimated 3000m thickness.

A Canadian firm Sander Geophysics executed the airborne geophysical survey which acquired Magnetic, Radiometric and Gravity data which was interpreted by the GSD with assistance from Geological Survey of Finland (GTK) and France (BGRM).

Meanwhile, the GSD and Department of Mines are implementing the GEMMAP project which consists of six components namely; Geological Mapping, Mineral Resources Potential Mapping, Training, Natural Risk (Geo-Hazard) mapping, Artisanal and Small Scale Mining and Laboratory equipment and documentation centre.

The Government engaged a consortium of BRGM, GTK and Council for Geosciences of South Africa to provide technical assistance to the five-year project, which will, among other things, interpret data from the *Kauniuni*



Dombola: more mineral potential

survey.

Dombola also says the GSD has planned to conduct some projects in the future which include a geochemical survey of the remaining parts of the country, updating geochemical databases, further training in Geographic Information System (GIS) and remote sensing for mineral exploration, mapping the geology of the country at 50K scale and filling gaps existing in the acquired high resolution airborne geophysical data.

He, however, expresses concern over some challenges the Department is facing including inadequate qualified personnel like geo-scientists, inadequate and old exploration and laboratory equipment like XRD and XRF, most of the data and information is in hard copies making it difficult to access, update, archive and disseminate, insufficient geochemical data coverage, insufficient funding to effectively carry out geo-scientific research and services and inadequate airborne geophysical data coverage ■



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## Govt. markets potential power projects to investors

By Wahard Betha

**G**overnment has lined up a number of power generation projects that it is marketing to independent power producers (IPPs) through local and international investment conferences.

Public Relations Officer for the Department of Energy Affairs in the Ministry of Natural Resources, Energy and Mining Saidi Banda says the initiative is aimed at attracting private investment in the power generation sector to increase the country's capacity, which is far from meeting the ever rising demand for electricity.

The projects earmarked for development include the 50MW Chasomba and 50MW Chizuma Hydro Power plants which seek to generate power on Bua River, and require a total investment of US\$451.4 million.

"These projects already went through feasibility studies which proved their viability for energy production and we are offering them to interested investors to develop," he says.

The other project on the table for IPPs is the 50MW Chim'gonda Hydro power project to be generating power on Dwambazi River and 100-175MW Lower Fufu power project to be generating from South Rukuru River.

The government is also promoting the 41MW Mbongozi Hydro Power Project on Bua River in Nkhotakota District, which is designed to have two generating plants of 16 MW and 25MW, with the development cost pegged at US\$198 million.

"The government developed an IPPs Framework to woo investors in the sector. We also created One Stop Shop Centre under Malawi Investment and Trade Centre (MITC) to facilitate efficiency in the investments and to sell the projects to investors," says Banda.



**Banda: Initiative aimed at meeting ever-rising demand**

He expresses optimism that investors will be identified for the projects saying the government has put in place a lot of incentives to attract players in the power generation sector, which is currently dominated by state owned Electricity Generation Company (EGENCO).

Development of power plants in these rivers will also help enhance security of power for Malawi as EGENCO generates about 98% of its power from power plants located on the Shire River, which has been subjected to environmental problems such as siltation and low water levels that are crippling machine operations.

Malawi is implementing a number of initiatives to address power supply challenges, which include the development of the Zambia-Malawi and Mozambique-Malawi power interconnectors.

Malawi-Mozambique interconnector is expected to be completed by 2021 while completion period for interconnection with Zambia will be determined as studies progress.

The country is also pursuing plans to diversify power sources by embracing alternative sources of energy including solar, wind, biogas and coal.

Malawi has an installed capacity of 347 MW against a peak demand of 700 MW which forces power utility Electricity Supply Corporation of Malawi (Escom) to resort to load shedding, which is affecting productivity in a number of economic sectors including mining and manufacturing.

The government, therefore, expects its interventions in the power generation sector to reduce load shedding, increase access to electricity, increase industrial production, increase development of new industries thereby increasing employment opportunities and improve provision of social services.

Malawi is, currently, importing 3MW of power from Mozambique through Mandimba to Mangochi and 20MW from Zambia through Chipata and Mchinji.

The country is also in discussions with Tanzania to import gas through Karonga to support the development of a 100MW Gas Fired Power Plant either to be operated by EGENCO or an IPP ■



**Natural Resources, Energy and Mining Minister, Aggrey Masi, launching Malawi power imports**



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