THE MINERAL INDUSTRIES OF

AFRICA

By George J. Coakley, Bernadette Michalski,[1] and Philip M. Mobbs

The civil wars, internal conflicts, and armed border conflicts that continued to destabilize a number of African countries constrained new investment in mineral exploration and development. Countries affected in 1998 included Algeria, Angola, Cameroon, the Republic of the Congo [Congo (Brazzaville)], the Democratic Republic of the Congo [Congo (Kinshasa)], Eritrea, Ethiopia, Guinea, Guinea-Bissau, Liberia, Nigeria, Rwanda, Sierra Leone, Somalia, Sudan, and Uganda. In Zimbabwe, increasing economic problems, which included high inflation and currency devaluations, were a disincentive to new investment. A December 1998 report by the Joint United Nations Program on HIV/AIDS, which is accessible at URL http://www.who.int/emc-hiv, highlighted the seriousness of the AIDS epidemic in Africa. In several southern African countries from 20% to 25% of the working age population is infected. The long-term implications of the AIDS epidemic on the workforce presents another disincentive to foreign investment and economic development in the region. AIDS also has the potential to increase operating costs to the mining sector in many countries where the social welfare and health-care costs of employees are absorbed by the mining companies.

New mining laws were put in place in Botswana, Sierra Leone, and Tanzania. Efforts to revise mining legislation were underway in Congo (Kinshasa) in spite of an ongoing civil war and in South Africa and Uganda. In South Africa, the Minerals & Mining Policy White Paper issued in October will lead to the first major post-Apartheid change in mineral policy. The White Paper proposed vesting mineral rights in the State and introducing a "use-it-and-keep-it" principle for mineral rights designed to free up unused mineral rights for new foreign investors and for new local black economic empowerment groups. The Government planned to use tax-based disincentives or other lease performance standards rather than expropriation to free up unused mineral rights, but final policies were still under discussion. Also during 1998, most of the corporate restructuring of South African mining investment houses {Anglo American Corp. of South Africa Ltd. (AAC) [including Johannesburg Consolidated Investment Ltd.], Gold Fields of South Africa Ltd. (GFSA), Gencor Ltd. [formerly General Mining and Finance Corp.], Rand Gold and Exploration Co. [formerly Rand Mines], and Anglovaal Ltd.} was completed putting in place an entirely new industry structure in South Africa. The corporate restructuring or "unbundling" was aimed at simplifying a complex system of interlocking ownership, establishing separate core-commodity-focused profit centers, and diversifying and rationalizing nonperforming assets to make the newly restructured companies more competitive internationally. The major changes included the merger of AAC and Minorco S.A., its international subsidiary, to form Anglo American plc and the move of its corporate headquarters from Johannesburg to London. Anglo American, then established separate operating units for gold (AngloGold Ltd.), platinum (Anglo American Platinum Corp. Ltd.), coal (Anglo American Coal Corp. Ltd.), and base metals (Anglo American Base Metals). The megamerger of GFSA and Gencor that created Gold Fields Ltd. was finalized in February 1998, GFSA sold off most of its nongold mineral assets as part of the restructuring. In June 1998, JCI Gold created three separate and independent operating companies, Western Areas Ltd, Randfontein Estates Ltd., and Consolidated African Mines. Western Areas included Barnato Exploration Ltd. and the South Deep gold project. In November 1998, a 50% interest in Western Areas a was sold to Placer Dome Inc., the Canadian gold company, for around $235 million. Rand Gold and Exploration Co., formed in July 1997 from Rand Mines Ltd. to acquire and rehabilitate marginal cost mines, restructured its holdings into Durban Roodeport Deep Ltd. and into the London-listed Randgold Resources Ltd., which maintained an exploration and mining program in seven other African countries, including the Syama gold mine and the Loulo gold development in Mali, and development of the Golden Ridge gold mine in Tanzania. During 1998, Harmony Gold Mining Co. Ltd., which was spun off by Rand Gold and Exploration Co. in 1997 as an independent company, continued to build up its gold production and resource base through the acquisition of mining assets being sold off by the major mining houses.

International exploration companies, in general, were cutting exploration expenditures back, some down to the minimum required to hold leases. According to the Metals Economics Group (1998), exploration expenditures in Africa, in line with the worldwide trend, declined by 25% to $494 million in 1998 from $662 million in 1997. The difficulty in raising new equity capital for exploration companies, following the Bre-X gold stock scandal in 1996, particularly by the junior exploration led to an exodus of some companies from Africa and a search by others for joint ventures with the major mining companies.

