

Geological Society of Zimbabwe



Newsletter

February 2021

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Attendance at the Society visit to the Mistress Pegmatite north of Harare, 21st November 2020

Photo: Tony Martin

www.geologicalsociety.org.zw

The Geological Society of Zimbabwe, P.O. Box CY 1719, Causeway, Harare

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Editorial

Breaking news from *Mining Zimbabwe* on 14th February 2021 is the announcement by Zimplats' CEO, Alex Mhembe that an employee of a contractor succumbed to injuries sustained when the high-wall collapsed at the Ngwarati Mine (Portal 1) box-cut. Other employees who were underground at the time were safely evacuated by the Zimplats Proto Team. Mhembe extended his condolences to the deceased's family, friends and colleagues. He reiterated that the Company remains committed to delivering a safe working environment for all employees.

As we reach the close of Ellah Muchemwa's tenure as Chairperson of our Society, under the unusual and trying circumstances brought about by the ongoing Covid-19 pandemic, our AGM will take place online from 17.00hrs on 26th February 2021. The Zoom link is as follows:

Venue: Zoom

<https://us02web.zoom.us/j/6055302841?pwd=dTJhajc4ZVpBeFo3akZwU3N2ZjZ5UT09>

Meeting ID: 605 530 2841

Passcode: 4vW7h4

AGENDA

1. CONVENING OF THE MEETING
2. OBITUARIES
3. APOLOGIES
4. MINUTES OF THE PREVIOUS MEETING
 - 4.1 Consideration and approval of the minutes
 - 4.2 Matters arising not covered elsewhere in the agenda
5. CHAIRMAN'S STATEMENT
6. TREASURER'S REPORT
8. ANNOUNCEMENT OF THE NEXT COMMITTEE 2021 – 2022
9. PROFESSIONAL REGISTRATION AND PROPOSED CHANGES TO THE CONSTITUTION
 - 9.1 Code of Ethics
10. AWARDS AND PRESENTATIONS

10.1	A.E. Phaup Award
10.2	Mike Vinyu Award
10.3	Keith Viewing Award
10.4	Geoffrey Bond Award

Perhaps the most important discussion point for the meeting will focus on Professional Registration for Geologists with debate on the draft 'Code of Ethics' as circulated with the announcement to the AGM by Kudzie Musiwa. Please take time to read the proposed Code so as to be in a position to make a constructive contribution to the discussion leading to its acceptance and ratification of the necessary changes to our Constitution.

Kennedy Mtetwa has provided a couple of historic photographs that date back to the 1990's exploration and feasibility efforts to enable mining of the Main Sulphide Zone at Ngezi. This truly was an 'ace team' worthy of record. Kennedy also gleaned recent articles published in *Mining.com* that relate to local and international events in our industry. We thank him for that.

With news gratefully received from our contributors at our academic institutions, one aspect that appears to be consistently missing is that of ongoing research by university staff and students. I therefore reproduce an article from *Commentary Africa* that details the paucity of research into earth sciences from Africa by African scientists. Here lies the challenge, and we look forward to some summaries of ongoing and relevant research from our institutions. In congratulating Dr Oliver Maponga on his degree award, we might ask him to start the ball rolling.

Thanks are always extended to Forbes Mugumbate for his commentary on the state of our mining industry and for his record from the Geological Survey of Zimbabwe, an institution that is consistently reduced due to a lack of appreciation for the vital need to generate, maintain and distribute basic geological information relating to Zimbabwe.

Finally an obituary recognises the passing of one of our Members, Godfrey Gundani.

Update from Julie Kuhn:

GSZ: MEMBERSHIP REPORT AS AT END-DECEMBER 2020

Number of Ordinary Members	169
Members reinstated	1
Transferred from Foreign Membership	1
New Members elected October to December 2020	1
Welcome to Nkomo, Prince Malach	
Number of Associate Members	26
Number of Honorary Members	16
Number of Foreign Members (Dec. 2020)	8
Transferred to Ordinary Membership	<u>(1)</u>
TOTAL MEMBERSHIP	<u>221</u>

Member's subscriptions enable the Society to continue playing an active and meaningful role in the minerals industry of Zimbabwe. This includes promoting the advancement of

the geological sciences in Zimbabwe and fostering a better understanding of our geological environment. We strive to ensure that the country has the requisite geological expertise needed to service the industry.

A large number of Members still need to pay their subscriptions, and there are a few that also need to pay their arrear subscriptions. In order to vote at the AGM subscriptions need to be up-to-date and the Member needs to be in good standing with the Society.

Tim Broderick



Chairperson's Chat

Ellah Muchemwa

It gives me great pleasure to connect with you in this our last Newsletter under the 2020-2021 Committee.

Your Committee continued to adopt and adapt to the change that was necessitated by the constraints arising from the Covid-19 pandemic and associated lockdowns, particularly the change from face-to-face meetings to digital or online interactions. We have been able to host several well-attended and interactive online talks since the last newsletter, with the added advantage of achieving a wider reach with participation by members from across different parts of the world. Thank you to all the speakers and members who participated in these talks.

We look forward to continued collaboration with the Geological Society of South Africa where GSSA members are able to join and participate in online talks organised by the GSZ and vice versa. This allows access to a broader and wider range of talks for our members and I encourage you all to join in these collaborative events.

The Annual General Meeting (AGM) for the Society is coming up on the 26th February 2021. This will be an online Zoom meeting in line with current lockdown restrictions. The Code of Ethics, which is one of the building blocks for professional registration, will be presented for discussion and ratification. Suggested changes required for the constitution to support the implementation of the Code of Ethics will also be made. It is important that members read the draft Code of Ethics and proposed constitutional changes that have been circulated with the invitation to the AGM, to allow for constructive discussion at the meeting.

The Society continued to grow its membership and our drive will be to get the Society to be as representative as possible of the geologist population in the country. Please continue to encourage as many of your colleagues/students to join the Society.

The only field trip of the year was organised to Mistress Mine as part of the Summer Symposium following the relaxation of constraints caused by the Covid-19 pandemic and lockdowns in November. The trip, which was all outdoors, was well attended and followed all the necessary precautions as per Ministry of Health and Child Care guidelines.

The Newsletter remains one of the most important links between the society and its membership. We value your feedback on suggested improvements and or topics that should be covered in the newsletter and look forward to your input.

Thank you for your continued support. Please stay safe and continue to mask up and observe social distance.

Articles and Reports

Historic photographs relating to early ZIMPLATS exploration

Kennedy Mtetwa

In 1995 Hartley Platinum Project around Selous involved development of the mine as being 67% owned by BHP and 33% by Delta Gold. The PGM exploration south of Selous, known as the Ngezi exploration project, was 100% owned by Delta Gold at that time. A concerted exploration effort was co-ordinated from a team base in Chegutu led by project geologist, Harry Wilhelmij. The team came up with their inaugural resource estimate for Zimplats and they celebrated this at their Christmas Party at the end of 1995 in Selous. The first photograph is a record of that team. Delta Gold followed up with a feasibility study to mine the Ngezi ore through 1996 into 1997. With the buy-out of BHP by Delta Gold upon closure of the Hartley Platinum Mine, Zimplats was born on the Australian Stock Exchange on 15th October 1998.



From Left: Sally Mawson (Draughts person), Doug Jack (Project Geologist), Kevin (Australian geotech consultant), Bera (Australian Project Administrator), Kennedy Mtetwa (Geologist), Sheryl Wendell (Zimbabwe Project Administrator), Alistair Cowden (Australian Zimplats Project Manager), Martine Wilhelmij (Field Administrator) and Harry Wilhelmij (Project Geologist).

The second photograph shows the Zimplats exploration core shed team from 1995 with Harry Wilhemij (Project Geologist) at left, Kennedy Mtetwa (Geologist) third from left and long term technician, Hamish Mariranyika at centre where he is standing against the core tray stack. Ben Mariranyika, Hamish's uncle, was the claims master responsible for pegging the entire mining lease real estate between Makwiro and the Ngezi River for Zimplats. Ben had previously been employed as a technician for the British Geological Survey mapping project between Rushinga and Nyamapanda where he led the stream sediment geochemical programme. Sadly, he has since passed.



