



2006 Minerals Yearbook

KENYA

THE MINERAL INDUSTRY OF KENYA

By Thomas R. Yager

In 2006, Kenya played a significant role in the world's production of fluor spar and natural soda ash. The country's share of the world's mine production of soda ash amounted to 3%, and that of fluor spar, nearly 2%. Other significant mineral processing operations included cement and petroleum refining. Kenya was not a globally significant consumer of minerals (Kostick, 2007; Miller, 2007).

Minerals in the National Economy

In 2006, the manufacturing sector accounted for 9.9% of the gross domestic product, and mining and quarrying, 0.5%. The mining and quarrying sector grew by 4.1% in 2006. Mineral exports accounted for between 2% and 3% of Kenya's total exports. Mining and quarrying was estimated to employ more than 50,000 Kenyans (Central Bank of Kenya, 2007, p. 15-16; Poggiolini, 2007).

Production

The production of fluor spar declined by nearly 15% in 2006. From 2002 to 2005, the production of ruby increased by 68%; carbon dioxide, 54%; cement, 45%; and soda ash, 18%. During the same period, Kenya's diatomite production declined by 82%, and gold, 58%.

Structure of the Mineral Industry

Most of Kenya's mining and mineral processing operations were privately owned, including the diatomite, fluor spar, gemstone, salt, and soda ash mines, the lime plants, and the steel mills. In 2006, Tata Chemicals Ltd. of India purchased a 63.5% share in the Brunner Mond Group Ltd., which was the parent company of Magadi Soda Ash Ltd. Athi River Mining Ltd. (ARM) and Bamburi Cement Ltd. were privately owned. The Government held a 52% share in East Africa Portland Cement Co. Ltd. (EAPC) and a 50% share in Kenya Petroleum Refineries Ltd. (KPRL).

Commodity Review

Metals

Gold.—Artisanal miners produced gold in Nyanza, Rift Valley, and Western Provinces. Kansai Mining Corp. of Canada and Mid Migori Mining Company Ltd. were engaged in a joint venture to explore for gold in the Migori District of Nyanza Province. AfriOre Ltd. of Canada explored in the Siaya District of Nyanza Province and the Kakamega District of Western Province. International Gold Exploration AB of Sweden had properties in Nyanza and Rift Valley Provinces; the company sought joint-venture partners for exploration (Poggiolini, 2007).

Titanium and Zirconium.—Tiomin Resources Inc. of Canada planned to mine at the Kwale heavy mineral sands

deposit after completing construction of the mine by mid-2008. The company was expected to produce 330,000 metric tons per year (t/yr) of ilmenite, 75,000 t/yr of rutile, and 37,000 t/yr of zircon in the first 6 years of the project. Capital costs for the project were estimated to be \$178 million. In December 2006, Tiomin declared force majeure at Kwale because of disputes concerning land ownership with local farmers; the company also had disputes with the Government concerning port tariffs and taxation (Industrial Minerals, 2006; Poggiolini, 2007).

Industrial Minerals

Cement.—In 2006, Kenya had three cement producers with a combined capacity of 3 million metric tons per year (Mt/yr). National cement production increased to about 2.2 million metric tons (Mt) in 2006 from 2.12 Mt in 2005 and 1.79 Mt in 2004.

Bamburi Cement was conducting a feasibility study on building a new cement plant with a capacity of 2.6 Mt/yr; costs of the new plant were estimated to be \$150 million. EAPC planned to increase its capacity to 1.2 Mt/yr from 600,000 t/yr by late 2007. In late 2006, ARM completed an expansion of its capacity to 300,000 t/yr from 120,000 t/yr. The company was considering a further 50% increase in its capacity by November 2007 (East African Portland Cement Co. Ltd., 2006; Kenya Engineer, 2006; Mogusu, 2006; Hoffman, 2007; Brown and Hoffman, undated).

In 2006, Kenya's cement consumption amounted to nearly 1.77 Mt compared with 1.57 Mt in 2005. The increase was partially attributable to growth in the residential construction sector and increased spending on road construction (Central Bank of Kenya, 2007, p. 21).

Fluor spar.—Kenya Fluor spar Ltd. produced acid-grade fluor spar in the Keiro Valley for export markets. In 2005, the value of fluor spar exports was \$1.45 million, or 17% of mineral exports. Domestic reserves amounted to about 2 Mt of contained fluor spar (Miller, 2007; E.S. Osumo, Mines and Geology Department, written commun., July 7, 2006).

