

## ZAMBIA

*By Martin Broome  
African Mining Consultants Ltd  
Kitwe, Zambia*

2002 turned out to be another challenging year for Zambia, and not just its minerals industry. Poverty reduction, good governance, a 630,000 t shortfall in the staple maize supply and the withdrawal by Anglo American from Konkola Copper Mines plc (KCM) were the economic issues of the day.

The country's new President, Mr Levy Mwanawasa, inaugurated in January 2002, declared the shortfall in maize production a 'National Disaster'. More than 600,000 t of maize was imported by the government and the private sector from South Africa, Uganda and Tanzania, putting additional pressure on the foreign-exchange market. By the end of the year, the value of the local currency, the kwacha, had depreciated by more than 26% against the US dollar.

The government's Poverty Reduction Strategy Paper (PRSP) was approved by the International Monetary Fund (IMF) during the period under review. This document sets out Zambia's strategy to alleviate poverty through sustained economic growth and improved governance. The high rate of population growth, coupled with a lack of economic development in recent years, has resulted in the current situation where almost 75% of Zambia's population of 10.3 million people are regarded as poor.

The HIV/AIDS pandemic has exacerbated the economic situation with its associated costs and tendency to affect competent manpower. Staggeringly, adult life expectancy in Zambia is now less than 38 years.

Areas earmarked for investment are mining, agriculture, tourism and manufacturing. The Zambian Government sees its role as the provider of infrastructure to encourage diversification of the export base away from the current heavy dependence on mining. It is anticipated that US\$1.2 billion will be spent on PRSP programmes by 2004, funded jointly by donors and from domestic sources.

The 2002 budget stressed the need for the economy to diversify, and agriculture has been given priority status in terms of this policy. Commercial and selected small-scale farmers will benefit from reduced energy charges, preferential excise duty rates on fuels, and subsidies on fertilizer.

The mining industry, meanwhile, continued to suffer from low world metal prices. Despite an increase in the production of new copper, which reached the commendable level of close to 340,000 t in 2002, almost all of the main Zambian producers continued to lose money at prevailing London Metal Exchange prices.

The situation with regard to the ownership of KCM has been resolved temporarily. Government concluded an exit agreement with Anglo American Corp. (Anglo) to smooth operations of the company until a new strategic equity partner can be found. Anglo agreed to leave its management team in place while an orderly transition was arranged. Anglo also part-funded a financing package estimated at US\$105 million which covers all of KCM's expected operating deficit until the end of 2003. The package included a US\$30 million exit payment as well as loans, advanced payments from customers and secured overdraft facilities.

At the time of writing, offers to acquire a majority equity interest in KCM are under consideration by the KCM board, the Zambian Government and their financial advisers, Standard Bank plc. On May 17 2003, Sterlite Industries of India was named as the preferred bidder.

First Quantum Minerals Ltd announced in April 2002 that it was to reduce its interest in Mopani Copper Mines plc, the operator of the Nkana and Mufulira mines, from 44% to 16.9% with effect from April 19, 2002. Swiss metal trader Glencore AG now holds 73.1% of Mopani, whilst the government, through ZCCM Investments Holdings plc, holds the remaining 10%.

First Quantum is focusing on the expansion of its Bwana Mkubwa leach – SX-EW operation at Ndola, which should reach planned throughput levels during the first half of 2003, and on the development of open-pit mining and processing operations at the Kansanshi copper deposit near Solwezi in northwestern Zambia.

Elsewhere on the Copperbelt, South African-based Avmin appears to be following Anglo American's lead and may be preparing to withdraw from Zambia. It owns 90% of Chambishi Metals plc, a cobalt and copper refining and tolling company with substantial cobalt resources in slag. At the release of its interim group results to December 31, 2002, Avmin announced that Chambishi had reached a level where it could sustain its operations without the financial assistance of Avmin, and was running at close to planned production levels following commissioning of the redesigned furnace.

