BOTSWANA

By Roger Murray

Diamonds contributed some 80% of Botswana's total export earnings and over half of government revenue in 2001, and this situation is set to continue for the forseeable future. Botswana's importance as a source of diamonds to the De Beers group, which has the exclusive right to market all stones produced by Debswana Diamond Co. (Debswana), the 50:50 government/De Beers-owned joint venture, via the Diamond Trading Co. (DTC), has grown, especially with the emergence of other major producers which has intensified the competitiveness of the global diamond market.

In 2001, recoveries by Debswana accounted for 68% of the total 38.7 Mct produced by De Beers-operated mines in Southern Africa (Botswana, Namibia and South Africa) and Tanzania. To promote a positive image for diamonds and ensure acceptability of the product is not tarnished by the trade in 'blood diamonds' from civil war regions elsewhere in Africa, the government and Debswana launched the 'Diamonds for Development' initiative in 2001. Both are also active participants in the 'Kimberley Process', under which stakeholders in the industry have agreed to introduce a system of certificates of origin to prevent 'blood diamonds' entering the legitimate international trade in diamonds.

The partnership between the government and De Beers was also further consolidated by Debswana's participation in the privatisation of the diamond group. This was completed in mid-2001 and the final offer valued De Beers (including its investment in Anglo American) at US$19.7 billion, of which the diamond business was valued at US$9.3 billion. Prior to the privatisation, Debswana held a 5% direct interest in the De Beers Consolidated/De Beers Centenary issued share capital. It now holds a direct interest of 10% in DB Investments (Luxembourg), the holding company for the new private concern, De Beers SA, with Anglo American, and Central Investments DBI, the major shareholders with 45% stakes each. Because of the need to raise the value of the final offer to ensure acceptance by De Beers' minority shareholders, Debswana also subscribed to 11% of Central Investments DBI, in which Central Holding Group, representing the Oppenheimer family interest, has an 89% stake. This has provided Debswana with a further indirect interest of 5% in DB Investments/De Beers SA; in consequence, Debswana has an effective 15% holding, and the Botswana Government 7.5%, in De Beers SA.

Largely owing to the substantial increase in diamond output during 2000 and 2001 by Debswana, Botswana's real GDP (in 1993/94 prices) grew by 9.1% in the 2000/01 (June 30-July 1) national accounts year. The mining sector recorded an exceptionally high growth rate of 19.6%, up from 12.1% in 1999/2000, due mainly to the first full year effect of Debswana's Orapa mine expansion project, which was completed during 2000. In consequence, revised forecasts indicate that the economy performed even more strongly than originally projected during the six-year period (1997/98-2002/03) covered by National Development Plan 8 (NDP 8), with average annual real growth of 6.7% (5.2% projected) and mining sector output growth averaging 6.8% (3.0% projected). However, real growth is expected to be much lower in 2001/02 and 2002/03, at around 5% according to official forecasts. The main reason for the decline is an anticipated slowdown in mining sector real output growth to around 2% in both years, reflecting the reaching of a plateau by diamond- mining production, continued international diamond market weakness in 2002 and the absence of any significant growth impetus from other mining sectors.

A new Debswana mine, Damtshaa near Orapa, is scheduled to start production by the end of 2002 but is a relatively small operation and initially will not make a substantial impact on overall diamond production. Continued efforts to diversify the economy away from over-dependence on diamond mining, especially by promoting investment in the financial, manufacturing and tourism sectors, will remain the focus of policies under NDP 9, with no significant new strategies for the mining sector currently planned.

A somewhat smaller merchandise trade surplus of P4.1 billion (US$705 million) and current account surplus of P2.6 billion (US$447 million) was preliminarily estimated for 2001, mainly as a result of reduced diamond exports due to the global economic slowdown, coupled with lower copper and nickel prices. Despite a 7% rise in diamond output in 2001, diamond exports by volume were 2% lower than in 2000. The value of local currency-denominated diamond exports (including a small quantity of diamonds cut locally) was slightly lower at P11.3 billion in 2001 (P11.4 billion in 2000) but earnings were somewhat cushioned by the 25% fall in the value of the pula vis-a-vis the US dollar during the latter part of the year.

The pula's depreciation was due to the sharp fall in the value of the South African rand, one of the trade-weighted basket of currencies against which the pula is valued. The US dollar-denominated value of diamond exports fell by 12% in 2001 to US$2.2 billion (US$2.0 billion in 2000). A further deterioration in the capital account resulted in a lower overall balance of payments surplus of P1.0 billion in 2001. Although a considerable decrease on the P1.9 billion overall payments surplus recorded in 2000, the external payments position has stayed healthy for an economy of the small size of Botswana's, due almost entirely to continued substantial foreign exchange earnings from diamond exports.

