



2010 Minerals Yearbook

ETHIOPIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF ETHIOPIA

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In 2010, Ethiopia played a significant role in the world's production of tantalum; the country's share of global tantalum mine production amounted to 11%. Other domestically significant mining and mineral processing operations included cement, crushed stone, dimension stone, and gold. Ethiopia was not a globally significant consumer of minerals (Papp, 2011).

Minerals in the National Economy

In 2009 (the latest year for which data were available), the manufacturing sector accounted for 4.9% of the gross domestic product, and mining and quarrying, 0.4%. Ethiopia's gold exports were valued at \$281.4 million in fiscal year 2010, or 14% of the value of total exports (National Bank of Ethiopia, 2011, p. 64; Organisation for Economic Cooperation and Development, 2011, p. 39).

Production

In fiscal year 2010, aquamarine production increased by 640%; garnet, by 550%; opal, by 383%; silica sand, by 129%; feldspar, by 100%; other clay, by an estimated 83%; rock salt, by 57%; emerald, by 43%; cement, by an estimated 38%; coal, by an estimated 33%; and niobium (columbium), by 21%. The output of peridot decreased by 75%; amethyst, by 50%; and platinum, by an estimated 20% (table 1; G.E. Mekonen, Head, Mineral Licensing and Administration Core Process, Ministry of Mines, written commun., September 29, 2011).

Structure of the Mineral Industry

Messebo Building Materials Production Share Co. and Mughher Cement Enterprise were state owned; other cement plants were privately owned. Gold, marble, platinum, and silica sand mining companies were privately owned. The state-owned Ethiopian Mineral Development S.C. produced dolomite, feldspar, kaolin, niobium, quartz, and tantalum. Artisanal miners produced clay, crushed stone, diatomite, gemstones, gold, gypsum, salt, sand, and silica sand (table 2).

Commodity Review

Metals

Gold and Platinum-Group Metals.—Midroc Gold Mine Pvt. Ltd. Co. produced about 3,100 kilograms per year (kg/yr) of gold at the Lega Dembi Mine open pit mine in southern Ethiopia. Mining was expected to be shut down in 2013 at the open pit because of the depletion of near-surface resources. In June 2009, Midroc started underground mining at Lega Dembi that would extend the mine's life until 2021; production was expected to be about 1,100 kg/yr from 2012 to 2019.

Midroc planned to open the Sakaro underground mine, which was adjacent to Lega Dembi, in 2011. Production at Sakaro was likely to be about 2,400 kg/yr from 2012 to 2014 and 1,800 kg/yr from 2015 to 2021. In 2010, Midroc postponed the opening of Sakaro until 2012 (Midroc Gold Mine Pvt. Ltd. Co., 2009; Mining Journal, 2011c, d).

In May 2010, Nyota Minerals Ltd. of Australia estimated that resources at the Tulu Kapi project were nearly 25.5 million metric tons (Mt) at a grade of 1.68 grams per metric ton gold. The company decided to stop production at the Yubdo platinum mine in 2010 because of low recovery rates. Stratex International plc of the United Kingdom planned to start drilling at the Megenta epithermal gold prospect and the Shehange prospect in northern Ethiopia in 2011 (Mining Journal, 2011c, e).

Niobium (Columbium) and Tantalum.—The state-owned Ethiopian Mineral Development Share Co. operated the Kenticha Mine, which produced about 202 metric tons (t) of columbite-tantalite in fiscal year 2010 compared with 187 t in fiscal year 2009. The capacity of the mine was 210 metric tons per year (t/yr) of columbite-tantalite, of which between 45% and 60% was tantalum pentoxide (Ta_2O_5), and between 10% and 20% was niobium pentoxide (Nb_2O_5) (Mining Journal, 2011b).

Industrial Minerals

Cement.—Ethiopia had 10 operating cement plants with a total capacity of 3.58 million metric tons per year (Mt/yr). Cement production increased to about 2.9 Mt in fiscal year 2010 from 2.1 Mt in fiscal year 2009. Domestic cement demand was estimated to be about 4.3 Mt in fiscal year 2010 compared with 3 Mt in fiscal year 2009. Increases in demand were attributable to new dams, housing, and road construction. By fiscal year 2015, the Government planned to increase the road network to 136,000 kilometers (km) from 49,000 km, complete a new 2,000-km rail line, and build nearly 500,000 new housing units (International Cement Review, 2010, 2011; Mesfin, 2011).

