SI CAPITAL

Company Summary

KAVANGO RESOURCES plc

22/09/2019

Kavango Resources

Company Profile

Stock Data:

Share Price (Last close)	1.6 - 2
52 Week Range	Low 1.4 High 5.2
Market Cap	£2.96m
Shares in issue	161,000,000
Avg. Daily Volume	1.1m
Status	Trading

Management:

Mike Moles	Director & Founder
Michael Foster	CEO
Douglas Wright	Director
Hillary Gumbo	COO & Founder
Chuck Forrest	CFO

Broker – SI Capital
Head of Corporate Broking Nick Emerson
Company summary written by Amber Griffin

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Kavango's three projects in Botswana offer an excellent diverse potential for the discovery of nickel-copper-PGE, copper-silver and rare earth deposits. Listed on the Main Board of the London Stock Exchange (Standard List) - (KAV.L)

- The Kalahari Suture Zone **(KSZ)** Project, a 450km long N-S magnetic structure of continental proportions, is a large scale nickel, copper, cobalt and PGE group exploration project in the southwest of the country. It is similar in its geological setting to the giant Norilsk deposits in Siberia. Kavango recently completed two phases of airborne electromagnetic surveys covering over 4,000 line-kms in the northern part of the KSZ. Numerous conductor anomalies were identified and located on the ground; **drilling of the most prospective targets is planned for late Q3 / early Q4 2019**

- The Ditau Camp Project **(Ditau)** is a 7km long magnetic body with corresponding geochemical and gravity anomalies approx. 50km west of the KSZ structure. It is one of 10 significant ring structures in the two Ditau licences. Two recent drill holes and the discovery by Falconbridge of a carbonatite in the area indicate a large area of alkali intrusive bodies. **Carbonatites are generally associated with rare earth minerals. Whilst the Company continues to add value to the project with some low cost (within the current budget) geophysical surveys at Ditau, the medium term plan is to attract a joint venture partner.**

- The Kalahari Copper Belt **(KCB)** extends in a northeast-southwest direction for at least 1,000 km from western Namibia to north-eastern Botswana. The KCB contains known sediment-hosted copper-silver deposits two of which are currently being developed into mid-tier copper-silver mines. Kavango will carry out geophysics surveys and soil sampling to identify copper hosting anticline structures. The KCB Project is the subject of a recently signed MOU with a private Botswana company, who hold two strategic but unexplored PLs in the KCB area, whereby Kavango can earn an interest in the two licences by spending funds on exploration.

London Stock Exchange

Management

Mike Moles (Director and Founder) is a geologist with a degree in African Studies and 30 years' experience in mineral exploration in southern Africa. **Michael Foster** (CEO) is a geologist and MBA, with 35 years' experience of the minerals industry worldwide. **Douglas Wright** (Director) has 30 years' experience in finance in the City of London. **Hillary Gumbo** (COO and Founder) is a geologist with a MSc in geophysics for mineral exploration. **Chuck Forrest** (CFO) is an accountant who has worked for 30 years in the minerals, financial and legal sectors in Asia and Africa.

Location

The small town of Hukuntsi, in central SW Botswana, is located within the KSZ project area. It is 500km from the capital city, Gaborone, and reached on excellent tarred roads. Hukuntsi has an operating airstrip, essential stores and supplies, and several small hotels. Kavango rents a house in the town for its geologists, with internet access and air-conditioning.