High mineral revenues, mainly taxes and royalties from diamonds, continue to ensure that government finances remain sound, despite a larger than normal budget deficit projected for the 2002/03 (March 31-April 1) fiscal year. Total revenue and grants for 2002/03 are forecast at P15.4 billion, representing an increase of P2.1 billion, or 15% over the 2001/02 revised budget estimate. Mineral revenue amounting to P8.5 billion represents an increase of P1.0 billion, or 14% over the 2001/2002 revised estimate. This growth in estimated mineral revenue was attributed entirely to the sharp depreciation of the pula vis-à-vis the dollar during the latter part of 2001. With expenditures and net lending amounting to P17.0 billion, the forecast budget deficit is P1.6 billion, or 4.2% of GDP, much larger than the P85 million deficit under the revised estimates for 2001/02. The increased deficit was described as a temporary departure in the 2002/03 budget statement, resulting from a combination of factors, especially the prevailing weakness of the international diamond market for diamonds, the need to make substantial provisions for fighting the scourge of HIV/AIDS and the desire to consolidate and complete, as much as possible, planned expenditures under NDP 8 during 2002/03.

Diamonds

According to its 2001 financial statement, Debswana's sales revenue increased to P10.7 billion (US$1.7 billion) in 2001, an increase in local currency terms from P10.1 billion (US$1.8 billion) in the preceding year, although the result was regarded as disappointing when compared with Debswana's budget target of P11.6 billion (US$2.0 billion) in revenue. The figures for both years are smaller than the figures for diamond export earnings published by the Bank of Botswana (see table), reflecting the latter's inclusion of cut diamonds and possible variations in currency exchange valuations. Despite higher production in 2001, there was a decrease in the volume of diamonds sold owing to the downturn on the global diamond market and the introduction of quotas (deferred purchase arrangements) by the

DTC on deliveries from contracted producers in the latter part of the year.

Diamonds sold by Debswana in 2001, including intake from the mines and stockpile releases, totalled 25.24 Mct, a 2% decrease on the 25.74 Mct sold in 2000. However, Debswana, as a contracted producer with De Beers, was partially protected from the full impact of the downturn in the market and the average 20% fall in average rough diamond prices.

During the year, De Beers reportedly sold a large proportion of its rough diamonds at a considerable discount to its Standard Selling Values (SSV), the prices paid for the diamonds delivered to the DTC by its contracted producers. Debswana's financial position was also bolstered in 2001 by the once-off gain arising from its participation in the privatisation of De Beers. Its net profit almost doubled to P11.2 billion in 2001, up from P6.2 billion in the preceding year, due mainly to a P4.7 billion gain on the disposal of Debswana's original shareholding in De Beers, and its greater share of profits generated by the privatised company, De Beers SA, as a result of its increased shareholding.

Production from the three mines operated by Debswana totalled 26,416,531 ct in 2001, up 7% on the preceding year's output of 24,650,855 ct. This was due to an increased tonnage of ore treated, up by 3% at 28.3 Mt in 2001, and an increase in the overall average recovery grade to 93.3 ct/100 t (89.9 ct/100 t in 2000), with higher recoveries at all three mines. Production at Orapa rose by 7% to 13,056,403 ct (12,171,887 ct in 2000), mainly due to highrecovery efficiencies at No.2 plant, although there was a slight decrease in the average recovery grade to 80.0 ct/100 t (83.0 ct/100 t). A hydraulic shovel was commissioned during 2001 for waste stripping and 6.3 Mt of waste was stripped, commencing in May that year. At Jwaneng, production was also up by 7% to 12,339,430 ct (11,520,253 ct), while in contrast the average recovery grade increased to 137.7 ct/100 t (124.2 ct/100 t). According to the 2001 annual review published by De Beers SA, this was mainly due to improved liberation of the North upper pipe bench material and excellent recovery efficiency in the Completely Automated Recovery Plant (CARP), which along with the Fully-Integrated Sort House (FISH), forms part of the Aquarium processing and sorting facilities commissioned in 2000. At the Letlhakane mine near Orapa, production exceeded 1 Mct for the first time in 2001, with a 6% rise in diamonds recovered to 1,020,698 ct (958,715 ct). The average recovery grade was marginally higher at 27.9 ct/100 t (27.3 ct/100 t). In contrast to the annual report for 2000, when De Beers was still a public company, figures for mineral resources and reserves (probable, indicated and inferred) for Debswana and mines in the other African countries where the group operates were not included in the annual review for 2001.

