



2005 Minerals Yearbook

MALAWI

THE MINERAL INDUSTRY OF MALAWI

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Malawi, which is a small country in southern Africa, was a producer of cement, coal, crushed stone, dolomite, kaolin, lime, and limestone for domestic consumption (table 1). The country also produced and exported dimension stone and gemstones. Malawi had deposits of bauxite, columbium (niobium), granite, graphite, kyanite, monazite, phosphate rock, pyrite, silica sand, titanium, uranium, vermiculite, and zirconium (table 3).

Albidon Ltd. of Australia held exclusive prospecting licenses for the Bimbili River, the Bua River, the Chingale, the Katakwi and the Mpemba nickel and platinum-group metals (PGM) properties. The company completed a drilling program at Mpemba in 2005; further exploration was expected to start in the second quarter of 2006. Lisungwe plc of the United Kingdom explored for gold, nickel, and PGM in the Lisungwe-Kirk Range area in 2005 (Malawi Department of Mines, 2005; Albidon Ltd., 2006, p. 18, 63).

Millennium Mining Ltd. (a subsidiary of Malawi Minerals Ltd.) held exclusive prospecting licenses for the Lake Chilwa, the Makanjila, and the Salima mineral sands deposits. The company was engaged in feasibility studies of producing 500,000 metric tons per year (t/yr) of ilmenite from Makanjila and Salima. Depending on favorable results of these studies, Millennium planned to conduct a feasibility study of building a smelter at Chipoka to produce titanium slag (Malawi Department of Mines, 2005; Mining Review Africa, 2005).

Allied Procurement Agency and Mineral Sands Ltd. of South Africa obtained a mining license for mineral sands at Chipoka. In the first half of 2005, the companies were installing equipment for an 18-month pilot mining and processing program (Malawi Department of Mines, 2005).

Cement production increased to 119,500 metric tons (t) in 2004 from 23,900 t in 2003. Portland Cement Co. Ltd. (a subsidiary of LaFarge Group of France) produced about 85,000 t using clinker imported mainly from Zambia and Zimbabwe. Shayona Cement Corp. produced about 34,000 t using locally quarried limestone. In 2006, Shayona planned to increase its capacity to 110,000 t/yr from 37,000 t/yr. Zagaf Cement Sales of Malawi carried out an environmental impact assessment for a new cement plant at Cemkumbe with a capacity of 37,000 t/yr; the company planned to finish construction by the end of 2006 (Malunga, 2005).

In fiscal year 2004-05, the production of aggregate increased to 171,464 t from 153,537 t in fiscal year 2003-04 because of strong demand from the construction sector. Large-scale quarries accounted for 91% of domestic production, and artisanal miners, 9% (Malawi Department of Mines, 2005).

Gemstones produced in Malawi included amethyst, aquamarine, garnet, ruby, and sapphire. National gemstone production declined to 1,620 kilograms (kg) in fiscal year 2004-05 from 2,318 kg in fiscal year 2003-04. The Chimwadzulu Hill Mine produced ruby and sapphire; the capacity of the mine increased to 5 kilograms per month of gem-quality ruby and pinkish-orange sapphire with the installation of a new washing

plant in late 2004. About 10% of the ruby mined was gem quality. Historically, ruby has accounted for 30% of the mine's production; pinkish-orange sapphire, 17%; and other sapphire, 53% (Boehm, 2004; Laurs, 2004; Malawi Department of Mines, 2005; Malunga, 2005).

Small-scale and artisanal miners produced such ornamental stones as blue agate and rose quartz. The production of ornamental stones declined to about 23 t in fiscal year 2004-05 from 417 t in fiscal year 2003-04 because of oversupply in world markets. Sunstone Ltd. and Robin Mines of Malawi explored for agate and sunstone (Malawi Department of Mines, 2005).

National lime production increased to 25,895 t in fiscal year 2004-05 from 22,340 t in fiscal year 2003-04. Production increased because of higher demand from the agricultural, construction, and paint manufacturing industries (Malawi Department of Mines, 2005).

In May 2005, Paladin Resources Ltd. of Australia announced plans to commence a bankable feasibility study of the Kayelekera uranium project; the company expected to complete the study by August 2006 at a cost of \$2.3 million. Paladin planned to produce 1,000 t/yr of uranium oxide (U₃O₈) starting in April 2008 if the feasibility study yielded favorable results. The life of the mine was expected to be 10 years (Paladin Resources Ltd., 2005, p. 13, 17).

Outlook

Most of Malawi's cement, coal, crushed stone, and lime output was for local consumption in 2005. The short-term outlook for these commodities depends on the state of the domestic economy. The outlook for many undeveloped mineral deposits is tied to strong global demand because severe poverty limits domestic markets for columbium (niobium), rare-earth elements, titanium, and uranium. The Government plans to promote the development of local dimension stone, gemstone, graphite, and gypsum mining; pyrite deposits could also be mined for use in sulfuric acid if the Kayelekera uranium project moves forward.

