



2008 Minerals Yearbook

ETHIOPIA

THE MINERAL INDUSTRY OF ETHIOPIA

By Thomas R. Yager

In 2008, Ethiopia played a significant role in the world's production of tantalum; the country's share of global tantalum mine production amounted to 9%. Other domestically significant mining and mineral processing operations included cement, crushed stone, dimension stone, and gold (Papp, 2009). Ethiopia was not a globally significant consumer of minerals.

Minerals in the National Economy

In fiscal year 2006-07 (the latest year for which data were available), the manufacturing sector accounted for 5.1% of the gross domestic product, and mining and quarrying, 0.4%. The value of output in the mining sector increased by 6% in fiscal year 2006-07. An estimated 500,000 Ethiopians were employed in artisanal mining activities (D'Souza, 2006; International Monetary Fund, 2008, p. 5).

Production

In fiscal year 2007-08, the production of soda ash increased by 458%; clay other than brick or kaolin, by 260%; gypsum, by 119%; platinum, by 100%; quartz, by 65%; silver, by 45%; ignimbrite, by 39%; peridot, by an estimated 38%; garnet, by an estimated 23%; and cement, by 13%. Granite production decreased by 45%; amethyst, by an estimated 45%; niobium (columbium) and tantalum, by 29% each; and gold, by 21% (Gebre Egziabher Mekonen, Head, Mineral Licensing and Administration Core Processes, Ethiopia Ministry of Mines and Energy, written commun., September 25, 2009).

Structure of the Mineral Industry

Mugher Cement Enterprise and Messebo Building Materials Production Share Co. were state owned; the Dire Dawa cement plant was privately owned. Gold, marble, and platinum mining companies and most salt mining companies were privately owned; kaolin, niobium (columbium), and tantalum mining companies were state owned. Artisanal miners produced clay, crushed stone, diatomite, gemstones, gold, gypsum, salt, sand, and silica sand (table 2).

Commodity Review

Metals

Gold.—Midroc Gold Mine plc (a subsidiary of Midroc Ethiopia plc) produced more than 3,000 kilograms per year (kg/yr) of gold at the Lega Dembi Mine in southern Ethiopia. The mine was expected to continue production until 2021. In 2007, Midroc discovered nearly 11,000 kilograms (kg) of new reserves at Lega Dembi; the company planned to start underground mining of the new reserves by the end of 2008. In February 2008, Midroc announced the discovery of an

additional 17,000 kg of new reserves at the East Sakaro deposit in Oromia Region. Minerva Resources plc of the United Kingdom explored at Dina and Tulu Kapi in Western Wellega Region in 2008 (Minerva Resources plc, 2008; Zenebe, 2008c).

Iron and Steel.—Rebar was produced by five domestic companies; Abyssinia Integrated Steel plc was the leading producer. In late 2008, national demand for rebar was estimated to be 400,000 metric tons per year (t/yr), of which 120,000 t/yr was attributable to the Government's housing development program (Alemayehu, 2008).

Niobium (Columbium) and Tantalum.—In 2008, the Kenticha Mine was producing columbite-tantalite at the rate of about 83 t/yr. The mine was expected to produce 210 t/yr after the completion of a plant expansion at the end of 2008 (Ethiopia Ministry of Mines and Energy, 2007, p. 32).

Platinum-Group Metals.—Minerva Resources produced small amounts of gold and platinum at the Yubdo Mine in Western Wellega Region. In 2008, the company was engaged in a feasibility study on increasing platinum production to nearly 1,600 kg/yr (Minerva Resources plc, 2008).

Industrial Minerals

Cement.—Domestic cement production amounted to 1.83 million metric tons (Mt) in late 2008. Ethiopia's cement demand was estimated to be 4 million metric tons per year (Mt/yr), of which 1.2 Mt/yr was attributable to the Government's housing development program. Other projects that contributed to shortages of cement included dams for irrigation and hydroelectric power, irrigation canals, and new roads (Alemayehu, 2008).

Mugher Cement Enterprise was engaged in an expansion of the capacity of its Mugher plant to 2.2 Mt/yr from 900,000 t/yr; the project was expected to be completed by March 2009 at a cost of nearly \$138 million. In August 2008, Mugher was unlikely to finish the project on time because of a lack of funds. National Cement Share Co. planned to increase capacity at the Dire Dawa plant to 230,000 t/yr from 150,000 t/yr by mid-2008. The company also planned to build a new plant with a capacity of 750,000 t/yr near the Dire Dawa plant by July 2010. Cement was also produced by Messebo Building Materials Production Share Co., which had a capacity of 900,000 t/yr; Jema Cement plc, 120,000 t/yr; and Abyssinia Cement plc, 110,000 t/yr (Ethiopian News Agency, 2008; Zenebe, 2008d).