The throughput and process efficiency of the Jwaneng mine's recrusher plant was improved during 2001 by using Multotec Process Equipment from south Africa in conjunction with mine engineers. The plant treats tailings from the primary liberation and separation process; the existing cyclone configuration utilised five modules of three Multotec 360 mm units in each. After testing it was found that using three 420 mm dense-media cyclones of a new lightweight design in each module offered the best recovery and efficiency option and five modules of these units were installed and commissioned by the end of 2001. The new units have consistantly produced the required 150 t/h throughput, 35 t/h more than the previous configuration, while process performance has also improved.

Construction of the new Damtshaa mine, centred on the BK group of four small pipes some 20 km east of the Orapa mine, commenced during 2001 and is on schedule to start production in October 2002. Debswana has allocated P225 million for construction of the mine which is due to attain full production in March 2003. Damtshaa is forecast to yield 5 Mct from 39 Mt of ore mined over a 30 year life-of-mine and will be a smaller operation than Letlhakane. Mining will be in two phases: the larger BK9 pipe is expected to supply about 86% of the ore during the mine's life although the smaller BK12 pipe will be mined first, followed by the BK1 and BK15 pipes. The mine includes a treatment plant with a designed rate of 200 t/h of ore and has its own slurry dam, although diamond-bearing concentrate will be transported to Orapa for final recovery. Along with diamonds recovered at Orapa and Letlhakane, those from Damtshaa will also be sent for final sorting to the Aquarium facility at Jwaneng mine. Delineation drilling and bulk sampling of the Thankane kimberlite southwest of Jwaneng was completed during 2001, with results due to be available in the second half of 2002.

Despite the downturn in the global market, exploration for diamonds by several junior mining companies continued at a high level in 2001 with some encouraging results. The UK's Firestone Diamonds has obtained positive data from a high-density sampling programme in the Mopipi joint venture project under way since the start of 2001. In October 2001, the company, which is listed on London's Alternative Investment Market (AIM), stated the results had significantly increased its confidence in the presence of diamondiferous kimberlite in the project area, with the potential for the discovery of a new kimberlite field with substantial commercial significance regarded as very high. The original project area, covering 2,000 km^2 and located some 50 km to the west of Debswana's Orapa and Letlhakane mines, was increased to some 3,000 km by the granting of an additional prospecting licence in the second half of 2001.

The sampling programme focussed on areas from where anomalous kimberlitic indicator mineral counts were obtained from previous reconnaissance sampling. Several hundred soil samples were taken on and around 60 targets located mainly in the Mopipi Central and Mopipi South licence areas. They coincide with the intersection of a deep-seated north-south structural trend with east-west trending dykes and fractures where kimberlite intrusions are typically located. In particular a concentration of samples with exceptionally high kimberlitic indicator mineral counts was identified in the 5 km^2 Mopipi Dam area of Mopipi Central. Compared to a previous high count of 88 grains of kimberlitic garnet, 11 samples from Mopipi Dam contained over 200 grains of largely fresh kimberlitic garnet providing strong evidence of the close proximity of a kimberlite source. A further two microdiamonds were recovered from the samples bringing the total number found to date to six of which five have been found in or close to Mopipi dam. Following completion of a gravity survey to delineate individual targets precisely, a comprehensive drilling programme was due to commence in early 2002, together with initial sampling of identified anomalies in the new Mopipi East licence area.

During 2001, Canada's Trivalence Mining Corp. continued exploration and drilling on its 3,745 km^2 Kokong licence area, located 300 km west of Gaborone and containing 14 known diamondiferous kimberlites. Prospecting work focussed on ground follow-up to test some 109 new kimberlite targets identified by a 22,000 line km geophysical survey completed in 2000. At the beginning of 2002 the company signed a joint-venture agreement with Rio Tinto Mining and Exploration (RTME) under which the latter has the right to earn a 65% interest by spending US$3.5 million by end-September 2005. RTME may earn an additional 10% interest by starting a US$5 million feasibility study by end-September 2008.

Copper-nickel

The sharp drop in base metal prices during 2001 had a major adverse financial impact on the Selebi-Phikwe copper/nickel mine operated by the BCL subsidiary of Botswana RST (BRST) as it coincided with a period of high capital expenditure to access additional ore reserves deeper underground. The deterioration in BCL's financial position has given rise to a strategic review of the continued operation of the mine, which is in any case scheduled for closure in 2010 according to the current mining plan. In December 2001, the government commissioned a comprehensive assessment of BCL's operations, due to have been completed in March 2002, to advise the major shareholders — Anglo American, De Beers and the government — on the company's future. The consultancy was tasked with investigating and assessing the viability of BCL with specific reference to the profitability, efficiency, competitiveness and operational performance of the mine and future plans regarding major business partners such as Tati Nickel Mining Co. (TNMC- see below).