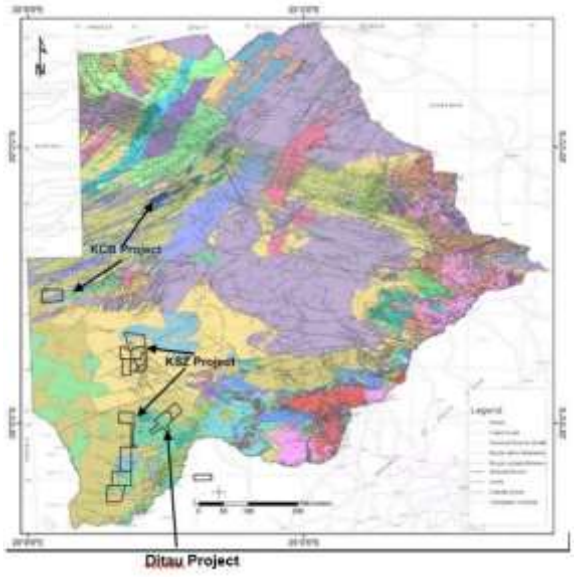
The larger town of Ghanzi, population of approx. 15,000, is strategically located just off the main Gaborone-Windhoek highway and is central for the KCB project area.

Infrastructure in Botswana is generally excellent.

Botswana

Botswana is rated the best jurisdiction in Africa for mining by the Fraser Institute and is the least corrupt according to Transparency International. The Minerals Act provides for up to seven years of tenure for prospecting licenses, subject to standard terms and conditions; it is transparent and well managed.

Principle Projects



Location of Licences in Botswana

Kalahari Suture Zone (KSZ)

The KSZ is a 450km long crustal scale discontinuity first identified from a Canadian funded regional aeromagnetic surveys flown over Botswana in the mid-1970s. The magnetic anomalies were interpreted to be related to the Tshane Complex represented by large volumes of mafic magma which are believed to have been emplaced in the late to middle Proterozoic (1.1Ga) during a major rifting event. A much later (180Ma) magmatic episode thought to be related to the break-up of the Gondwana super-continent emplaced a sequence of gabbros and dolerites into the Karoo sediments. These have been interpreted as feeder zones to the vast basalt lava flows which once covered much of southern Africa. *This type of geological setting with mafic rocks intruded into existing sediments is prospective for nickel-copper-PGE deposits as we explain later in this note and has similarities to the extensive Norilsk-Talnakh deposits in Russia.*

The area was partially drilled in the early 1980s by the Botswana Geological Survey, and later in the 1990s, most notably by Falconbridge. Gabbros were variably intersected by drilling, but often missed due to technical drilling issues. The holes that did intersect such complexes were interpreted to have hit barren, non-mineralised gabbros.

Kavango's geological model

In 2015, Kavango re-logged the core from historic drilling (1980s holes) which was still available. The core was also analysed with a handheld Niton™ XRF gun and tested for magnetic susceptibility. In addition, samples from the gabbro were taken for assay and whole rock geochemistry. Initially, the results from the core and XRF although interesting, were underwhelming from an economic standpoint. However, Kavango's view changed rapidly after receiving the results from the analysis of the whole-rock geochemistry, which had been interpreted by Dr Martin Prendergast, a world expert in mineral deposits associated with mafic/ultramafic intrusives. Dr Prendergast concluded that it seemed likely that many of the metals appeared to have been removed from the crystallising magma probably by "free" sulphur in the system introduced by the incorporation of significant amounts of sulphur rich sedimentary rock (coal measures) into the magma. Dr Prendergast's report suggests that free sulphur may have combined with metal elements (Fe, Cu, Ni, PGEs) to form an immiscible liquid during magma crystalisation and that this dense liquid could have been concentrated (by gravity or mechanical pressure) into discrete locations either within or adjacent to the main gabbroic body. The task of the exploration company is therefore to identify the location of these deposits.

An analogue to world-class Ni-Cu-PGE magmatic deposits

Magmatic sulphide deposits are an important source of nickel, copper, PGEs (platinum, palladium etc) typified by world-class deposits such as Norilsk (Russia), Pechanga (Russia), Voisey's Bay (Canada) and Kabanga (Tanzania). These deposits form in several different styles (see below), but the genetic model is broadly similar.