In August 2008, Derba Midroc Cement plc started production at a new cement plant near Dejen with a capacity of nearly 150,000 t/yr. Derba Midroc planned to build another plant with a capacity of 2.5 Mt/yr near Chancho by March 2009. The cost of the plant and related infrastructure was estimated to be about \$350 million. In October 2008, the company was forced to delay commissioning until February 2010. Habesha Cement Share Co. planned to complete a new plant at Holeta with a capacity of about 1.2 Mt/yr in late 2010; the cost was estimated to be about \$125 million (Fekade, 2008; Zenebe, 2008a, b).

Gypsum, Sand and Gravel, and Stone, Crushed.—Ethiopia quarried numerous types of stone for use in construction that included basalt, granite, ignimbrite, limestone, marble, pumice, rhyolite, sandstone, and scoria. Domestic consumption of gravel was estimated to be 20 million cubic meters, of which 6 million cubic meters was attributable to the Government's housing development program. National Cement's new plant was expected to consume between 240,000 and 480,000 t/yr of gypsum and pumice (Alemayehu, 2008; Ethiopian News Agency, 2008).

Potash.—In September 2008, Allana Resources Inc. of Canada acquired the Dallol potash deposits in the Danakil Depression in northeast Ethiopia. Allana estimated that inferred resources at Dallol were 105 Mt at a grade of 20.8% potassium chloride (KCl) (Allana Resources Inc., 2008).

Silica.—In March 2008, CGC Overseas Construction Ethiopia Ltd. of China signed an agreement with the Ministry of Mines and Energy to mine silica sand near Lemi in Amhara Region. The company expected to produce an average of about 180,000 t/yr of silica sand during the next 20 years as raw material for its planned new glass factory (Yewondwossen, 2008).

Mineral Fuels

Coal.—In March 2008, Derba East Africa Coal Mining plc (a joint venture of Derba Midroc Cement plc and East Africa Holdings) announced plans to mine more than 1 Mt/yr of coal in Oromia Region. The company planned to supply the Derba Midroc and National Cement plants initially; other cement plants and glass and bottle manufacturers were likely to be supplied subsequently (Chebud, 2008).

Petroleum.—Trans Global Petroleum Inc. of the United States acquired an exploration permit in Afar Region in March 2008. In late August, Titan Resources Corp. of the United States acquired Blocks 1, 5, 10, and 14 in the Ogaden Basin, and five blocks in the Abay Basin. Falcon Petroleum Ltd. of Cyprus signed a production-sharing agreement for Blocks AB1, AB4, and AB7 of the Abay Basin in August. Victoria Oil & Gas plc purchased Falcon in October. Lundin Petroleum AB of Sweden held Blocks 2, 6, 7, and 8 in the onshore Ogaden Basin (Africa Energy Intelligence, 2008).

Outlook

The production of gold, niobium, platinum, silica sand, silver, and tantalum is likely to increase in the near future;

coal production is likely to start. In the next few years, cement and steel products demand was expected to increase sharply because of Government plans to build new houses, hydroelectric dams, and roads. Cement production increases were likely to be limited by capacity constraints in 2009. By the end of 2010, cement production capacity could increase by nearly 5.8 Mt/yr. The production of gypsum and pumice was expected to increase because of higher demand from cement plants; output of other construction materials was also likely to increase (Alemayehu, 2008).