Affected by depressed world mineral commodity prices and the widespread civil unrest, African mineral production was generally in decline in 1998. In countries where currency devaluations were significant, especially in South Africa, low international commodity prices were offset by higher local currency returns and allowed some marginal operations to remain in production. Africa, however, continued to play an important role in world markets for a number of mineral commodities (table 1). Africa accounted for from 1% to 6% of

[1]Deceased.

world supply for aluminum, cement, coal, copper, graphite, iron ore, lead, steel, and zinc; from 11% to 31% of world supply for bauxite, cobalt, gold, manganese, petroleum, phosphate, and uranium; and from 50% to 57% of chromium and diamonds. In addition to the commodities shown in table 1, South Africa alone accounted for 76% of the world supply of vermiculite, 62% of vanadium, 59% of alumino-silicates (andalusite and kyanite), 43% of platinum-group metals, 26% of zirconium minerals, and 23% of titanium minerals. For many of these commodities, Africa also held a comparable share of the world mineral reserve base.

In the gold sector, South Africa, which accounted for 19% of world gold production, produced 464 metric tons (t) of gold in 1998. This decline from 1997 was attributed to the rationalization and closure, sale, or reduced production from higher cost gold mines during the major restructuring of the South African gold industry in 1998. In the aluminum sector, production in Africa dropped by 10,000 t from the 1.1-million-metric-ton (Mt) level of 1997, with the energy crisis in Ghana accounting for much of the decline as Kaiser Aluminum Corp.'s aluminum smelter was able to operate at only 20% of capacity (table 1). Copper and cobalt production, principally from Congo (Kinshasa) and Zambia, continued their decline (table 1). The ongoing privatization of the copper industry in Zambia, however, was expected to begin reversing this decline within 3 to 4 years. Production of iron ore and steel, chiefly in South Africa and Zimbabwe, was hurt by the Asian financial crisis and the drop in world demand and dropped slightly in 1998, and production of ferrochromium, ferromanganese, and ferrosilicon alloys increased to 6% from 4% in 1997. The export of excess South African steel products into a stronger U.S. market led to antidumping actions by the United States against South Africa and several other countries. Coal and titanium production, primarily in South Africa, increased in 1998, and production of platinum-group metals (PGM) in South Africa and Zimbabwe increased in response to a decline in PGM exports from Russia. Despite weak markets, diamond production held steady in Botswana and South Africa, and new offshore marine production in Namibia and new alluvial production in Angola accounted for increased production in both countries. An armed attack on the new Yetwene Mine of Diamond Works Ltd. of Canada in Angola in November 1998 set back hopes for diamond production expansion in that country. The diamond mining areas of Mbuji-Maya in Congo (Kinshasa) remained a center of armed conflict, but did not appear to reduce significantly that country's normal production levels of more than 20 million carats per year.

The most significant development in the African aluminum industry was the June ground-breaking on Billiton plc.'s new $1.3 billion Mozambique Aluminum Ltd. (MOZAL) aluminum smelter at Maputo, Mozambique. MOZAL will initially have a capacity of 245,000 metric tons per year (t/yr) of aluminum and will be doubled to 490,000 t/yr at a later date (Billiton plc,1998, The Mozal Project, accessed February 2, 1999, at URL http://www.mozal.com). In Ghana, Kaiser reached an agreement with the Government to increase its allocation of power from the Akosombo Dam, thus allowing the company to increase operations from one to three of its five potlines at its 200,000-t capacity Volta Aluminum Co. Ltd. aluminum smelter at Tema (Kaiser Aluminum Corp., 1999, Form 10-K, 1998, to U.S. Securities and Exchange Commission, accessed October 12, 1999, at URL http://www.sec.gov/Archives/edgar/data/811596/0000811596-99-000004.txt). In Guinea, the Government was attempting partial privatization of the Frigua bauxite mine and alumina refinery.

Efforts to privatize and rehabilitate state-owned copper-cobalt mining companies in the Copperbelt of Congo (Kinshasa) and Zambia faced major setbacks during 1998. During 1996 and 1997 in Congo (Kinshasa), the state-owned La Générale des Carrières et des Mines (Gécamines) had successfully attracted a number of American, Australian, European, and South African companies to joint-venture arrangements to revitalize Gécamines' copper and cobalt operations in Shaba Province. The outbreak of a new civil war in 1998, however, put much of the redevelopment effort on hold.

