mining maven

Special Report

Goldstone Resources Ltd.

Overview

Date	April 2012
Price	4.35p
Market Cap	£13.8m
Code	GRL
Listing	AIM
Shares in issue	318m

Goldstone Resources - Closeology in Senegal

Goldstone Resources has been on our radar for some two years now. Over this time the company has progressively advanced its highly prospective license areas in West Africa with an intelligent exploration strategy.
In Ghana right now, the company is engaged in an aggressive campaign exploration programme at Homase-Akrokerri, with two drill rigs running and airborne geophysical study (VTEM) commissioned.

In January 2011 we published an article about Goldstone's Ghanaian projects, at Homase-Akrokerri and also Manso Amenfi. In this we introduced the concept of "Closeology" to our readers. For anyone with an active interest in resource investment, Closeology (or the study of what is close!!!) can be an extremely useful indicator in assessing the chances of an explorer replicating the success of its neighbour. Closeology gives us a broad benchmark in order to assess regional geology and the commercial operating environment so we may form a view on the potential for value creation in an investment.

Our Closeological study of Goldstone's Ghanaian licenses proved popular with readers and helped highlight the strength of these projects. More importantly the report gave a glimpse of what was yet to come.
Just like Goldstone we are firm believers that if an approach works, keep repeating it. It's simple really. So with this in mind, we now turn our attention to another of Goldstone's blue-sky projects, namely Sangola in Senegal.

The geological basis for Closeology

To begin with we should first consider the supporting evidence for Closeology to better understand what makes it such a powerful investing tool.
The answer begins four and a half billion years ago, at the birth of our planet. Over the eons, irresistible geological forces exerted their gradual influence over the Earth's form, moving mountains, shaping continents and creating seas. With these great movements of mass travelled the planet's natural resources.

At times, this ponderous process would suddenly become spectacularly violent, as volcanic eruptions and massive earthquakes tore landscapes apart. Temperatures greater than 700 °C liquefied rocks and mineral deposits and propelled them to the surface. In this state, magma is more viscous than water and formed devastating rivers of destruction burning channels through local terrain, leaving behind rich sediment. Meanwhile, colliding continents caused great splits, forcing folds of land to ride over one another.

When this furious volcanic activity eventually subsided, the lava then cooled down allowing the molten rocks, with their mineral deposit content to settle. The pressure of the moving mantle relieved, the land is then calmed. Millions of years later the evidence of these awe-inspiring events is easily recognisable to the trained eye and although the scale is grand, the paths are clearly defined.

Experienced geologists are able to follow these paths in their quest to identify resources in the ground. And this is at the heart of Closeology. When looking to make a discovery one looks for clues in the consistency of mineralised trends so the best place to start is where those trends are most likely to be most consistent; that being as close as possible to the site of the original discovery.

The commercial basis for Closeology

There is another aspect of Closeology, which adds to its analytical appeal.

When looking at a company's license areas it can often help to look at the calibre of the other companies operating locally. Regular readers of MiningMaven will know that we do like this method of analysis. If a small-cap AIM explorer is working in close proximity to a major player, this can tell us several things.

First it indicates the prospectivity of the region. Larger companies are generally speaking, more interested in exploring for larger resources. So if an AIM explorer is operating next door to a Major, then by inference, then the chances of making a significant discovery may well increase.

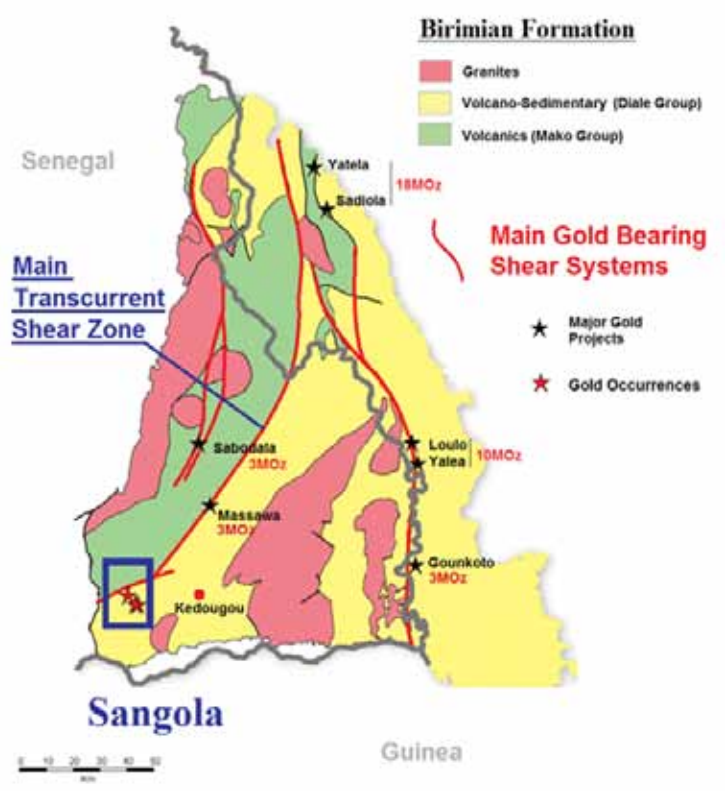
Second, it can offer the hope that the smaller company might, at some point, become a takeover target. There are never any guarantees here, but with known players of substance in the neighbourhood, it does give confidence that, should a discovery of significance be made, then our deep pocketed neighbour may be the first to come knocking.