During the period, Chambishi's contribution to Avmin's headline earnings was a negative R61 million. Avmin has guaranteed Chambishi's debt facilities, which amount to approximately US\$62 million.

Avmin's chairman, Rick Menell announced on April 8, 2003, that "Chambishi requires additional capital expenditure to achieve optimal performance. Since it is already overcapitalised due to delays in reaching full production and the decline in the cobalt price, Avmin does not wish to invest further funds, and has decided that the sale of Chambishi is in the company's best interests as it will allow Avmin to focus on new growth opportunities in South Africa".

Avmin also announced that it had entered into a Memorandum of Understanding with J&W Holdings AG of Switzerland concerning the possible

disposal of its 90% interest in Chambishi Metals. J&W has a two-month exclusivity period during which to complete due diligence. Pending the outcome of this, Avmin may enter into a final sale and purchase agreement with J&W.

Early in 2003, Avmin had received written notification from the liquidator that the company was to be appointed the preferred bidder in the purchase of the Luanshya and Baluba mine assets belonging to the Roan Antelope Mining Corp. of Zambia (RAMCOZ). Subsequently, the government issued a number of press releases that appear to have reversed this decision and stated that these assets are to be offered to J&W Holdings.

It would seem that following the project overruns with Chambishi, and the failure to secure the Baluba mine, a source of cobalt concentrate feed for its roasting plant, Avmin now wishes to refocus investment on its other regional assets.

Overall though, the mood is growing more positive for Zambia's minerals industry. Increased levels of investment since 2000 continue to be reflected in increasing levels of copper and cobalt production (see Table 1).

The shareholders of the main producing mines, ie those operated by Mopani and KCM, appear to be committed to the longer term future of the industry. First Quantum Minerals continues with its aggressive expansion programmes at the Bwana Mkubwa operation and the Lonshi open-pit mine in the neighbouring Democratic Republic of the Congo (DRC). A number of major new mine projects are in the advanced feasibility phase, most notably the Lumwana project being developed by Equinox Resources and the Kansanshi project belonging to First Quantum Minerals.

### **Konkola Copper Mines (KCM)**

For the 2002 financial year, KCM produced 222,010 t of copper and 2,039 t of cobalt, which was 9.4% below budget for copper and 4% above budget for cobalt. Following the Anglo American pull-out announcement in January 2002, the capital spending programme was curtailed to essential items and committed capital that would incur heavy penalties if cancelled.

Although morale was initially adversely affected, things had settled down by the year end after the shakeout and restructuring which carved out Anglo American, CDC Capital Partners and the IFC from the KCM shareholding.

A budget and business plan was approved by the new KCM board that is designed to allow rapid increases or decreases in production from higher-cost sources in response to movement in the copper price. The budget is fully funded within the capability of the newly-structured KCM.

The Konkola Deep Mining Project (KDMP) has been suspended indefinitely. The current life-of-mine plan envisages a continuation of operations until 2010, although this will depend on further optimisation studies planned for 2003.

On September 16, 2002, the Nkana Smelter in Kitwe became a subsidiary of KCM. All smelter toll agreements expired at the year-end, although KCM and Mopani signed a Memorandum of Understanding to exchange up to 60,000 t/y concentrates for blending.

### **Mopani Copper Mines (MCM)**

During the review period, MCM revised its financial year end to December 31. For the 13-month period from December 1, 2001 to December 31, 2002, the company hoisted 6.1 Mt of ore at a grade of 1.99% total copper from its Mufulira and Nkana underground mining operations. Fine copper production for the same 13-month period amounted to 102,479 t, some 7% below budget. Cobalt production was slightly over budget at 1,964 t.

Cash operating costs, in line with the other large Zambian producers, continue to be high by world standards at around US\$0.73/lb. A significant amount of refurbishment remains to be done before these are reduced to more acceptable levels. Mopani's major objectives include a reduction in cash operating costs to around US\$0.65/lb within three years.