Operational and financial problems at Zambia Consolidated Copper Mines Ltd. (ZCCM) led to a further 20% decrease in copper-production levels during 1998. By yearend, the company was forced to seek financial assistance from the Government to avoid the threat of bankruptcy. The sale of the Nchanga and the Nkana Divisions failed after the Government rejected the Kafue Consortium's offer to invest more than $1 billion in the operations (Times Zambia Digest, April 7, 1998, ZCCM—The inside story, accessed May 1, 1999, at URL http://www.zamnet.zm/zamnet/times/zamdigest.htm). These Divisions represented more than one-half of ZCCM production capacity and included five underground mines, one open pit mine, associated concentrator facilities, a tailings leach plant, a copper smelter, a copper refinery, an acid plant, and a cobalt plant. Elsewhere in Zambia, Colossal Resources Corp. of Canada shut down its Kabwe cobalt tailings retreatment plant after only 1 year of operation, owing to poor economics.

In a surprise move, Gold Fields closed its copper and lead mining and smelting operations in Namibia and laid off around 2,000 workers at the Tsumeb mine tailings retreatment area and at the Khusib Springs, the Kombat, and the Ojithase Mines. The Namibian Government began efforts to attract new investors to take over these operations. In other copper developments, Namibia Copper Joint Venture (Pty.) Ltd., which was a partnership of Namibia Copper Mines Inc. of the United States (80%) and Great Fitzroy Mines NL of Australia (20%), proceeded with feasibility studies on developing the Haib porphyry copper deposit.

The sharp drop in demand and prices for diamonds, which was attributed, in part, to the financial crisis in Asia, led De Beers Consolidated Mines Ltd. to begin cutting back production at some existing South African operations by yearend. New diamond exploration and mining operations continued, with some exceptions, in Angola, Botswana, Mauritania, and Namibia. In 1998, the Mbala diamond mine in the Central African Republic and the River Ranch diamond mine in Zimbabwe were shut down.

In two yearend moves, Billiton and Anglo American cemented their role as major players in the world ferroalloys industry by joint venturing to purchase outstanding minority shares of Samancor Ltd.'s South African ferrochromium operations for $200 million and by purchasing the manganese operations of The Broken Hill Proprietary Co. Ltd. (BHP) of Australia for $375 million. The acquisition will give Billiton a

60% equity interest and Anglo American 40% in both mining and ferroalloy companies. Billiton's main competitor in the ferroalloys industry has now become the Swiss-owned Sudelektra S.A., in which Glencore International, the Swiss metals trading company, was a major shareholder. Sudelektra acquired Chromecorp Holdings Ltd. and Consolidated Metallurgical Industries in 1998, thus essentially shifting the majority ownership of the South African ferroalloys industry to Europe. Billiton and Sudelektra, as the world's two largest producers, now each controlled more than 1 Mt of ferrochrome capacity. Sudelektra, which had previously acquired Rhombus Vanadium Holdings Ltd., the South Africa vanadium producer, was also South Africa's second largest vanadium pentoxide producer after Highveld Steel and Vanadium Corp. Ltd.

Gold continued to be the major focus of exploration and new mine development in Africa during 1998 with several new mines coming on-stream. These included the $15 million rehabilitation and reopening of the Poura gold mine in Burkina Faso. Ashanti Goldfields Co. Ltd. of Ghana opened the redeveloped Bibiani Mine in Ghana for $83 million and the $55 million Siguiri gold mine in Guinea. New gold projects began at the Damang, the Tarkwa, and the Wassa Mines in Ghana and the Golden Pride Mine in Tanzania. At yearend, Sutton Resources Ltd. was working on project financing for the Bulyanhulu deposit, which was the largest gold deposit discovered to date in Tanzania, with reported measured, indicated, and inferred resources of 17.55 Mt grading 13.14 grams per metric ton (Sutton Resources Ltd., March 26, 1998).

In South Africa, where the extreme depths of new deposits adds several years to underground development time, four major new gold projects continued on track—Avgold Ltd.'s Target project, Western Areas's South Deep project, AngloGold Ltd.'s Moab project, and Gold Fields's developing Oryx mine. Elsewhere in Africa during 1998, the Afema gold mine in Cote d'Ivoire and the Dalny gold mine in Zimbabwe were closed, and the Freda Rebecca gold mine in Zimbabwe shifted operations from open pit to underground.

