



# 2005 Minerals Yearbook

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ERITREA

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# THE MINERAL INDUSTRY OF ERITREA

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The East African country of Eritrea, which became independent from Ethiopia in 1993, produced a variety of minerals and mineral products. Such industrial minerals and construction materials as basalt, cement, common clay, coral, granite, gravel, gypsum, kaolin, lime, limestone, marble, pumice, quartz, salt, sand, and silica sand were produced (table 1). Artisanal miners also produced small amounts of gold. The country also has deposits of barite, chromium, copper, feldspar, iron ore, lead, magnesium, nickel, potash, silver, talc, and zinc.

In September 2004, the Government ordered a halt to all mineral exploration activity in Eritrea while it reviewed the Mining Act. The Government suspension was lifted in January 2005. The Government increased the maximum possible equity interest that it may hold in a project through an option agreement to 30% from 20% (Hadgu, 2005).

In October 2005, Nevsun Resources Ltd. started a \$1.4 million exploration program at its AK, Augaro, and Bisha properties in western Eritrea. In February, Nevsun initiated a feasibility study on the development of the Bisha copper-gold-silver-zinc deposit; the study was expected to be completed near the end of the second quarter of 2006. If the feasibility study were to yield favorable results, gold production could start in 2008 (African Mining, 2005; Hadgu, 2005).

Nevsun planned to mine 2 million metric tons per year (Mt/yr) of ore from Bisha during the first 9 years of the mine's life; ore production was expected to increase to 2.51 Mt/yr in the 10th year. In the first 2 years, Nevsun planned to produce 13,200 kilograms per year (kg/yr) of gold and 32,200 kg/yr of silver; ore would be mined from the oxide zone of the deposit. In the next 3 years, the company planned to produce about 70,000 metric tons per year (t/yr) of copper, 840 kg/yr of gold, and 52,600 kg/yr of silver; ore would be mined from the supergene zone of the deposit. Starting in the sixth year, Nevsun planned to produce 150,000 t/yr of zinc and 18,000 t/yr of copper; ore would be mined from the primary copper and zinc zones of the deposit (Yu and others, 2005, p. 1.4, 16.19-16.20, 18.22, 18.41-18.42).

Sub-Sahara Resources NL of Australia held the Adi Nefas, the Debarwa, and the Medrizien exploration licenses near Asmara; these licenses composed the company's Asmara Project. In 2005, Sub-Sahara and its joint-venture partner Sunridge Gold Corp. of Canada conducted drilling at the Adi Nefas Gossan copper-gold-zinc deposit and at the Debarwa copper-gold-zinc deposit. The companies began a conceptual mine study on Debarwa that was expected to be completed by February 2006. Exploration was also planned at the Emba Derho copper-zinc deposit in the Medrizien license. Sub-Sahara and its joint-

venture partner Dragon Mining NL of Australia began diamond drilling at the Zara project in northwestern Eritrea in August 2005 (African Mining, 2005; Sub-Sahara Resources NL, 2005).

In 2005, Sanu Resources Ltd. of Canada explored at properties in western Eritrea that included the Dieba River, the Fanco, the Guluj, the Kerkebet, and the Mogoraib. The company relinquished the Kerkebet West license in July. Sanu spent \$1.6 million on exploration for gold in Eritrea in 2005. Minières du Nord Ltée. of Canada initiated a new exploration program at the Harab Suit exploration license in December (Minières du Nord Ltée., 2005; Sanu Resources Ltd., 2006, p. 2, 14, 16).

Granite was produced near Arato, Geleb, Korbaria, and Tukul, and marble, at Debri and Kertse-Komte. From 2001 to 2005, granite production increased to 350,280 metric tons (t) from 145,193 t. In 2005, marble production declined to 36,046 square meters (m<sup>2</sup>) from 780,733 m<sup>2</sup> in 2004 but was still more than double the output of 2001. Eritrea also produced kaolin and other clays; about 36.2 million bricks were produced in 2005 compared with 29.3 million in 2004 (Department of Mines, 2006, p. 11; Alem Kibreab, Director General, Department of Mines, written commun., June 27, 2006).

## Outlook

Eritrea's mineral industry could experience substantial growth in the near future because of the development of metals deposits; the continuation of peace with Ethiopia and favorable global market conditions are necessary conditions for successful development. Demand for construction materials could increase if Bisha and other metals deposits are developed.