Third, it gives us an indication of the strength of the local operating environment and infrastructure. Political, economic, legal and infrastructure concerns usually top the list of likely obstacles in the way of an exploration company with its sights set on making the transition to a producer.
Larger companies often prefer smaller companies to lead the way and demonstrate that local operating conditions are right for production before making the decision to move in themselves. If larger companies are already operational on the ground, then this would suggest that conditions are indeed conducive for mining operations.

Regional geology and production

Before looking at Goldstone's license area in Senegal it would be helpful to appreciate the regional geology and to understand how this has already led to substantial production.

According to Goldstone's website, the Sangola license area lies at the south-western tip of a Birimian Formation which stretches over south-eastern Senegal and western Mali. The Birimian rocks are West Africa's major source of gold. These formations are named after the Birim River and have ensured that Ghana and Mali are the second and third largest African gold producers respectively.



This Birimian Formation is characterised by major shear zones. In layman's terms a shear zone is analogous to an ancient geological fault line. As the pressure of continents drifting into one another built, this would find release along contours of weakness, often in the presence of volcanoes. If you look at the map here, it is not too difficult to imagine earthquakes occurring along the red lines indicated.
As you can see, major gold deposits have been found along or next to these regional shear zones.

For Mali this has been a source of great wealth.

To the north you can see the Yatela and Sadiola mines. These mines are operated by AngloGold Ashanti, but they share the ownership with IAMGOLD (40%) and the Malian Government (20%). Over 18MOz of gold have been discovered to date at Yatela and Sadiola. Although the two mines are not on one of the main gold bearing shear systems, you will notice that they are present where the Mako Group (Yellow) of volcanic rocks meets the Diale Group (Green).

A little explanation of these two groups will help explain the significance of their presence. The Mako Group are volcanic rocks and the Diale Group are volcano-sedimentary rocks. Volcanic rocks are formed directly from the lava of volcanoes. In geological terms this happens extremely quickly. Volcano-sedimentary rocks are formed through alternating events of volcanic eruption and sedimentation from rivers and shallow oceans.

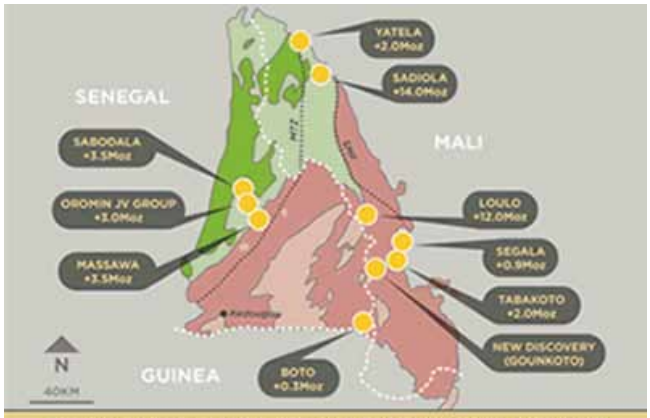
Both rock types can host gold deposits because gold is deposited afterwards from hot water circulating through the shear zones.

Travelling further south, but staying within the boundaries of Mali (noting that geology has no respect for man-made borders), we meet the Loulo mining complex, which includes the operation at Yalea. Operated by Randgold Resources, ownership is shared with the Malian Government (20%). This mining complex has yielded discoveries in excess of 10MOz of gold. The same gold bearing shear system has also provided the Gounkoto mine, which Randgold has rolled into its Loulo operation. This added a further 3MOz of gold to Randgold's project in western Mali. The latest results for mining at Loulo and Gounkoto can be seen here.