MCM's management continued to implement the policy of focusing production on lower-cost sources of ore. Production targets for 2003 and beyond are extremely aggressive and MCM plans to achieve production levels of 175,000 t to 180,000 t of finished copper by 2005.

Up-dip mining of the Mindola sub-vertical area will start during 2003 and a study is in progress to look at the possibility of re-starting production from the Mindola open pit.

MCM's long-term viability may depend on successful mining of the resources contained in the Nkana Synclinorium. These total at least 90 Mt and could extend the life of Nkana mine to 2025 or beyond.

At the Mufulira mine, trials have commenced on the in situ leaching of stopes and crown pillars within and above previously mined areas. It is hoped that this could be a major source of low-cost copper in the future.

### **First Quantum Minerals (FQM)**

First Quantum Minerals also announced a change in its year end, to December 31, and reported copper production of 11,878 t from Bwana Mkubwa for the 13-month period ending December 31, 2002.

FQM's net loss over the same period was US\$3.8 million, although this was due to the loss of US\$4.6 million contributed by Carlisa (MCM). Cash operating costs at the Bwana Mkubwa operation were only US\$0.27/lb of copper, net of acid credits, easily the lowest on the Copperbelt.

Bwana Mkubwa completed the expansion of its leach SX-EW facility and expects to achieve target production rates of 2,500 t/mth of copper by the second quarter of 2003.

The Bwana Mkubwa plant treats ore mined from the Lonshi open pit across the border in the Democratic Republic of the Congo. More than 1.0 Mt of ore was mined at Lonshi during the 13-month reporting period. The development of cross-border mining operations has been an outstanding achievement for FQM, and is one of which it can be justifiably proud.

In December 2002, FQM completed a feasibility study for the initial development of the Kansanshi copper-gold project near Solwezi in Zambia's North-western Province. FQM anticipates developing the project in two phases, with production of some 1.6 Mt of copper during the first 16 years.

### **Chibuluma Mines**

The Chibuluma West mine hoisted 256,000 tonnes of ore at a grade of 3.5% total copper and 0.1% cobalt. Finished copper attributable to Chibuluma West was slightly down at 6,908 t.

The tolling contract with Mopani ended on September 30, 2002. For the final three months of the year, ore from Chibuluma West was trucked to the Chibuluma South concentrator. Concentrates were then transported to the group's O'Okiep smelter in South Africa for further processing.

No mining was carried out at the Chibuluma South mine during the year. Tailings from previous Chibuluma South operations were treated on a small-scale through the existing leach-cement copper plant, and 465 t of copper was produced.

A re-engineered feasibility study for underground mining at Chibuluma South was completed during the year. This study envisages a decline from the bottom of the existing open pit to facilitate cut-and-fill mining of sulphide ore. Negotiations for equity funding from South Africa's Industrial Development Corporation (IDC) are at an advanced stage, and it is hoped that the Chibuluma South underground project can commence in mid-2003.

### **NFC Africa Mining**

Things also seem to be moving forward with the Chambishi underground mine owned by NFC Africa, a subsidiary of China Non-ferrous Metals Corp. Refurbishment of the Chambishi concentrator has finally been completed, and some mining operations have restarted after a 15-year gap (the mine was closed and put on care-and-maintenance in 1987). The first concentrates were produced in October 2002 and the mine expects to produce around 15,000 t of copper in concentrates in 2003.

### **Avmin**

Chambishi Metals seems to have put most of the technical problems that beset its Cosac smelter project behind it. The main one related to the furnace cooling system, which was completely revamped during 2002, and the slag treatment project is now operating at more than 90% of design capacity.

