

2019 Minerals Yearbook

UGANDA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF UGANDA

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In 2019, the East African country of Uganda's share of the world's production of pumice and pumicite was 4%, and vermiculite, 2%. The country also produced aggregates, beryl, brick clay, cement, mined and refined gold, iron ore, kaolin, refined lead, limestone, niobium (columbium), salt, sand, steel, stone and gravel, tantalum, tin, and tungsten. Uganda was not a globally significant consumer of most minerals in 2019; it is likely that domestic consumption of pumice and pumicite (including pozzolanic materials) in cement production and other construction uses was globally significant (Crangle, 2021; Hatfield, 2021).

The mineral sector of Uganda, except for the petroleum and natural gas subsector, is governed by the Mining Act (2003). The petroleum and natural gas subsector is governed by the Petroleum (Exploration, Development, and Production) Act 2012 (also referred to as the Upstream Act) and the Petroleum (Refining, Conversion, Transmission, and Midstream Storage) Act 2012 (also referred to as the Midstream Act). The Upstream Act and the Midstream Act were enacted into law in 2013.

The Ministry of Energy and Mineral Development was responsible for geologic mapping; issuing exploration and mining licenses; and administering the Mining Act (2003), the Midstream Act, the Upstream Act, and their accompanying regulations. At the end of 2019, 859 licenses for the mining sector (excluding mineral fuels) were in operation, including 407 exploration licenses, 193 prospecting licenses, 133 location licenses, 76 mineral dealers' licenses, 46 mining leases, and 4 retention licenses (Uganda Ministry of Energy and Mineral Development, 2020, p. 104).

Minerals in the National Economy

In fiscal year 2019 (which began on July 1, 2018, and ended on June 30, 2019), the manufacturing sector (which included cement, refined lead, and steel production) accounted for 15.5% of the gross domestic product (GDP), and the mining and quarrying sector, 1.3%. The value of output in the mining and quarrying sector increased by 33.4% in fiscal year 2019 compared with 30.5% in fiscal year 2018. The growth in the mining sector in fiscal years 2018 and 2019 was attributable to the informal mining subsector. The value of output increased by 63.6% in the informal mining subsector and decreased by 2.9% in the formal mining subsector in fiscal year 2019 (Uganda Bureau of Statistics, 2020, p. 213, 229–232).

In 2017 (the latest year for which data were available), the production of bricks was estimated to employ nearly 200,000 artisanal and small-scale miners; aggregates, nearly 170,000; dimension stone, 30,000; and other construction materials, 11,000. At the end of 2019, a total of 65,000 artisanal miners were estimated to be employed in producing gold in Karamoja and Mubende Districts (Ssekika, 2017; ACP–EU Development Minerals Programme, 2018, p. 30; Barreto and others, 2018, p. 16; Daily Monitor, 2019b).

The value of all Uganda's exports totaled \$3.56 billion in 2019, of which gold and gold compounds accounted for 35.3%; petroleum products 3.6%; iron and steel, 1.8%; and cement, 1.6%. In 2015, the total value of exports was \$2.27 billion, of which gold and gold compounds accounted for 1.6%. The increase in gold exports was probably attributable to the opening of a new gold refinery. All petroleum products exports were reexports. The value of all Uganda's imports totaled \$7.7 billion in 2019, of which petroleum products accounted for 16%; iron and steel, 4.6%; and fertilizers, 1.1% (Uganda Bureau of Statistics, 2020, p. 248–249, 266–268).

Production

In 2019, the output of mined gold increased by an estimated 60%; refined gold, by 42%; dimension stone other than granite and marble, by an estimated 23%; cement, by 20%; and aggregates and construction sand, by an estimated 19% each. Tin production decreased by 72% in 2019; kaolin, by 68%; beryl, by 38%; crushed syenite stone and tungsten, by 23% each; granite, by 14%; and pozzolanic materials, by 13%. Iron ore mining shut down in 2018 (Uganda Bureau of Statistics, 2020, p. 83–84).

In 2019, cement production increased because of plant expansions and openings. The increases in aggregates and sand production were attributable to increased consumption of concrete. Mined gold production increased because of the reopening of artisanal mining sites. Data on mineral production are in table 1.