The mines at Yalea, Loulo and Gounkoto hold two main points of interest when compared to Goldstone's Sangola license. First all three deposits of gold occur along a very similar gold bearing shear system. Second all three deposits occur within the same volcano-sedimentary rock as is under two thirds of Sangola. It is worth remembering this as the significance will become clear later.

Other Exploration in Senegal

So armed with our understanding of shear zones, Birimian formations and such like, it is time to put this knowledge to work.



Strategically located at the epicentre of a new major gold camp where 10 Moz gold has been discovered in just four years

From: Mineral Deposits Ltd

Unlike Mali, Senegal is a relatively under-explored country. This may be somewhat surprising since Senegal is the only country in western Africa not to have experienced a civil war since independence and has been relatively stable in recent decades. In spite of sharing notable geological similarities with its prolific neighbour, Senegal remains true frontier territory in terms of gold exploration. This said, three deposits of in excess of 3MOz of gold each, have been discovered in the last five years (though only two are shown on the map).

It is for these reasons that Goldstone stands shoulder to shoulder with major international players Randgold Resources (market cap £5.18billion @ £57.70 a share), IAMGOLD (market cap C$4.96billion @ C$13.21 a share) and Mineral Deposits Limited (market cap A$538.8million @ A$6.45 a share). Not bad for tiny AIM stock!

In terms of Closeology, the proximity of these three companies to Goldstone's license area is certainly worthy of note, but further investigation of the local geology is even more encouraging. The deposits at Sabodala and Massawa are indicated on Goldstone's map (on page 3), but not the third major discovery in eastern Senegal in the Oromin JV Group's license area, which is very close to Sabodala.

Sabodala was Senegal's first operational gold mine. Operated by a subsidiary of Mineral Deposits Limited, ownership is shared with the Senegalese Government (20%). The mine became operational in early 2009, after Mineral Deposits had demonstrated that the gold resource was in excess of 3.5MOz. Sabodala lies on both a main gold bearing shear system and in a field of volcanic rocks from the Mako Group.

In early 2008 Randgold announced that Massawa would be a multi-million ounce discovery. Then in January 2010 the company announced it planned to invest $300million into Massawa and hoped that it would be operational by 2013. However since this announcement there have been issues with securing appropriate electricity supplies to power the project. On its website Randgold says that it is currently reviewing options for securing the reliable source of electricity it needs. We will be watching developments here closely, particularly with regard to recovery rates as they will need to be at a satisfactory level to ensure a viable project.

The lack of local infrastructure will almost certainly have been off-putting for other companies, allowing smaller companies to take advantage and take on the risk. But as long as the price of gold remains strong, Randgold will no doubt find the economics of Massawa compelling enough, improving the likelihood that a solution to its power issues will be found. That Sabodala is operational and just up the road strengthens this view. 3MOz in the ground must be a major motivator!

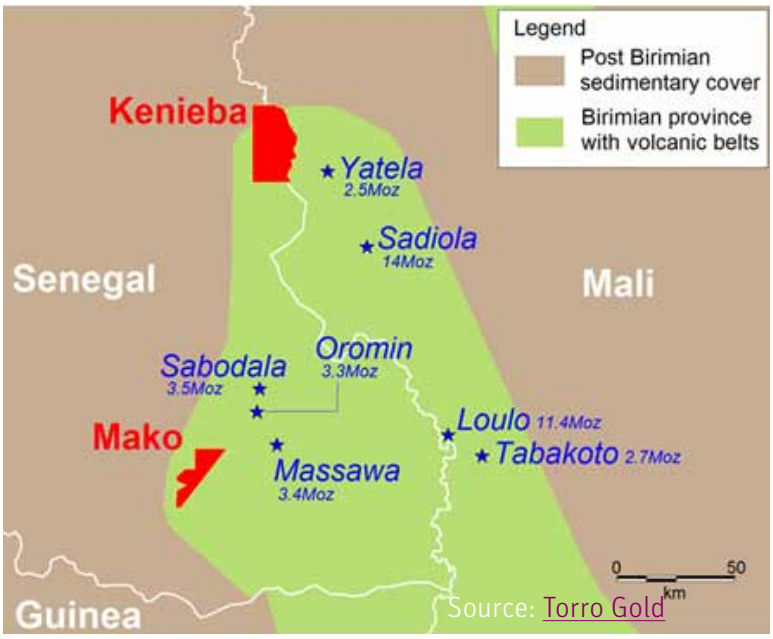
And whilst Randgold sorts out its operational issues, Goldstone continues its exploration program at Sangola with the aim of proving up a resource.

