2019 Minerals Yearbook

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The Mineral Industry of Congo (Kinshasa)

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The Democratic Republic of the Congo [Congo (Kinshasa)] played a globally significant role in the world's production of cobalt, copper, diamond, gold, tantalum, and tin. In 2019, the country's share of the world's mined cobalt production amounted to 69%; tantalum, 31%; diamond (gem and industrial), 10%; mined copper, 6%; refined copper and tin, 4% each; and gold, 1%. In 2019, Congo (Kinshasa) accounted for about 51% of the world's cobalt reserves. Crude petroleum production also played a significant role in the domestic economy. The country was not a globally significant consumer of minerals or mineral fuels in 2019 (Republique Democratique du Congo Ministere des Mines, 2020; Callaghan, 2021; Flanagan, 2021; Merrill, 2021; Olson, 2021a, b; Sheaffer, 2021; Shedd, 2021).

Minerals in the National Economy

The mining and mineral processing sector accounted for an estimated 19.7% of the gross domestic product (GDP) in 2018 (the latest year for which data were available) and the manufacturing sector, 17.8%. The value of real output in the mining sector increased by 16.9% in 2018 compared with an increase of 7.8% in 2017. In 2018, the mining sector accounted for 76% of the growth in the GDP (Banque Centrale du Congo, 2019, p. 26, 29, 38).

About 450,000 artisanal miners were estimated to be employed in diamond mining in Congo (Kinshasa) in 2016. An additional 100,000 artisanal miners were estimated to be employed in cobalt mining. Gold mining was estimated to employ about 150,000 artisanal miners in Ituri Province in 2018. In the fourth quarter of 2019, niobium, tantalum, tin, and tungsten mining employed a total of about 45,900 miners in the mine sites covered by the ITRI Tin Supply Chain Initiative (iTSCI); some mines produced at least two different minerals (Frankel, 2016; James, 2016; Bedidjo, 2018, p. 9; International Tin Research Institute, 2020).

Government Policies and Programs

In March 2018, the President of Congo (Kinshasa) signed law no. 18/001 of March 9, 2018, which was the country's new mining code. The new law increased royalties for precious metals to 3.5% from 2.5%, and for nonferrous and base metals, to 3.5% from 2%. The law also introduced a royalty of 10% on minerals deemed to be strategic by the Government, which include cobalt, germanium, niobium, and tantalum. Other provisions include a reduction in the terms of mining licenses to 25 years from 30 years, a reduction of the guaranteed period for contract stability to 5 years from 10 years, an increase in the Government's free-carried and nondilutable share in mining projects to 10% from 5%, and a 50% tax on windfall profits. Under the new law, exploration licenses are renewable only once (Asselineau, 2018).

In February 2019, the Government issued a decree that banned the export of cobalt and copper concentrates to promote domestic downstream processing of cobalt and copper. In March, the Government lifted the ban; the Government's decision could be attributable to power shortages limiting downstream processing of concentrates. The Government also announced its intentions to review its decision regarding the ban every 6 months (Radford and others, 2019).

Congo (Kinshasa) was a signatory to the Kimberley Process, which is a certification system that became effective on January 1, 2003, to reduce the trade in conflict diamond. In 2019, the Diamond Development Initiative (DDI) trained miners in a certification process that formalized artisanal diamond mining through the formation of cooperatives (Diamond Development Initiative, 2019).

In July 2010, the U.S. Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) which contains provisions concerning the use of minerals to finance military operations in eastern Congo (Kinshasa). The U.S. Securities and Exchange Commission (SEC) issued regulations in final form in accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act in August 2012.

In March 2011, the Government of Katanga Province and the International Tin Research Institute (ITRI) started the iTSCI, which is a traceability mechanism for domestically produced tantalum, tin, and tungsten to meet end users' requirements under the Dodd-Frank Act and Organisation for Economic Co-operation and Development due diligence guidelines. In the fourth quarter of 2019, 334 mine sites were covered by the iTSCI in the former Katanga Province (which was divided into Haut-Katanga, Haut-Lomami, Lualaba, and Tanganyika Provinces in 2015), of which 159 were active (International Tin Research Institute, 2020).

In Maniema Province, 420 mine sites were covered by the iTSCI in the fourth quarter of 2019, of which 221 were active. In Nord-Kivu Province, 185 mine sites were covered, of which 100 were active. In Sud-Kivu Province, 172 mine sites were covered, of which 144 were active (International Tin Research Institute, 2020).

Armed groups reportedly interfered with artisanal mining operations in eastern Congo (Kinshasa) through the illegal taxation of miners. In 2019, armed groups reportedly interfered with at least 33% of the artisanal mining operations in Ituri, Nord-Kivu, and Sud-Kivu Provinces. Interference by armed groups was rare in the former Katanga Province. Armed groups present at mines included Congo (Kinshasa) military units and various local groups (Matthysen and others, 2019b, p. 7, 18–19).

Production

In 2019, the production of zinc increased by 471%; smelted copper, by an estimated 32%; tin, by an estimated 24%; refined copper, by 13%; sulfuric acid, by an estimated 12%; and cement, by 11%. Germanium and lead production restarted in 2019. Total niobium and tantalum production from cassiterite and columbite-tantalite concentrates increased by an estimated 25% and 22%, respectively. Manganese production decreased by 24%, and total diamond production (artisanal and large-scale), by 11%. Refined cobalt production shut down in 2018 (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

Between 2015 and 2019, tungsten output increased by an estimated 273%; cement, by 192%; tin, by an estimated 144%; and smelted copper, by 82%. Between 2015 and 2019, germanium output decreased by an estimated 86%.

Cement production increased in 2019 because of the opening of new plants in recent years; the increase in tin production was attributable to the startup of large-scale mining operations. Increased sulfuric acid output was attributable to increased use in copper refining. Data on mineral production are in table 1.

Structure of the Mineral Industry

In surveys conducted by the International Peace Information Service (IPIS) between 2013 and 2019, gold was produced in Ituri Province, the former Katanga Province, and in Maniema, Nord-Kivu, and Sud-Kivu Provinces at a minimum of 1,608 mines; niobium, tantalum, and tungsten, at a minimum of 886 mines; and tourmaline, at a minimum of 10 mines. Some mines produced at least two different minerals (Matthysen and others, 2019a).

La Générale des Carrières et des Mines (Gécamines), which was a state-owned company, produced coal, cobalt, copper, and sulfuric acid. Other cobalt and copper mining companies were privately owned; Gécamines held shares of between 5% and 40% in numerous operations. Large-scale gold mines also were privately owned. The Government held shares in the large-scale diamond producers, including 80% in Société Minière de Bakwanga (MIBA) and a 50% share in Societe Anhui-Congo d'Investissment Minier SPRL (SACIM).