Structure of the Mineral Industry

Most of Uganda's mining and mineral-processing facilities were privately owned, including the cement and steel plants, the gold and lead refineries, and the vermiculite mine. In recent years, artisanal and small-scale miners accounted for all or most of the country's production of brick clay, construction sand, crushed stone, dimension stone, mined gold, and salt production (ACP–EU Development Minerals Programme, 2018, p. 111). Artisanal and small-scale miners also played a significant role in Uganda's production of pozzolanic materials. Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Gold.—In August 2017, the Government evicted at least 60,000 artisanal gold miners from the mines in Mubende District. The miners were evicted because they were operating on the exploration license granted to AUC Mining Uganda Ltd. In March 2019, the Government granted licenses to 15 of the 21 groups of artisanal miners that were evicted. The artisanal

miners were permitted to produce gold from about 30% of AUC's concession (Ssekika, 2017; Daily Monitor, 2019b).

At least 10,000 artisanal miners were employed in the Buhweju District as of October 2017. The miners were engaged in a legal dispute with Hubei Jiu Zhou Geological Exploration Company Ltd. of China, which held an exploration license for the mining area. By August 2019, the number of miners had increased to 20,000. The Government evicted the miners in late August (Ssekika, 2017; Daily Monitor, 2019a).

In 2019, African Gold Refinery (AGR) produced 17,000 kilograms (kg) of refined gold at its refinery in Entebbe compared with about 12,000 kg in 2018 and 9,330 kg in 2017. The refinery had a capacity of 70,000 kilograms per year. AGR sourced gold that was produced by artisanal miners in Congo (Kinshasa), Kenya, Rwanda, Tanzania, Uganda, and Venezuela (Mines & Petroleum Magazine, 2016b; Sentry, The, 2018, p. 38; Goethals, 2019; Lewis and Hobson, 2020).

Iron and Steel and Iron Ore.—Small amounts of iron ore were produced in Uganda before 2019. Guangzhou Dongsong Energy Group of China planned to mine iron ore at the Sukulu carbonatite complex for use in a new steel mill with a capacity of 300,000 metric tons per year (t/yr). The company had planned to start production at its steel mill in July 2019; the opening of the plant was delayed until May 2020. Resources at Sukulu were estimated to be 61.8 million metric tons (Mt) grading 30.1% iron (Mines & Petroleum Magazine, 2016a; Musisi, 2019).

Niobium (Columbium) and Tantalum.—3T Mining Ltd. operated the Wampero Mine in Waksio District. The company's output had a tantalum pentoxide content of between 20% and 35% and a niobium pentoxide content of between 5% and 7%. In 2019, 3T Mining produced about 7,000 kg of columbite-tantalite compared with 6,830 kg in 2018 and 11,187 kg in 2017 (table 1; 3T Mining Ltd., 2017; Uganda Bureau of Statistics, 2020, p. 84).

Industrial Minerals

Cement, Construction Sand, and Crushed Stone.—

Uganda's cement production increased to 3.07 Mt in 2019 from 2.56 Mt in 2018 and 2.14 Mt in 2014. In 2018, Hima Cement Ltd. increased its capacity to 1.7 million metric tons per year (Mt/yr) from 900,000 t/yr and Simba Cement Uganda Ltd. (a subsidiary of National Cement Company Ltd. of Kenya) opened a new plant in Tororo with a capacity of 1 Mt/yr (Global Cement, 2018; Kezaabu, 2018; Uganda Bureau of Statistics, 2018, p. 77; 2020, p. 83).

Cement consumption was 2.68 Mt in 2019 compared with 2.22 Mt in 2018 and 2.44 Mt in 2016. In fiscal year 2016 (which started on July 1, 2015, and ended on June 30, 2016), production of aggregates other than syenite was estimated to be nearly 6.8 Mt, and construction sand, about 3.5 Mt. Based on changes in cement consumption, the production of aggregates was estimated to be 6.2 Mt in 2018 and 7.4 Mt in 2019. The production of construction sand was estimated to be 3.2 Mt in 2018 and 3.8 Mt in 2019 (table 1; ACP–EU Development Minerals Programme, 2018, p. 111; Uganda Bureau of Statistics, 2020, p. 83).