Why African countries must invest more in earth sciences

February 11, 2021 3.47pm SAST

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The African continent contains some of the world's richest mineral resources. For instance, the Democratic Republic of Congo produces most of the world's cobalt; Rwanda, Ethiopia and Mozambique are major contributors to global tantalum output. These minerals are important constituents in modern electronics.

The continent also has the bulk of global reserves of platinum and palladium, metals which are critical in the rapidly evolving market for renewable energy and electric vehicles.

With such resources to hand, African researchers should be contributing significantly to the academic discipline of earth science – the physical and chemical makeup of the solid Earth, the oceans and atmosphere.

A robust earth science discipline has positive effects: the South African minerals industry employs almost 500,000 people directly and contributed about R350 billion to the country's GDP annually.

Get your news from people who know what they're talking about

But exactly how much local knowledge and expertise in the earth sciences is developed by Africans, in Africa? That is what we set out to establish in a recent journal article. We surveyed 182,996 articles published in high-impact international earth science journals. These are prestigious journals that publish work by world leaders in research.

Our findings were alarming: 70% of research articles about some aspect of earth science in Africa do not contain a single African author. This compares very unfavourably to other regions. The five countries producing the most earth science research are the US, China, Australia, Japan and Canada, all of which also produce at least 60% of the research on their own countries.

We also found that the average contribution of African-authored earth science articles to the international literature has been 2.3% since 1973. This is extremely low; the US, a country with one-quarter of Africa's population, produces 47% of the literature.

It seems the production of earth science knowledge in Africa is simply not progressing, despite the world's interest in (and exploitation of) the continent's mineral wealth.

We argue that the reasons are preparedness, research expenditure and “parachute” science.

Preparedness

Nearly all countries around the world have a geological survey whose task is to examine and map basic geology, mineral resources and geohazards, and maintain databases related to geology and minerals.

However, two studies, by Geoscience Australia and the African Minerals Development Centre, have shown that most geological surveys in Africa lack capacity and geological information. Only six countries are able to undertake active geoscientific work: South Africa, Egypt, Ethiopia, Morocco, Namibia and Tanzania. These countries are within the top seven producers of earth science research in Africa. This suggests there is a link between a national survey's functionality and a country's research output. Although we have no information on why these countries have more active surveys, it might relate to their abundant mineral wealth.

Other work related to scientific publishing in the developing world has shown that relatively poor research output is linked to governments' perceptions that research is peripheral to meeting basic needs like food and health care. Research often needs laboratories, specialised equipment, substantial funding and technicians.

Many African scientists also tend to submit research articles to relatively low-impact, Africa-centric journals and are reluctant to collaborate on high-impact work. The main reason for this is overloading with teaching and service obligations, which has been documented at many African institutions.

There is also a well-documented "brain drain" of scientists from Africa. The International Organisation for Migration indicates that Africa has lost about 20,000 trained professionals each year since 1990, 30% of whom are academics.

Spending and investment

One of the most enlightening findings in our research is the link between spending on research, and research output and impact.

In Africa, research spending has increased from US\$4 (1996) to US\$42 (2017) per capita. The global average has increased from US\$100 to US\$300 per capita over the same period. The figures for high-income countries are significantly higher: about US\$450 per capita in 1996, which more than doubled over the past 20 years to US\$1,064. If these trends are plotted over trends in earth science research output, clear parallels emerge between research funding input and research output.

If there was not a lot of earth science research happening in African countries, this would explain the lower figures. But this is not the case.

By examining individual articles, we found a great deal of earth science research happens in Africa. But much of it appears to be "parachute" science. This is when researchers from developed nations work in Africa (for example, doing field work and collecting samples) without involving in-country scientists. African scientists may be excluded altogether, or left out when articles are being written for publication.

In the medical and health science fields, practitioners are becoming very aware of the negative impacts this can have. Some journals are becoming stricter in accepting this type of work, because it continues old colonial patterns in science and marginalises the prospects of in-country researchers.

Future directions

If African economies wish to build geoscience capacity, develop their own knowledge and use their own mineral resources, they must spend more on developing and retaining earth scientists and increasing research resources.

Researchers visiting and working in Africa ought to collaborate with their African counterparts, to develop skills and output that has impact. Funding bodies and universities in high-income countries should reevaluate their funding and reward policies to promote this.

Journals should avoid condoning the types of "parachute" science that marginalise researchers in developing countries through their publication of such articles.

Within Africa, it is critical that research institutes and universities reward meaningful research and international collaboration, retain high-quality staff and bolster investment.

https://theconversation.com/why-african-countries-must-invest-more-in-earth-sciences-153736?utm_term=Autofeed&utm_medium=Social&utm_source=Facebook#Echobox=1613095669

Some International Mining News

gleaned from <https://www.mining.com/>

by Kennedy Mtetwa

Zimbabwe gold deliveries tumble nearly a third in 2020

Gold sales to Zimbabwe's sole buyer and exporter of bullion, Fidelity Printers and Refiners (FPR), fell 31% to 19 tonnes last year following lower deliveries from small-scale miners, official data has shown. FPR pays US dollars in cash to small-scale gold miners, but a shortage of hard currency caused delays in payments through most of last year. That forced many miners to sell their gold to illegal buyers, industry officials say. Deliveries of gold, the country's top foreign currency earner, have been on the decline since reaching a record 33.2 tonnes in 2018. The central bank has announced plans to unbundle FPR into two separate companies and sell a majority stake in the new gold refinery business to miners in a bid to boost output. FPR data shows that total gold deliveries fell to 19.05 tonnes from 27.66 tonnes in 2019. Small-scale producers sold only 9.35 tonnes last year compared with 17.48 tonnes in 2019. The government says gold worth at least \$1.2 billion is illegally exported from the country annually. Last month Zimbabwe banned the use of mercury in mining, which could further curtail gold output in the short-term, especially from the small-scale sector.

Kuvimba seeks \$1 billion for its 2021 acquisitions and capex

A mining company that is majority-owned by the Zimbabwe Government, and whose profits are intended partly to be used to compensate former white commercial farmers for land confiscated two decades ago, intends to raise \$1 billion for acquisitions and capital expenditure. Kuvimba Mining House Ltd, in which the government holds a 65% stake, will invest a "significant amount" of the cash raised on the Darwendale Platinum Project, which belongs to its Great Dyke Investments unit, according to Chief Operating Officer David Brown. About \$100 million will be set aside for acquisitions and capital expenditure over the next 12 months, he said in emailed responses to questions. The group, whose portfolio includes gold, nickel and platinum, will raise part of the money internally through its operations, Brown said. It will also issue debt. Brown indicated that Kuvimba has three working gold mines producing about 300 kg of the metal each month and owns a nickel mine with monthly output of 550 tonnes. The company is finalizing negotiations to acquire Metallon Gold Zimbabwe Ltd's Mazowe Mine. It is looking at other assets such as lithium, nickel and copper and is also intending to explore opportunities elsewhere in Africa.

Kuvimba is held by government pension funds and Zimbabwe's sovereign wealth fund, Finance Minister Mthuli Ncube said in a separate interview. He denied any ownership by Kudakwashe Tagwirei, an adviser to President Emmerson Mnangagwa, who is under US targetted sanctions for alleged corruption. Profits from Kuvimba will be used to compensate former white commercial farmers for land confiscated two decades ago and for pension payments that are in arrears, Ncube said.

Gold price begins new year on a high

Gold is off to a good start in 2021 after recording its best yearly gain in a decade. Prices surged above \$1,900 an ounce to the highest in almost two months as lower US real yields and a weaker dollar kept the yellow metal's momentum up.

Spot gold advanced 2.1% to \$1,939.41 an ounce by 11:40 a.m. EST. US gold futures were also up 2.6% to \$1,945.10 per ounce.

Funds still in the driving seat as copper hits fresh highs

London Metal Exchange (LME) copper last week punched up through the \$8,000-per tonne level for the first time since February 2013. LME three-month metal price touched a high of \$8,238 per tonne and has retracted to a current \$7,900. The copper price has now almost doubled since its Covid-19 low of \$4,371 in March last year. The subsequent super-charged rally has been a bullish collision of positive short-term fundamentals, particularly China's unprecedented buying spree, and funds betting on a longer-term, commodities-intensive global recovery. However, there is a growing sense of unease that high-flying copper may be due a fall.