Artisanal and small-scale miners accounted for most Congolese output of diamond, gemstones, niobium, tantalum, tin, and tungsten. Artisanal and small-scale miners also played a significant role in the country's cobalt and gold mine production (Bedidjo, 2018, p. 9; Matthysen and others, 2019a; Republique Democratique du Congo Ministere des Mines, 2019, 2020). Capacity, location, ownership, and production information were not readily available for many artisanal and small-scale operations. Table 2 is a list of major mineral industry facilities.

Mineral Trade

Total reported exports were valued at $16 billion in 2018, and imports, $15 billion. Copper accounted for 47% of the value of Congo (Kinshasa)'s exports; cobalt, 40%; gold, 7%; crude petroleum, 4%; diamond, 1%; and niobium, tantalum, tin, and zinc, a total of 1%. Other mineral exports included germanium, tourmaline, and tungsten (Banque Centrale du Congo, 2019, p. 99, 101).

In 2019, the share of Congolese copper production that was refined prior to export was 83%. An additional 5% was smelted prior to export (table 1). Cobalt mine production was exported after processing to intermediate products, such as cobalt carbonate and cobalt hydroxide. The lack of domestic cobalt refining could be attributable to power shortages. Most or all Congolese diamond, niobium, tantalum, tin, and tungsten production was exported prior to downstream processing.

Commodity Review

Metals

Cobalt, Copper, and Germanium.—Katanga Mining Ltd. of Switzerland (Glencore plc of Switzerland, 75%, and Gécamines, 25%) produced copper and cobalt at the KOV open pit mine, the KTO underground mines, and the Luilu refinery. The company planned to increase production to an average of 300,000 metric tons per year (t/yr) of refined copper and 30,000 t/yr of cobalt in hydroxide by 2022. In 2019, Katanga Mining produced 234,500 metric tons (t) of refined copper and 17,100 t of cobalt in hydroxide compared with 152,400 t of copper and 11,100 t of cobalt in 2018 (Katanga Mining Ltd., 2017; Monnet, 2019; Glencore plc, 2020, p. 6, 11).

In the fourth quarter of 2018, Katanga Mining put its exports and sales of cobalt on hold because of uranium levels in its cobalt hydroxide that exceeded levels permissible for export. In April 2019, the company resumed the export of cobalt hydroxide that met domestic and international standards for uranium levels (Mining Weekly, 2019).

Mutanda Mining SPRL (Glencore plc, 100%), operated the Mutanda Mine and refinery in Lualaba Province. In 2019, copper output at Mutanda was 103,200 t compared with 199,000 t in 2018. Cobalt output in concentrate and hydroxide decreased to about 25,100 t in 2019 from 27,300 t in 2018. In the fourth quarter of 2019, Glencore placed Mutanda on care-and-maintenance status because of factors that included low cobalt prices. Mining was not expected to resume until at least late 2021 (Davies and Zou, 2019; Glencore plc, 2020, p. 6, 11).

Eurasian Resources Group (ERG) of Luxembourg produced 84,254 t of copper in concentrate at the Frontier Mine in 2019 compared with 102,058 t in 2018. The company planned to produce an average of 80,000 t/yr between 2020 and 2024 (Eurasian Resources Group, 2019a, 2020).

In the fourth quarter of 2018, ERG completed the Roan Tailings Retreatment (RTR) project in Lualaba Province. In the first phase of the project, ERG planned to produce 77,000 t/yr of refined copper and 14,000 t/yr of cobalt in hydroxide by retreating tailings from previous mining operations near Kolwezi. The company planned to increase production to 120,000 t/yr of copper and 24,000 t/yr of cobalt in the second phase of the project. ERG produced 50,815 t of refined copper and an estimated 4,900 t of cobalt in hydroxide in 2019 (Eurasian Resources Group, 2019b; Division Provinciale des Mines de Lualaba, 2020).

Boss Mining SPRL [ERG, 70%, and Gécamines, 30%] produced copper and cobalt at the Mukondo Mountain Mine and the Luita solvent extraction-electrowinning (SX–EW) plant. Refined copper production at Luita decreased to 4,366 t in 2019 from 26,206 t in 2018 and cobalt production, to an estimated 290 t in 2019 from 4,800 t in 2018 (Kibawa, 2016; Moore Stephens LLP, 2017, p. 150; Division Provinciale des Mines de Haut-Katanga, 2019a; Division Provinciale des Mines de Lualaba, 2020).

Boss Mining planned to produce about 50,000 t/yr of refined copper from oxide ores. Reserves were expected to be depleted in the mid- or late 2020s. The company was considering the extension of mining operations by between 20 and 30 years by mining sulfide ore deposits and re-treating tailings. In early 2019, the company placed its operations on care-and-maintenance status (Eurasian Resources Group, 2018; Hancock, 2019).

In 2019, output at the Tenke Fungurume Mine was 117,956 t of refined copper and 16,098 t of contained cobalt in hydroxide compared with 168,309 t of refined copper and 18,747 t of contained cobalt in 2018. Planned production for 2020 was between 163,000 and 200,000 t of copper and between 14,000 and 17,000 t of cobalt. Tenke Fungurume was a joint venture of China Molybdenum Company Ltd. (80%) and Gécamines (20%) (China Molybdenum Company Ltd., 2019, p. 18; Reid and others, 2020).

In November 2015, Sicomines (China Railway Group Ltd. and Sinohydro Corp., 68%, and Gécamines and Société Immobilière du Congo, 32%) started production at its cobalt and copper mining operations. Refined copper production was 64,486 t in 2019 compared with 58,562 t in 2018; the company also produced more than 16,000 t of copper in concentrate in 2019 compared with 22,000 t in 2018. China Railway Group and Sinohydro pledged to build infrastructure with a value of $3 billion in return for their stake in Sicomines. Initial planned copper output at the Mashamba West Mine was 125,000 t/yr (Inside Mining, 2016; Division Provinciale des Mines de Haut-Katanga, 2019a; Division Provinciale des Mines de Lualaba, 2020).

MMG Ltd. of China operated the Kinsevere Mine and SX–EW plant. In 2019, production was 67,935 t of refined copper compared with 79,711 t in 2018. Decreased output was partially attributable to lower ore grades. MMG planned to produce between 68,000 and 75,000 t of refined copper at Kinsevere in 2020 (MMG Ltd., 2020, p. 5, 18, 21).