Clay and Shale.—In fiscal year 2016, Uganda's production of brick clay was estimated to be about 10.8 Mt (based on an average brick size of 2 kg). Output increased to an estimated 14 Mt in 2017 before decreasing to an estimated 12 Mt in 2018

and 2019 (table 1; ACP–EU Development Minerals Programme, 2018, p. 111; Uganda Bureau of Statistics, 2020, p. 213).

Phosphate Rock and Sulfur.—Uganda last produced small amounts of phosphate rock in the 1990s. Guangzhou Dongsong planned to mine 2 Mt/yr of low-grade ore for use in a new phosphate fertilizer plant with a capacity of 300,000 t/yr at the Sukulu carbonatite complex. The company also planned to produce 200,000 t/yr of sulfuric acid at Sukulu. Guangzhou Dongsong started trial production at the fertilizer plant in March 2019; large-scale production was expected to start in January 2020. Phosphate rock resources at Sukulu were estimated to be 62.5 Mt grading 11.3% phosphorous pentoxide (Mines & Petroleum Magazine, 2016a; Musisi, 2019; Ngwomoya, 2019).

Pumice and Pumicite.—National production of pozzolanic materials was about 960,000 t in 2019 compared with 1.1 Mt in 2018 and 742,000 t in 2014. Tororo Cement produced pozzolanic materials in Kapchorwa District for consumption in its cement plant. In Kabarole District, Pozzolana Miners, Transporters and Drivers Association had an agreement to supply Hima Cement with 50% of its requirements for pozzolanic materials. Miners also sold pozzolanic materials directly for use in the construction of drainage channels, housing, and roads. In mid-November 2019, the Government suspended the mining of pozzolanic materials in eastern Uganda because of reported concerns about water pollution (Uganda Bureau of Statistics, 2018, p. 209; 2020, p. 84; Daily Monitor, 2019c; Global Cement, 2019).

Sand, Industrial.—Guangzhou Dongsong planned to produce glass at Sukulu using silica sand from the shores of Lake Victoria as raw material. Production could start in 2020. Kimu Investments and Government-owned Uganda Development Corp. also were considering the production of 60,000 t/yr of glass at a new plant in the Masaka District. The plant would use silica sand from the Masaka District on the shores of Lake Victoria; it was unclear when production would start (Wenfang, 2018; Uganda Development Corp, undated).

Vermiculite.—Namekara Mining Company Ltd. operated the Namekara Mine near Busumbu in Manafwa District. Vermiculite production was 9,674 t in 2019 compared with a revised 10,413 t in 2018 and 4,119 t in 2017 (Uganda Bureau of Statistics, 2020, p. 84).

Mineral Fuels

Natural Gas and Petroleum.—At the end of 2019, Uganda did not produce natural gas or crude or refined petroleum. China National Offshore Oil Corp. (CNOOC), Total S.A. of France, and Tullow Oil plc of the United Kingdom each held a one-third share in the following exploration areas (EAs): EA–1, EA–1A, EA–2, and EA–3 on Lake Albert. Total was the operator of EA–1 and EA–1A; Tullow, of EA–2; and CNOOC, of EA–3. The companies planned to produce a total of 230,000 barrels per day (bbl/d) of crude petroleum from their concessions. The final investment decision on the project could be as early as the first quarter of 2020, with exports starting in 2023, depending on the result (Lewis, 2019).

The Governments of Tanzania and Uganda planned to build a new crude petroleum pipeline with a capacity of 216,000 bbl/d

from Lake Albert to the Tanzanian Port of Tanga. The final investment decision was expected by the end of 2018. As of November 2019, the development of the oilfields and pipeline was on hold because of a dispute between the Government and CNOOC, Total, and Tullow regarding taxation. Other unresolved issues included the compensation of landowners along the route for the pipeline (Karakire, 2018; Lewis, 2019).

In April 2018, the Government signed an agreement with General Electric Co. of the United States and its joint-venture partners for the development of a new petroleum products refinery in Hoima District. The planned capacity of the refinery was 60,000 bbl/d; the estimated capital cost was \$3 billion. As of November 2018, the planned startup date for the refinery was 2023. As of November 2019, it was unclear when the refinery would start production (Stoddard, 2018; Lewis, 2019).

