



2007 Minerals Yearbook

KENYA

THE MINERAL INDUSTRY OF KENYA

By Thomas R. Yager

In 2007, Kenya played a significant role in the world's production of fluorspar and natural soda ash. The country's share of the world's mine production of soda ash amounted to 3%, and that of fluorspar, to nearly 2%. Other significant mineral processing operations included cement and petroleum refining. Kenya was not a globally significant consumer of minerals (Kostick, 2008; Miller, 2008).

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%. Mineral exports accounted for between 2% and 3% of Kenya's total exports. Mining and quarrying were estimated to employ more than 50,000 Kenyans (Poggiolini, 2007; Central Bank of Kenya, 2008, p. 18).

Production

The production of cement increased by 6% in 2007. From 2002 to 2006, the production of carbon dioxide increased by 65%, and soda ash, by 23%. During the same period, Kenya's diatomite production decreased by 86%, and gold, by 71% (M.J. Njeru, Kenya Mines and Geology Department, written commun., August 27, 2007).

Structure of the Mineral Industry

Most of Kenya's mining and mineral processing operations were privately owned, including the diatomite, fluorspar, gemstone, salt, and soda ash mines, the lime plants, and the steel mills. Athi River Mining Ltd. (ARM) and Bamburi Cement Ltd. were privately owned. The Government held a 52% share in East African Portland Cement Co. Ltd. (EAPC) and a 50% share in Kenya Petroleum Refineries Ltd. (KPRL). Artisanal miners produced gemstones and gold in areas that included Nyanza Province, Rift Valley Province, and Western Province.

Commodity Review

Metals

Gold.—Kansai Mining Corp. of Canada explored for gold at its Migori project in Nyanza Province. In July 2007, International Gold Exploration AB (IGE) of Sweden formed a joint venture with Goldplat plc of the United Kingdom for the Kilimapesa project. The companies planned to start gold mining at Kilimapesa in mid-2008. Ore was expected to be mined at a rate of between 100 and 150 metric tons per day (Mining Review Africa, 2007; International Gold Exploration AB, 2008, p. 30).

Nickel.—IGE started exploration at the Sekerr nickel deposit in northwest Kenya in the fourth quarter of 2007. The

company planned to commence a scoping study at Sekerr in the second half of 2008. Resources were estimated to be 5 million metric tons (Mt) at a grade of 1% nickel (International Gold Exploration AB, 2008, p. 32).

Titanium and Zirconium.—In December 2006, Tiomin Resources Inc. of Canada declared force majeure at the Kwale heavy mineral sands deposit because of disputes concerning land ownership with local farmers. Tiomin also had disputes with the Government concerning port tariffs and taxation. At the end of 2007, Kwale remained under force majeure (Poggiolini, 2007).

Industrial Minerals

Cement.—Kenya had three cement producers with a combined capacity of 3.3 million metric tons per year (Mt/yr). National cement production increased to 2.31 Mt in 2007 from 2.17 Mt in 2006 and 2.12 Mt in 2005. Production increases were limited by shortages of clinker and the cost of importing coal from South Africa (Central Bank of Kenya, 2008, p. 17).

Bamburi Cement was considering an expansion of its capacity to 3 Mt/yr from 2.3 Mt/yr in 2009. EAPC planned to increase its capacity to 1.3 Mt/yr from 700,000 metric tons per year (t/yr) by May 2009. The estimated cost of EAPC's expansion was \$29 million. ARM increased its capacity to 300,000 t/yr from 120,000 t/yr in 2006; the company expected to increase capacity to 600,000 t/yr by 2010. The new expansion was estimated to cost about \$16 million. Catic Cement (Kenya) Company Ltd., which was owned by Chinese investors, planned to build a new cement plant in Kitengela with a capacity of 440,000 t/yr. Construction of the plant was expected to start in February 2008 pending Government approval of Catic's environmental impact assessment (East African Portland Cement Co. Ltd., 2007; Odhiambo, 2007; Omondi, 2007; Swan and Hoffman, 2007; Ondari, 2008).