Ruashi Mining SPRL (Jinchuan Group of China, 75%) produced cobalt and copper from the Ruashi Mine; refined copper and cobalt hydroxide were produced at the company's SX–EW plant. In 2019, production was 33,824 t of refined copper and 5,070 t of contained cobalt compared with 24,108 t of refined copper and 4,752 t of contained cobalt in 2018. Increased copper output was attributable to higher ore grades and recovery rates (Jinchuan Group International Resources Co. Ltd., 2020, p. 15–16).

In 2017, Jinchuan completed the reopening of the Kinsenda Mine. In 2019, the company produced 32,598 t of copper in concentrate compared with 27,492 t in 2018. Kinsenda's estimated remaining life was more than 10 years; the life of the mine could be extended to more than 20 years depending on the conversion of currently subeconomic resources to reserves (Jinchuan Group International Resources Co. Ltd., 2020, p. 18).

Jinchuan and joint-venture partner Gecamines were developing a new mine and SX–EW plant at the Musonoi project. Gecamines approved the feasibility study in May 2019; construction started in December. The companies planned to produce 38,000 t/yr of copper and 7,800 t/yr of cobalt. Mining could start in 2022. Reserves at Musonoi were estimated to be 33 million metric tons (Mt) at grades of 2.7% copper and 0.7% cobalt (Jinchuan Group International Resources Co. Ltd., 2019, p. 13; 2020, p. 29).

Compagnie Minière de Musonoie (COMMUS) produced nearly 31,000 t of copper in black copper in 2019 compared with 25,000 t in 2018. Black copper is a form of smelted copper that has a copper content of between 80% and 98%. In 2019. COMMUS started refined copper production and produced 25,687 t by yearend. COMMUS also produced copper in concentrate. The company's operations were located in Lualaba Province (Division Provinciale des Mines de Lualaba, 2020).

In 2019, China Nonferrous Metals Corp. (CNMC) produced 58,115 t of refined copper at its operations in Haut-Katanga Province compared with 45,224 t in 2018. CNMC Huachin Mining Mabende's production of refined copper increased to 34,709 t in 2019 from 32,318 t in 2018 and Huachin Metal Leach SA's, to 23,406 t from 13,106 t. Increased output at Huachin Metal Leach was attributable to an expansion of the plant's capacity that was completed in the second quarter of 2019 (Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020; Mughai, 2019).

CNMC planned to complete a new smelter in Lualaba Province in October 2019. At full capacity, the plant would process more than 400,000 t/yr of copper concentrates and produce 120,000 t/yr of smelted copper. As of yearend, production had not started at the smelter (Radford and others, 2019; Luk, 2020).

Congo Dongfang International Mining SPRL (CDM) of China processed cobalt ore purchased from artisanal miners to cobalt concentrate and cobalt hydroxide. In 2019, the company produced an estimated 6,400 t of cobalt compared with 7,000 t in 2018. Most of CDM's cobalt production was in Haut-Katanga Province. In 2019, CDM also produced 45,848 t of refined copper at its SX–EW plant in Haut-Katanga Province compared with 11,693 t in 2018. CDM produced about 3,600 t of smelted copper in 2019 (Frankel, 2016; Kibawa, 2016; Moore Stephens LLP, 2017, p. 151, 153, 157; Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020; Division Provinciale des Mines de Lualaba, 2020).

Shituru Mining Corp. SPRL (a subsidiary of Pengxin International Mining Co. of China) operated the Shituru Mine in Haut-Katanga Province. In 2019, the company produced 38,134 t of refined copper at its SX–EW plant compared with 34,592 t in 2018 (Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020).

Chemaf SPRL (a subsidiary of Shalina Resources Ltd. of the United Arab Emirates) produced copper and cobalt at the Etoile Mine and the Etoile and the Usoke Avenue copper SX–EW and cobalt hydroxide plants. Refined copper production decreased to 24,276 t in 2019 from 26,914 t in 2018. Cobalt production in hydroxide increased to an estimated 7,900 t in 2019 from 7,800 t in 2018 and 5,160 t in 2017 (Chemaf SPRL, 2018, p. 9, 13; Kibawa, 2018; Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020).

Chemaf planned to open a new mine at its Mutoshi project in October 2019. The company planned to produce 20,000 t/yr of refined copper and 16,000 t/yr of cobalt in hydroxide at Mutoshi. As of the end of 2019, the mine had not opened (Chemaf SPRL, 2018, p. 9, 13; Roskill Information Services Ltd., 2018).

Gécamines operated the Kamfundwa and the Kilamusembu Mines in Haut-Katanga Province. The company's total mined copper and cobalt production from Kamfundwa and Kilamusembu was estimated to be more than 15,000 t and 130 t, respectively, in 2019. Refined copper production at the Shituru plant, which was the only refinery in Congo (Kinshasa) to use processes other than SX–EW, increased to 14,838 t in 2019 from 7,631 t in 2018; cobalt metal production shut down (Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020).

In 2019, Gécamines restarted cobalt and copper production at La Société pour le Traitement du Terril de Lubumbashi's (STL) Big Hill tailings treatment plant in Lubumbashi. Based on cobalt production of 5,065 t in 2015, about 770 t of cobalt in a copper-cobalt alloy was produced at the plant in 2019. STL also produced about 3,000 kilograms (kg) of germanium by yearend (table 1; Kibawa, 2016; Moore Stephens LLP, 2017, p. 151; Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020).

In 2019, Rubamin SPRL (a subsidiary of Rubamin Ltd. of India) produced nearly 21,000 t of copper in black copper compared with 13,000 t in 2018. La Minière de Kalumbwe Myunga (MKM), Minière du Katanga SPRL (Somika) of India, and other companies operated small copper refineries. Kai Peng Mining's production of refined copper increased to 30,495 t in 2019 from 15,873 t in 2018; MKM's, to 28,527 t from 17,544 t; and Somika's, to 23,200 t from 18,880 t. Compagnie Minière de Luisha's (COMILU) production decreased to 23,855 t in 2019 from 28,023 t in 2018 (Moore Stephens LLP, 2017, p. 153; Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020; Division Provinciale des Mines de Lualaba, 2020).

Comika Mining SAS produced an estimated 2,500 t of cobalt in concentrate and hydroxide in 2019 compared with 3,200 t in 2018. Metal Mines produced 3,200 t of cobalt in hydroxide in 2019 compared with nearly 4,900 t in 2018; Minière de Kasombo, 1,800 t compared with 2,300 t; and Somika, 750 t compared with 2,600 t. The companies' operations were located in Haut-Katanga Province (Kibawa, 2016; Moore Stephens LLP, 2017, p. 151, 153, 157; Division Provinciale des Mines de Haut-Katanga, 2019a–d, 2020).