Gemstones.—Kenya produced gemstones that included amethyst, aquamarine, cordierite, garnet, ruby, sapphire, and tourmaline. Rockland Kenya Ltd., which operated the John Saul ruby mine, was the leading ruby producer. The Scorpion Mine produced tsavorite, which is a green grossular garnet that obtains its color from trace amounts of chromium and vanadium.

Soda Ash.—Magadi Soda Ash Ltd. mined trona from Lake Magadi. The production of soda ash increased to 374,010 metric tons (t) in 2006 from 360,161 t in 2005 (table 1). Magadi's production of soda ash and crushed refined soda accounted for 77% of the value of Kenya's mineral production in 2005. The company finished a new processing plant that increased capacity to 715,000 t/yr from 350,000 t/yr (table 2) (Brunner Mond Group Ltd., 2007; E.S. Osumo, Mines and Geology Department, written commun., July 7, 2006).

From 2001 to 2005, about 90% of Kenya's soda ash production was exported. Soda ash was consumed domestically by ARM in the production of sodium silicate, which was used in detergents, soaps, and chemical and metallurgical applications. By the end of 2006, ARM planned to increase its sodium silicate capacity to 60,000 t/yr from 40,000 t/yr (Mogusu, 2006; Brown and Hoffman, undated; E.S. Osumo, Mines and Geology Department, written commun., July 7, 2006).

Mineral Fuels

Petroleum.—KPRL produced refined petroleum products from imported crude petroleum. The use of outdated equipment at the refinery reportedly cost the Kenyan economy nearly \$67 million per year. The company planned to upgrade the refinery to increase liquefied petroleum gas production to about 1.33 million barrels per year (Kathuri, 2006).

In April 2006, the Government awarded the exploration rights to Blocks 1, 9, 10A, L2, L3, and L4 to China National Offshore Oil Company Ltd. The company held 28% of Kenya's petroleum exploration acreage. A joint venture of Woodside Energy Ltd. of Australia (30%), Dana Petroleum plc of the United Kingdom (30%), Repsol Exploration SA (20%), and Star Petroleum International (Kenya) Ltd. (20%) [a subsidiary of Global Petroleum Ltd. of Australia] explored at offshore Blocks L5 and L7. Pancontinental Oil and Gas NL of Australia had joint-venture agreements to explore in offshore Block L6 with Gippsland Offshore Petroleum Ltd. of Australia, and in Blocks L8 and L9 with Origin Energy Ltd. of Australia (East African, 2006).

Outlook

Cement production was likely to increase because of the increased capacity at ARM and EAPC. If the recent broad-

based increase in world minerals demand continues, Kenyan production of fluorspar and soda ash is likely to increase. The outlook for titanium minerals depends on the resolution of disputes concerning land ownership, port tariffs, and taxation.

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TABLE 1
KENYA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2002	2003	2004	2005	2006 ^c
Aluminum, secondary ^c	2,400	2,400	2,400	2,400	2,400
Carbon dioxide gas, natural	5,662	4,614	5,982	8,723	9,359 ³
Cement, hydraulic thousand metric tons	1,463	1,658	1,789	2,123	2,200
Clays: ^c					
Bentonite	50	50	50	50 ^r	60
Kaolin	720	740	760	780	780
Other	18,000	19,000	20,000	20,000	20,000
Diatomite ⁴	1,333	353	330	243	185 ³
Feldspar	60	50	40	22 ³	25
Fluorspar, acid grade	98,007 ^r	95,278	108,000 ^r	97,261 ^r	83,000 ³
Gemstones, precious and semiprecious: ^c					
Amethyst kilograms	500	300	82 ³	73 ³	75
Aquamarine do.	230	280	331 ³	250	260
Cordierite, iolite do.	190	140	92 ³	81 ³	85
Green garnet do.	1,100	600	1,603 ³	800	830
Ruby do.	3,043 ³	2,310 ³	4,758 ³	5,100	5,300
Sapphire do.	1,800	1,400	2,000	3,500	3,600
Tourmaline do.	11,000	7,000	4,000	8,000	8,300
Gold, mine output, Au content ⁴ do.	1,477	1,543	567	616	432 ³
Gypsum and anhydrite ^c	8,400	8,700	8,900	9,100	9,100
Iron ore ^c	900	700	500	300 ³	300
Lead, refined secondary	1,000	1,000	1,000	1,000	1,000
Lime ^c	50,000	50,000	50,000 ^r	50,000	50,000
Petroleum refinery products:					
Gasoline thousand 42-gallon barrels	2,158	2,243	2,346	2,200 ^e	2,200
Kerosene and jet fuel do.	2,148	2,298	2,416	2,300 ^e	2,300
Distillate fuel oil do.	3,021	3,066	2,887	2,800 ^e	2,800
Residual fuel oil do.	3,550	3,490	4,129	4,000 ^e	4,000
Liquefied petroleum gas do.	278	499	313	300 ^e	300
Other ^c do.	100	110	110	100	100
Total ^c do.	11,300	11,700	12,200	11,700	11,700
Salt, crude ^c	46,000	48,000	60,000	52,000	60,000
Soda ash	304,110	352,560	353,835	360,161	374,210 ³
Stone, sand and gravel: ^c					
Granite for dimension stone	180	190	200	200	200
Limestone for cement thousand metric tons	710	800	870	1,000	1,000
Limestone for dimension stone	32,000 ³	33,000	34,000	35,000	35,000
Marble for dimension stone	120	130	130	130	130
Sand, industrial; glass	12,000	13,000	13,000	13,000	13,000
Shale	190,000	200,000	210,000	210,000	210,000
Sulfuric acid	20,000	20,000	20,000 ^e	20,000 ^e	20,000