Glencore seals Zambia copper sale

Glencore Plc has agreed to sell its stake in Mopani Copper Mines Plc to the Zambian Government for \$1.5 billion, but will get just \$1 upfront. Mopani Copper Mines is 73.1% owned by Glencore, 16.9% by First Quantum Minerals and 10% by ZCCM Investments Holdings Plc. Glencore has been in talks with the state about Mopani since last year after the two clashed on the future of the mine, which has been unprofitable for years. Despite the challenges, the operations are a vital employer for Zambia. Glencore said Tuesday it will receive \$1 for its share of the 90% holding it owns with Vancouver-based First Quantum Minerals Ltd. There has been speculation on how Zambia would pay for the asset after it became the first African country to default on its debt since the onset of the coronavirus pandemic. Zambia's state-owned ZCCM Investments Holdings Plc already owned 10% of Mopani. Once the deal is complete, Mopani will owe its previous owners \$1.5 billion. That will be repaid from sales and profits going forward. Glencore, the world's biggest commodity trader, will retain offtake rights for Mopani's copper production until the debt has been paid. Mopani was once central to Glencore's plans to turn around its African copper business that has been dogged by problems in recent years. The company spent billions of dollars to sink new shafts, but the asset has struggled to turn a profit. Still, once fully operational, the mines should produce about 140,000 tons of copper a year, compared with just 51,000 tons in 2019. "The move exits Glencore from a loss-making asset, reduces future capex exposure and simplifies its copper business," said Alexander Pearce, an analyst at BMO Capital Markets.

Glencore shelved its plans to place the operations under care and maintenance last year after Zambia threatened to revoke its mining license in April. The government's strategy is driven by a need to safeguard jobs at the site. Mines Minister Richard Musukwa said that the plans to shutter the mine would have led to 15,000 workers being laid off and sent home. President Edgar Lungu will be hoping that by stepping in to take ownership, he'll win support from labor unions and workers ahead of elections later this year. Zambia went into arrears in November, after failing to convince bondholders to freeze debt-service payments. Taking on Mopani's debt to keep the operations running in the key Copperbelt Province could further harm the government's chances of getting a loan from the International Monetary Fund. Musukwa said the loans will be paid off in 10 to 17 years, depending on the copper price. Still, the country will look for partners to help shoulder the debt burden. Musukwa said the government has received interest from companies based in Canada, Turkey, Qatar, China and South Africa. Mopani will require about \$300 million of investment to complete projects that Glencore had started, he said.

Kabanga, Tanzania to develop world's largest nickel deposit

British miner Kabanga Nickel, formerly known as LZ Nickel, has inked a framework agreement with the government of Tanzania to develop the world's largest battery-grade nickel sulphide deposit in the country's northwest. As part of the deal, the parties have created a joint company called Tembo Nickel Corp., which will mine, process and refine class 1 nickel with cobalt and copper co-products. Kabanga Nickel is the new entity's majority owner with an 84% stake. Tanzania owns the remaining 16%, which is the government's usual stake in all of the country's mining projects. Economic benefits from the Kabanga nickel project, formerly owned by Barrick Gold and Glencore, will be shared equally between the two shareholders, the parties said in the statement.

Tanzania, Africa's fourth-largest gold producer, has sought in recent years higher revenues from its vast mineral resources by overhauling the fiscal and regulatory regime of its mining sector. Barrick and Glencore lost the nickel project in 2018, when President John Magufuli's administration revoked their retention license, along with 10 others. The move followed the suspension of new mining permits and the passing of two bills giving Dar es Salaam the right to renegotiate or revoke existing licenses. The Kabanga project hosts an *in situ* mineral resource of 58 million tonnes at 2.62% Ni, containing more than 1.52 million tonnes of nickel, a key ingredient for the making of electric vehicles (EVs). The company said the deposit also has significant amounts of cobalt and copper with a 30-year mine life. Kabanga Nickel noted it will acquire all the project data and information from Barrick and Glencore, including a 2014 draft feasibility study report and subsequent updates. It also said it would build a hydrometallurgical (hydromet) plant, which is expected to reduce carbon footprint and minimize environmental impact, as well as lower capital and production costs. "The project aims to develop the country's vision of adding value to all minerals and to expand refineries beyond Kabanga that will make Tanzania a regional and central hub for East and central Africa capable of processing minerals in Africa," the company's vice chairman, Chris von Christerson, said in the signing ceremony.

IAMGOLD, AngloGold Ashanti close Mali mine sale

IAMGOLD and joint venture partner AngloGold Ashanti announced in December 2020 that they completed the sale of their collective interests in Société d'Exploitation des Mines d'Or de Sadiola S.A. to Allied Gold Corp. SEMOS' principal asset is the Sadiola gold mine in the Kayes region of Western Mali. Sadiola, one of the three assets AngloGold Ashanti put on the chopping block this year and IAMGOLD's founding asset, is also owned by Mali's government, which has an 18% interest. The \$150 million deal was first announced in December 2019 but delayed in August over a coup, which was Mali's second in less than ten years. The coup capped weeks of protests demanding that Malian President Ibrahim Boubacar Keita step down. Keita faced opposition criticism for alleged corruption and nepotism within his administration, and the mishandling of an escalating Islamist insurgency in the West African nation. B2Gold, Resolute Mining, AngloGold Ashanti, Hummingbird Resources, Roscan and Cora Gold said operations and staff were unaffected, but traders sold shares because of increased political risk. Immediately prior to the transaction, the companies said, a dividend of \$20 million was declared and paid by SEMOS pro-rata to its shareholders. IAMGOLD and AngloGold Ashanti each received a cash dividend of \$8.2 million and the Republic of Mali received a cash dividend of \$3.6 million. "We are pleased to complete this transaction, which underpins our commitment and focus on a prudent capital allocation strategy as we embark on a transformational path with the execution on our growth pipeline," IAMGOLD CEO Gordon Stothart said in a

press release. “The Sadiola Mine was the founding cornerstone asset and building block of our company, and we would like to recognize the Sadiola team, surrounding communities and all stakeholders for their valued support over more than twenty years.”

Trump hurries to loosen mining regulations, approve projects

Outgoing US President Donald Trump’s administration is moving to loosen mining regulations and green-light new mineral projects before leaving office this month, with successor Joe Biden unable to reverse some of the changes. Administration officials tell *Reuters* they plan to publish a raft of decisions on January 15 that will expand miners’ access to Federal lands, give final approval to Lithium Americas Corp’s Nevada lithium mine and approve a swap for a Rio Tinto Ltd Arizona copper mining project, among other steps. Biden will be able to reverse some of Trump’s changes, especially proposed rules under regulatory review. But some of Trump’s steps will either be irreversible or require Biden to restart the rule-making process, a years-long effort, which is a concern to environmentalists. Trump administration officials are finalizing a rule change that would add mining to a list of industries that can receive fast-tracked permitting, part of a law signed by former President Barack Obama in 2015, according to government records. The law, known as FAST-41, was intended to streamline permitting for utility projects, such as power transmission lines. “Congress never intended for FAST-41 to cover the mining sector,” U.S. Representative Raul Grijalva of Arizona, chairman of the House Natural Resources Committee, wrote to regulators late last month, attempting to stop the change.

Officials may also allow the storage of mine waste, known as tailings, on Federal land. The proposed change would essentially codify an existing practice in an area of law that environmentalists say is vague. The Bureau of Land Management, the Federal agency considering the new rule, did not respond to a request for comment. Several U.S. lawmakers called for Trump’s immediate removal after his supporters stormed the U.S. Capitol on Wednesday January 6. It is not clear if Vice President Mike Pence would continue Trump’s regulatory steps. Trump could exercise his power under the Administrative Procedure Act, which stipulates how regulations are drafted and enforced, to finalize both proposals before he leaves office, a step that would require him to find “good cause” for the faster-than-normal approval. The National Mining Association, an industry trade group, says it supports streamlining regulation, especially the FAST-41 changes. “American mining is key to successfully repairing our nation’s infrastructure,” said Rich Nolan, the NMA’s president. The Biden transition team said its incoming administration “will begin to take swift and bold action across the Federal government to roll back harmful Trump Administration policies, including those impacting climate and environmental policies, on January 20 to halt or delay Trump’s damaging midnight regulations.” Trump officials are also on the verge of approving several mining projects, or significantly advancing their regulatory review process. One of those, the Lithium Americas Thacker Pass project in Nevada, is expected to be approved on January 15, according to an official at the Bureau of Land Management. “It’s been a good, collaborative process with state and Federal authorities. We look forward to the decision,” said Jon Evans, chief executive of Lithium Americas, which has been developing the project for more than a decade. Lithium is a key component of electric vehicle batteries.