Production of metal in concentrates comprised 14,900 t of copper and 12,600 t of nickel in 2001, down from 16,300 t and 13,400 t respectively in the preceding year. The combination of lower production and reduced metal prices pushed BCL sales revenue down from US$111 million in 2000 to only US$71 million the following year.

Canada's LionOre Mining International has continued with its US$66 million expansion project at TNMC, reported to be 75% complete as of early 2002. TNMC operates the Selkirk underground and Phoenix open-pit mines near Francistown; ore from Selkirk is concentrated by BCL at Selebi-Phikwe while that from Phoenix is initially treated at the mine, with output from both smelted on a toll basis by BCL. Production by TNMC, after smelting into matte by BCL, totalled 6,305 t of nickel and 2,157 t of copper in 2001. The expansion includes an open pit capable of producing 3.6 Mt/y of ore, plus installation of a concentrator at the Phoenix mine, with the aim of approximately doubling nickel output from 6,500 t/y to 13,000 t/y. The expansion has remained within budget and commissioning was due to commence during the first half of 2002. LionOre has also continued exploration, establishing continuity and continuation of the orebody.

In May 2002, LionOre completed a deal to acquire Anglo American's nickel interests in Botswana for US$76 million in cash, subject to government approval and a final agreement. This includes a 43.35% interest in TNMC, and a 12.65% interest in Botswana RST. The latter has an 85% interest in BCL (the government holds the remaining 15%), which means LionOre will also acquire a 7.5% diect interest in BCL, and LionOre already held a 41.65% interest in TNMC and will now own 85%, with the government holding the remaining 15%. According to LionOre's chief executive, Colin Steyne, the deal with Anglo would increase the company's nickel production to 35 Mlb/y (15,800 t/y). The acquisition was to be financed partly with debt, and backdated to take effect from the start of 2002.

Other Minerals

The other main minerals produced in 2001 continued to be soda ash, salt and bituminous coal, along with small quantities of gold, semi-precious stones and quarried aggregates.

The Botswana Ash (Botash) plant at Sua Pan performed well in 2001, with higher sales in both volume and value terms of soda ash and salt compared with the previous year. Increased demand led to higher soda ash export earnings of P180 million (P173 million in 2000), while salt exports by value were up by P2 million at P39 million.

During 2001, Perth-based Gallery Gold continued to define resources at its Mupane prospect near Francistown, where it has outlined two deposits of non-refractory gold, Area 1 and Area 2. A resource of 557,000 oz at some 3 g/t Au was initially calculated for an open-pit operation, with preliminary costings indicating a production cost of US$160/oz. Mine and plant development is currently scheduled for 2003 with the first gold pour by early 2004. In the first quarter of 2002, Gallery completed a prefeasibility study of Mupane, covering envisaged production from two open pits plus additional feed from a smaller deposit at Signal Hill. The total estimated resource have been revised upwards to 914,000 oz of gold (indicated and inferred) of which 411,000 oz are within the indicated category. A feasibility study is scheduled for completion by mid-2003, with drilling programmes to convert resources to reserves and to define additional resources under way. Exploration is also continuing elsewhere in the Mupane permit area.

Botswana's substantial reserves of bituminous coal, in the Greater Morupule and Mmamabula coal fields to the east of the country, remain largely untapped. Existing production by Morupule Colliery, in which Anglo American is the major shareholder is solely for the domestic market. Annual production remained at just over 1 Mt in 2001, with over half the output directly supplied by conveyor to the adjacent Morupule coal-fired power station; the BCL mine and Botash plant are the other main customers. The Morupule resource is estimated at 5,000 Mt and the government plans to commission a new coal-export feasibility study to assess the potential for exporting to the global steam-coal market during 2002.

The government is also seeking to promote wider coal utilisation domestically, with the upgrading of two coal depots in Francistown and Gaborone due to have been completed by March 2002, while the establishment of more coal depots in the future is envisaged.

Botswana Mineral Production (t except where stated)

	2000	2001
Diamonds ('000 ct)	24,651	26,417
of which Orapa	12,172	13,056
Value (US$ million) [1,2]	2,228	1,960
Copper-nickel matte	29,932	n/a
Value (US$ million) [1]	111	71
Copper	16,300	14,900
Nickel	13,400	12,600
Cobalt	211	n/a
Soda ash	n/a	n/a
Salt	n/a	n/a
Coal	n/a	n/a

[1] Export values as published by the Bank of Botswana (central bank).

[2] As well as rough diamonds, the figures include small quantities of cut diamonds exported by Teemane Manufacturing Co., and Schachter/Namdar Botswana (formerly Lazare Kaplan).

Source: Bank of Botswana; De Beers SA; Botswana RST.