In May 2017, Cape Lambert Resources Ltd. of Australia signed a joint-venture agreement with Paragon Mining to develop the Kasombo project and the Kipushi tailings project. The companies planned to produce 8,000 t/yr of copper and 4,000 t/yr of cobalt by retreating tailings from Kipushi for a period of between 7 and 8 years. Kasombo was a hard-rock project located between 3 and 5 kilometers (km) from the Kipushi processing plant. In August 2019, Cape Lambert withdrew from the projects because of its inability to secure financing, which was attributable to various factors, including decreased cobalt prices on world markets and an outbreak of Ebola (Cornish, 2017b; Iannucci, 2019).

In October 2017, Nzuri Copper Ltd. of Australia completed a feasibility study on a new mine at its Kalongwe project. The company completed an updated feasibility study in April 2018. In the first stage of mining, production was expected to be nearly 19,000 t/yr of copper and 1,400 t/yr of cobalt in concentrate. The first phase of mining was expected to last for 8 years; Nzuri Copper also was considering a second phase of mining in which refined copper and cobalt would be produced at an SX–EW plant. Contained resources at Kalongwe were estimated to about 300,000 t of copper and 43,000 t of cobalt. As of the end of 2019, it was unclear when mining would start at Kalongwe (Kotze, 2018; Washbourne, 2019).

In November 2017, Ivanhoe Mines Ltd. of Canada completed a new preliminary economic assessment (PEA) on a two-stage mining operation at its Kakula and Kamoa deposits. Under the PEA, the first mine would be developed at Kakula with a capacity of 6 million metric tons per year (Mt/yr) of ore. The second mine with a capacity of 6 Mt/yr of ore would be developed at Kamoa. Planned production at Kakula and Kamoa was more than 500,000 t/yr of copper in blister. The life of the project was estimated to be more than 44 years. In early 2019, Ivanhoe completed a prefeasibility study on an initial mine at Kakula, which revised the production target for Kakula and Kamoa to 700,000 t/yr. Mining could start in the third quarter of 2021 (Engineering & Mining Journal, 2018; Arnoldi, 2019).

Gold.—Artisanal and small-scale miners produced gold in Ituri, Maniema, Nord-Kivu, Sud-Kivu, and Tanganyika Provinces in eastern Congo (Kinshasa). Most of the gold exports from artisanal production were undeclared. Production by artisanal miners in eastern Congo (Kinshasa) was estimated to be about 13,500 kilograms per year (kg/yr) of gold, of which nearly 4,300 kg/yr was mined in Ituri Province (Bedidjo, 2018, p. 9).

IPIS' survey between 2013 and 2019 reported that gold was produced at 1,607 mines in eastern Congo (Kinshasa). The Paris Soir and Bagdad Mine in Sud-Kivu Province employed about 5,000 miners; the Msisi Mine, nearly 3,800 miners; the Bigobe Mine, 3,500 miners; the Ngoma Mine, nearly 2,800 miners; and the Carriere G7 Nord and the Carriere D 18 Nord Mines, 2,500 miners each. The Musigha Mine in Nord-Kivu Province employed more than 16,000 miners; the 7 eme Seau Mine, 3,000 miners; and the Omate Mine, 2,200 miners. The Maginda, the Nokono, and the Senzere Mine in Iutri Province employed 2,500 miners each; the Amani Mbi Mine, 2,100 miners; and the Paradiso Mine, 2,000 miners (Matthysen and others, 2019a).

AngloGold Ashanti Ltd. of South Africa and Randgold Resources Ltd. of the United Kingdom started operations at the Kibali Mine in Haut-Uele Province in 2013. In December 2018, Randgold merged with Barrick Gold Corp. of Canada. Production in 2019 was about 25,300 kg, which was nearly unchanged from that of 2018. Planned production was more than 22,000 kg in 2019 (Barrick Gold Corp., 2019; 2020; Creamer, 2019).

Banro Corp. of Canada operated the Twangiza Mine in Sud-Kivu Province; the company produced 1,338 kg of gold in 2019 compared with 3,135 kg in 2018. The company also operated the Namoya Mine in Sud-Kivu Province; production decreased to 726 kg in 2019 from 1,666 kg in 2018. Decreased output at Namoya and Twangiza was partially attributable to civil unrest in July and September (Jamasmie, 2019; Republique Democratique du Congo Ministere des Mines, 2019, 2020).

In July 2017, Amani Gold Ltd. of Australia estimated that resources at its Kebigada prospect were 49 Mt at a grade of

1.5 grams per metric ton (g/t) gold. Kebigada was part of the Giro project, which was located in Haut-Uele Province. In November 2018, the company estimated that total resources at the Giro project were 82 Mt at a grade of 1.2 g/t. Amani Gold planned to complete a feasibility study on a new mine at the Giro project in the fourth quarter of 2019. At yearend, the study had not been completed (Kotze, 2017; Amani Gold Ltd., 2019).

Niobium (Columbium) and Tantalum.—In 2019, national columbite-tantalite output decreased to 1,256 t from 2,267 t in 2018. Production in Nord Kivu Province was 881 t in 2018; in Haut-Lomani Province, 623 t; in Sud Kivu Province, 269 t; in Haut-Katanga Province, 260 t; and in Tanganyika Province, 210 t (Republique Democratique du Congo Ministere des Mines, 2019. 2020).

IPIS' survey reported a total of 194 columbite-tantalite mines in eastern Congo (Kinshasa); columbite-tantalite also was mined as a coproduct of cassiterite, gold, or wolframite at 86 mines. Columbite tantalite was produced at 81 mines in Nord-Kivu Province and 59 mines in Tanganyika Province. The Luwowo/Gasasa, the D4 Gakombe, and the Ngoriba columbite-tantalite mines in Nord-Kivu Province employed about 1,550, 1,000, and 500 miners, respectively. A total of nearly 1,300 miners were employed at 13 columbite-tantalite mines near Katatu in Tanganyika Province (Matthysen and others, 2019a).

Niobium and tantalum were also contained in cassiterite. Based on historical production of niobium and tantalum from slag at smelters in Congo (Kinshasa), the estimated tantalum and niobium content of cassiterite in 2019 was 300 t and 200 t, respectively. In 2018, the estimated tantalum and niobium content of cassiterite was 240 t and 160 t, respectively (World Mining, 1979; Ellis, 1981; Republique Democratique du Congo Ministere des Mines, 2019, 2020).