Messebo and Mughher were engaged in expansions of their plants' capacities to 2.3 Mt/yr each from 900,000 t/yr each; the projects were expected to be completed by June 2011. National Cement S.C. planned to increase the capacity of its plant at Dire Dawa to 600,000 t/yr from 250,000 t/yr; the company also planned to complete a new plant with a capacity of 960,000 t/yr by January 2012. Derba Midroc Cement plc operated a plant near Dejen with a capacity of about 90,000 t/yr; the company planned to build another plant with a capacity of 2.7 Mt/yr at Derba by May 2011. In August 2010, Guangdong Chuanhui Technology Development Group Company Ltd. of China opened its new Huang Shan Cement plant, which had a capacity of 660,000 t/yr. Jiangsu Zhongshun Import and Export Trade Company Ltd. opened its new Zhongshun Cement Manufacturing Factory, which had a capacity of 91,000 t/yr, in May (International Cement Review, 2010, 2011).

Habesha Cement Share Co. planned to complete a new plant at Holeta with a capacity of about 1.35 Mt/yr in May 2012. By November 2011, Ethio Cement plc planned to complete its new plant at Chancho with a capacity of about 860,000 t/yr. CH Clinker Manufacturing plc of China was building a new plant in Oromia Region with an initial capacity of 1 Mt/yr; the plant's capacity was likely to be expanded to 3.2 Mt/yr (International Cement Review, 2010, 2011).

Gemstones.—In 2008, a new deposit of opal was discovered at Wegel Tena in Wollo Province. By mid-2010, artisanal miners produced about 1,500 kilograms of opal at Wegel Tena. Ethiopia also produced small amounts of gemstones including amethyst, aquamarine, emerald, garnet, peridot, ruby, sapphire, topaz, and tourmaline (Rondeau and others, 2010).

Potash.—Allana Resources Inc. of Canada engaged in drilling at the Dallol potash deposits in the Danakil Depression in 2010; the company planned further drilling in 2011. Inferred resources at Dallol were 105 Mt at a grade of 20.8% potassium chloride (KCl). Allana planned to complete an updated resource estimate by the end of the first quarter of 2011, and a feasibility study on a new mine at Dallol by the end of March 2012 (Mining Journal, 2011a).

Silica and Soda Ash.—Ethiopia Hansom International Glass plc [a joint venture of CGC Overseas Construction Ltd. (CGCOC) of China and China-Africa Development Fund] produced at about 80% of the capacity of its glass plant, which was 42,000 t/yr. Dolomite, feldspar, limestone, and silica sand for use as raw materials were purchased domestically. The production of soda ash at Lake Abiyata by state-owned National Mining Corp plc was reportedly insufficient to supply the plant; soda ash was imported from China. Import competition and high soda ash costs resulted in the plant operating at a loss (Sutton and Kellow, 2010, p. 178).

Outlook

Gold production is expected to increase from 2011 through 2013 before declining starting in 2014. By fiscal year 2015, cement production is likely to increase to 27 Mt, and demand,

to 13.2 Mt. The production of gypsum and pumice is expected to increase because of increased demand from cement plants; output of other construction materials is also likely to increase. The outlook for niobium and tantalum will depend on world market conditions (Midroc Gold Mine Pvt. Ltd. Co., 2009; Mesfin, 2011).