The highlight of the South African steel industry in 1998 was the commissioning of the $1.4 billion steel plant at Saldanha Bay. A joint venture between Iscor Ltd. and the Industrial Development Corp. of South Africa (IDC), Saldanha Steel (Pty.) Ltd. will have a production capacity of 1.25 million metric tons per year of hot-rolled coil steel, targeted primarily for export markets. Weak global steel markets, particularly in Asia, forced other South African producers to cut back on production by yearend. During the year, Iscor decommissioned its 45-year-old Hot Strip Mill South and Blast Furnace B at its Vanderbijlpark Works and mothballed the ironmaking facilities at its Pretoria Works. Highveld also closed two of its seven steel-processing furnaces.

In separate but related actions, Iscor settled a longstanding dispute over mineral rights at its Rosh Pinah zinc mine in Namibia and purchased the remaining interest in the Zinc Corp. of South Africa Ltd. (Zincor) smelter. The mine's corporate name will change from Imcor Tin (Pty.) Ltd. to Rosh Pinah Zinc Corp. (Pty.) Ltd. Rosh Pinah zinc concentrates were exported to the Zincor smelter in South Africa for refining. Also in Namibia during 1998, Reunion Mining plc. of the United Kingdom, completed its feasibility study on the Scorpion zinc deposit. With a commitment to develop the mine, Reunion will earn a 60% interest in the project from Anglo American.

In South Africa, Anglo American consolidated its position in the lead-zinc industry by purchasing base metals producer Black Mountain Mineral Development Co. (Pty.) Ltd. from Gold Fields and Phelps Dodge Corp. Anglo American announced plans to invest $700 million to develop the Gamsberg zinc mine, mill, and smelter project. The Gamsberg deposit, in Northern Cape Province, contains a resource of 90 Mt, grading about 6.4% zinc (David McKay, September 8, 1998, Anglo to develop R4billion zinc mine; Business Day Online (Johannesburg), accessed September 9, 1998, at URL http://www.bday.co.za/98/0908/news/news2.htm). Billiton's and IDC's plans to build a new zinc refinery at Ngqura Port, near Port Elizabeth, Eastern Cape Province, were set back in December when its Japanese partners, a consortium led by Mitsui Mining and Smelting Co., withdrew from the project. In Tunisia, the Bougrine lead and zinc mine was reopened under the new ownership of Breakwater Resources Ltd. of Canada following a 2-year closure. Full production at the rate of 83,000 t/yr of zinc concentrates and 10,000 t/yr of lead concentrates is expected by 1999.

Avmin Ltd.'s Nkomati nickel mine in South Africa continued on track during its first full year of production, yielding about 3,000 t/yr of nickel in concentrate. The Epoch nickel mine in Zimbabwe depleted its resource and was closed. In Tanzania, Anglo American continued to conduct exploration and feasibility studies on the Kabanga nickel project on behalf of Sutton Resources, its joint venture partner.

In 1998, Morocco continued to be one of the world's top three phosphate rock producers. Production accounted for about 16% of world supply and 31% of Morocco's export earnings.

Petroleum and natural gas projects were becoming of increased importance to the economies and the electrical power needs of Africa. New natural gas developments were underway or in advanced planning stages in Ghana, Egypt, Namibia, and Mozambique. Nigeria authorized a study on the feasibility of establishing a natural gas pipeline to distribute Nigerian gas throughout West Africa. In Angola in 1998, major world-class deep-water petroleum discoveries by consortiums led by Chevron Corp. and Exxon Corp., both of the United States, along with the 1997 discoveries by Elf Aquitaine Group of France, will contribute to a tripling of Angolan oil production to more than 2 million barrels per day in the next 5 years. By 2003, Angola could rival Nigeria as Africa's largest oil producer. During 1998, Algeria's Société Nationale pour la Recherche, la Production, le Transport, la Transformation, et la Commercialisation des Hydrocarbures (SONATRACH) announced the discovery of 14 new oil and natural gasfields—2 by SONATRACH and others by such foreign operators as Anadarko Petroleum Corp. of the United States; BHP; LL&E Algeria Ltd., a subsidiary of Burlington Resources Inc. of the United States; Neste Oy of Finland; and Petro-Canada.

Reference Cited

Metals Economics Group, 1998, Overview of worldwide exploration budgets: Metals Economics Group Strategic Report, September-October, p. 1-5.