Tin.—In 2019, national cassiterite production increased to 19,984 t in 2019 from 16,273 t in 2018. Artisanal and small-scale miners produced cassiterite in Haut-Katanga, Haut-Lomani, Maniema, Nord-Kivu, Sud-Kivu, and Tanganyika Provinces. Cassiterite output by artisanal and small-scale miners decreased to 13,862 t in 2019 from 16,273 t in 2018. Production by artisanal and small-scale miners in Haut-Lomani Province was 4,720 t in 2018; in Maniema Province, 3,954 t; in Sud-Kivu Province, 3,342 t; in Haut-Katanga Province, 1,591 t; in Tanganyika Province, 1,251 t; and in Nord-Kivu Province, 975 t (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

IPIS' survey reported a total of 613 cassiterite mines in eastern Congo (Kinshasa); cassiterite also was mined as a coproduct of columbite-tantalite, gold, or wolframite at 64 mines. In the Manono Territory of Tanganyika Province, the Mile Beches Mine employed 1,000 miners; the Congo Mine, 800 miners; the Djibende Mine, 500 miners; and the Makonde Mine, 480 miners. The Kalimbi and T20 Mine in Sud-Kivu Province employed 1,000 miners; the Kasenge Mine, 700 miners; and the Kibuye and the Nzombe Mines, 500 miners each. The Busanga Mine in Lualaba Province employed about 700 miners; the Mitwaba Mine in Haut-Katanga Province, about 600 miners; and the Camp Tembo Mine in Maniema Province and the Malenge Mine in Haut-Lomani Province, 500 miners each (Matthysen and others, 2019a).

In 2019, Alphamin Resources Corp. of Mauritius started production at a new underground mine at the Mpama North deposit, which was part of the Bisie project in Nord-Kivu Province. By yearend, the company had exported 6,122 t of cassiterite. Alphamin planned to produce about 9,600 t/yr of tin in concentrate at Mpama North during the estimated mine life of nearly 12 years (Cornish, 2017a; Republique Democratique du Congo Ministere des Mines, 2020).

Tungsten.—Wolframite was mined in Maniema and Sud-Kivu Provinces. Congo (Kinshasa)'s production of wolframite increased to 406 t in 2019 from 380 t in 2018. Production in Sud-Kivu Province was 212 t in 2018, and in Maniema Province, 98 t (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

Zinc.—In 2019, Congolese zinc production increased to 6,452 t from 1,129 t in 2018. Increased production could be attributable to the reopening of STL's Big Hill tailings treatment plant in Lubumbashi (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

Cape Lambert and Paragon had planned to produce 2,000 t/yr of zinc at the Kipushi tailings project. In August 2019, Cape Lambert withdrew from the project (Cornish, 2017b; Iannucci, 2019).

In December 2017, Ivanhoe completed a prefeasibility study on reopening the Kipushi zinc-copper mine, which is located 30 km southwest of Lubumbashi. Depending on the results of a feasibility study, Ivanhoe could produce about 225,000 t/yr of zinc in concentrate during the estimated 11-year life of the mine. Capital costs of reopening the mine were estimated to be $337 million. The company planned to complete its feasibility study in the second half of 2018. As of the end of 2019, the study had not been completed (Moore, 2017).

Industrial Minerals

Cement.—National cement production increased to 1.16 Mt in 2019 from a revised 1.05 Mt in 2018 and 0.3 Mt in 2014. Increased output was attributable to the opening of new plants. Lucky Cement Ltd. of Pakistan's and Groupe Rawji's plant, which had a capacity of 1.26 Mt/yr, opened in October 2016. The plant was located at Songololo in Bas-Congo Province. PPC Ltd. of South Africa and Barnet Group completed a new plant with a capacity of 1 Mt/yr near Kimpese in 2017. Forspak International of China operated a plant with a capacity of 300,000 t/yr at Dolisie (International Cement Review, 2017, 2018; Banque Centrale du Congo, 2020, p. 4).

Diamond.—Artisanal and small-scale miners accounted for most Congolese output of diamond. In 2019, artisanal and small-scale diamond production was nearly 9.5 million carats compared with 11.9 million carats in 2018. Production in Kasai-Oriental Province decreased to 8.01 million carats in 2019 from 9.55 million carats in 2018; in Kasai Central Province, to about 521,000 carats from 1.26 million carats; and in Kasai Province, to about 512,000 carats from 765,000 carats. In Sankuru Province, production increased to about 333,000 carats from 150,000 carats (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

SACIM (Anhui Foreign Economic Construction Group of China, 50%, and Government-owned Société Congolaise d'Investissment Minier, 50%) produced diamond at the Tshibwe Mine in Kasai-Oriental Province. In 2019, SACIM produced about 3.98 million carats compared with 3.08 million carats in 2018. The company planned to increase its output to 6 million carats per year (Republique Democratique du Congo Ministere des Mines, 2019; 2020; undated, p. 12, 14).

MIBA mined mostly industrial and near-gem-quality diamond at Mbuji-Mayi in Kasai-Oriental Province. In 2019, the company produced 19,683 carats from its alluvial deposits compared with 118,788 carats in 2018. MIBA's operations were on care-and-maintenance status between March and November (Republique Democratique du Congo Ministere des Mines, 2019, 2020).

Outlook

Increased mined cobalt and refined copper production from the Mutoshi Mine and the RTR project is expected to be offset by the temporary closure of the Mutanda Mine. Mined copper production is likely to increase because of the opening of the Kakula-Kamoa Mine. Tin production was expected to increase in 2020 and 2021 as the Mpama North Mine reaches full capacity. Diamond mining also could increase because of the expansion at the Tshibwe Mine.

The development of these projects depends heavily upon political and economic stability and favorable conditions in world markets. The outlook for gold, niobium, tantalum, tin, and tungsten is particularly dependent upon political stability because of continued civil unrest in eastern Congo (Kinshasa) and upon international concerns about the reported use of minerals to finance military operations.