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TABLE 1
ETHIOPIA: PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2006	2007	2008	2009 ^e	2010 ^e	
Cement, hydraulic	1,731,000	1,625,560	1,834,000	2,100,000 ^r	2,900,000	
Clays: ⁴						
Brick ^e	120,000	130,000	130,000	140,000	140,000	
Kaolin, China clay	1,641	1,400 ^e	1,275	3,534 ⁵	3,600	
Other clay ^e	cubic meters	33,000	50,000 ⁵	289,584 ^{r,5}	300,000 ^r	550,000
Coal, lignite	--	--	--	15,000	20,000	
Columbite-tantalite, ore and concentrate:						
Gross weight	kilograms	108,900	116,500	206,116 ^r	202,048 ^{r,5}	187,130 ⁵
Nb content	do.	11,000	11,700	14,400 ^r	14,100 ^{r,5}	17,000 ⁵
Ta content	do.	57,000	52,000	75,900 ^r	74,400 ^{r,5}	73,500 ⁵
Diatomite ^e		-- ⁵	--	--	4,104 ^{r,5}	4,100
Feldspar		478	459	424	750 ^{r,5}	1,500 ⁵
Gemstones: ⁶						
Amethyst	kilograms	43	20 ^e	11	6 ^{r,5}	3 ⁵
Aquamarine	do.	2	6 ^{r,e}	11 ^r	10 ^{r,5}	74 ⁵
Emerald	do.	--	1 ^e	3 ^r	7 ^{r,5}	10 ⁵
Garnet	do.	20	10 ^{r,e}	1 ^r	4 ^{r,5}	26 ⁵
Opal	do.	516	522	1,217 ^r	651 ^{r,5}	3,147 ⁵
Peridot	do.	4	8 ^e	11	4 ^{r,5}	1 ⁵
Quartz	do.	31	33 ^e	19 ^r	7 ^{r,5}	290 ⁵
Sapphire	do.	--	-- ^e	1 ^r	-- ³	1 ⁵
Tourmaline	do.	1	2 ^e	3 ^r	1 ^{r,5}	2 ⁵
Gold, mine output, Au content ⁶	do.	4,028	4,368	3,465	6,251 ^{r,5}	5,936 ⁵
Gypsum and anhydrite, crude		38,809	29,886	32,989	36,000	36,000
Lime ^e		5,000	5,000	6,000	6,000	6,000
Platinum, mine output, Pt content	kilograms	4 ^e	5	10	10	8 ⁵
Quartz		40	72	119	210	210
Salt, rock		218,000	240,000 ^e	260,000 ^e	350,709 ^{r,5}	550,486 ⁵
Silver, mine output, Ag content	kilograms	902	707	1,026	1,400	1,400
Soda ash, natural		4,100 ^e	286	1,597	1,600	1,600
Steel: ^e						
Crude		60,000	110,000	110,000	110,000	110,000
Semimanufactured		110,000	200,000	200,000	200,000	200,000
Stone, sand and gravel: ⁴						
Basalt:						
Construction stone		1,029,000	1,205,000	1,146,000	1,200,000	1,200,000
Other ^e		57,700 ⁵	61,000 ⁵	61,000	66,000	66,000
Dolomite		12,812	5,653	81,889	89,000	89,000
Granite ^e	square meters	12,000	8,411 ⁵	4,591 ⁵	5,000	5,000
Ignimbrite	cubic meters	204,516	250,938	350,000	380,000	380,000
Limestone:						
Slab/tiles ^e	square meters	1,000	338 ⁵	358 ⁵	390	390
Other	thousand metric tons	1,750 ^e	1,900	1,900	2,000	2,000
Marble: ^e						
Slab/tiles	square meters	60,000	32,700 ⁵	33,657 ⁵	36,000	36,000
Terrazzo	do.	120,000	130,000	130,000	140,000	140,000
Block and other		22,000	23,000	23,000	25,000	25,000
Pumice		255,622	22,000	35,000	250,000	350,000
Rhyolite ^e		22,000	23,000	23,000	25,000	25,000
Sand	thousand metric tons	810	842	774	840	840
Sandstone ^e	do.	1,300	1,400	1,400	1,500	1,500
Scoria ^e		133,706 ⁵	140,000	140,000	150,000	150,000
Silica sand		5,700	6,302 ⁵	6,546 ⁵	30,700 ^{r,5}	70,250 ⁵

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through January 31, 2012.

²Data are for the Ethiopian Calendar Year ending July 7 of the year listed, except for steel.

³In addition to the commodities listed, sulfuric acid and talc reportedly were produced, but information is inadequate to estimate output.

⁴When reported as volume or pieces, conversions to metric tons are estimated.

⁵Reported figure.

⁶Does not include smuggled artisanal production.