At least ten other projects were deemed important enough to the U.S. economic recovery from the coronavirus pandemic that they should receive fast-track permitting, according to an executive order the President signed last June. Several gold and phosphate fertilizer projects in Nevada and Idaho, respectively, have also either been approved by Trump

recently or have seen major advancements in the permitting process. In Utah, developers of the Twin Bridges Bowknot Helium Project received approval to drill seven wells, build roads and install pipelines to produce helium in the Labyrinth Canyon Wilderness, a project environmentalists claim has been fast-tracked ahead of Biden's inauguration. A judge issued a temporary injunction to the project in late December, pending a full review. In South Dakota, the Dewey-Burdock uranium mine got several important permits from the U.S. Environmental Protection Agency in November, though it will need other permits before it can open. The mine, like Rio's project in Arizona, is strongly opposed by Native American tribes who say it will pollute their water reservoirs. In Arizona, Trump's plans to approve the land swap needed for Rio to build a copper mine has run into stiff opposition from Native Americans who consider the land sacred. Rio fired its chief executive last year after he oversaw the destruction of indigenous sites in Australia. Its new CEO has vowed to "restore trust" with indigenous groups, though Native Americans say the company is poised to make the same mistake in Arizona as it did in Australia.

Copper, iron ore price rally adds \$250bn to Top 50 mining companies

Propelled by a fourth-quarter rally in copper and iron ore prices, MINING.COM's ranking of the world's 50 most valuable mining companies jumped to a new record high of \$1.3 trillion by year's end. The Top 50 most valuable mining companies added \$250 billion in market capitalization over the three months to end December thanks to surging base metal and iron ore prices, and precious metals markets holding onto most of their 2020 gains. Measured from the height of the pandemic in March-April, the MINING.COM TOP 50* has now recovered by \$580 billion amid predictions of a post-pandemic supercycle in commodities demand thanks to construction and green infrastructure spending not only in China but also in the US and many parts of the developed and emerging world.

Iron ore price lit a fire under the top 4 producers, with a strengthening currency further boosting BHP, Rio Tinto, and Fortescue's US dollar value during the year. Fortescue Metals Group was the best overall performer in 2020, climbing to number 4 after starting the year outside the top 10. US iron ore producer Cleveland Cliffs managed to climb 18 spots but fell just short of the ranking at position number 53.

Gold's relative underperformance during the quarter saw two mid-tier producers – B2Gold and Yamana Gold – fall out of the top 50 at year-end and replaced by Lundin Mining and Ivanhoe Mines. Once Endeavour (which also absorbed Samafo this year) and Teranga close their combination, the merged entity would stand a good chance of entering the Top 50.

Base metal miners stormed the rankings towards the end of the year, and Ivanhoe becomes the first non-producing company to rank among the Top 50 and joins other copper companies on the best performing list, notably Freeport McMoRan and KGHM.

*** Notes:**

As with any ranking, criteria for inclusion are contentious. We decided to exclude unlisted and state-owned enterprises at the outset due to a lack of information. That, of course, excludes giants like Chile's Codelco, Uzbekistan's Navoi Mining, which owns the world's largest gold mine, Eurochem, a major potash firm, trader Trafigura, top uranium producer Kazatomprom (partially listed on the LSE, but with only an estimated market value) and numerous entities in China and developing countries around the world.

Another central criterion was the depth of involvement in the industry before an enterprise can rightfully be called a mining company. For instance, should smelter companies or commodity traders that own minority stakes in mining assets be included, especially if these investments have no operational component or not even warrant a seat on the board? This is a common structure in Asia, and excluding these types of companies removed well-known names like Japan's Marubeni and Mitsui, Korea Zinc and Chile's Copec.

Levels of operational involvement and size of shareholding were central considerations. Do streaming and royalty companies that receive metals from mining operations without shareholding qualify, or are they just specialized financing vehicles? We included Franco Nevada, Royal Gold and Wheaton Precious Metals. What about diversified companies such as BHP or Teck with substantial oil and gas assets? Or oil sands companies that use conventional mining methods to extract bitumen, for that matter? Vertically integrated concerns like Alcoa and energy companies such as Shenhua Energy where power, ports and railways make up a large portion of revenues pose a problem as do diversified companies such as Anglo American with separately listed majority-owned subsidiaries. We've included Angloplat in the ranking, as well as Kumba Iron Ore. Chemical companies are also problematic – should Albemarle not be ranked because its potash and lithium operations are such a small part of its overall revenues? The same issue applied to FMC before it spun off its lithium business. Many steelmakers own and often operate iron ore and other metal mines, but in the interest of balance and diversity we excluded the steel industry, and with that many companies that have substantial mining assets including giants like ArcelorMittal, Magnitogorsk, Ternium, Baosteel and others.

Head office refers to operational headquarters wherever applicable, for example BHP and Rio Tinto are shown as Melbourne, Australia, but Antofagasta is the exception that proves the rule. We consider the company's HQ to be in London, where it has been listed since the late 1800s. Trading data are from primary listing exchange and currency cross-rates at the date of publication. Market capitalization calculated at primary exchange, where applicable from total shares outstanding, not only free-floating shares.

MINING [DOT]COM TOP 50

	Chg 2020	Company	HQ	Operations	Market Value – end-2020 (\$)	Change – Mar 31 (\$)	Change – Jan 1 (%)
1.	0	BHP Group	Melbourne	Diversified	165.82B	76.7B	20.6%
2.	0	Rio Tinto	Melbourne	Diversified	142.30B	58.5B	24.4%
3.	0	Vale	Rio de Janeiro	Diversified	86.37B	43.8B	27.0%
4.	8	Fortescue Metals	Perth	Iron ore	55.72B	37.0B	142.3%
5.	-1	Norilsk Nickel	Moscow	Diversified	50.77B	12.7B	3.6%
6.	2	Southern Copper	Phoenix	Copper	50.34B	28.6B	53.3%
7.	0	Newmont Goldcorp	Denver	Gold	48.15B	11.6B	35.1%
8.	-2	Anglo American	London	Diversified	45.20B	20.6B	12.2%
9.	-4	Glencore	Baar	Diversified	42.46B	21.5B	-0.0%
10.	-1	Barrick Gold	Toronto	Gold	40.64B	8.3B	25.0%
11.	3	Freeport-McMoRan	Phoenix	Copper	37.81B	28.0B	98.6%
12.	6	Zijin Mining	Xiamen	Gold	36.48B	24.5B	140.3%
13.	4	Polyus	Moscow	Gold	29.05B	12.0B	88.0%
14.	-4	Nutrien	Saskatoon	Potash	27.47B	8.1B	0.3%
15.	-4	Anglo American Platinum	Johannesburg	PGM	25.85B	14.7B	1.7%
16.	-3	Franco-Nevada	Toronto	Precious Metals	24.01B	5.4B	24.2%
17.	5	Antofagasta	London	Copper	19.42B	10.0B	62.9%
18.	3	Wheaton Precious Metals	Vancouver	Royalty	18.83B	6.6B	42.0%
19.	0	Agnico Eagle	Xiamen	Gold, Copper	17.11B	7.7B	17.0%
20.	-4	Newcrest Mining	Melbourne	Gold	16.21B	5.5B	0.1%
21.	-1	Shandong Gold Mining	Jinan	Gold	15.86B	861.7M	9.2%
22.	6	China Molybdenum	Luoyang City	Copper	14.10B	8.1B	52.2%
23.	2	Kumba Iron Ore	Johannesburg	Iron Ore	13.39B	8.5B	39.3%
24.	14	SQM	Santiago	Lithium	12.92B	7.0B	83.9%
25.	14	First Quantum Minerals	Vancouver	Copper	12.42B	8.9B	78.9%
26.	3	Sumitomo Metal Mining	Tokyo	Base Metals	12.25B	6.6B	36.9%
27.	13	Sibanye Stillwater	Johannesburg	Gold, PGM	12.15B	8.8B	86.0%
28.	-13	Coal India	Kolkata	Coal	11.42B	81.3M	-37.6%
29.	12	Fresnillo	Mexico City	Silver	11.38B	5.3B	82.9%
30.	0	Kirkland Lake Gold	Toronto	Gold	11.35B	3.2B	33.9%
31.	6	Polymetal International	St-Petersburg	Gold	10.87B	2.8B	46.6%
32.	-1	Jiangxi Copper	Guixi City	Copper	10.69B	4.5B	27.0%
33.	-1	Impala Platinum	Johannesburg	PGM	10.60B	7.2B	28.8%
34.	-11	Alosa	Mirny	Diamond	9.90B	4.0B	-1.6%
35.	12	KGHM Polska Miedz	Lubin	Copper	9.89B	7.2B	92.2%
36.	4	Boliden	Stockholm	Diversified	9.75B	5.0B	49.5%
37.	-13	Teck Resources	Vancouver	Diversified	9.67B	5.6B	-0.4%
38.	-12	AngloGold Ashanti	Johannesburg	Gold	9.27B	1.8B	-2.0%
39.	3	Kinross Gold	Toronto	Gold	9.26B	4.3B	56.1%
40.	-13	South32	Perth	Base Metals	9.21B	3.9B	-2.5%
41.	-9	Mosaic	Plymouth	Potash	8.72B	4.6B	4.5%
42.	-9	Vedanta	Panaji	Base Metals	8.13B	5.0B	1.4%
43.	2	Gold Fields	Johannesburg	Gold	8.01B	4.0B	46.7%
44.	-8	Yanzhou Coal	Zoucheng	Coal	7.57B	1.6B	1.7%
45.	-2	China Northern Rare Earth	Baotou	Rare Earth	7.36B	2.8B	30.1%
46.	2	Pan American Silver	Vancouver	Silver	7.27B	4.3B	46.8%
47.	-13	Royal Gold	Denver	Gold	6.97B	1.2B	-12.7%
48.	3	Evolution Mining	Perth	Gold	6.57B	2.6B	45.9%
49.	3	Lundin Mining	Toronto	Base Metals	6.53B	3.8B	48.9%
50.	10	Ivanhoe Mines	Vancouver	Copper, PGM	6.51B	4.5B	95.3%