Outlook

Uganda's mineral industry could expand in the next few years with the restart of iron ore and phosphate rock mining, the expansion of cement production, and the opening of downstream processing plants for glass, phosphate fertilizers and steel. Further growth could take place depending on the viability of crude and refined petroleum production. The development of the petroleum subsector will depend on the resolution of tax disputes and other issues. The current projected costs of the Kabaale refinery and the pipeline to the Indian Ocean could be increased owing to the long distances involved, poor road conditions, and the acidic and waxy nature of the Lake Albert crude petroleum (Quinlan, 2013; Lewis, 2019).

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$\label{eq:table 1} \textbf{TABLE 1} \\ \textbf{UGANDA: PRODUCTION OF MINERAL COMMODITIES}^1$

(Metric tons, gross weight, unless otherwise specified)

Commodity ²		2015	2016	2017	2018	2019
METALS						
Beryl			14		24 ^r	15
Copper, mine, concentrates, Cu content			550 e	e		
Gold:						
Mine, Au content ^e	kilograms	3,400 ^r	3,400 °	2,500 °	1,500 °	2,400
Refinery	do.	1,200	9,000	9,330	12,000 ^e	17,000
Iron ore, mine:						
Gross weight		9,000	2,163	2,320	4,500 ^r	
Fe content		5,800	1,400	1,500	2,900 ^r	
Iron and steel, raw steel		120,000 ^e	140,000 ^e	165,000	150,000 r, e	150,000
Lead, refinery, secondary ^{e, 3}		800	800	800	800	800
Niobium, mineral concentrate, columbite-tantali	te:					
Gross weight	kilograms	4,589	12,640	11,187	6,830 ^r	7,000
Nb content ^e	do.	190	530	470	290 г	300
Tantalum, mineral concentrate, columbite-tantal	ite:					
Gross weight	do.	4,589	12,640	11,187	6,830 ^r	7,000
Ta content ^e	do.	1,000	2,800	2,500	1,500 ^r	1,500
Tin, mine, Sn content		135	62 ^r	66	53 ^r	15
Tungsten, mine, concentrate, W content		36	41	62	188 ^r	144
INDUSTRIAL MINERALS						
Cement, hydraulic	thousand metric tons	2,331	2,494	2,511	2,557 ^r	3,072
Clay:						
Brick clay ^e		10,300,000	10,800,000	14,000,000 ^r	12,000,000 ^r	12,000,000
Kaolin		34,697	45,909	55,317	32,183 ^r	10,448
Lime ^e		190,000	190,000	200,000 r	200,000 r	200,000
Pumice and related materials, pozzolan, material	S	686,564 г	846,604	792,564	1,103,198 ^r	960,363
Salt ^{e, 4}		15,000	15,000	15,000	15,000	15,000
Stone, sand, and gravel, construction:						
Sand and gravel, sand ^e		3,200,000	3,490,000	3,600,000	3,200,000	3,800,000
Stone:						
Crushed:						
Aggregates ^e		6,200,000	6,770,000	6,900,000	6,200,000	7,400,000
Limestone		979,660 ^r	1,203,074	1,231,926	894,001 ^r	942,477
Syenite		82,716	81,413	93,639	164,353 ^r	126,034
Dimension:		*				*
Granite		NA	NA	NA	255	220
Marble		18,000 e	18,000 °	4,500 e		
Other ^e		1,300,000	1,460,000	1,500,000	1,300,000	1,600,000
Vermiculite		1,118	3,294	4,119	10,413 ^r	9,674
^e Estimated. ^r Revised. do. Ditto. NA Not availa	hle Zero		,			

^eEstimated. ^rRevised. do. Ditto. NA Not available. -- Zero.

¹Table includes data available through December 9, 2020. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, corundum, phosphate fertilizers, silica sand, and soapstone may have been produced, but available information was inadequate to make reliable estimates of output.

³Estimated based on capacity.

⁴Estimated based on past production.

