

THE MINERAL INDUSTRY OF

SWAZILAND

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In 1994, Swaziland was a significant regional producer of asbestos, diamonds and, to a lesser extent, coal. In years past, it has also been a producer of gold, iron ore, tin, and certain industrial minerals, such as barite, fluor spar, and pyrophyllite. Among these commodities, coal, gold, and industrial minerals have attracted recent exploration interest. With the exception of brick and concrete block manufacturing, there appears to be no secondary or downstream minerals processing in the country.

Mining revenues for asbestos, coal, diamonds, and quarried stone in 1994 were reported by the Swaziland Geological Survey and Mines Department (GSMD) as totaling about \$27.8 million,² about the same as in 1993. Although 1994 data were unavailable, the same department estimated in 1993 that semi-industrial output that year of clay, sand, and soapstone overall was worth almost \$3 million. Except for some construction materials, virtually all of Swaziland's mineral output was exported. By comparison, Swaziland's gross domestic product in 1994 was about \$1.1 billion, and total exports of goods amounted to about \$690 million.

Employment levels in the mining industry in Swaziland were believed to be slightly lower than those in 1993, which were reported by the GSMD at 1,354 persons. However, to gauge the true economic impact of mining on Swaziland's economy, employment of Swazis in South Africa must be included. According to data for 1993 from the South African Chamber of Mines, almost 16,000 Swazi miners worked in South Africa, largely in gold mines. It was estimated that total wages earned by these miners was about \$100 million, and about 10% of Swaziland's population was directly dependent on this income.

Swaziland's geology is dominated by Archean granitic rocks, which make up most of the western two-thirds of the country. Tin-bearing pegmatites in some of these rocks have given rise to alluvial tin deposits. Along the northwest Swaziland border is part of an Archean greenstone belt known as the Barberton Mountain Land. This terrane in Swaziland has hosted asbestos, barite, gold, and iron deposits. A somewhat discontinuous mafic igneous complex (Usushwana Complex) in west and southwest Swaziland has been prospected for base metals, chromite, and platinum, to date without the announcement of economic discoveries. In east-central Swaziland, a 20-kilometer (km)-wide north-south belt of Karoo sedimentary rocks hosts Swaziland's

large coal reserves and some occurrences of industrial minerals. The eastern one-third of the country is made up of a largely economically barren north-south belt of volcanic rocks forming the Lubombo Plateau.

All minerals in Swaziland are vested in the King, in trust for the Swazi Nation. The Minerals Committee, appointed by the King in consultation with the Ministry of Natural Resources and Energy, oversees all mining matters. Applications for prospecting and mining licenses are made through the Geological Survey and Mines Department, which transmits them to the Minerals Committee.

Equity participation in mining ventures by the Swazi Nation is through the national trust organization Tibiyo Taka Ngwane (TTN), which was formed in 1968. TTN's free equity share in mining ventures is commonly on the order of 40% to 50%. However, in accordance with the Mineral Rights Taxation Regulations of 1976, all mineral royalties and lease revenues have been paid to another national trust organization, Tisuka Taka Ngwane, to support housing and infrastructure development. In 1987, the Swaziland Industrial Development Co. Ltd. (SIDC) was set up as a private development finance company to promote private-sector projects, including mining, in Swaziland.

Because of mining's particular importance to the rural economy, the Government in recent years has acted as an intermediary in mine labor negotiations and has made loans to at least one mine to prevent its closure.

Swaziland's mineral industries are relatively small and lack associated smelters or large thermal powerplants. Accordingly, there have been few environmental problems, such as severe acid mine drainage or heavy-metal contamination of water, associated with the industry. Dumps at the old Havelock chrysotile asbestos mine at Bulembu are a source of local asbestos contamination. The Ngwenya open pit iron mine, now closed, has been included in a nature reserve and is variously regarded as an eyesore and a tourist attraction.

Output of mineral commodities was mixed in 1994. Coal production increased markedly as the Maloma Mine reached full production levels. Offsetting this in terms of revenues was an important decline in asbestos output. A continuing program of road building and rehabilitation in Swaziland has led to a strong demand for, and hence production of, crushed stone.

In terms of trade, Swaziland is a member of the Southern

African Customs Union (SACU), which provides for duty-free internal shipping, a common external tariff, and access to a market of about 45 million persons. The other members of SACU are Botswana, Lesotho, Namibia, and South Africa—the last being the dominant member. It is estimated that direct sales to and transshipments through South Africa accounted for about 75% of Swazi exports. Almost 90% of Swaziland's imports either originate in or transit South Africa. Trade with the United States generally has been minor and has not involved significant quantities of minerals.

Although mineral commodity import data have been unavailable since 1991, it is estimated that they were at similar levels in 1994. On this basis, it can be estimated that total mineral commodity imports amounted to about \$150 million, of which about \$125 million was for refined petroleum products, \$5 million for bituminous coal, and the remainder mainly for fertilizers. These imports were virtually all from South Africa. Electricity imports from South Africa in 1994, according to data from the South African power utility ESKOM, were worth almost \$13 million.

