

THE MINERAL INDUSTRY OF BURKINA FASO

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Burkina Faso's economy is dominated by services and agriculture, which together account for more than three-fourths of its gross domestic product (GDP). Cotton is the most important cash crop and the most important export commodity. The minerals sector, which is dominated by gold mining, typically has accounted for only 1% to 2% of the GDP. Given the decline of gold production in recent years, the contribution in 1996 was probably close to or below the lower percentage.

Gold was the only mineral exported in quantity in 1996. With the sharp decrease in output from the Poura Mine, artisanal production has become the predominant source of gold in the last few years. It has been estimated that in recent years 40% to 60 % of artisanal gold has been smuggled out of the country; the smuggled gold is not accounted for in official figures for gold production (U.S. Bureau of Mines, 1993). Given the Government's stated intention to eliminate its export monopoly on gold, which has been administered by the Comptoir Burkinabè des Métaux Précieux (Ministère de L'Energie et des Mines, 1996), data on the production and export of gold are expected to become more transparent. Imports were dominated by capital goods and food. Refined petroleum products made up the greater part of the cost of mineral imports, and cement, clinker, and fertilizers accounted for most of the rest.

Burkina Faso has considerable mineral potential for diamonds, gold, limestone, manganese, phosphate, and zinc. Most of the country is underlain by Precambrian rocks of the Birimian shield. These granitoids and gneisses are cut by numerous discontinuous northeast- and north-northeast-trending shear zones and associated belts of greenstone, the steeply dipping reefs of metamorphosed volcanosedimentary rocks that host most of the precious and base metal mineralization in West Africa. The westernmost part of the country is underlain by Precambrian and Paleozoic sedimentary rocks, in which a few small deposits of bauxite and marble are located. A small part of the southeastern corner of the country is underlain by sedimentary rocks that host a number of phosphate deposits, including at least one (Arli) that has been mined in the past.

With the development in the 1990's of a new mining policy, in which was incorporated a new mining code (Ministère de L'Energie et des Mines, 1996), investment by foreign companies became much more attractive, and a minerals exploration rush—largely a gold rush—ensued. By 1995, the Ministère de l'Energie et des Mines was dealing with so many applications for exploration permits that it decided to increase the number of available concessions by limiting individual permits to 500 square kilometers (km²) (U.S. Geological

Survey, in press). By yearend 1996, 90 concessions had been established on greenstone terranes. The interest in Burkinabè exploration by foreign companies was fueled by the new mining code; favorable fiscal policies, such as the absence of restrictions on repatriation of profits and invested capital; good basic geological and geophysical information, some gathered in previous years by Government- and United Nations-directed surveys; and the availability of technically trained people. At the same time, modern heap-leach technology made it possible to consider low-grade gold mineralization that had been ignored in the past because it could not be economically exploited. Until very recently, exploration in the country was confined to high-grade quartz veins; now, companies are examining the low-grade stockwork quartz and low-grade wallrock.

The most important gold deposit being exploited in 1996 was the Poura deposit, 200 kilometers (km) west of Ouagadougou, operated by the parastatal Société de Recherches et d'Exploitations Minères du Burkina. Through 1995, Poura had yielded an estimated 19,000 kilograms (kg) of gold from high-grade quartz veins. As 1996 began, a joint venture of two Canadian companies, International Gold Resources Corp. (IGR) and Echo Bay Mines, was exploring Poura and the surrounding 500-km² concession. IGR held an option to earn a 90% interest in the mine and the concession. A \$13.3 million grant awarded to the Burkina Faso Government by the European Development Fund was to be used to aid in the rehabilitation of the mine. In June, IGR and its interest in Poura were acquired by Ashanti Goldfields Co. Ltd., of Ghana. In April 1997, Ashanti transferred its interest in Poura to Sahelian Goldfields, Inc., another Canadian company, which planned to continue exploration and mine rehabilitation and development. In addition to production at Poura, artisanal production came from several locations scattered around the country.