Source: MINING.COM, Miningintelligence, Morningstar, GoogleFinance, company reports. Share data from primary-listed exchange converted to US\$ at currency cross-rates Jan 4 2020.

News



Geology Department, University of Zimbabwe

Maideyi Meck

The department buildings are yet to succumb to the ravages of covid. They have maintained their social distance as no staff or students are daring to enter them 😞😞😞. On a serious note so far none of the departmental staff has tested positive. We, however, had two of our students who tested positive, but they are now fully recovered.

In this newsletter I will only report on the situation within the old Geology Department as we know it. I hope to report on the merged Chemistry and Earth Science Department in the next edition. I currently do not have news or statistics from our sister institute as we have only met once since the merger.

The first semester for 2020/2021 started in October with groups of students coming in for a varying period of time ranging from 2- 4 weeks. The rest of the teaching is taking place online. The semester is likely to end sometime in March but exams have been scheduled for February. So far the Geology section of the new department has not been able to carry out field courses due to pandemic restrictions. Any suggestions from the geological fraternity as to how the department may bridge this gap would be most welcome.

Mr Oliver J. Maponga has been granted his PhD degree by the University of Johannesburg, so we now have another Doctor in the house. Congratulations are extended.

Department staff members have the following projects running, and Society Members who wish to contribute to any of them are free to contact Dr Meck:

1. Landslide in Zimbabwe - UNESCO
2. Capabilities of geospatial methods to detect minerals - RCZ
3. Geoscience Curriculum review for African Universities - AU

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The Mennell Geological Society

President: Tinashe Mudzingwa (President)

Patron: Fadzanayi Bornwell Mupaya
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Graduation thank you note:

The University of Zimbabwe Geology graduate class of 2020 would like to express their utmost gratitude to the University of Zimbabwe geological staff and to the Geological Society of Zimbabwe. The graduates would like to thank you for your guidance, support and generosity of spirit over the past 4 years. To the University of Zimbabwe lecturers, we thank you for being wonderful teachers and friends. We gained so much important knowledge about life in general and our intended careers from your mentorships. As much as we hated to study and complete all the project work and assignments given, we can now clearly say that you moulded us into better people and we are ready to take up the challenges in life.

The graduates would also like to extend their gratitude to the Geological Society of Zimbabwe for its interaction with the Mennell Geological Society. We thank you for your mentorship, assistance in attachment seeking, field trip sponsoring funds, the continuous assessments and interest in the activities of the Mennell Society. This enabled us to gain

field work exposure to gold, nickel and coal mines such as Freda Rebbeca, Trojan Nickel and Makomo Resources. It also helped us to increase the levels of confidence in ourselves and has given us the enthusiasm to get into the real geological industrial field. Our hope now is that you also help in creating job opportunities for us so that we continue to grow and learn to become competent geologists.

Thank you for being an important part of our college journey.

The University of Zimbabwe Geology Graduate Class of 2020 comprised 31 students of whom 10 are female and 21 male. This group included both students from the February and August 2016 intakes. Below is the list of the graduates:

Geology Class of 2020 Graduates.					
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	28	MSPIHA	AUDREY		
	29	TATIRA	TANYARADZWA		
	30	NYAMOMBE	VINCENT		
	31	DZINAMARIRA	TAPIWA		

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MIDLANDS STATE UNIVERSITY
FACULTY OF ENGINEERING & GEOSCIENCES
ZVISHAVANE CAMPUS

Updates from the Faculty of Engineering & Geosciences

A positive development during the ongoing Covid-19 pandemic is the exposure of our students and staff to webinars and online lectures accessible from diverse experts across the globe. Local industry personnel and academics from sister institutions who would like to share their knowledge with MSU academics and students can contact me on the email address below should they wish to contribute. The next online event that will have been hosted by MSU is the launch on 28th January 2021 of the Mine Safety Campaign. This campaign, initiated by Faculty students and the Young Miners' Foundation, is supported by our Faculty, the Ministry of Mines & Mining Development and the Mining Industry.

Staff who resigned during 2020, as reported in the October 2020 Newsletter, are being replaced through normal MSU recruitment processes. As we fill the gaps, the Faculty invites experienced mining industry personnel, especially mining engineers, to apply for flexible lectureships/mentorships in order to share their knowledge and experiences with our young staff recruits, and with students. The lectureship/mentorship scheme is supported by MSU and the Royal Academy of Engineering. Those interested can contact me using the email below to discuss further details.

Submitted by Dr Antony Mamuse, Executive Dean
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NUST – DEPARTMENT OF APPLIED PHYSICS
EARTH SCIENCES PROGRAM

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ZIMBABWE SCHOOL OF MINES

Serving the SADC mining industry



The ZSM school calendar had to be altered in response to Covid-19 restrictions. Examinations that are normally written from November to December have been scheduled for March 2021. Lectures that were set to kick off in January on campus have been suspended. Instead they are now running online with the use of interactive boards linked to online teaching platforms like *Google Meet* and *Classroom*. Students can access books and library material from the school's website.

Delivery of practicals has been through demonstrations in an attempt to keep the students practically oriented. In this light the school is appealing to mining organisations to assist with videos of geologists and geotechnicians at work in the field or on the mine to give the students that experience as we cannot take them out to the mines for exposure.

2020 attachments were severely affected by the Covid-19 pandemic with only 64% of the second-year students being attached. The School has since allowed those who failed to get attachment to come back and proceed to third-year in 2021, then go on attachment in 2022. This process, however, creates serious disruption to the attachment programme. We therefore appeal to mining houses to accept our students for attachment for at least eight months.

The graduating class of 2020 had no graduation ceremony due to the pandemic, but graduands can access their certificates from the School while we work on a virtual graduation.

Submitted by Fyrence Ndebele



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Department of Mining and Processing Engineering

Contact between students and lectures is by mixed mode, both online and face to face, due to the Covid-19 pandemic that has disrupted the norm. A phased approach for physical contact was implemented with the level one first conducting their face to face lectures in October followed by online lectures from November whilst face to face lectures for levels 2 and 3 resumed in November with their online lectures commencing in December.