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

(Metric tons unless otherwise specified)

Commodity ³	2001	2002	2003	2004	2005 ^c
Cement, hydraulic	180,761	174,283	23,900 ^r	119,500 ^r	120,000
Clay, kaolin	825	636	800 ^c	800 ^c	800
Coal, bituminous	34,410	43,372	47,037	40,891	49,000
Dolomite	49	4,394	5,400 ^c	5,400 ^c	5,400
Gemstones kilograms	1,800 ^c	2,305	2,297	1,820	1,400
Lime	6,177	6,776	18,877	23,095	29,000
Stone:					
Crushed for aggregate	594,979	113,992	159,954	168,600	175,000
Dimension, crude and partly worked	483	130 ^r	100 ^{r,c}	-- ^r	--
Limestone, for cement	167,000 ^c	86,234	23,965	21,224	28,000
Ornamental	NA	120	450	320	20
Vermiculite	1	--	--	--	--

^cEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. NA Not available. -- Zero.

¹Table includes data available through September 19, 2006.

²Data from 2005 are estimated based on reported data for fiscal year 2004-05.

³In addition to commodities listed, modest quantities of gypsum and salt and unlisted varieties of crude construction materials (clays, and gravel and other stone) may also be produced, but information is inadequate to make reliable estimates of output.

TABLE 2
MALAWI: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Cement	Portland Cement Co. Ltd.	Plant at Blantyre	288,000.
Do.	do.	Plant at Changalume	180,000.
Do.	Shayona Cement Corp.	Plant at Livwezi	37,000.
Coal, bituminous	Mchenga Coal Mines	Mine at Mchenga	60,000.
Dimension stone	Ilomba Granite of Blantyre	Mine at Ilomba Hill	NA.
Fertilizer	Optichem Ltd.	Plant at Blantyre	40,000.
Limestone	Shayona Cement Corp.	Mine in Kasungu Province	NA.
Ruby and sapphire kilograms	Agricola Resources plc	Mine at Chimwadzulu Hill	180 ruby ^c ; 420 sapphire. ^c

^cEstimated. NA Not available.

TABLE 3
MALAWI: MINERAL RESOURCES IN 2005¹

Commodity	Deposit	Tonnage	Grade	Mineral content
Bauxite	Mulanje Mountain	28.8 Mt	43.9% Al ₂ O ₃	12.6 Mt Al ₂ O ₃ .
Clay, kaolin	Linthipe	14.1 Mt	33.8% Al ₂ O ₃	NA.
Coal	Ngaga	15 Mt	NA	NA.
Do.	Mwabvi	4.7 Mt	NA	NA.
Do.	Livingstonia (Mchenga Mine)	2 Mt	NA	NA.
Columbium (niobium)	Tundulu	0.9 Mt	0.37% Nb ₂ O ₅	3,300 t Nb ₂ O ₅ .
Do.	Chilwa Island	0.38 Mt	0.95% Nb ₂ O ₅	3,600 t Nb ₂ O ₅ .
Do.	Ilomba Hill	0.1 Mt	3% Nb ₂ O ₅	3,000 t Nb ₂ O ₅ .
Graphite	Katengeza	2.7 Mt	5.8% C	157,000 t graphite.
Limestone	Malowa Hill	15 Mt	48% CaO	NA.
Marble	do.	3.7 Mt	36.21% CaO	NA.
Phosphate rock	Tundulu	2 Mt	17% P ₂ O ₅	340,000 t.
Pyrite	Chisepo	34 Mt	8% S	2.7 Mt.
Do.	Malingunde	10 Mt	12% S	1.2 Mt.
Silica sand	Mchinji	1.6 Mt	97% SiO ₂	NA.
Strontium and rare earths	Kangankunde	11 Mt	8% Sr; 2% REE	880,000 t Sr; 220,000 t REE.
Titanium	Makanjila	1,000 Mt	5.2% ilmenite	52 Mt ilmenite
Do.	Lake Chilwa	1,000 Mt	7.05% ilmenite; 0.11% rutile; 1.16% zircon	71 Mt ilmenite; 1.1 Mt rutile; 12 Mt zircon.
Do.	Salima	500 Mt	8.4% ilmenite; 0.38% rutile; 0.28% zircon	42 Mt ilmenite; 1.9 Mt rutile; 1.4 Mt zircon.
Do.	Chipoka	210 Mt	NA	NA.
Do.	Tengani	108 Mt	11% ilmenite; 2% rutile; 1% zircon	12 Mt ilmenite; 2.2 Mt rutile; 1.1 Mt zircon.
Uranium	Kayelakera	9.4 Mt	0.12% U ₃ O ₈	10,900 t U ₃ O ₈ .
Vermiculite	Mwanza District	2.5 Mt	4.9% vermiculite	120,000 t.

NA Not available.

¹Abbreviations used in this table for commodities include the following: Al₂O₃--aluminum oxide; C--carbon; CaO--calcium oxide; Nb₂O₅--columbium (niobium) oxide; P₂O₅--phosphorous pentoxide; REE--rare-earth elements; S--sulfur; SiO₂--silicon dioxide; Sr--strontium; and U₃O₈--uranium oxide. Abbreviations used in this table for units of measurement include the following: Mt--million metric tons; and t--metric tons.

Sources:

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