Interpretation for KSZ

Whilst Kavango's projects remain at an early stage of exploration, the geological setting and geochemistry justify a major exploration programme. Some of the major components required to generate a magmatic deposit have been recognised in the KSZ area:

- A deep, crustal scale discontinuity has been identified – the KSZ. This provides the source for the generation of large quantities of magma.
- The magmas are seen to intrude into the upper Karoo sequences which contain various sulphur bearing lithologies including coal measures. These may have acted as a source of sulphur to induce sulphur saturation.
- The recent work by Dr Prendergast provides evidence that the Karoo age gabbroic bodies along the KSZ have undergone metal depletion. The inference is that these gabbros at some point became sulphur saturated, and that the sulphides, after scavenging chalcophile elements from the silicate melt, have been removed from the magma and concentrated in a restricted locality.

Exploration by Kavango

Kavango has now conducted helicopter borne electromagnetic (EM) surveys in two phases over the northern part of the KSZ structure. This represents about one third of the company's ground holdings on this project.

Helicopter borne time-domain EM is the most suitable geophysical technique to detect buried massive and semi-massive sulphide bodies normally to depths in excess of one kilometre. However, due to the highly conductive nature of the surficial Kalahari sands, clays and calcretes, average depth penetration of the Phase 1 survey was only 167m. This is not enough to identify the deeper conductors.

By December 2018, a new 12.5hz (deep penetrating) system developed by SkyTEM had become available and the company was contracted to fly the Phase 2 survey (2,200 line/kms). Depth penetration was improved dramatically, achieving an average of 398m. As a result, fifty-one conductive targets were identified, many of them covering multiple flight lines (500m apart).

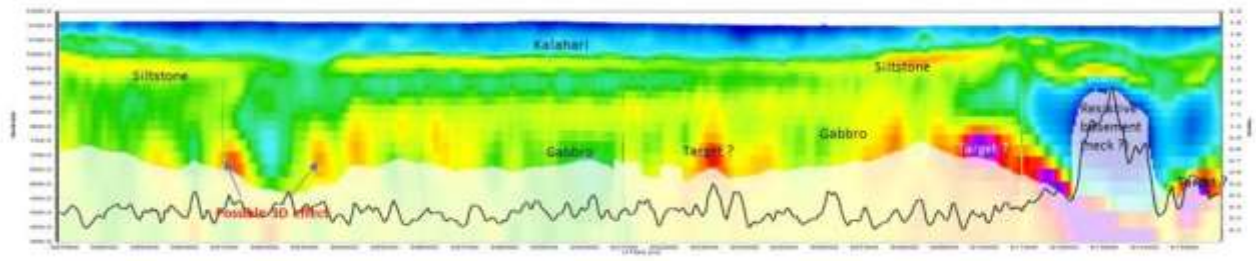


Figure: Example of a vertical cross section from Kalahari sediments on surface (blue), shows resistive intrusive gabbro (grey). (Aarhus Geophysics).

The data for the survey was modelled in Denmark by the Company's geophysical consultant Aarhus Geophysics using state of the art 3D modelling software. This allows Kavango's geologists to generate both horizontal and vertical "sliced" images of the conductive geology, which helps understand the geology (in 3D) as well as identify potential drill targets.

Ground follow up is now being undertaken. This includes CSAMT resistivity profiles and IP surveying to confirm exact position, gauge depth to source and the presence of disseminated sulphides prior to drilling. Since most of the gabbro feeder zones (sills) are thought to lie reasonably close to surface, only those lying above 350m depth will (initially) be followed up with drilling.

A drilling program is currently being designed and is planned to start in early Q4 2019.

Ditau Project

The project currently consists of 2 Prospecting Licences totalling 1,385.6 km^2 (PL 169/2012 and PL 010/2019).

History of Kavango's Exploration at Ditau

Kavango's Prospecting licence PL169/2012 was originally applied for as having potential to host Banded Ironstone Formation (BIF) iron ore deposits. Although no BIF was discovered, the company's geologists noted a number of magnetic ring features within the licence area. Regional soil geochemistry was conducted over many of the features and one of them produced soil anomalies (particularly iron and zinc) that coincided with the magnetic anomaly outlining the ring structure, which was given the name "Ditau".