Mr Hove resigned from the department to pursue other interests whereas new members have joined the department. New staff members include Mr Z. Ndlovu, a Mining and Exploration Geologist at Zimbabwe Consolidated Diamond Company, and Miss Ashley R. Sabao whose specialization is in Mining. Recruitment is ongoing for an additional member to complement the departmental staff.

A certificate in GIS has been introduced in the department and more mineral valuation certificates will be introduced in the near future.

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Mr Mutizhe	Part-time Lecturer		
Mr Dzimunya	Part-time Lecturer		
Mr Z. Ndlovu	Part-time Lecturer		

Contributed By: Tapiwa Frank Kwachara Ngoroyemoto

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Geological Survey Department

Forbes Mugumbate

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The staffing situation at the Geological Survey is now pathetic, thanks to lateral transfers of geoscientists to other departments in the Ministry. The result is that the Department is facing the danger of losing the capacity to generate primary geological information. There are only three geologists in post out of an establishment of 15. These are Ms **Vimbayi Gengezha**, Ms **Evelyn Marumisa** and **Mangwiro Sibanda**. All geologists reported in previous GSZ news as having been seconded to newly created departments in the Ministry have now been moved permanently to those departments. The chronic staffing situation is compounded by the Covid-19 induced lockdowns.

Officers from the Department participated in online training seminars on remote sensing conducted by the Japan Oil, Gas and Metals National Corporation (JOGMEC). ASTER, PALSAR and SRTM image data processing were used to analyze selected areas of the country. These seminars are replacing the yearly SADC remote sensing competitions, seminars and workshops, which cannot take place this year due to the Covid. Participants in this on-going project are; Ms **Vimbayi Gengezha**, Geologist, **Mathias Ndoro**, Geophysicist, **Ebenezel Makuvaza**, Geophysicist, Mrs **Portia Mugate**, Deputy Cadastre Registrar, and **Tendai Kashiri**, Provincial Mining Director for Mashonaland East Province.

Lloyd Shawarira, Principal Geophysicist, attended a virtual seminar about *High Degree of Freedom Finite Fault Inversion Method* hosted by the International Institute of Seismology and Earthquake Engineering (IISEE), Japan.

MINING INDUSTRY COMMENTARY

Forbes Mugumbate
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The road to a USD12 billion mining industry

2020 – Performance of our mining industry

The mining sector is expected to drive Zimbabwe's economic growth towards an upper middle-income economy by the year 2030 as enshrined in the National Development Strategy (NDS1 2021-2025). To achieve this goal, the Ministry of Mines and Mining Development adopted a vision of attaining a USD12 Billion Mining Industry by 2023.

During the period January to December 2020 USD2.4 Billion was realized in export receipts from all minerals except Gold compared to USD1.89 Billion realised at the same period in 2019, an increase of 27% in value terms. Including gold, the total revenue realised from minerals in 2020 is about USD3.5 Billion which is 9.4% increase from USD3.2 billion realised in 2019. Thus the mining sector recorded a growth of 9.4% despite facing a number of challenges, chief among these being the Covid-19 pandemic that disrupted operations for the better part of the year.

The 2021 Budget Support

The 2021 National Budget under the theme "*Building Resilience and Sustainable Economic Recovery*", recognised the potential of the mining sector to transform the economy into a USD12 billion industry by 2023. The government allocated \$1.4 billion to the Ministry of Mines as it seeks to better co-ordinate the envisaged growth in the mining sector.

The budget that came after the presentation of the National Development Strategy (NDS1) covering the period 2021-2025, which is part of the blueprint expected to lead Zimbabwe towards a middle-income country by 2030, will see government implementing a number of measures meant to attract investors and bring transparency to the industry. The following are some of the steps that are going to be taken by government to increase and achieve the desired growth by:

- Finalising the amendment of the Mines and Minerals Act, which is expected to bring stability, consistency, competitiveness and transparency in the sector, and also to pave way for the formulation of mineral policies. The Attorney General's office is polishing up the final draft of the Bill in preparation for the tabling of this before Parliament for debate.
- Replacing the outdated manual cadastre system that is characterised by old maps and unreliable records. The project that is on-going has taken longer to complete than anticipated due to funding challenges. It is expected to be completed by the end of this year. Principles of the computerised cadastre have already been captured in the Mines and Minerals Amendment Bill.

- By providing capacity for Ministry of Mines personnel in terms of mobility, communication and computerisation to ensure efficiency. *Inter alia* this will ensure increased frequency in the inspection of mines and their compliance with mining regulations.
- Harmonising mining taxation laws, which are critical in ensuring viability of the sector whilst review gold marketing conditions.
- Capitalising the Mining Industry Loan Fund to support small-scale miners.
- Facilitating exploration activity leading to the discovery of new mineral resources, and ascertaining the quantum of mineral reserves available to the country;
- Promoting mine health and safety regulation to reduce the number of mining accidents; and
- Reviewing the tax rate on income accruing from mining operations from 25% to 24% with effect from January 1, 2021.

Ambiguities clarified

The Finance (2) Act of 2020 that was promulgated following the 2021 National Budget included an item construed by investors and stakeholders in the mining sector as a re-introduction of the 51/49 per cent shareholding structure in favour of indigenous entities. This caused panic. Government had scrapped the indigenisation laws in 2018 allowing foreigners to own up to 100 per cent in mining entities. To reassure investors, Government had to climb down to remove the controversial clause from the Finance Act. This, however, is being taken by some to represent ‘flip-flopping’ of policy by the government.

Combating the effects of Covid-19 pandemic to ensure success of the envisioned USD12 billion industry

Just as with any other sector of the economy, the mining industry has been greatly affected by negative economic shocks mainly caused by the Covid-19 pandemic through reduced investment flows, lost production hours as well as broken supply chains among others. Government reacted by exempting the mining industry from the lockdowns imposed to reduce the spread of the Covid-19. This resulted in the addition of certain positive impacts to the mining sector. Construction of the USD4.2 billion Great Dyke Investments Platinum Mine progressed. New coal mines have been opened and drilling within the Invictus Energy Oil and Gas Project area in Muzarabani is expected to start in October 2021.

Liberalization of the marketing of gold?

A potential threat to the achievement of the USD12 billion mining industry is the centralised marketing of gold. The law is making it difficult for companies to raise capital for investment. The Reserve Bank of Zimbabwe, which has a legal obligation to buy all gold produced in Zimbabwe, pays part of the proceeds in Zimbabwe dollars that are worthless outside the country. Calls for the liberalization of this law are now getting louder. B2 Gold Corporation and Caledonia Mining Corporation are reported to have held discussions with government about changing the rules to unlock investment potential. Deputy Minister Polite Kambamura acknowledged that government was weighing its options to see if it could give investors gold-trading licences.

The advantages of maintaining the *status quo* are not clear. The change in this policy is doubtlessly an important component of the drive to achieve the USD12 billion mining industry.

Kuvimba Mining House – a game changer in achieving the USD12 billion mining industry?

The newly established mining venture, Kuvimba Mining House headed by the group's chief executive officer, David Brown, has laid out ambitious plans that will have far reaching consequences on the mining industry in Zimbabwe, and will certainly have noticeable positive impacts on the country's vision for achieving a USD12 billion mining industry. Government has a 65% shareholding in the Kuvimba Mining House while the remaining 35 % is held by a number of investors.

The company targets to produce up to 500,000 ounces of gold per year from its subsidiaries including Freda Rebecca Gold Mine, Shamva Gold Mine and Jena Mine. Government intends to use Kuvimba Mining House to assess and re-open certain closed mines. Already the resumption of mining operations at Shamva Mine in May 2020 has brought the entire District back to life. Kuvimba is set to take over the Globe and Phoenix gold mine and other associated mines in Kwekwe. Other mines which Kuvimba Mining House is assessing for viability include the Tiger Reef, Primrose and Club mines.

Another major mine that Kuvimba has interests is Trojan Nickel, trading under Bindura Nickel Corporation. The mine has put in place plans to ramp up development work from 3330m to 8000 over the next five years in order to sustain the production of 10,000 tonnes of nickel per annum. Exploration will be carried out at the mine to extend the current ore resource.