## References Cited

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TABLE 1  
ERITREA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2001	2002	2003	2004	2005
Basalt	161,759	148,424	111,677	499,349	184,027
Cement <sup>c</sup>	45,000	45,000	45,000	45,000	45,000
Clays:					
Common	282,518	225,504	218,539	173,412	3,740,411
Kaolin	588	250	281	101	1,037
Coral	38,596	49,297	70,000 <sup>e</sup>	95,131	91,348
Gold kilograms	107	--	9	33	25
Granite	145,193	150,053	140,418	192,803	350,280
Gravel	339,692	220,928	340,125	169,254	219,837
Gypsum	985	504	1,284	500	101
Laterite	3,575	5,200	832	1,240	44
Lime	42,610	47,406	5,400	2,915	22,423
Limestone <sup>e, 3</sup>	2,800	2,900	2,900	2,900	2,900
Marble blocks square meters	17,656	12,851	1,777,814	780,733	36,046
Pumice	195	212	50	439	56
Quartz	350	215	370	4,496	103
Salt	77,853	116,268	5,241	3,075	6,300
Sand thousand metric tons	685	605	788	611	1,163
Silica sand	--	36	40 <sup>e</sup>	46	50 <sup>e</sup>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. -- Zero.

<sup>1</sup>Table includes data available through July 13, 2006.

<sup>2</sup>In addition to the commodities listed, feldspar and talc reportedly were produced, but information is inadequate to estimate output.

<sup>3</sup>For other than cement.

TABLE 2  
ERITREA: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

Commodity	Major operating companies	Location of main facilities	Annual capacity
Cement	metric tons Eritrea Cement Works	Massawa	45,000 cement; 45,000 clinker.
Petroleum products	thousand barrels Petroleum Corp. of Eritrea <sup>1</sup>	Assab	5,320.

<sup>1</sup>Has not operated since 1997.

TABLE 3  
ERITREA: MINERAL RESOURCES IN 2005

Deposit	Operating companies	Tonnage <sup>1</sup>	Grade <sup>1</sup>	Mineral content <sup>1</sup>
<b>Bisha:</b>				
Primary Zinc Zone	Nevsun Resources Ltd.	13.6 Mt	8.8% Zn, 1% Cu, 0.7 Au, 57 g/t Ag	1.2 Mt Zn, 130,000 t Cu, 770 t Ag, and 10 t Au.
Supergene Copper Zone	do.	7.83 Mt	3.8% Cu, 0.7 g/t Au, 30.7 g/t Ag	300,000 t Cu, 240 t Ag, and 6 t Au.
Oxide Zone	do.	5.11 Mt	7.1 g/t Au, 30.4 g/t Ag	36 t Au and 155 t Ag.
Primary Copper Zone	do.	2.1 Mt	3.1% Zn, 0.8% Cu, 0.7 g/t Au, 32.3 g/t Ag	66,000 t Zn, 18,000 t Cu, and 68 t Ag.
Emba Dero <sup>2</sup>	Sub-Sahara Resources NL, 48%; Sunridge Gold Corp., 40%; Africa Wide Resources Ltd., 12%	2.59 Mt	2.36% Zn, 0.39% Cu, 0.1 g/t Au, 4.5 g/t Ag	61,000 t Zn, 10,000 t Cu, and 12 t Ag.
<b>Debarwa:</b> <sup>2,3</sup>				
Main and Footwall Zones	do.	1.65 Mt	5.1% Cu, 1.4 g/t Au	84,000 t Cu and 2 t Au.
Leached Zone	do.	0.47 Mt	7.07 g/t Au	3 t Au.
Gupo Gold (Adi Nefas Doop) <sup>4</sup>	do.	1.9 Mt	2.99 g/t Au	6 t Au.
Adi Nefas Gossan <sup>4</sup>	do.	1.4 Mt	9.3% Zn, 1.4% Cu, 1.6% Pb, 4.28 g/t Au, 160 g/t Ag	130,000 t Zn, 20,000 t Cu, 22,000 t Pb, 6 t Au, and 220 t Ag.

<sup>1</sup>Abbreviations used for units of measure in this table include the following: g/t--grams per metric ton; Mt--million metric tons; t--metric tons.

Abbreviations used for commodities in this table include the following: Ag--silver; Au--gold; Cu--copper; Pb--lead; Zn--zinc.

<sup>2</sup>Sub-Sahara indicated that these resource estimates are not in compliance with the standards set by the Australasian Joint Ore Reserves Committee; readers are advised to treat these estimates with caution.

<sup>3</sup>Sub-Sahara Resources NL reported that additional resources at Debarwa were 1.3 Mt; grades are not available.

Sources:

Sub-Sahara Resources NL, 2002, Annual report 2002: Perth, Australia, Sub-Sahara Resources NL, 49 p.

Sub-Sahara Resources NL, 2004, Annual report 2004: Perth, Australia, Sub-Sahara Resources NL, 48 p.

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