The magnetic anomaly appears to have an elongated shape and is approximately 7km x 5km in size. It is also associated with a gravity anomaly that had been detected during the Botswana national gravity survey (1973).

During the course of 2017 and 2018 more detailed soil geochemistry suggested that Zn and Fe anomalies were aligned along (mag) interpreted faults and fractures. This was followed by resistivity surveying (CSAMT) over a number of lines that cut across the anomaly.

The CSAMT profiles showed 2 very pronounced conductors (1.8km apart) down to at least 400m in depth. It was concluded that these conductors could represent massive sulphide deposits and should be drilled to confirm this hypothesis.

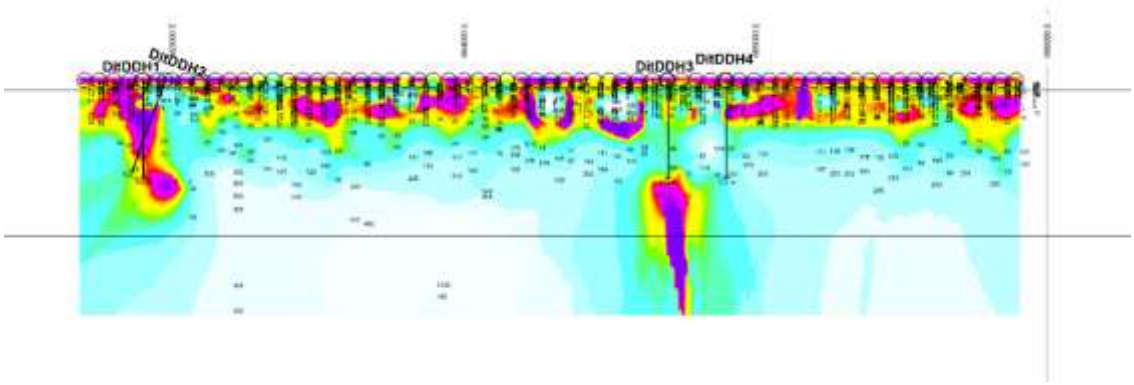


Figure: CSAMT section on line L7250000N showing 2 conductors with proposed drill holes

Drilling at Ditau

In February 2019, approximately 1,000m of drilling was undertaken by a local contractor. About 700m of this was in diamond core drilling. Only holes DitDDH1 and DitDDH3 were drilled due to the deeper than expected conductor source.

No massive sulphide was intersected, and the cause of the conductors detected by the CSAMT was not fully explained. Hole No. DitDDH1 intersected 75m of Kalahari sands and calcrete and thereafter remained in Karoo sediments until the hole was abandoned at 340.5m. In DitDDH3 (subsequently re-named DitDDH2) the Karoo sediments extended to 479m before intersecting altered gabbro. However, in some areas the Karoo sediments appeared to show fairly intense alteration together with pyrite and small amounts of chalco-pyrite ($CuFeS_2$).

Interpretation

The presence of elevated REEs in some sections of the Ditau core, together with elevated uranium, iron, potassium and calcium suggests that hydrothermal fluids related to alkali magmatism (including carbonatite) may have penetrated the Karoo sediments (fenite). This in turn suggests that the ring structures could represent an alkali igneous complex.

If the alkaline intrusives are Karoo (or even post Karoo) in age, they may lie relatively close to surface. Within PL 169/2012 and PL 010/2019 there are at least 10 ring structures. There would therefore seem to be considerable potential for the discovery of metal deposits within this complex.

This model was given significant support when it was found that in 1973 Falconbridge had discovered carbonatite about 50km north of Ditau whilst they were looking for kimberlites. Apparently, the company used "jumper drills" to intersect 3 carbonatites close to surface but did not analyse the drill chips. One of the drill collars is reported to be still capped and visible.