The Great Dyke Investments (GDI) Darwendale Platinum Mine is another game-changer linked to Kuvimba Mining. GDI recently secured a 5-year tax holiday in terms of a Special Mining Lease secured from government. The company is implementing an ambitious programme that will see them producing 860,000 ounces of PGM's and gold per year at full capacity.

Meanwhile there are reports that Great Dyke Investments has sold a 4.4% stake to Fossil Mines owned by Obey Chimuka, who will invest \$30m in the Darwendale project through a combination of cash and services that will include engineering input, procurement and construction activity. This leaves Vitaliy Machitski's Vi Holding and Zimbabwe's Landela Mining Venture each with a 47.8% stake.

Caledonia Mining Corporation adds weight to the USD12 billion vision

Caledonia Mining Corporation Plc, who signed a Memorandum of Understanding with the Government of Zimbabwe in October 2020, and declared that Zimbabwe was the last frontier for discovering gold deposits of significant size, is taking steps to implement its expansion plans. The company has secured exclusive rights to explore and acquire the mining claims in the gold-rich Connemara North area in Gweru as part of efforts to expand its operations. This comes after the company announced a similar arrangement around the Mine Glen Hume in the same district where airborne geophysics has indicated interesting targets.

The MOU was signed at the time when Caledonia is nearing completion of its more than USD60 million investment in a new shaft at Blanket Mine, which is set to increase the mine's production from about 55,000 ounces per year to 80,000 ounces from 2022.

Artisanal miners – a threat to the USD12 billion vision

The reputation of artisanal mining in Zimbabwe is now known for its numerous unnecessary accidents and for the illicit trading of minerals that detract from the economic benefits accrued. Gold production from this sector declined by more than 40% from last year as a result of these phenomena.

In November 2020 an estimate of 40 illegal miners were trapped at the RAN Mine in Bindura. This means that resuscitation of this mine will be delayed. A week earlier, 10 illegal gold miners were reported to have been buried alive at Premier Estate near Mutare when owners of the mine commenced reclamation of damaged areas within the mine. 2021 started with news of five illegal miners trapped in an old shaft at the Elvington Mine at Gadzema on 29 January. The mine is currently under care and maintenance.

With problems in the marketing of gold, where Fidelity Printers and Refiners fails to pay miners on time, and where part of the payment is in Zimbabwe dollars, the smuggling of gold is tangibly rife. Given the presence of thousands of artisanal miners in all mining areas, the quantity of smuggled gold is probably huge. The case currently with the courts where the President of the Zimbabwe Miner's Federation is being accused of attempting to smuggle 6kg of gold to Dubai demonstrates the level at which smuggling is taking place. The question is how much gold has been smuggled without detection?

A look at the performance of major mineral commodities in 2020

Gold

The revenue realized from gold for the period January to December 2020 totalled USD1.07 billion which was 18.3% lower than the USD1.31 billion realized in the same period in 2019. This excludes gold production from secondary producers, notably PGM's. Gold deliveries to Fidelity Printers and Refiners (FPR) for the period under review stood at 19.05 tonnes. This represents a 31% decline compared to the same period in 2019 where deliveries stood at 27.66 tonnes.

The decline in gold production is certainly a cause for concern. It is attributed to the Covid-19-induced lockdown and leakages to the parallel market, especially from small-scale miners, as well as to the recurrent accidents in small-scale mining. Large-scale mines produced 9.739 tonnes while small-scale producers declared 9.314 tonnes. This means that small-scale mines that produced 17.479 tonnes of gold in 2019 reduced their delivery by 46.7% in 2020. The consequences of relying too much on small-scale mining for mineral production are now apparent and one cannot project production from this sector for planning purposes.

Measures such as the reduction of payment time for gold deliveries will go a long way to adding incentive to small-scale miners to deliver gold to the Reserve Bank.

Gold deliveries to FPR - 2020

	1st Q	2nd Q	3rd Q	4th Q	TOTAL
Primary producers (kg)	2150.018	2411.658	2576.515	2600.561	9738.752
Small-scale producers (kg)	3571.691	2478.118	1462.213	1801.879	9313.901
TOTAL (kg)	5721.709	4889.776	4038.728	4402.44	19,052.65

Source: Fidelity Printers and Refiners

Platinum group metals (PGMs)

PGM's contributed 81.9% (USD1.964 billion) of the total mineral exports during the period January to September, 2020. Compared to the same period in 2019, the sector grew by 62% up from USD1.215 billion in value terms.

Anglo American Platinum Limited's local unit, Unki Mine's PGM production increased by 7% to 55,800 ounces during the fourth quarter to December 31, 2020 compared to that period in 2019. According to the group, the increase was largely due to higher 4E built-up head grade and higher throughput.

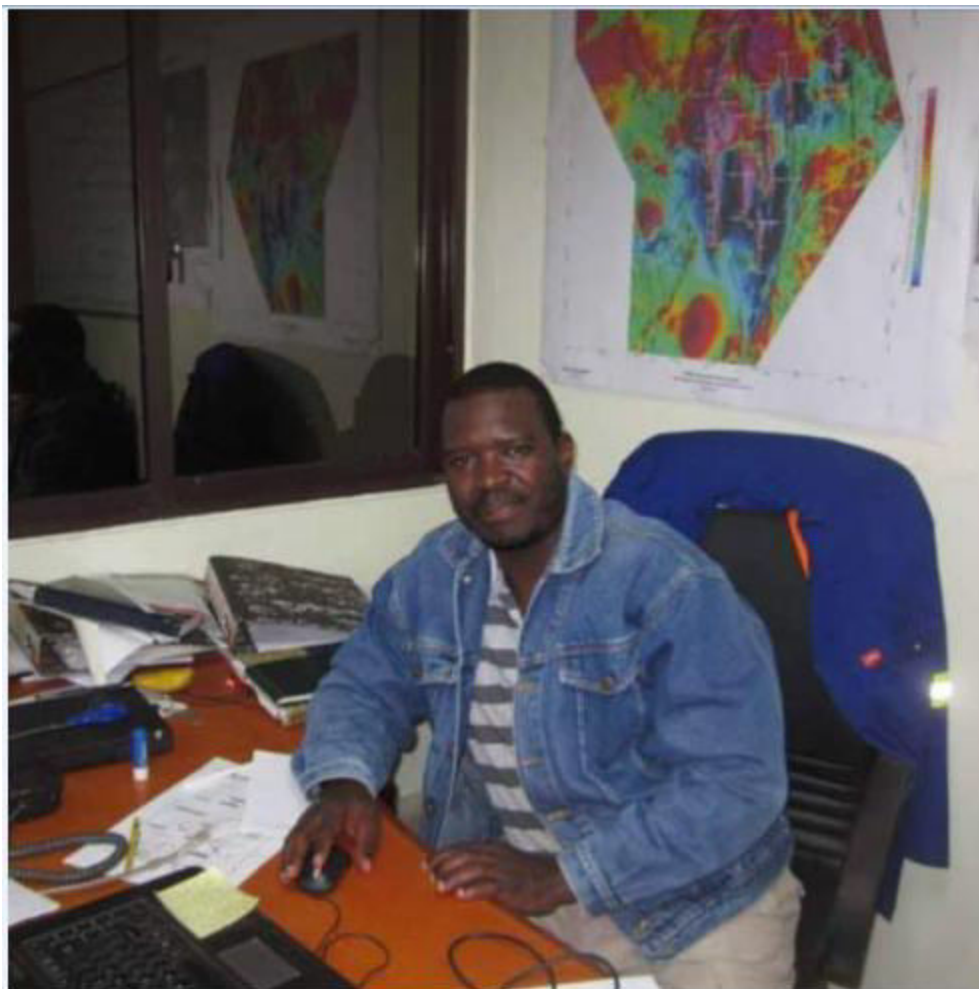
Chrome ore / High carbon ferrochrome

A total of 195,851.97 Mt of high carbon ferrochrome valued at USD129.48 million was sold during the period January to December 2020 compared to the same period previously when 360,497.39 Mt valued at USD278.38 was sold. This represents a decline of 53% in terms of value, which can be attributed to declining metal prices during 2020.

A total of 752,075.05 Mt of chrome ore and concentrates valued at USD54.2 million were exported in 2020, compared to 715,523.60 Mt valued USD91.7 million exported in 2019. This represents a 5% increase in terms of volume and a 40% decrease in terms of value. This is attributed to the softening demand for chrome ore and ferrochrome due to the Covid-19 pandemic, resulting in the falling of prices.