TABLE 1
AFRICA: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998 1/

(Thousand metric tons gross weight unless otherwise specified)

Country	Aluminum	Bauxite	Cement e/	Chromite	Coal, anthracite and bitu-minous	Cobalt, mine Co content (metric tons)
Algeria	--	--	7,500	--	--	--
Angola	--	--	350 3/	--	--	--
Benin	--	--	500	--	--	--
Botswana	--	--	--	--	780 e/	335 3/
Burkina Faso	--	--	--	--	--	--
Burundi	--	--	--	--	--	--
Cameroon	88	--	400	--	--	--
Central African Republic	--	--	--	--	--	--
Congo (Brazzaville)	--	--	10	--	--	--
Congo (Kinshasa)	--	--	100	--	5	1,500
Cote d'Ivoire	--	--	650	--	--	--
Egypt	230 3/	--	19,230 3/	1	300 e/	--
Equatorial Guinea	--	--	--	--	--	--
Eritrea	--	--	45	--	--	--
Ethiopia	--	--	775	--	--	--
Gabon	--	--	196	--	--	--
Ghana	56 3/	650	2,000	--	--	--
Guinea	--	15,000	--	--	--	--
Kenya	2	--	1,200	--	--	--
Liberia	--	--	10	--	--	--
Libya	--	--	3,000	--	--	--
Madagascar	--	--	120	140 p/	--	--
Malawi	--	--	175	--	65	--
Mali	--	--	10	--	--	--
Mauritania	--	--	50	--	--	--
Morocco	--	--	7,200	--	269	230 3/
Mozambique	--	6	290	--	100	--
Namibia	--	--	--	--	--	--
Niger	--	--	30	--	145	--
Nigeria	20	--	2,700	--	30 e/	--
Rwanda	--	--	10	--	--	--
Senegal	--	--	1,000	--	--	--
Sierra Leone	--	--	100	--	--	--
Somalia	--	--	--	--	--	--
South Africa	693 3/	--	9,500 3/	6,480	224,385	435
Sudan	--	--	380	20 e/	--	--
Swaziland	--	--	--	--	410	--
Tanzania	--	--	1,200	--	35	--
Togo	--	--	565	--	--	--
Tunisia	--	--	4,590 3/	--	--	--
Uganda	--	--	210	--	--	--
Zambia	--	--	351	--	50	5,011
Zimbabwe	--	--	1,100	605 e/	4,575	137
Total, Africa 4/	1,089	15,656	65,547	7,246	231,149	7,648
Total, world	22,100	122,000	1,519,000	13,503	4,229,169	26,300
Share of world total	5%	13%	4%	54%	5%	29%
United States	3,600	NA	85,222	--	1,003,591	--

See footnotes at end of table.

TABLE 1--Continued
AFRICA: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998 1/

(Thousand metric tons gross weight unless otherwise specified)

Country	Copper, mine Cu content	Diamond (thousand carats) e/ 2/	Gold e/ (kilograms)	Graphite	Iron ore	Lead, mine Pb content (metric tons)
Algeria	--	--	--	--	1,783	730
Angola	--	2,764 3/	--	--	--	--
Benin	--	--	--	--	--	--
Botswana	25	19,772 3/	1 3/	--	--	--
Burkina Faso	--	--	1,100	--	--	--
Burundi	--	--	5	--	--	--
Cameroon	--	--	1,000	--	--	--
Central African Republic	--	530	100	--	--	--
Congo (Brazzaville)	--	--	10	--	--	--
Congo (Kinshasa)	35	24,500	134	--	--	--
Cote d'Ivoire	--	310	1,500	--	--	--
Egypt	--	--	--	--	3,001	--
Equatorial Guinea	--	--	--	--	--	--
Eritrea	--	--	573	--	--	--
Ethiopia	--	--	2,500	--	--	--
Gabon	--	500	70	--	--	--
Ghana	--	809 3/	72,541 3/	--	--	--
Guinea	--	400	14,000	--	--	--
Kenya	--	--	388 3/	--	--	--
Liberia	--	300	800	--	--	--
Libya	--	--	--	--	--	--
Madagascar	--	--	50	13	--	--
Malawi	--	--	--	--	--	--
Mali	--	--	25,000	--	--	--
Mauritania	--	--	--	--	11,400	--
Morocco	8 e/	--	450	--	6	79,300
Mozambique	--	--	17 3/	6	--	--
Namibia	21	1,467 3/	1,882 3/	--	--	13,303
Niger	--	--	1,000	--	--	--
Nigeria	--	--	10	--	--	--
Rwanda	--	--	26	--	--	--
Senegal	--	--	--	--	--	--
Sierra Leone	--	250	15	--	--	--
Somalia	--	--	--	--	--	--
South Africa	166	10,756 3/	464,216 3/	--	32,965	84,128
Sudan	--	--	5,000	--	--	--
Swaziland	--	70	--	--	--	--
Tanzania	--	93	720	--	--	--
Togo	--	--	--	--	--	--
Tunisia	--	--	--	--	220	4,272
Uganda	--	--	2,500	--	300	--
Zambia	280 e/	--	765	--	--	--
Zimbabwe	4 e/	29 3/	25,175 3/	14	372	--
Total, Africa 4/	539	62,550	621,548	33	50,047	181,733
Total, world	12,200	114,938	2,480,000	683	1,020,935	3,100,000
Share of world total	4%	54%	25%	5%	5%	6%
United States	1,860	4	366,000	--	62,931	493,000