Of the dozens of exploration projects in Burkina Faso, the following, described in the trade press, are representative. High River Gold Mines (Canada) began exploration of the Taparko concession in east-central Burkina Faso and planned to spend nearly \$6 million in 4 years on exploration at Taparko to earn a 61.5% interest in the venture; Incanore Resources (Canada) and the Government of Burkina Faso were to hold the balance. Kinbauri Gold (Canada) was drilling on three concessions, of which the most advanced project at the beginning of the year was the 314-km² Dossi concession, about 200 km southwest of Ouagadougou. The other concessions were the 493-km² Oula, 160 km northwest of Ouagadougou, on which Kinbauri held an option from Southern Rio Resources (Canada) to earn a majority interest and the 478-km² Soukoura, 330 km southwest of

Ouagadougou, in the southwestern part of the country. The joint venture of Randgold Resources (South Africa), North Ltd. (Australia), and Faso Études Travaux (Burkina Faso) continued work on the Sanmatenga project, consisting of three concessions (Sanmatenga, Foulgo Alga, and Foulgo Sika) covering 3,500 km², 100 km north of Ouagadougou. In addition to its work on the Poura permit, the IGR/Echo Bay Mines joint venture explored the Youga and the Tamberi concessions. Ascot Resources (Canada) conducted a drilling program on its Koupela permit, a wholly-owned property 80 km southeast of Ouagadougou. Golden Knight (Canada) began exploration of vein-type and related low-grade deposits at its Comidok and Seguenega permits. Emerging Africa Gold Inc., an affiliate of Ste. Genevieve Resources (Canada), secured exploration licenses for the 1,000-km² Piela concession, in eastern Burkina Faso, and for three contiguous concessions, Tigan, Dama, and Nimima, totaling 1,400 km² in the western part of the country. Over the course of the year, the Canadian company Société pour l'Exploration Minière en Afrique de l'Ouest acquired 75% interests in each of 14 concessions in greenstone terranes throughout the country. The joint venture of Orezone Resources (Canada) and Geomaque Exploration (Canada) was to begin a drilling program late in the year on the 500-km² IntiéDougou permit, 100 km east of Bobo Dioulasso and east of the Houndé greenstone belt. European Mining Finance continued drilling on the Guiro deposit and were reporting an indicated resource of about 2,700 kg of contained gold by April. Channel Resources (Canada) continued drilling and began prospecting and surface sampling on its Bouroum concession in north-central Burkina Faso. The company also conducted exploration of several types on the Barao, Bouroum North, Bombore, Madougou, Somifa, Subeiga, and Tounte concessions. Santa Fe Pacific Gold Corp. (United States) and

IMAR-B (Burkina Faso) formed a joint venture and prepared to explore the 500-km² Poni permit. Oxford Resources (Canada) held permits for the Bola-Niobare, Kari, Rambobo, Tcheriba, and Tioro properties.

InterStar Mining Group, Inc. (Canada) secured a gold exploration permit covering 429 km² near the Tambao manganese project in the northeastern corner of the country. InterStar also continued to explore and develop the high-grade Tambao manganese deposit, but the high cost of moving the manganese ore 249 km to the nearest railhead and then on to ocean ports continued to deter full-scale operation.

The Governments of Burkina Faso and Ghana continued talks, begun in 1995, on the construction of a pipeline for petroleum products, between Ouagadougou and Buipe via Bolgatanga.

The International Fertilizer Development Center held a seminar in October in Burkina Faso to develop and implement a national strategy for the large-scale use of the country's phosphate rock. Current production capacity was said to be 3,500 metric tons per year (t/y); it was recommended that it be raised over a number of years to about 60,000 t/y (International Fertilizer Development Center, 1996).

References Cited

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TABLE 1
BURKINA FASO: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity 2/	1992	1993	1994	1995	1996
Gold 3/ kilograms	5,400	5,000	4,000	3,000	4,000
Manganese, Mn content of ore	--	17	30	9	10
Pumice and related volcanic materials	10	10	11	11	11
Salt	7 r/	7 r/	7 r/	7 r/	7
Stone, marble	100	100	110	110	110

r/ Revised.

1/ Includes data available through Dec. 1997.

2/ In addition to the commodities listed, other industrial minerals and construction materials (phosphate, sand and gravel, etc.) are produced, but information is inadequate to make reliable estimates of output.

3/ Includes undocumented artisanal production.