References Cited

- Africa Energy Intelligence, 2008, Addis Ababa starts reeling in investors: Africa Energy Intelligence, no. 470, September 3-16, p.
- Alemayehu, Hayal, 2008, Growing industry stretching the demand-supply gap for construction materials: Ethiopian Reporter [Addis Ababa, Ethiopia], December 13, unpaginated.
- Allana Resources Inc., 2008, Allana Resources acquires potash resource with 100 million tonne inferred resource: Toronto, Ontario, Canada, Allana Resources Inc. press release, September 17, 8 p.
- Chebud, Michael, 2008, Derba East Africa Coal Mining Company on the edge of extracting coal: Addis Fortune [Addis Ababa, Ethiopia], March 25, unpaginated.
- D'Souza, Kevin, 2006, Poverty in the land of the Queen of Sheba: African Mining, v. 11, no. 4, July/August, p. 62-67.
- Ethiopia Ministry of Mines and Energy, 2007, Investment opportunities in metallic minerals of Ethiopia: Addis Ababa, Ethiopia, Ethiopia Ministry of Mines and Energy, 40 p.
- Ethiopian News Agency, 2008, Dire Dawa to get 70 mln USD cement factory: Addis Ababa, Ethiopia, Ethiopian News Agency press release, April 26, 1 p.
- Fekade, Berhanu, 2008, Share company to open a 1.2bln birr cement factory: Ethiopian Reporter [Addis Ababa, Ethiopia], November 15, unpaginated.
- International Monetary Fund, 2008, The Federal Democratic Republic of Ethiopia—Statistical appendix: Washington, DC, International Monetary Fund, July 31, 39 p.
- Minerva Resources plc, 2008, Agreement to increase holding in Yubdo Platinum & Gold Development PLC, Ethiopia: London, United Kingdom, Minerva Resources plc press release, March 31, 2 p.
- Papp, J.F., 2009, Tantalum: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 164-165.
- Yewondwossen, Muluken, 2008, Industrial zone to be established on 5km square land: Capital Ethiopia [Addis Ababa, Ethiopia], March 23-29, unpaginated.
- Zenebe, Wudineh, 2008a, Dejen Cement by Derba Midroc hits market: Addis Fortune [Addis Ababa, Ethiopia], August 12, unpaginated.
- Zenebe, Wudineh, 2008b, Derba-MIDROC to cement profits through reinvestment: Addis Fortune [Addis Ababa, Ethiopia], October 12, unpaginated.
- Zenebe, Wudineh, 2008c, MIDROC strikes gold big in two reserves: Addis Fortune [Addis Ababa, Ethiopia], February 11, unpaginated.
- Zenebe, Wudineh, 2008d, Sticky progress in cement factory expansion: Addis Fortune [Addis Ababa, Ethiopia], August 24, unpaginated.

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

(Metric tons unless otherwise specified)

Commodity ³		2004	2005	2006	2007 ^c	2008
Cement, hydraulic		1,315,934	1,568,624	1,731,000 ^r	1,625,560 ^{r,4}	1,834,000
Clays: ⁵						
Brick ^e		106,609 ⁴	120,000	120,000	130,000	130,000
Kaolin, China clay		4,251	3,726	1,641	1,400 ^{r,e}	1,275
Other clay ^e	cubic meters	30,000	33,000	33,000	50,000 ^{r,4}	180,000 ⁵
Columbite-tantalite, ore and concentrate:						
Gross weight	kilograms	70,730	92,500	108,900	116,500 ^{r,4}	82,540
Nb content	do.	7,100	9,300	11,000	11,700 ^{r,4}	8,300
Ta content	do.	37,000 ^r	49,000 ^r	57,000 ^r	52,000 ^{r,4}	37,000
Diatomite		2,000	420 ^r	-- ^r	-- ^r	-- ^e
Feldspar		361	445	478	459 ^{r,4}	424
Gemstones: ⁶						
Amethyst	kilograms	1	1	43	20 ^r	11
Aquamarine	do.	2	2 ^e	2	1 ^r	--
Emerald	do.	1	1 ^e	--	1 ^r	2
Garnet	do.	11	15 ^{r,e}	20	30 ^r	37
Opal	do.	370	496	516	522 ^{r,4}	482
Peridot	do.	--	--	4	8 ^r	11
Quartz	do.	469	250 ^{r,e}	31	33 ^r	35 ^e
Sapphire	do.	1	1 ^r	--	-- ^r	--
Tourmaline ^e	do.	5	3 ^r	1 ⁴	2 ^r	3 ⁴
Gold, mine output, Au content ⁶	do.	3,443	4,376	4,028	4,368 ^{r,4}	3,465
Gypsum and anhydrite, crude		51,200	34,729	38,809 ^r	72,000 ^{r,4}	158,000
Lime ^e		3,800 ⁴	3,800	3,800	4,000	4,000
Platinum, mine output, Pt content ⁷	kilograms	--	--	4 ^{r,e}	5 ^{r,4}	10
Quartz		170	99	40	72 ^{r,4}	119
Salt, rock		200,000	87,354	218,000	240,000 ^r	260,000 ^e
Silver, mine output, Ag content	kilograms	1,133	886	902 ^r	707 ^{r,4}	1,026
Soda ash, natural		6,444	8,207	4,100 ^e	286 ⁴	1,597
Steel: ^e						
Crude		30,000	60,000	60,000	110,000	110,000
Semimanufactured		70,000	110,000	110,000	200,000	200,000
Stone, sand and gravel: ⁵						
Basalt:						
Construction stone		477,100	651,700	1,029,000	1,205,000 ^{r,4}	1,146,000
Other		18,700	52,900	57,700	61,000	61,000
Dolomite		2,250	2,148	12,812	5,653 ^{r,4}	81,889
Granite	square meters	19,499	16,000 ^{r,e}	12,000 ^{r,e}	8,411 ^{r,4}	4,591
Ignimbrite	cubic meters	229,277	258,829	204,516	250,938 ^{r,4}	350,000
Limestone:						
Slab/tiles	square meters	3,078	2,000 ^{r,e}	1,000 ^{r,e}	338 ^{r,4}	358
Other	thousand metric tons	2,380	1,635	1,750 ^e	1,900	1,900
Marble:						
Slab/tiles	square meters	122,008	90,000 ^{r,e}	60,000 ^{r,e}	32,700 ^{r,4}	33,657
Terrazzo ^e	do.	114,446 ⁴	120,000	120,000	130,000	130,000
Block and other ^e		14,600 ⁴	22,000	22,000	23,000	23,000
Pumice		270,994	255,334	255,622	22,000 ^{r,4}	35,000
Rhyolite ^e		20,700 ⁴	22,000	22,000	23,000	23,000
Sand	thousand metric tons	490 ^e	312	810	842 ^{r,4}	774
Sandstone ^e	do.	1,221 ⁴	1,300	1,300	1,400	1,400
Scoria ^e		85,000	68,351 ⁴	133,706 ⁴	140,000	140,000
Silica sand		4,550	5,100 ^{r,e}	5,700 ^{r,e}	6,302 ^{r,4}	6,546