In 2007, Kenya's cement consumption amounted to 2.03 Mt compared with 1.77 Mt in 2006. EAPC held a 37% share of the domestic cement market, and ARM, an estimated 12% (East African Portland Cement Co. Ltd., 2007; Swan and Hoffman, 2007; Central Bank of Kenya, 2008, p. 21).

Fluorspar.—Kenya Fluorspar Ltd. produced acid-grade fluorspar in the Kerio Valley for export markets. In 2006, the value of fluorspar exports was \$1.6 million. Domestic reserves amounted to about 2 Mt of contained CaF₂ (Miller, 2008; M.J. Njeru, Kenya Mines and Geology Department, written commun., August 27, 2007).

Soda Ash.—Magadi Soda Ash Ltd. mined trona from Lake Magadi. The production of soda ash increased to 386,598 metric tons (t) in 2007 from 374,210 t in 2006. Magadi's production of soda ash and crushed refined soda accounted for 81% of the value of Kenya's mineral production in 2006. Recent production increases were attributable to a new processing plant that increased capacity to 715,000 t/yr from 350,000 t/yr (table 2; Brunner Mond Group, 2007; Central Bank of Kenya,

2008, p. 18; M.J. Njeru, Kenya Mines and Geology Department, written commun., August 27, 2007).

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. In 2006, ARM increased its sodium silicate capacity to 60,000 t/yr from 40,000 t/yr; the company planned to increase its capacity to 120,000 t/yr by 2010 (Swan and Hoffman, 2007; E.S. Osumo, Kenya Mines and Geology Department, written commun., July 7, 2006).

Mineral Fuels

Petroleum.—KPRL joint-venture partners BP p.l.c. of the United Kingdom, Chevron Corp. of the United States, and Royal Dutch Shell Group of the Netherlands were unwilling to finance a Government-proposed upgrade to KPRL's refinery at Mombasa. The Government was seeking new investors to acquire the companies' shares in KPRL in December 2007 (Sambu, 2007).

In 2007, China National Offshore Oil Company Ltd. (CNOOC) relinquished four of the six blocks that it was awarded in 2006. Woodside Energy Ltd. of Australia and its joint-venture partners drilled a dry exploration well in Block L5. In October, the Government signed production-sharing agreements with Central African Mining and Exploration Co. plc (CAMEC) of the United Kingdom for Block 10A; Lundin Petroleum AB of Sweden for Block 11; and Vangold Resources Ltd. of Canada for Block 3A. CAMEC, CNOOC, Lundin, and Vangold committed to drilling wells by 2010 (East African, 2007; Petroleum Economist, 2007).

Outlook

Cement production is likely to increase because of the increased capacity at ARM, Bamburi, and EAPC, and the new plant to be built by Catic. Cement demand in east Africa is

expected to increase to 11 Mt/yr in 2012 from 5.5 Mt/yr in 2008. If the recent broad-based increase in world mineral demand continues, Kenyan production of fluorspar and soda ash is likely to increase. Local demand for soda ash could increase substantially because of the proposed expansion of ARM's sodium silicate plant (Ondari, 2008).