The important thing to remember though is the geological traits shared by Massawa and Sangola. Both are on the same Main Transcurrent Shear Zone and both are on the border of the Mako Group and Diale Group of rocks.

The final substantial deposit is within the Oromin Joint Venture area. In September 2010 this JV announced a total resource of 3.17MOz. As the latest project update reveals, the project is currently undergoing permitting. Oromin Exploration operates the projects and owns 43.5% of the JV. The remaining shares are owned by two private companies. Oromin's market cap is CAD$112 @ CAD$0.82 per share.

An exciting update – 5th April 2012

Another regional explorer privately held Toro Gold, also have a project in Senegal, south-west of Sabodala and west of Massawa, at Mako.
The image above of the project area, taken from Toro Gold's website, demonstrates where Mako is in relation to Goldstone's license area at Sangola.



Source: Torro Gold

On March 28th 2012 Toro Gold announced a maiden inferred mineral resource of 1.05MOz/Au at an average grade of 2.2g/t gold.
What is significant here is Toro were able to go from zero to +1m ounces in an extremely short space of time. Drilling commenced in August 2011 and they had completed only 3,000 m by December 2011!

When comparing Toro Gold's map with Goldstone's map below it looks like Mako is not on one of the main regional gold bearing systems. However the project clearly lies within the Birimian Formation of rocks as indicated above.

If further evidence were required of the prospectivity of the region it is nice to have received such a timely, local reminder.

In light of all this Goldstone announced a new drilling programme which is due to commence in the near future and will be followed by a second phase of drilling directed at other targets in the area. Meanwhile Goldstone will conduct airborne high resolution magnetic and radiometric surveying across the entire permit including, Baraboye and Tiobo.

Sangola, Senegal

The positive geological indicators for Goldstone's Sangola project should be clear;

- The license area covers both volcanic and volcano-sedimentary rocks.
- It is part of the Birimian formation, which, in the area, has yielded over 40MOz of gold discoveries.
- It lies on the same Main Transcurrent Shear Zone as the 3Moz Massawa deposit
- It is relatively unexplored

Termite mound sampling in Sangola

In terms of mitigating exploration risk, this goes a long a way to meeting that aim. However there is more encouraging evidence of the prospectivity of the area. The map below reveals the existence of regional artisanal gold mining.

Artisanal mining is small scale mining conducted by local people, often using extremely basic methods. It is interesting to note that a map on Goldtone's website indicates that a large proportion of this artisanal mining across the Birimian Formation is in the volcano-sedimentary Diale Group of rocks. This is possibly significant as the three gold anomalies Goldstone has so far identified in its license area also occur in the Diale Group.

As stated in the latest half-yearly report, Goldstone spent the period conducting termite mound sampling across Sangola (to find out more about termite mound sampling please read the Special Report we published in October 2011). These efforts identified three major gold anomalies; Baraboye, Tiabedji and Tiobo. All three anomalies were within touching distance of the Main Transcurrent Shear Zone, linked to Massawa.

In their Operational Update in February, Goldstone provided more information about work undertaken on these anomalies. They received results of in-fill sampling at Tiabedji, which confirmed the robust geometry of the six kilometre long anomaly. Further they believed this also gave support to the view that this anomaly is a splay off the Main Transcurrent Shear Zone. The presence of other gold pathfinder elements (silver, arsenic and cobalt) confirmed the prospectivity of Tiabedji.

Some final thoughts

Goldstone clearly still has much to do at Sangola. However the purpose of this report is to highlight the strategy the company has adopted, as we did in January 2011 for the Ghanaian projects, whilst drawing investor's attention to the significance of Closeology in relation to their operations in Senegal.

There are signs that this strategy is about to yield results in Ghana. The stated combined JORC resource there is currently 405,000 Oz/Au, but this could soon be in line for a notable upgrade.

Assuming this happens it will then beg the question whether Goldstone can repeat the success in Senegal?

Using Closeology, we have made the geological case for this project. Using Closeology, we have also made the commercial case for this project (i.e. the regional presence of major corporations and artisanal operations). We have also demonstrated progress the company has made in advancing Sangola. Taken together, this all feels very compelling.

Of course it is not a definitive answer and as with any AIM explorer there are no guarantees. Even so we have a hard time to identify other similar scale exploration projects, which offer such potential upside with risks as well managed as these. We don't believe there are many such opportunities. With Goldstone's share price where it currently is (about 4.35p) we believe this company offers investors a smart risk/reward ratio.

To find out more about Goldstone please do be sure to read our special report from October 2011 and listen to our latest podcast interview with management from March 2012.

Disclosure: MiningMaven Principals own shares in Goldstone Resources

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