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

¹Includes data available through March 18, 2010.

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

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

⁴Reported figure.

⁵When reported as volume or pieces, conversions to metric tons are estimated.

⁶Does not include smuggled artisanal production.

⁷Yubdo Mine only. Platinum was also reportedly contained in gold ingots from the Lega Dembi Mine, but information is inadequate to estimate output.

TABLE 2
ETHIOPIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(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.		do.	Plant at Addis Ababa ¹	120,000.
Do.		Messebo Building Materials Production Share Co. (Government owned)	Plant at Mekele	900,000.
Do.		National Cement Share Co.	Plant at Dire Dawa	230,000.
Do.		Derba Midroc Cement plc	Plant at Dejen	150,000.
Do.		Jema Cement plc	Plant In North Shoa Zone	120,000.
Do.		Abyssinia Cement plc	Plant at Chantcho	110,000.
Glass		Addis Ababa Bottle and Glass Share Co.	do.	8,000.
Gold		Midroc Gold Mine plc (subsidiary of Midroc Ethiopia plc)	Mine at Lega Dembi	1,500,000 ore processing.
Do.	kilograms	do.	do.	4,300 gold.
Kaolin		Ethiopian Mineral Resources Development Enterprise (Government owned)	Mine at Bamba Wuha	15,000.
Marble		Ethiopian Marble Industries	Mines at Harar and various sites in western Ethiopia	NA.
Do.		National Mining Corp. (subsidiary of Midroc Ethiopia plc)	Mine at Boka	NA.
Do.	square meters	do.	Plant at Awash	250,000.
Do.		Saba Stones	Mine in Tigre Province	NA.
Niobium (columbium) and tantalum	kilograms	Ethiopian Mineral Development Share Company (Government owned)	Kenticha Mine near Borena	79,000 tantalum; 18,000 niobium.
Platinum	do.	Minerva Resources plc	Mine at Yubdo	10. ^c
Salt		Afar Salt Production Share Co. (Government owned)	Mine at Afdera Lake	50,000.
Do.		Artisanal miners	Mines at Afdera Lake	NA.
Soda ash		National Mining Corp. plc	Mine at Lake Abiyata	20,000. ^c
Steel:				
Crude		Abyssinia Integrated Steel plc	Plant at Debre Zeit	150,000. ^c
Do.		Sheba Steel Mills plc	do.	20,000. ^c
Do.		Ethiopia Steel Smelting Enterprise (Government owned)	NA	7,000.
Semimanufactured		Abyssinia Integrated Steel plc	Plant at Debre Zeit	150,000.
Do.		Zuqala Steel Rolling Mill Enterprise (Government owned)	do.	36,000.
Do.		Wallia Steel Factory	NA	36,000.
Do.		Sheba Steel Mills plc	Plant at Debre Zeit	20,000.
Do.		Ethiopia Steel Smelting Enterprise	NA	7,000.
Galvanized		Akaki Metal Products Factory	Plant at Akaki	NA.
Stone, crushed		CGC Overseas Construction Ethiopia	Plant at Addis Ababa	930,000. ^c
Sulfuric acid		Melkasa Aluminum Sulfate and Sulfuric Acid Factory	Plant at Melkasa	NA.

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

¹Not operating at the end of 2008.