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TABLE 1
CONGO (KINSHASA): PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons, gross weight, unless otherwise specified)

Commodity[2]		2015	2016	2017	2018	2019
METALS						
Cobalt:						
Mine, Co content, recoverable[e, 3]		72,000	68,000	80,000	104,000	97,000
Refinery, metal[4]		3,141	50	120	60	--
Copper:						
Mine:						
Concentrates, Cu content[e, 5]		168,000	212,000	276,000	280,000	224,000
Solvent extraction		870,589	811,274	818,730	945,607	1,066,500
Total mine, Cu content[e]		1,040,000	1,020,000	1,090,000	1,230,000	1,290,000
Smelter, primary, black[e]		34,000	26,000	42,000	47,000	62,000
Refinery, primary:						
Electrowon		870,589	811,274	818,730	945,607	1,066,500
Other		15,347	10,039	11,757	7,631	14,838
Total primary refinery		886,000	821,000	830,000	953,000	1,080,000
Germanium, mine, Ge content	kilograms	21,000 e	15,000 e	11,000 e	-- r	3,000 e
Gold, mine, Au content[e]	do.	40,000	39,000	39,000	46,000	43,000
Lead, mine, Pb content		653	101	--	--	625
Manganese, mine, ore[6]		--	--	--	14,884	11,347
Niobium and tantalum, mineral concentrate:						
Cassiterite:						
Gross weight		8,304	11,824	18,893	16,273	19,984
Nb content		84	120	190	160	200
Ta content		125	180	280	240	300
Columbite-tantalite:						
Gross weight		2,102	2,414	2,174	2,267	1,256
Nb content		370	420	380	400	220
Ta content		465	530	480	500	280
Silver, mine, Ag content	kilograms	2,412	835	-- e	-- e	-- e
Tin, mine, concentrate:						
Gross weight		8,304	11,824	18,893	16,273	19,984
Sn content[e]		5,000	7,100	11,000	9,800	12,200
Tungsten, mine:						
Gross weight		106	154	252	380	406
Concentrate, W content[e, 7]		51	73	120	180	190
Zinc, mine, Zn content		12,675	12,587	12,337	1,129 [8]	6,452
INDUSTRIAL MINERALS						
Cement, hydraulic		398,749	253,201	899,533	1,048,340 r	1,163,782
Diamond, by type:						
Artisanal	thousand carats	14,284	12,377	15,415	11,929	9,464
Large-scale	do	1,505	3,182	3,688	3,202	4,005
Gemstones, tourmaline		27 r	7 r, e	7 r, e	7 r, e	7 e
Stone, crushed, unspecified		306,800	326,100	340,800 r	396,800 r	400,000 e
Sulfur, compounds, sulfuric acid[e]		3,000,000	2,800,000	2,900,000	3,300,000	3,700,000
MINERAL FUELS AND RELATED MATERIALS						
Coal, bituminous		6,900	8,200	8,000 e	8,000 e	8,000 e
Petroleum, crude	thousand 42-gallon barrels	8,247	7,837	7,536	8,393	8,200 e

[e]Estimated. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through August 17, 2020. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

[2]In addition to the commodities listed, amethyst and crude construction materials, including brick, may have been produced, but available information was inadequate to make reliable estimates of output.

[3]Determined from estimated cobalt content of ores, concentrates, refined cobalt metal, and intermediate products, such as crude cobalt alloys, crude cobalt hydroxide, and crude cobalt carbonate, produced from cobalt ores and concentrates, tailings, and slags sourced from Congo (Kinshasa).

[4]Does not include production of cobalt in alloys, carbonate, hydroxide, and other materials that would require further refining.

[5]Recoverable content.

[6]Reported by the International Manganese Institute.

[7]Production estimated based on reported exports.

[8]Reported exports.

TABLE 2
CONGO (KINSHASA): 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	Lucky Cement Ltd., 50%, and Groupe Rawji, 50%	Plant at Songololo in Bas-Congo Province	1,260,000.
Do.	PPC Barnet DRC Manufacturing SA (PPC Ltd., 69%, and Barnet Group, 21%)	Plant near Kimpese	1,000,000.
Do.	Cimenterie de Lukala (HeidelbergCement AG, 85%)	Lukala plant near Kinshasa	420,000.
Do.	Interlacs (HeidelbergCement AG, 85%)	Kabimba plant near Lubumbashi	50,000.
Do.	Cimenterie Nationale SARL (Nova Cimangola, 58%)	Kimpese plant, 40 kilometers south of Kinshasa[1]	300,000.
Do.	Ciment et Matériaux du Katanga [Enterprise Malta Forrest SPRL (EGMF), 50.27%, and Générale des Carrières et des Mines SA (Gécamines), 49.73%]	Lubudi plant in Lualaba Province	87,000.
Coal	La Générale des Carrières et des Mines SA (Gécamines) (Government, 100%)	Luena Mine in Haut Katanga Province	NA.
Copper and cobalt:			
Mine	Katanga Mining Ltd. (Glencore International AG, 75%, and Générale des Carrières et des Mines (Gécamines), 25%]	KOV, KTO, and Mashamba East Mines near Kolwezi	300,000 copper; 30,000 cobalt.
Do.	Tenke Fungurume Mining SARL [China Molybdenum Co. Ltd., 80%, and Générale des Carrières et des Mines (Gécamines), 20%]	Tenke Fungurume Mine in Lualaba Province	225,000 copper; 18,000[e] cobalt.
Do.	Mutanda Mining SPRL (Glencore plc, 100%)	Mutanda Mine in Lualaba Province[1]	220,000[e] copper; 28,000[e] cobalt.
Do.	Sicomines [China Railway Group Ltd. and Sinohydro Corp., 68%, and La Générale des Carrières et des Mines SA (Gecamines), 32%]	Mashamba West Mine in Lualaba Province	125,000 copper.
Do.	Eurasian Resources Group (ERG), 95%	Frontier Mine in Haut-Katanga Province	100,000 copper.
Do.	Eurasian Resources Group (ERG), 100%	Roan Tailings Retreatment project near Kolwezi	77,000 copper; 14,000 cobalt.
Do.	Boss Mining SPRL [Eurasian Resources Group plc, 51%, and Générale des Carrières et des Mines SA (Gécamines), 49%]	Mukondo Mountain Mine near Kakanda[1]	40,000[e] copper; 10,000[e] cobalt.
Do.	Sicomines [China Railway Group Ltd. and Sinohydro Corp., 68%, and La Générale des Carrières et des Mines SA (Gecamines), 32%]	Mashamba West Mine in Lualaba Province	125,000 copper.
Do.	MMG Ltd., 100%	Kinsevere Mine near Kinke	80,000 copper.
Do.	Ruashi Mining SPRL (Jinchuan Group International Resources Co. Ltd., 75%)	Ruashi Mine near Lubumbashi	38,000 copper; 5,000 cobalt.
Do.	Jinchuan Group International Resources Co. Ltd., 77%	Kinsenda Mine in Haut-Katanga Province	37,000[e] copper.
Do.	La Compagnie Minière de Musonoie Global SAS (Zijin Mining Group Company Ltd., 72%)	Kolwezi Mine in Lualaba Province	70,000[e] copper; 3,000 cobalt.
Do.	CNMC Huachin Mining Mabende (China Nonferrous Mining Corp. Ltd., 67.5%)	Mine at Mabende	38,000[e] copper.
Do.	CNMC-Mabende Metal Leach SPRL (China Nonferrous Mining Corp. Ltd., 65%)	Plant at Lwisha	26,000[e] copper.
Do.	Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Etoile Mine near Lubumbashi	51,500 copper; 8,700[e] cobalt.
Do.	Congo Dongfang International Mining SPRL[2] (Zhejiang Huayou Cobalt Co. Ltd., 98%)	Plants in former Katanga Province	45,000[e] copper; 8,700[e] cobalt.
Do.	Shituru Mining Corp. SPRL (Pengxin Group, 72.5%)	Mines in Haut-Katanga Province	40,000[e] copper.
Do.	Tiger Resources Ltd., 60%, and La Générale des Carrières et des Mines SA (Gécamines), 40%	Kipoi Mine in Haut-Katanga Province	32,500 copper.
Do.	La Minière de Kalumbwe Myunga (MKM) (China Railway Group Ltd., 80.2%)	Mine near Kolwezi	29,000[e] copper.
Do.	Trafigura Group	Mawson West Mine[1] near Kapulo	26,000 copper.