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised.

¹Table includes data available through July 9, 2007.

²In addition to the commodities listed, a variety of minerals and construction materials [brick clays, coal, gravel, meerschaum, mica, murram (laterite), crushed rock, and construction sand] may be produced, but quantities are not reported, and available information is inadequate to make estimates of output.

³Reported figure.

⁴Exports.

TABLE 2
KENYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Carbon dioxide gas, natural		Carbacid Ltd.	Mine at Kereita	10,000. ^c
Cement		Bamburi Cement Ltd. (Lafarge Group, 73%)	Plant at Mombasa	1,100,000.
Do.		do.	Plant at Nairobi	1,000,000.
Do.		East African Portland Cement Co. Ltd. (EAPC) (LaFarge Group, 41%; National Social Security Fund, 27%; Government, 25%)	Plant at Athi River	600,000.
Do.		Athi River Mining Ltd. (ARM)	Plant at Kaloleni	300,000.
Diatomite		African Diatomite Industries Ltd.	Kariandusi and Soysambu	4,000.
Fluorspar		Kenya Fluorspar Ltd.	Mine at Kerio Valley	120,000.
Garnet	kilograms	Bridges Exploration Ltd.	Scorpion Mine in Taita Taveta	40.
Glass		Central Glass Industries Ltd.	Plant at Nairobi	51,100.
Do.		Impala Glass Industries Ltd.	do.	NA.
Gold	kilograms	Artisanal miners	Mines in Nyanza, Rift Valley, and Western Provinces	NA.
Lead, refined secondary		Associated Battery Manufacturers Co. Ltd.	Plant at Athi River	3,000.
Lime		Homa Lime Company Ltd.	Plant at Koru	30,000.
Do.		Athi River Mining Ltd. (ARM)	Plant at Kaloleni	24,000.
Petroleum, refined	thousand 42 -gallon barrels	Kenya Petroleum Refineries Ltd. (KPRL) (Government, 50%; Royal Dutch Shell Group, 17.1%; British Petroleum plc, 17.1%; and Chevron Corp., 15.8%)	Refinery at Mombasa	32,850.
Ruby	kilograms	Rockland Kenya Ltd.	Mine at Kasigau	1,500. ^c
Salt		Magadi Soda Ash Ltd. (Brunner Mond Group Ltd., 100%)	Mine at Magadi	40,000.
Do.		Krystalline Salt Ltd.	Mine at Nairobi	NA.
Do.		Mombasa Salt Works Ltd.	Mine at Mombasa	NA.
Soda ash		Magadi Soda Ash Ltd.	Mine at Magadi	715,000.
Sodium silicate		Athi River Mining Ltd. (ARM)	Plants at Athi River and Kaloleni	40,000.
Steel: ¹				
Crude ²		Kenya United Steel Co. Ltd. (E.A. Wire Industries Ltd., 81%)	Plant at Mombasa	20,000.
Rolled		Mabati Rolling Mills Ltd.	do.	120,000.
Do.		Standard Rolling Mills Ltd.	do.	40,000.
Do.		Kenya United Steel Co. Ltd.	do.	30,000.
Do.		Steelmakers Ltd.	do.	30,000.
Sulfuric acid		Kel Chemicals Ltd.	Plant at Thika	32,000.
Do.		East African Heavy Chemicals	Plant at Webuye	NA.
Vermiculite ³		Kenmag Investments Ltd.	Mine at Lodosoit	2,000.

^cEstimated. NA Not available.

¹In addition to its crude and rolled steel facilities, Kenya has three galvanized steel plants with a capacity of 210,000 metric tons per year (t/yr).

²Has not operated since 1998.

³Has not operated since 2000.