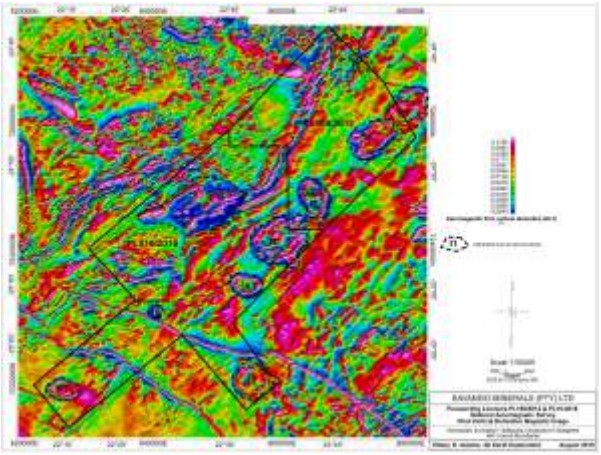


Figure: 1st Vertical Derivative map showing location of the two project licences and a number of ring structures. (image is approx. 90km on the diagonal)

Future Plans at Ditau

The strategy now is to use gravity and ground magnetic surveys to identify carbonatite targets within Kavango's licences. Those targets selected should then be tested with fence lines of shallow percussion holes to confirm the presence of carbonatite and carry out initial geochemical analysis for potential economic mineralisation.

Whilst Kavango is optimistic that economic mineralisation might be found at Ditau, the company does not currently have the resources to undertake the necessary exploration. It is therefore undertaking preliminary discussions with a number of industry partners with a view farming out the project (both licences).

Kalahari Copper Belt (KCB)

On 2 September 2019 Kavango announced the signing of a Memorandum of Understanding ("MOU") with the Botswana company, LVR GeoExplorers (Pty) Ltd ("LVR"), to farm into two Prospecting Licences in the Botswana section of the highly prospective sedimentary copper province known as the Kalahari Copper Belt ("KCB"). The MOU provides for a staged Farm-In, which will give Kavango the right to earn up to a 90% interest in both or either of the licences.

- In the first 12 months following the signing of the Farm-In Agreement, Kavango will be obliged to spend the equivalent of £92,000 on each of the licences to acquire a 25% interest.
- A 90% interest in either licence can be earned by taking a project through to bankable feasibility.
- Kavango will be managers of the exploration and development but will be allowed to withdraw at any time following a two month notice period.

A New World Class Copper Province

Sedimentary copper deposits are attractive to mineral exploration companies because they can form orebodies that compete with porphyry deposits on tonnage but are of much higher grade. Examples include the Polish Lubin deposit with 2.6Bt @ 2% Cu and the Congolese Kamoa-Kakula deposit with 2.6Bt @ 2.6% Cu. They can also contain 'pockets' of several hundred million tonnes at over 4% Cu. A compilation of all sediment-hosted copper deposits globally shows that 19 of the 28 known giant deposits, defined as >2Mt of contained copper, occur within the Katanga basin. The most recent deposit to join the giant category is Cupric Canyon's Zone 5 discovery in the Botswana section of the Kalahari Copper Belt, along strike of MOD's T3 deposit. It establishes the Ghanzi-Chobe basin as only the seventh basin globally to host a giant sediment-hosted copper deposit. To date, the Ghanzi-Chobe belt holds over 7Mt contained Cu in several deposits, with resource grades ranging from 0.9%-2.2% Cu at an average 1.4% Cu grade, well above the average (<1% Cu) feed grade of copper mines globally. Of the well-endowed belts globally, the Kalahari Copper Belt is the only one with an accelerating discovery rate. Of note, the belt shows potential for both open-pit and underground minable resource styles.

Conclusion

Kavango's three projects in Botswana, the Kalahari Suture Zone, the Ditau Camp Project and the Kalahari Copper Belt, offer an excellent diverse potential for the discovery of nickel-copper-PGE, copper-silver and rare earth deposits.

Botswana is recognised as the best jurisdiction in Africa for business and with the Company's very experienced management team the chances of success are high.