Coal and coke

A total of 393,650.26 Mt of coal, coke and coke breeze valued at USD44.18 million was sold during the period January to December 2020 compared to the same period last year when 228,399.68 Mt valued at USD31 million were sold. The positive growth of 72% and 42.5% in terms of volume and value respectively was mainly driven by increased production by Hwange Colliery and Makomo Resources.

Godfrey Gundani, 17/01/1969 - 16/01/2021

Godfrey was born on 17th January 1969 in Gweru as the sixth child in a family of seven. His formative years were spent near Gokwe but later he attended Hartzell High School where he completed his secondary education studies in 1989. He then gained his BSc General Degree from the University of Zimbabwe in 1993, following up with a BSc Honours in Geology in 1996. He was awarded the Geoffrey Bond Award for the best Honours Project in that year entitled *Metabasites and the tectonic evolution of the Northern Marginal Zone, Limpopo Belt*.

From 1994 to 1995 he worked for Kinross Blanket Mines as an exploration geologist around and at the Golden Kopje Mine near Chinhoyi.

Between 1996 and 2001 he worked as a Project Geologist for Ashanti Goldfields Zimbabwe. During this period he was engaged on Ashanti's exploration projects in Zimbabwe and in target generation across the Manica and Tete provinces of Mozambique.

In 2002 and 2003 he joined the Zimbabwe Geological Survey as a Senior Geologist in the data management section. He occasionally visited small mines to provide geological extension services that resulted in him compiling several technical reports on the mines

that he visited. These reports are filed the Zimbabwe Geological Survey library. During this period Godfrey contributed to the Annals for 2003 as *Mangezi S and Gundani G. Zimbabwe Exclusive Prospecting Orders database – GIS overview of exploration efforts.*

Later in 2003 he joined ZIMASCO where he then became Resource Evaluation Manager based in Shurugwi and Mutorashanga.

Between 2007 and 2009 Godfrey was Project Manager for RSG Global Consultants in the establishment of a chrome and platinum project in Zimbabwe and then as manager to a team of geological consultants tasked with establishing the resource of the Tschudi copper deposit in Namibia to JORC standards.

Then in 2009 with Coffey Mining Consultants he led a geological mapping project on a PGE project in the Bushveld Complex of South Africa. In 2010 he was consulting geologist to Goldseach Technical Services as the Resources Competent Person for 3 medium-scale gold deposits in Zimbabwe. Later in 2010 he acted as Resource Evaluation Manager for Afrique Minerals (Afrigold) conducting due diligence evaluations on potential mining acquisitions in Zimbabwe.

From mid-2011 to 2013 he was appointed Geological Manager for Angolan Exploration Mining Resources (AEMR) at Kassinga in Angola before consulting for Rovuma Resources Limitada (Rockover) in 2014 on copper-lead-zinc prospects in the Cabo del Gado Province of northern Mozambique.

In January 2015 he acquired and developed a small underground gold mine in the Kadoma District of Zimbabwe. From September of that year until the time of his passing, Godfrey was employed as Geology Manager for Sociedade Mineira de Cobre de Angola (SMCA) based in Uige from where he oversaw all geological activities for copper and base metal exploration and mining development in that country.

In May 2019 Godfrey presented a talk to the Geological Society of Zimbabwe entitled *Exploration of blind copper ore bodies - Discovery, evaluation and resource estimation. A case Study from South of Angola,* the project he had been working on in Angola at the time of his death.

Godfrey mentored and coached innumerable young Zimbabwean geologists throughout his career. He was a registered member of the South African Institute of Mining and Metallurgy (SAIMM) and with the South African Council for Natural Scientific Professions (SACNASP) whilst maintaining his membership of the Geological Society of Zimbabwe. We extend our sincere condolences to his family at this time.

Compiled by Kennedy Mtetwa

On-Line Talks

As reported by *Houda Bouammar*

The Geological Society of Zimbabwe has introduced a programme of on-line talks during the prevailing Covid-19 pandemic using the *Zoom* platform.

Since the Newsletter of October 2020, five online talks have been hosted and were very well attended. All the talks can be found on the Geological Society website under the heading 'News'.

Friday 11 December 2020

Contrasting rare-element mineralization in the Bikita & Mweza pegmatite fields, Zimbabwe

By Godfrey Chagondah

Friday 15 January 2021

Insights into the deformation and gold mineralisation of the Mwanesi Greenstone Belt, central Zimbabwe Craton

By Brian Mapingere

Friday 29 January 2021

We shared in a presentation of the Geological Society of Africa Seminar Series <http://gsafr.org>

The place of geobotany in geology

By Prof. Beneah Odhiambo

And we continue with our collaborative link with the Geological Society of South Africa

<https://calendar.google.com/calendar/u/0/embed?src=10c6p8imnnh6b5t9ospshd2tfc@group.calendar.google.com&ctz=Africa/Johannesburg>



GSZ Research and Development Fund

Enquiries relating to the distribution of funds through this facility should be made through the standing Chairperson.



SEG Timothy Nutt Memorial Fund

This fund will be available to provide financial support for geology students and young economic geologists located in Zimbabwe or in southern Africa with ties to Zimbabwe. The fund may be used to support SEG student chapter activities, travel to meetings, field trips, for research or study grants, technical lectures or any other activities approved by the SEG Regional Vice President for Africa.

Strong preference will be given to those applicants who are SEG Student Members.

To become an SEG Student member visit www.segweb.org/join

Applicants must describe what the project is, why the research is important and how it is to be done.

An estimate of expenses for the project must be included with the application.

Grants are expected to be fully utilized by April 30 following the calendar year in which they are awarded / dispersed. .

Grant recipients are required to provide a year-end accounting of how the money was spent together with a suitable progress report or final abstract.

**A 2018 Research Grant application form may be downloaded from
www.segweb.org/StudentResearchGrants**

Student Research Grants Committee c/o Assistant for Student Affairs, Society of Economic Geologists Foundation 7811 Shaffer Parkway, Littleton, CO 80127-3732 USA

Phone: +1.720.981.7882/Fax: +1.720.981.7874

Conferences

GSSA Geocongress 2020

Stellenbosch, Western Cape
The next 125 years of Earth Sciences
Postponed to 2021

WorldGold Hybrid Conference 2021

South African Institute for Mining and Metallurgy (SAIMM)
16-17 August 2021

Misty Hills Conference Centre
Muldersdrift, Johannesburg, South Africa

The event is planned as a hybrid conference with international participation, which will allow for contact and online attendance and presentation.

[World Gold Hybrid Conference Registration Form 2021-27012021.pdf](#)

<https://www.saimm.co.za/saimm-events/upcoming-events/world-gold-hybrid-conference-2021>

12th International Kimberlite Conference

30 years of diamonds in Canada

Postponed - 15 to 19 August 2022

Yellowknife, Canada

secretariat@12ikc.ca

A GREAT OPPORTUNITY EXISTS TO CREATE ADDITIONAL AWARENESS

Advertising on the GSZ website is only \$50 per display for a 6-month period.

Visit <http://www.geologicalsociety.org.zw/> to see where the adverts can be placed, and choose your spot.

Please contact Andrew du Toit at andrewdutoitzim@gmail.com, or the Administrator at geol.soc.zimbabwe@gmail.com, for more information.

Don't forget - you can also advertise in this Newsletter through these contacts.

GEOLOGICAL SOCIETY OF ZIMBABWE: CONTACT DETAILS OF MEMBERS OF THE EXECUTIVE COMMITTEE FOR 2020

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Institutional Membership, 2020

Bruker RSA

Chamber of Mines of Zimbabwe

Freda Rebecca Mine

Invictus Energy

Metallon Gold

Mimosa Mining Company (Pvt) Ltd

New Dawn Mining

Optimum Drilling

Prospect Resources

RioZim Limited

RZM Murowa (Pvt) Limited

Samrec Vermiculite Zimbabwe (Pvt) Limited

Sandvik

SMC Drilling

Trojan Nickel Mine

University of Zimbabwe Geology Department

Unki Mines (Pvt) Limited

Vast Resources

Zimbabwe Geological Survey

Zimbabwe Mining Development Corporation

Zimbabwe Platinum Mines Limited