



2010 Minerals Yearbook

KENYA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF KENYA

By Thomas R. Yager

In 2010, Kenya played a significant role in the world's production of natural soda ash. The country's share of the world's mine production of soda ash amounted to 4%. Other domestically significant mining and mineral processing operations included cement, fluorspar, and petroleum refining. Kenya was not a globally significant consumer of minerals (Kostick, 2011).

Minerals in the National Economy

In 2010, the manufacturing sector accounted for 9.7% of the gross domestic product, and mining and quarrying, 0.4%. The mining and quarrying sector grew by 9.8% in 2010 after contracting by 4.5% in 2009. In 2008 (the latest year for which data were available), formal employment in the mining and quarrying sector was reported to be about 6,600 (National Bureau of Statistics, 2009, p. 33; Central Bank of Kenya, 2011c, p. 15).

Production

In 2010, fluorspar production increased by 184%; gold, by 90%; soda ash, by 17%; and cement, by 12%. The production of most gemstones was estimated to have increased by between 10% and 15%. Cement production increased by 71% from 2006 to 2010. Refined lead production decreased by an estimated 50% in 2010 (table 1).

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. All cement plants except for East Africa Portland Cement Co. Ltd. (EAPC) were privately owned. The Government held a 52% share in EAPC and a 50% share in Kenya Petroleum Refineries Ltd. Artisanal and small-scale miners produced gemstones and gold.

Commodity Review

Metals

Copper, Gold, Silver, and Zinc.—Aviva Corporation Ltd. of Australia signed a joint-venture agreement with Lonmin plc of the United Kingdom to explore in the Ndori Greenstone Belt in July 2010. Drilling started at the Bumbo polymetallic deposit in November, where resources previously were estimated to be 1.2 million metric tons (Mt) at a grade of 11% zinc, 3.5% copper, 40 grams per metric ton (g/t) silver, and 1 g/t gold. In August, Red Rock Resources plc of the United Kingdom estimated that resources at the Macalder tailings project at

Migori were 1.42 Mt at a grade of 1.64 g/t gold (Red Rock Resources plc, 2010; Fraser, 2011).

Iron and Steel.—Devki Steel Mills Ltd. (a subsidiary of the Devki Group of Companies) operated three steel plants with a combined capacity of 250,000 metric tons per year (t/yr). Starting in March 2011, Devki planned to build a new steel mill with a capacity of 1 million metric tons per year (Mt/yr). The first phase of the project could start production in mid-2012 with a capacity of 250,000 t/yr. Capital costs of the project were estimated to be about \$450 million (McGregor, 2010).

In 2010, the production of galvanized steel sheets increased to 201,410 metric tons (t) from 182,151 t in 2009. The increase may have been attributable to the expansion of Mabati Rolling Mills Ltd.'s galvanized steel production capacity by 35,000 t/yr (Naidoo, Shevel, and Zvarayi, 2010; Central Bank of Kenya, 2011b, p. 17).

Niobium (Columbium) and Rare Earths.—In late September, Pacific Wildcat Resources Corp. (PAW) of Canada commenced a drilling program at the Mrima Hill niobium and rare-earth elements project. PAW hoped to identify a resource of at least 13 Mt at a grade of at least 1.3% niobium pentoxide (Pacific Wildcat Resources Corp., 2010).

Titanium and Zirconium.—In 2010, Base Resources Ltd. of Australia acquired the Kwale mineral sands deposits from Vaaldiam Mining Inc. of Canada. The company planned to complete a feasibility study on a new mine at Kwale in the second quarter of 2011. Depending on the results of the study, Base Resources could start mining in mid-2013. During the first 6 years of the project, ilmenite production was likely to be 330,000 t/yr; rutile, 80,000 t/yr; and zircon, 40,000 t/yr. In the subsequent 5 years, production was expected to decrease to an average of 190,000 t/yr of ilmenite, 55,000 t/yr of rutile, and 25,000 t/yr of zircon (Base Resources Ltd., 2011, p. 4, 7, 8).

Industrial Minerals

Cement.—Kenya had five cement producers with a combined capacity of 5.7 Mt/yr. National cement production increased to 3.71 Mt in 2010 from 3.32 Mt in 2009. Higher output was attributable to the construction of new plants and the recent capacity expansions at existing plants (Central Bank of Kenya, 2011b, p. 17).

In 2010, Bamburi's production remained nearly unchanged at about 1.9 Mt. EAPC increased its output to 975,000 t in 2010 from 845,000 t in 2009. ARM's plant at Kaloleni had a capacity of 300,000 t/yr; the company commissioned a new plant with a capacity of 730,000 t/yr at Athi River in December. Mombasa Cement produced about 300,000 t of cement in 2010 compared with 250,000 t in 2009. The company planned to complete the expansion of its plant's capacity to 1 Mt/yr from 500,000 t/yr in 2011 (Athi River Mining Ltd., 2011, p. 34, 43; Renaissance Capital LLC, 2011, p. 55).