TABLE 2 UGANDA: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Tororo Cement Ltd.	Plant at Tororo	1,800,000.
Do.		Hima Cement Ltd. (Bamburi Cement Ltd., 70%)	Plant at Kasese	900,000.
Do.		do.	Plant at Tororo	800,000.
Do.		Kampala Cement Company Ltd.	Plant at Namataba	1,200,000.
Do.		Simba Cement Uganda Ltd. (National Cement Company Ltd.)	Plant at Tororo	1,000,000.
Clay:		Simoa Coment Oganda Eta. (Tanonar Coment Company Eta.)	Think at Toroio	1,000,000.
Brick		Artisanal and small-scale miners	Mines in various locations	14,000,000.e
Kaolin		Muhindo Enterprises Ltd.	Mine in Buhweju District ¹	50,000. ^e
Copper, mine		Kilembe Mines Ltd. (Government, 100%)	Mine in Kasese District	7,200.
Gold:		Kilemoe Willes Etd. (Government, 10070)	Wille III Kasese District	7,200.
Mine	kilograms	Artisanal and small-scale miners	Mines in Mubende District	1,800. ^e
Do.	do.	do.	Mines in Karamoja District	950. ^e
Do.	do.	do.		850. ^e
Refined	do.		Mines in Buhweju District ¹ Entebbe	
	do.	African Gold Refinery (AGR) Tembo Steel Ltd.		70,000. ^e
Iron and steel, steel, crude			Plant at Lugazi	100,000.
Do.		do.	Plant at Iganga	60,000.
Do.		Pramukh Steel Ltd.	Plant at Njeru	40,000.
Iron ore		Kamuntu Investment Ltd.	Mine in Kabale District ¹	10,000.e
Lead, refined secondary		Uganda Batteries Ltd.	Plant in Kanungu District	1,000.
Lime		Artisanal and small-scale producers	Various locations including Kasese and Tororo Districts	220,000. ^e
Niobium (columbium) and		3T Mining Ltd.	Wampero Mine in Waksio	120 concentrate
tantalum, mineral concer	ntrate	51 Mining Etc.	District	28 ^e tantalum:
columbite-tantalite	muc,		District	5 ^e niobium.
Phosphate fertilizers		Guangzhou Dongsong Energy Group	Plant at Sukulu	300,000.2
Pozzolanic material		Tororo Cement Ltd.		460,000. ^e
Do.		Industrial Minerals Ltd.	Mine in Kapchorwa District Mine in Rubirizi District	130,000. ^e
Do.		Seahorse International Ltd.	Mine in Kabarole District	
				65,000.°
Do. Do.		Hillmarks Ltd.	do.	40,000. ^e
		Royal Transit Ltd.		39,000.e
Do.		Artisanal and small-scale miners	do.	18,000.e
Salt		do.	Mine at Lake Katwe	15,000.
Sand, construction		do.	Mines in various locations	3,800,000.e
Stone:				
Crushed:		W. G. W.	V	
Limestone		Hima Cement Ltd.	Mines in Kasese District	760,000.e
Do.		do.	Mine in Kamwenge District	140,000.e
Do.		Tororo Cement Ltd.	Mines in Moroto District	310,000. ^e
Do.		do.	Mines in Tororo District	88,000.e
Do.		Artisanal and small-scale miners	Mines in various locations	330,000.e
Unspecified		do.	do.	7,400,000. ^e
Dimension:				
Marble		DAO Marble	Mines in Moroto District ¹	18,000.e
Do.		do.	Plant in Kampala ¹	18,000.
Unspecified		Artisanal and small-scale miners	Mines in various locations	1,800,000.e
Tin		African Panther Resources (U) Ltd.	Mine in Isingiro District	23. ^e
Tungsten content of		KI3R Minerals International	Nyamurilo Mine in Rubanda	240 wolframite
wolframite			District	120e tungster
Do.		3T Mining Ltd.	Buyaga Mine in Lyantonde	72 wolframite;
			District	36 ^e tungsten.
Vermiculite		Namekara Mining Company Ltd.	Namekara Mine in Manafwa	30,000.
			District	

^eEstimated. Do., do. Ditto.

¹Not operating at the end of 2019.

²Trial production only.