TABLE 2
ETHIOPIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Caustic soda		National Mining Corp plc (Government owned)	Plant at Ziway	10,000.
Cement		Mugher Cement Enterprise (Government owned)	Plant at Mugher	900,000.
Do.		Messebo Building Materials Production S.C. (Government owned)	Plant at Mekele	900,000.
Do.		Guangdong Chuanhui Technology Development Group Company Ltd.	Plant at Mojo Town	660,000.
Do.		National Cement S.C.	Plant at Dire Dawa	250,000.
Do.		Jema Cement plc	Plant In North Shoa Zone	240,000.
Do.		Abyssinia Cement plc	Plant at Chanco	150,000.
Do.		CGC Overseas Construction Ltd. (CGCOC)	Plant at Koka	150,000.
Do.		Red Fox International Investment plc	Plant at Adama	150,000.
Do.		Jiangsu Zhongshun Import and Export Trade Company Ltd.	Plant at Dukem	91,000.
Do.		Derba Midroc Cement plc	Plant at Dejen	90,000.
Coal, lignite		Ethio-Pak Coal Mining plc	Mine at Dilby	20,000. ^e
Dolomite		Ethiopian Mineral Development S.C. (Government owned)	Mine at Soloka	8,000. ¹
Feldspar		do.	Kenticha Mine near Borena	8,000. ¹
Glass		Ethiopia Hansom International Glass plc [CGC Overseas Construction Ltd. (CGCOC) and China-Africa Development Fund]	Plant at Addis Ababa	42,000.
Do.		Addis Ababa Bottle and Glass S.C.	do.	8,000.
Gemstones, opal	kilograms	Artisanal miners	Mine at Wegel Tena	750. ^e
Gold	do.	Midroc Gold Mine Pvt. Ltd. Co. (subsidiary of Midroc Ethiopia Technology Group)	Mine at Lega Dembi	4,200.
Kaolin		Ethiopian Mineral Development S.C.	Mine at Bamba Wuha	7,500.
Lime		Senkele Lime Factory	Plant at Ambo	6,000. ^e
Niobium (columbium) and tantalum		Ethiopian Mineral Development S.C.	Kenticha Mine near Borena	90 tantalum; 20 niobium.
Platinum	kilograms	Nyota Minerals Ltd.	Mine at Yubdo ²	10. ^e
Quartz		Ethiopian Mineral Development S.C.	Kenticha Mine near Borena	8,000. ¹
Salt		Artisanal miners	Mines at Afdera Lake	NA.
Silica sand		CGC Overseas Construction Ltd. (CGCOC)	Mine near Lemi	180,000. ^e
Soda ash		National Mining Corp. plc	Mine at Lake Abiyata	20,000. ^e
Steel:				
Crude		Abyssinia Integrated Steel plc	Plant at Debre Zeit	150,000. ^e
Do.		Sheba Steel Mills plc	do.	20,000. ^e
Semimanufactured		Abyssinia Integrated Steel plc	do.	150,000.
Do.		Zuquala Steel Rolling Mill Enterprise (Government owned)	do.	36,000.
Do.		Wallia Steel Factory	Plant at Alemgena	36,000.
Do.		Sheba Steel Mills plc	Plant at Debre Zeit	20,000.
Stone, crushed		CGC Overseas Construction Ltd. (CGCOC)	Plant at Addis Ababa	930,000. ^e
Stone, dimension	cubic meters	Ethiopian Marble Processing Enterprise (Government owned)	Mines at Eckonti, Harar, and Mankush	5,000. ^e
Do.	square meters	do.	Plants at Addis Ababa, Bole, and Nifas Silk	65,000.
Do.	cubic meters	National Mining Corp. (subsidiary of Midroc Ethiopia Group)	Mines at Beninshangul and Harar	4,500.
Do.	square meters	do.	Plant at Awash	60,000.
Do.	cubic meters	Saba Stones	Mines in Tigray Region	4,500 marble; 2,200 limestone; 1,500 granite.
Sulfuric acid		Melkasa Aluminum Sulfate and Sulfuric Acid Factory	Plant at Melkasa	14,600.

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

¹The combined capacity for the dolomite, feldspar, and quartz processing plant at the Kenticha Mine is 8,000 metric tons per year.

²Not operating at the end of 2010.