In November 2010, National Cement opened its new plant at Athi River with a capacity of 700,000 t/yr. Cemtech Sanghi Group of India planned to build a new cement plant at Pokot with an initial capacity of 1.2 Mt/yr by 2012 (Kimanthi, 2009, p. 7; Central Bank of Kenya, 2011a, p. 20; Waerp and Arnoldsen, 2011).

In 2010, Kenya's cement consumption increased to about 3 Mt compared with 2.7 Mt in 2009 because of growth in the construction sector. Cement prices were about \$120 per metric ton in 2010 compared with landlocked African countries with high power and transportation costs, such as Congo (Kinshasa) (about \$400 per metric ton), Burundi (about \$350 per metric ton), Rwanda (about \$300 per metric ton) and Uganda (nearly \$200 per metric ton) (Central Bank of Kenya, 2011a, p. 23; Renaissance Capital LLC, 2011, p. 9, 34).

Fluorspar.—In 2009, Kenya Fluorspar Co. (KFC) shut down mining operations because of sharp decreases in demand in the fluorochemicals sector resulting from the worldwide economic crisis. KFC indicated that mining could restart if acid-grade fluorspar prices increased to at least \$270 per metric ton compared with between \$230 and \$240 per metric ton in February 2010. By the end of the second quarter of 2010, prices increased sufficiently to allow the mine to reopen (Tran, 2009; Industrial Minerals, 2010; Roberts, 2010).

Soda Ash.—Magadi Soda Ash Ltd. mined trona from Lake Magadi. The production of soda ash increased to 473,689 t in 2010 from 404,904 t in 2009. Increases in production were attributable to improvements in the worldwide economic situation and recovery from competition with Chinese synthetic soda ash. From 2005 to 2009, 84% of Magadi's output was exported. Soda ash was consumed domestically in glass production and by ARM in the production of sodium silicate, which was used in detergents, soaps, and chemical and metallurgical applications. In 2010, ARM's sodium silicate output was about 54,000 t [Central Bank of Kenya, 2011a, p. 20; Renaissance Capital LLC, 2011, p. 50; Ministry of Environment and Natural Resources, written commun., (September 30, 2010)].

Mineral Fuels

Petroleum.—In July, China National Offshore Oil Company Ltd. (CNOOC) plugged the Bogal-1 exploration well on Block 9 in north-central Kenya because of unfavorable results. CNOOC withdrew from all exploration activities in Kenya by the end of 2010. Africa Oil Corp. of Canada planned to drill exploration wells on Blocks 10A and 10BB in the first half of 2011 (Africa Oil Corp., 2010; China National Offshore Oil Company Ltd., 2011, p. 17).

Outlook

Cement production is likely to increase because of the increased capacity at existing plants and the construction of

new plants. Cement demand in Kenya is expected to increase to 3.3 Mt in 2011, 3.9 Mt in 2013, and 4.6 Mt in 2015. In Burundi, Rwanda, Tanzania, and Uganda, cement demand is likely to increase to a total of 8 Mt in 2015 from 5 Mt in 2010; demand for Kenyan cement exports is expected to increase as a result. The outlook for fluorspar, gemstones, and soda ash depends heavily on world market conditions. Steel and refined lead production could increase because of the export ban instituted by the East African Community in August 2010 to alleviate regional shortages of scrap metal (Bureau of International Recycling, 2010; Renaissance Capital LLC, 2011, p. 27–28, 34–35).

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TABLE 1
KENYA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2006 ^e	2007 ^e	2008 ^e	2009 ^e	2010 ^e
Aluminum, secondary ^e	6,000	6,000	6,000	5,500 ^r	6,000
Carbon dioxide gas, natural	9,359 ³	11,028 ³	22,030 ³	15,711 ³	19,000
Cement, hydraulic thousand metric tons	2,174 ³	2,546 ³	2,829 ³	3,320 ³	3,710 ³
Clays: ^e					
Bentonite	60	70	70	65	70
Kaolin	810	910	940	850	900
Other	21,000	24,000	25,000	23,000	24,000
Diatomite ⁴	185 ³	201 ³	72 ³	231 ³	250
Feldspar	25	30	30	30	30
Fluorspar, acid grade	83,428 ³	82,000 ³	98,248 ³	15,667 ³	44,500 ³
Gemstones, precious and semiprecious: ^e					
Amethyst kilograms	75	80	60	45	50
Aquamarine do.	260	290	210	170	190
Cordierite, iolite do.	85	100	80	60	70
Green garnet do.	830	940	700	560	630
Ruby do.	5,300	6,000	4,500	3,600	4,000
Sapphire do.	3,600	4,100	3,000	2,400	2,700
Tourmaline do.	8,300	9,400	7,000	5,600	6,300
Gold, mine output, Au content ⁴ do.	432 ³	3,023 ³	340 ³	1,055 ³	2,000 ³
Gypsum and anhydrite ^e	9,500	11,000	11,000	10,000 ^r	11,000
Iron ore ^e	310	350	360	330	360
Lead, refined secondary	1,000	1,000	1,000	500	250
Lime ^e	50,000	50,000	50,000	45,000	47,000
Petroleum refinery products:					
Gasoline thousand 42-gallon barrels	1,523 ^{r,3}	1,763 ^{r,3}	1,549 ^{r,3}	1,340 ^{r,3}	1,350
Kerosene do.	912 ³	796 ³	742 ^{r,3}	840 ^r	850
Jet fuel do.	1,792 ³	1,871 ³	1,753 ^{r,3}	2,000 ^r	2,000
Distillate fuel oil do.	2,742 ^{r,3}	2,958 ^{r,3}	2,790 ^{r,3}	2,907 ^{r,3}	2,900
Residual fuel oil do.	3,971 ^{r,3}	3,558 ^{r,3}	3,431 ^{r,3}	3,311 ^{r,3}	3,300
Liquefied petroleum gas do.	349 ^{r,3}	385 ^{r,3}	379 ^{r,3}	341 ^{r,3}	350
Other do.	935 ³	697 ³	660 ^r	670 ^r	670
Total do.	12,224 ^{r,3}	12,028 ^{r,3}	11,300 ^r	11,400 ^r	11,400
Salt, crude ⁵	35,024 ³	11,596 ³	24,345 ³	24,125 ³	25,000
Soda ash	374,210 ³	386,598 ³	513,415 ³	404,904 ³	473,689 ³
Stone, sand and gravel: ^e					
Granite for dimension stone	210	240	240	220	230
Limestone for cement thousand metric tons	1,100	1,200	1,500	1,600 ^r	1,700
Limestone for dimension stone	36,000	41,000	42,000	38,000	40,000
Marble for dimension stone	130	150	150	140	150
Sand, industrial; glass	14,000	16,000	16,000	15,000	16,000
Shale	220,000	250,000	260,000	240,000	250,000
Sulfuric acid	20,000	20,000	20,000	19,000	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 August 11, 2011.