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TABLE 1
KENYA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2003	2004	2005	2006 ^e	2007 ^e
Aluminum, secondary ^c	2,400	2,400	2,400	2,400	2,400
Carbon dioxide gas, natural	4,614	5,982	8,723	9,359 ³	9,900
Cement, hydraulic thousand metric tons	1,658	1,789	2,123	2,174 ^{r,3}	2,314 ³
Clays: ^c					
Bentonite	50	50	50	60	60
Kaolin	740	760	780	780	830
Other	19,000	20,000	20,000	20,000	21,000
Diatomite ⁴	353	330	243	185 ³	200
Feldspar	50	40	22 ³	25	25
Fluorspar, acid grade	95,278	108,000	97,261	83,428 ^{r,3}	82,000 ³
Gemstones, precious and semiprecious: ^e					
Amethyst kilograms	300	82 ³	73 ³	75	80
Aquamarine do.	280	331 ³	250	260	280
Cordierite, iolite do.	140	92 ³	81 ³	85	90
Green garnet do.	600	1,603 ³	800	830	880
Ruby do.	2,310 ³	4,758 ³	5,100	5,300	5,600
Sapphire do.	1,400	2,000	3,500	3,600	3,800
Tourmaline do.	7,000	4,000	8,000	8,300	8,800
Gold, mine output, Au content ⁴ do.	1,543	567	616	432 ³	460
Gypsum and anhydrite ^c	8,700	8,900	9,100	9,100	9,600
Iron ore ^c	700	500	300 ³	300	300
Lead, refined secondary	1,000	1,000	1,000	1,000	1,000
Lime ^c	50,000	50,000	50,000	50,000	50,000
Petroleum refinery products:					
Gasoline thousand 42-gallon barrels	2,243	2,346	2,269 ^r	1,527 ^r	2,300
Kerosene and jet fuel do.	2,298	2,416	2,337 ^r	2,704 ^r	2,300
Distillate fuel oil do.	3,066	2,887	2,790 ^r	2,745 ^r	2,800
Residual fuel oil do.	3,490	4,129	3,656 ^r	3,969 ^r	3,700
Liquefied petroleum gas do.	499	313	302 ^r	348 ^r	300
Other ^c do.	110	110	110	110	110
Total ^c do.	11,700	12,200	11,500 ^r	11,400 ^r	11,500
Salt, crude ^c	48,000	60,000	52,000	60,000	64,000
Soda ash	352,560	353,835	360,161	374,210 ³	386,598 ³
Stone, sand and gravel: ^c					
Granite for dimension stone	190	200	200	200	200
Limestone for cement thousand metric tons	800	870	1,000	1,000	1,100
Limestone for dimension stone	33,000	34,000	35,000	35,000	37,000
Marble for dimension stone	130	130	130	130	140
Sand, industrial; glass	13,000	13,000	14,000 ^r	14,000 ^r	15,000
Shale	200,000	210,000	210,000	210,000	220,000
Sulfuric acid	20,000	20,000 ^e	20,000 ^e	20,000	20,000

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

¹Table includes data available through April 13, 2009.

²In addition to the commodities listed, a variety of minerals and construction materials [brick clays, coal, gravel, meerschaum, mica, murrum (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 2007

(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 ^e
Cement		Bamburi Cement Ltd. (Lafarge Group, 58.6%)	Plants at Mombasa and Nairobi	2,300,000
Do.		East African Portland Cement Co. Ltd. (EAPC) (LaFarge Group, 41.7%; National Social Security Fund, 27%; Government, 25%)	Plant at Athi River	700,000
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	47,500
Do.		Bawazir Glass Works Ltd.	Plant at Mombasa	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	25,000
Petroleum, refined	thousand 42 -gallon barrels	Kenya Petroleum Refineries Ltd. (KPRL) (Government, 50%; Royal Dutch/Shell Group, 17.1%; BP p.l.c., 17.1%; and Chevron Corp., 15.8%)	Refinery at Mombasa	32,850
Ruby	kilograms	Rockland Kenya Ltd.	Mine at Kasigau	1,500 ^e
Salt		Magadi Soda Ash Ltd. (Brunner Mond Group Ltd., 100%)	Mine at Magadi	45,000
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	60,000
Steel: ¹				
Crude		Devki Steel Mills Ltd.	Plant at Nairobi	45,000
Do.		Kenya United Steel Co. Ltd. (subsidiary of Alam Group of Companies)	Plant at Mombasa	20,000
Billet		Devki Steel Mills Ltd.	Plant at Nairobi	50,000
Do.		Kenya United Steel Co. Ltd.	Plant at Mombasa	20,000 ^e
Rolled		Mabati Rolling Mills Ltd.	do.	100,000
Do.		Standard Rolling Mills Ltd.	do.	80,000
Do.		Devki Steel Mills Ltd.	Plant at Nairobi	36,000
Do.		Kenya United Steel Co. Ltd.	Plant at Mombasa	30,000
Sulfuric acid		Kel Chemicals Ltd.	Plant at Thika	32,000
Do.		East African Heavy Chemicals	Plant at Webuye	NA

^eEstimated. Do., do. Ditto. NA Not available.

¹In addition to its billet and rolled steel facilities, Kenya has three galvanized steel plants with a capacity of 175,000 metric tons per year (t/yr).