See footnotes at end of table.

TABLE 2—Continued

CONGO (KINSHASA): 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
Copper and cobalt:—Continued			
Mine—Continued	La Générale des Carrières et des Mines SA (Gécamines) (Government, 100%)	Kamfundwa and Kilamusembu Mines in Haut-Katanga Province	20,000[e] copper; 900[e] cobalt.
Do.	Société Minière du Katanga SPRL (Somika) (Kalyan Ltd., 50%, and Shukrana Ltd., 50%)	Mine near Lubumbashi	20,000[e] copper; 3,500[e] cobalt.
Do.	La Société pour le Traitement du Terril de Lubumbashi (STL) [La Générale des Carrières et des Mines SA (Gécamines), 100%]	Big Hill tailings treatment plant at Lubumbashi	3,500 copper; 5,500 cobalt.
Do.	Metal Mines (Nanjing Hanhui Cobalt Ltd., 100%)	Mines in Haut-Katanga Province	7,000[e] cobalt.
Do.	Macrolink Jiayuan Mining SARL (Jiayuan Cobalt Holding Ltd., 99%)	Mines in Haut-Katanga Province[1]	3,800[e] cobalt.
Do.	Comika Mining SAS (Wanbao Kingco Ltd., 70%)	do.	3,600[e] cobalt.
Do.	Minière de Kasombo (Zhejiang Huayou Cobalt Co. Ltd., 72%)	do.	2,600[e] cobalt.
Do.	MPC	Mines in former Katanga Province	2,400[e] cobalt.
Do.	Feza Mining SPRL	do.[1]	1,000[e] cobalt.
Smelted[3]	La Compagnie Minière de Musonoie Global SAS (Zijin Mining Group Company Ltd., 72%)	Plant in former Katanga Province	34,000[e] copper.
Do.	Congo Dongfang International Mining sprl (Zhejiang Huayou Cobalt Co. Ltd., 98%)	Plant in Lubumbashi	30,000[e] copper.
Do.	Rubamin SPRL (Rubamin FZC, 80%)	Plant in Likasi	25,000 copper.
Refined[3]	Katanga Mining Ltd. (Glencore International AG, 75%, and Générale des Carrières et des Mines (Gécamines), 25%]	Luilu plant near Kolwezi	300,000 copper.
Do.	Tenke Fungurume Mining SARL [China Molybdenum Co. Ltd., 80%, and Générale des Carrières et des Mines (Gécamines), 20%]	Plant near Tenke Fungurume Mine	225,000 copper.
Do.	Mutanda Mining SPRL (Glencore plc, 100%)	Plant near Mutanda Mine[1]	200,000 copper.
Do.	Eurasian Resources Group (ERG), 100%	Plant at Roan Tailings Retreatment	77,000 copper.
Do.	Boss Mining SPRL [Eurasian Resources Group plc, 51%, and Générale des Carrières et des Mines SA (Gécamines), 49%]	Luita plant near Kakanda[1]	40,000 copper.
Do.	Sicomines [China Railway Group Ltd. and Sinohydro Corp., 68%, and La Générale des Carrières et des Mines SA (Gecamines), 32%]	Plant near Mashamba West Mine	80,000[e] copper.
Do.	MMG Ltd., 100%	Kinsevere plant near Kinke	80,000[e] copper.
Do.	CNMC Huachin Mining Mabende (China Nonferrous Mining Corp. Ltd., 67.5%)	Plant at Mabende	38,000[e] copper.
Do.	CNMC-Mabende Metal Leach SPRL (China Nonferrous Mining Corp. Ltd., 65%)	Plant at Lwisha	26,000[e] copper.
Do.	Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Usoke plant in Lubumbashi	51,500 copper.
Do.	Shituru Mining Corp. SPRL (Pengxin Group, 72.5%)	Plant in Haut-Katanga Province	40,000[e] copper.
Do.	Ruashi Mining SPRL (Jinchuan Group International Resources Co. Ltd., 75%)	Ruashi plant near Lubumbashi	38,000 copper.
Do.	Kai Peng Mining Ltd., 100%	Plant at Likasi	33,000[e] copper.
Do.	Tiger Resources Ltd., 60%, and La Générale des Carrières et des Mines (Gécamines), 40%	Plant near Kipoi Mine	32,500 copper.
Do.	Compagnie Minière de Luisha (COMILU)	Plant near Kolwezi	31,000[e] copper.
Do.	Congo International Mining Corp. (China Railway Group Ltd., 51%,)	Plant in former Katanga Province	30,000 copper.
Do.	La Minière de Kalumbwe Myunga (MKM) (China Railway Group Ltd., 80.2%)	Plant near Kolwezi	29,000[e] copper.
Do.	La Générale des Carrières et des Mines SA (Gécamines) (Government, 100%)	Shituru plant near Likasi	21,600 copper
Do.	do.	Fonderie Electrique de Panda cobalt plant[1]	1,200 cobalt.
Do.	Société Minière du Katanga SPRL (Somika) (Kalyan Ltd., 50%, and Shukrana Ltd., 50%)	Plant near Lubumbashi	20,000[e] copper.