The cobalt roast-leach-electrowin (RLE) plant at the Chambishi Metals site would seem to have a more uncertain future. With production of cobalt concentrate from the Nchanga open pit due to wind down in the next year or two, and with Avmin's apparent failure to secure the right to operate the Baluba mine (a major source of cobalt concentrates), Avmin has decided not to make any further investment in Chambishi Metals and is in discussions with J&W Holdings regarding the sale of its 90% ownership of that facility.

As for the Luanshya and Baluba assets formerly owned by Roan Antelope Mining Corp. (RAMCOZ), these remained closed during 2002. The cost of re-opening the Baluba mine is increasing every month as infrastructure continues to deteriorate. The Luanshya mine will probably not re-open, although there are other potentially viable oxide copper resources in the Luanshya area.

### **Other activity**

As would be expected during another difficult year, activity away from the major mines on the Copperbelt was limited.

The emerald-mining industry continues to be shrouded in secrecy. The government is attempting to set up a gemstone exchange to encourage more open trading in precious and semi-precious stones, but proposals have still to be ratified and it will be some time before a working model can be finalised.

The Sable Zinc project in Kabwe produced 1,200 t of zinc mainly in strip form. This project, which recovers zinc from old Kabwe mine tailings in a small leach-electrowin plant, has also struggled to remain viable, with the zinc price hovering around the US\$800/t mark for most of the year.

Exploration activity has also been very low key. Anglo American and Avmin, previously two of Zambia's more active explorers, both effected further reductions in the size of their in-country exploration offices. Zamanglo will be entering into a joint venture with Chibuluma Mines Plc to follow up targets in the Chibuluma mine licence area on the Copperbelt. The anomalies were identified from earlier airborne reconnaissance surveys carried out by Anglo American.

Albidon Ltd, an Australian junior explorer, carried out some infill drilling on the Munali nickel-PGM prospect near Lusaka. Albidon plans to conduct further exploration work and a pre-feasibility study during 2003.

The other exploration programme of note is the joint venture between First Quantum Minerals and BHP Billiton on the Mwinilunga prospect in North-western Province where an 8 km-wide copper anomaly has been identified by rotary airblast drilling.

With the mining and metals sectors still firmly in the down-cycle, Zambia continues to wait patiently for better economic news.

Table next page.

<b>Table 1. Zambia Copper and Cobalt Production (t)</b>						
	<b>2001</b>		<b>2002</b>		<b>2003*</b>	
	<b>Cu</b>	<b>Co</b>	<b>Cu</b>	<b>Co</b>	<b>Cu</b>	<b>Co</b>
KCM	196,805	2,400	222,010	2,039	226,000	783
Mopani	83,161	1,779	94,339	1,843	142,820	2,384
Chibuluma Mines	8,639	100	7,373	77	7,500	-
Chambishi Underground	-	-	-	-	15,000	-
Bwana Mkubwa Mining	9,662	-	11,878	-	28,705	-
Chambishi Metals <sup>1</sup>	428	355	785	2,344	1,800	3,624
<b>Totals</b>	<b>298,695</b>	<b>4,634</b>	<b>336,385</b>	<b>6,303</b>	<b>421,825</b>	<b>6,791</b>

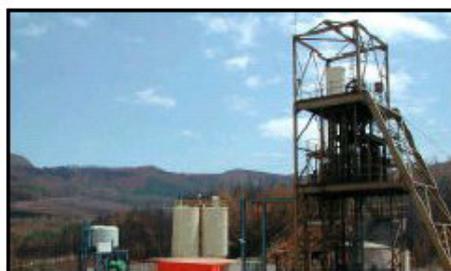
\*Forecast

<sup>1</sup> = Own Account

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For more information

Contact:



**Andrew Spivey**

**AFRICAN MINING CONSULTANTS LIMITED**

1564/5 Miseshi Road, P.O. Box 20106, Kitwe, Zambia.

Telephone +260-2-211108 Fax +260-2-211104

e-mail: [amc@zamnet.zm](mailto:amc@zamnet.zm)

[www.amc.co.zm](http://www.amc.co.zm)