Following its opening in July 1993, the coal mine operated by Maloma Colliery Ltd., reached capacity levels in 1994. The mine consisted of a north-south line of narrow, shallow open pits that exploited shallowly east-dipping seams. Preparations were being made to commence underground mining, scheduled to start late in 1994, and it was anticipated that all mining would be underground by mid-1995.

About 70% of the run-of-mine coal output was salable. The coal was trucked 26 km to a dedicated railroad siding, from which it was railed to the South African ports of Richards Bay and Durban. It was hoped to utilize the Matola coal terminal in Mozambique once suitable coal handling facilities were installed there.

The Bulembu Mine, operated by HVL Asbestos (Swaziland) Ltd., continued to be Swaziland's sole asbestos producer. Output declined during the year, owing to a variety of technical problems; demand for the product remained strong.

Swaziland's diamond production was all from the open pit Dokolwayo Mine, at Dvokolwako, northwest of Hlane. According to Trans Hex Group Ltd. of South Africa, the operator and 50% owner of the operation, the mine continued to experience technical problems and higher costs, mostly arising from having to deal with hard, unoxidized kimberlite ore, and power supply fluctuations that affected the heavy-media diamond recovery plant. In light of escalating costs, the company renegotiated its royalty rates with the Government.

Swaziland's road and railroad network was considered to be generally adequate to serve the mining industry, with the exception of the asbestos mine. The asbestos mine, located in mountainous terrain, ships its ore by aerial bucketway to the nearby town of Barberton, South Africa. Swaziland's first railroad, from Kadake to the Mozambique border, was built to export ore from the now closed iron mine northwest of

Mbabane. The same line served to export coal when security conditions in Mozambique permitted. The portion of the railroad from Kadake to Matsapha has been inactive for many years and its rails were recently taken up. A newer, north-south railroad was built to allow the rapid transportation of South African goods, including coal, through Swaziland, chiefly to the South African ports of Richards Bay and Durban.

Swaziland's electrical generation capacity and grid have been a problem for industrial development. The generation capacity totaled about 60 megawatts, installed in a number of coal and diesel and/or fuel oil thermal plants. The coal-fired plants are designed for South African bituminous coal rather than the harder-to-ignite Swaziland anthracite. However, projects have been discussed to build anthracite-burning powerplants on the Swaziland coalfields, most notably at Mpaka where the proposal would involve reopening an old coal mine. Swaziland typically imports annually about \$10 million to \$13 million in electricity (577.1 gigawatt hours in 1994).

Except for coal, the future of mining in Swaziland is uncertain beyond the turn of the century. Current reserves at the country's sole asbestos and diamond mines, according to the operators, are nearing depletion. At the Bulembu asbestos mine, HVL Asbestos (Swaziland) Ltd. has expressed cautious optimism for finding modest additional reserves as a result of exploration between the existing ore body and the nearby South African border. However, it was unclear if the mine's existing concession would cover new discoveries in that area. The Bulembu area also is considered to have potential for economic gold mineralization, but that would require a separate license. No significant discoveries had been announced by yearend resulting from recent gold exploration programs in northern and northwestern Swaziland, although the possibility remains for development of gold mining on a small scale. According to the company, Anglovaal Ltd. was negotiating to extend exploration development at some of its existing small underground gold mines in nearby Barberton, South Africa, into Swaziland. No additional diamond reserves have been announced.

Coal appears to be the most promising mineral commodity for sustained or increased output over the long term. Constraints on the export of coal through Mozambique, although still something of a problem, should diminish as security conditions in that country improve and as rehabilitation of the coal terminal at Matola (Maputo) is completed. Exports through South Africa could increase as the coal terminals at Richards Bay are expanded. Swaziland has a number of deposits of industrial minerals and some of these may yet be developed on a modest scale.

Worrisome to Swaziland, economically tied to South Africa, were the latter country's economic, political, and social uncertainties following the election of a new South African Government in April 1994. It was unclear if the SACU, which has benefited Swaziland significantly, would

be maintained, and in what form. Various proposals were being made in South Africa in early 1994 pertaining to migrant labor—these included eliminating this type of employment, maintaining the status quo, and offering South African citizenship at least to long-term labor contract holders. Some of these proposals were seen as threats to the repatriation of mine wages into Swaziland.

¹Text prepared May 1995.

²Where necessary, values have been converted from Swazi emalangen (E)

to dollars at the rate for 1994 of E3.55=US\$1.00. The conversion rate for 1993 was E3.26=US\$1.00.

Major Source of Information

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TABLE 1
SWAZILAND: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

Commodity 3/		1990	1991	1992	1993	1994
Asbestos, chrysotile fiber	metric tons	35,900	13,900	32,300	33,900	26,700
Coal, anthracite	thousand metric tons	151	123	100	50 /r	228
Diamond	carats	42,500	47,400	50,500	61,700	76,100
Stone, quarry products	thousand cubic meters	155	129	233	258	292

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant figures.

2/ Includes data available through May 19, 1995.

3/ In addition to the commodities listed, modest quantities of crude construction materials (brick clay, sand and gravel) and pyrophyllite are produced, but output is not reported quantitatively, and information is inadequate to make reliable estimates of output levels.