See footnotes at end of table.

TABLE 1--Continued
AFRICA: PRODUCTION OF SELECTED MINERAL COMMODITIES, 1998 1/

(Thousand metric tons gross weight unless otherwise specified)

Country	Manganese ore	Petroleum, crude (thousand barrels)	Phosphate rock e/	Steel, crude e/	Uranium, concentrate U_3O_8 5/ (metric tons)	Zinc, mine Zn content (metric tons)
Algeria	--	454,750	1,155 3/	400 3/	--	4,555
Angola	--	268,275	--	--	--	--
Benin	--	200 e/	--	--	--	--
Botswana	--	--	--	--	--	--
Burkina Faso	1 e/	--	--	--	--	--
Burundi	--	--	--	--	--	--
Cameroon	--	45,000	--	--	--	--
Central African Republic	--	--	--	--	--	--
Congo (Brazzaville)	--	98,550 e/	--	--	--	--
Congo (Kinshasa)	--	10,950	--	--	--	1,234
Cote d'Ivoire	--	7,300 e/	--	--	--	--
Egypt	10	316,090	1,050 3/	2,800 3/	--	--
Equatorial Guinea	--	30,000	--	--	--	--
Eritrea	--	--	--	--	--	--
Ethiopia	--	--	--	--	--	--
Gabon	2,092	132,000	--	--	862	--
Ghana	537	2,190	--	25	--	--
Guinea	--	--	--	--	--	--
Kenya	--	--	--	25	--	--
Liberia	--	--	--	--	--	--
Libya	--	502,970	--	--	--	--
Madagascar	--	--	--	--	--	--
Malawi	--	--	--	--	--	--
Mali	--	--	--	--	--	--
Mauritania	--	--	--	--	--	--
Morocco	28	35	23,587 3/ 6/	7	--	112,000
Mozambique	--	--	--	--	--	--
Namibia	--	--	--	--	3,257	42,142
Niger	--	--	--	--	4,400	--
Nigeria	--	788,000	--	--	--	--
Rwanda	--	--	--	--	--	--
Senegal	--	1 e/	1,320	--	--	--
Sierra Leone	--	--	--	--	--	--
Somalia	--	--	--	--	--	--
South Africa	3,044	6,549	2,739	7,506	1,134	69,630
Sudan	--	1,200	--	--	--	--
Swaziland	--	--	--	--	--	--
Tanzania	--	--	2	--	--	--
Togo	--	--	1,900	--	--	--
Tunisia	--	27,776	7,901 3/	122 3/	--	31,368
Uganda	--	--	--	15	--	--
Zambia	--	--	--	--	--	--
Zimbabwe	--	--	91	220	--	--
Total, Africa 4/	5,712	2,691,836	39,745	11,120	9,653	260,929
Total, world	18,700	24,441,130	145,000	781,000	40,016	7,540,000
Share of world total	31%	11%	27%	1%	24%	3%
United States	--	2,281,980	44,200	98,600	2,208	755,000

e/ Estimated. p/ Preliminary. NA Not available.
1/ Data may be different from that appearing in individual country production tables owing to availability of more current data. Table includes data available through March 1, 2000.
2/ Excluding synthetic diamond.
3/ Reported figure.
4/ May not add to totals shown because of independent rounding.
5/ Source: The Uranium Institute, London, England, written commun., 1999.
6/ Includes production from Western Sahara.