See footnotes at end of table.

TABLE 2—Continued
CONGO (KINSHASA): 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
Diamond	carats	Artisanal and small-scale miners	Mines in Kasai-Oriental Province	13,000,000.[e]
Do.	do.	do.	Mines in Kasai Province	2,200,000.[e]
Do.	do.	do.	Mines in Kasai-Central Province	1,400,000.[e]
Do.	do.	do.	Mines in Sankuru Province	370,000.[e]
Do.	do.	do.	Mines in Kwango Province	150,000.[e]
Do.	do.	do.	Mines in Tshopo Province	130,000.[e]
Do.	do.	Societe Anhui-Congo d'Investissment Minier SPRL (SACIM) [Anhui Foreign Economic Construction Group, 50%, and Société Congolaise d’Investissment Minier, 50%]	Tshibwe Mine in Kasai-Oriental Province	6,000,000.
Do.	do.	Société Minière de Bakwanga (MIBA) [Government, 80%, and Sibeka Group (Mwana Africa plc), 20%	Mines at Mbuji Mayi in Kasai-Oriental Province	900,000.
Do.	do.	Société Minière de Lupatapata (SMDL)	Mines in Kasai-Oriental Province[1]	220,000.[e]
Gemstones		Artisanal and small-scale miners	Mines at Rwangara and Shakubangwa in Nord Kivu Province	15[e] tourmaline.
Germanium	kilograms	La Société pour le Traitement du Terril de Lubumbashi (STL) [La Générale des Carrières et des Mines SA (Gécamines), 100%]	Big Hill tailings treatment plant at Lubumbashi	20,000.
Gold	do.	Artisanal and small-scale miners	Mines in various locations, including:	10,000.[e]
Do.	do.	do.	Maniema Province	NA.
Do.	do.	do.	7 eme Seau, Musigha, Omate, and other mines in Nord-Kivu Provice	NA.
Do.	do.	do.	Bigobe, Carrière D 18 Nord, Carriere G7 Nord, Msisi, Ngoma, Paris Soir-Bagdad, and other mines in Sud-Kivu Provice	NA.
Do.	do.	do.	Tanganyika Provice	NA.
Do.	do.	do.	Amani Mbi, Maginda, Nokono, Paradiso, Senzere and other mines in Iutri Province	4,800.[e]
Do.	do.	AngloGold Ashanti, 45%, and Barrick Gold Corp., 45%	Kibali Mine in Ituri Province	29,000.
Do.	do.	Banro Corp. 100%	Namoya Mine in Maniema Province[1]	4,100.
Do.	do.	do.	Twangiza Mine in Sud-Kivu Province	3,500.
Niobium (columbium) and tantalum		Artisanal and small-scale miners	D4 Gakombe, Luwowo-Gasasa, Ngoriba, and other mines in Nord-Kivu Province	1,500[e] columbite-tantalite.
Do.		do.	Kahemba Nord, Kalongwe, Katutu, and other mines in Tanganyika Province	1,000[e] columbite-tantalite.
Do.		do.	Mines in Haut-Lomani Province	700[e] columbite-tantalite.
Do.		do.	Mines in Haut-Katanga Province	340[e] columbite-tantalite.
Do.		do.	Mines in Sud-Kivu Province	300[e] columbite-tantalite.
Do.		do.	Mines in Maniema Province	80[e] columbite-tantalite.
Petroleum, crude	thousand 42-gallon barrels	Perenco REP (Perenco plc), 100%	Kifuku, Kinkasi, Liawenda, Makelekese, Muanda, Nsiamfuma, and Tschiende onshore wells	5,480.
Do.	do.	Muanda International Oil Co. (Perenco plc), 50%; Inpex Corp., 32.3%; ODS Ltd., 17.7%)	Mibale, Motoba, and Tshiala offshore wells	3,650.
Silver, mine	kilograms	Trafigura Group	Mawson West Mine[1] near Kapulo	3,000.[e]
Stone, crushed		Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Kilimasimba quarry near Lubumbashi	440,000.

See footnotes at end of table.

TABLE 2—Continued
CONGO (KINSHASA): 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
Sulfuric acid	Tenke Fungurume Mining SARL [China Molybdenum Co. Ltd., 80%, and Générale des Carrières et des Mines (Gécamines), 20%]	Plants at Tenke Fungurume Mine	760,000.
Do.	Ruashi Mining SPRL (Jinchuan Group International Resources Co. Ltd., 75%)	Plant at Ruashi Mine	190,000.
Do.	Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Plant in Lubumbashi	170,000.
Do.	Mutanda Mining SPRL (Glencore plc, 100%)	Plant at Mutanda Mine	130,000.
Do.	La Générale des Carrières et des Mines SA (Gécamines) (Government, 100%)	Plant at Likasi	68,000.
Tin, mine	Artisanal and small-scale miners	Congo, Djibende, G24, Makonde, Mile Beches, and other mines in Tanganyika Province	7,400[e] cassiterite.
Do.	do.	Malenge, Musafiri, and other mines in Haut-Lomani Province	5,300[e] cassiterite.
Do.	do.	Camp Tembo, Mukuku, and other mines in Maniema Province	4,400[e] cassiterite.
Do.	do.	Lula, Mitwaba, and other mines in Haut-Katanga Province	3,800[e] cassiterite.
Do.	do.	Kalimbi-T20, Kasenge, Kibuye, Nzombe, and other mines in Sud-Kivu Province	3,700[e] cassiterite.
Do.	do.	Mines in Nord-Kivu Province	2,300[e] cassiterite.
Do.	do.	Busanga and other mines in Lualaba Province	NA.
Do.	Alphamin Resources Corp., 84.14%	Mpama North Mine in Nord-Kivu Province	9,600 tin in concentrate.
Tungsten	Artisanal and small-scale miners	Mines in Sud-Kivu Province	240[e] wolframite.
Do.	do.	Mines in Maniema Province	110[e] wolframite.
Do.	do.	Mines in Nord-Kivu Province[1]	90[e] wolframite.
Zinc	La Société pour le Traitement du Terril de Lubumbashi (STL) [La Générale des Carrières et des Mines SA (Gécamines), 100%]	Big Hill tailings treatment plant at Lubumbashi	15,000 zinc in zinc oxide.

[e]Estimated. Do., do. Ditto. NA Not available.
[1]Not operating at the end of 2019.
[2]Company processed ore produced by artisanal miners.
[3]Largest facilities listed; also several more small producers.