²In addition to the commodities listed, brick clays, gravel, murrum (laterite), crushed rock, construction sand, and steel (both crude and semimanufactured) may be produced, but quantities are not reported, and available information is inadequate to make reliable estimates of output.

³Reported figure.

⁴Exports.

⁵Production by Magadi Soda Ash Ltd. only.

TABLE 2
KENYA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, secondary		Booth Manufacturing Ltd.	Plant at Nairobi	4,000
Do.		Aluminium Enterprises	Plant at Kikuyu	1,200
Do.		Crystal Industries Ltd.	do.	1,000
Do.		Narcol Aluminium Rolling	Plant at Mombasa	1,000
Do.		Aluminium Extruders	Plant at Nairobi	800
Carbon dioxide gas, natural		Carbacid Ltd.	Mine at Kereita	23,000
Cement		Bamburi Cement Ltd. (Lafarge Group, 58.6%)	Plants at Mombasa and Nairobi	2,200,000
Do.		East African Portland Cement Co. Ltd. (EAPC) (LaFarge Group, 41.7%; National Social Security Fund, 27%; Government, 25%)	Plant at Athi River	1,300,000
Do.		Athi River Mining Ltd. (ARM)	do.	730,000
Do.		do.	Plant at Kaloleni	300,000
Do.		National Cement Company Ltd. (a subsidiary of Devki Group of Companies)	Plant at Athi River	700,000
Do.		Mombasa Cement Ltd.	do.	500,000
Diatomite		African Diatomite Industries Ltd.	Kariandusi and Soysambu	4,000
Fluorspar		Kenya Fluorspar Ltd.	Mine at Kerio Valley	100,000
Gemstones:				
Garnet	kilograms	Bridges Exploration Ltd	Scorpion Mine in Taita Taveta	40
Do.		Artisanal and small-scale miners	Mines in Taita Taveta District	NA
Ruby and sapphire	kilograms	Rockland Kenya Ltd.	Mine at Kasigau	6,000
Glass		Central Glass Industries Ltd.	Plant at Nairobi	47,500
Do.		Bawazir Glass Works Ltd.	Plant at Mombasa	NA
Gold	kilograms	Artisanal and small-scale miners	Mines in Migori and Turkana Districts	NA
Iron ore		Wanjala Mining Co.	Mine at Wanjala	10,000
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.	Plant at Kaloleni	25,000
Petroleum, refined	thousand 42-gallon barrels	Kenya Petroleum Refineries Ltd. (KPRL) (Government, 50%, and Essar Energy Overseas Ltd, 50%)	Refinery at Mombasa	32,900
Salt		Kensalt Ltd.	Plant at Mombasa	120,000
Do.		Magadi Soda Ash Ltd. (Brunner Mond Group Ltd., 100%)	Plant at Magadi	45,000
Do.		Mombasa Salt Works Ltd. and others	Mines near Malindi	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.	Three plants in Kenya	250,000
Do.		Kenya United Steel Co. Ltd. (subsidiary of Alam Group of Companies)	Plant at Mombasa	20,000
Billet		Devki Steel Mills Ltd.	Three plants in Kenya	250,000
Do.		Kenya United Steel Co. Ltd.	Plant at Mombasa	20,000
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	14,500
Do.		Pan Africa Chemicals Ltd.	Plant at Webuye	NA

⁰Estimated. Do., do. Ditto. NA Not available.

¹In addition to its billet and rolled steel facilities, Kenya has several galvanized steel plants.