



# 2022 Minerals Yearbook

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**CONGO (KINSHASA) [ADVANCE RELEASE]**

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# THE MINERAL INDUSTRY OF THE DEMOCRATIC REPUBLIC OF THE CONGO

By Thomas R. Yager

The Democratic Republic of the Congo [Congo (Kinshasa)] played a significant role in the world's production of cobalt, copper, diamond, gold, tantalum, and tin. In 2022, the country's share of the world's mined cobalt production amounted to 73%; tantalum, 45%; mined copper, 11%; diamond, 8%; refined copper, 7%; tin, 6%; and gold, 1%. Congo (Kinshasa) also accounted for 2% of the world's diamond production, by value. In 2022, Congo (Kinshasa) accounted for about 55% 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 2022 (Barrick Gold Corp., 2023, p. 74; Brussels Times, 2023; Narvekar and Even-Zohar, 2023, p. 7; Ewing, 2024; Flanagan, 2024; Friedline, 2024a, b; Olson, 2024a, b; Sheaffer, 2024).

## Minerals in the National Economy

The mining sector accounted for an estimated 19.6% of the real gross domestic product (GDP) in 2021 (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 9.7% in 2021. The mining and mineral-processing sector accounted for 46.9% of the growth in the GDP in 2021 (Banque Centrale du Congo, 2022, p. 135).

There were as many as 2 million artisanal miners employed in Congo (Kinshasa) in 2022. An estimated 150,000 to 200,000 artisanal miners were employed in cobalt and copper mining in 2019 (the latest year for which data were available). Gold mining was estimated to employ more than 270,000 artisanal miners in 2019; tin mining, 95,000; niobium and tantalum mining, 26,000; tungsten mining, 7,700; and tourmaline mining, 2,000. In the fourth quarter of 2022, niobium, tantalum, tin, and tungsten mining employed a total of nearly 61,000 miners in the mine sites covered by the ITRI Tin Supply Chain Initiative (iTSCI), which did not cover all artisanal niobium, tantalum, tin, and tungsten mine sites (Barich, 2022; International Tin Association, 2023; Delve, undated, p. 17).

## Government Policies and Programs

In March 2018, the President of Congo (Kinshasa) signed law No. 18/001 of 9 March 2018, which became the country's new mining code. In May 2021, the Government issued a decree that banned the export of cobalt and copper concentrates to promote domestic downstream processing of cobalt and copper. Companies with waivers from the ban were allowed to continue exporting these concentrates (Shanghai Metals Market, 2021).

Congo (Kinshasa) was a signatory to the Kimberley Process Certification Scheme, which is a certification system that became effective on January 1, 2003, to reduce the trade in

conflict diamond. Congo (Kinshasa) also was a signatory to the Extractive Industries Transparency Initiative, which promotes the open and accountable management of nonfuel minerals and mineral fuels.

In July 2010, the United States 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 Act in August 2012.

In March 2011, the Government of Katanga Province (which was divided into the Haut-Katanga, Haut-Lomami, Lualaba, and Tanganyika Provinces in 2015) and the International Tin Research Institute (now the International Tin Association Ltd) 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's and Organisation for Economic Co-operation and Development's due diligence guidelines. In the fourth quarter of 2022, 401 mine sites were covered by iTSCI in the former Katanga Province, of which 203 were active. In Maniema Province, 509 mine sites were covered, of which 236 were active. In Sud-Kivu Province, 267 mine sites were covered, of which 182 were active. In Nord-Kivu Province, 218 mine sites were covered, of which 143 were active (International Tin Association, 2023).

Armed groups reportedly interfered with artisanal-mining operations in eastern Congo (Kinshasa) through the illegal taxation of miners. According to surveys of 354 active mine sites conducted by the International Peace Information Service (IPIS) between September 2021 and March 2022, armed groups reportedly interfered with at least 41% of artisanal-mining sites. Interference by armed groups was more common at gold mines than at niobium, tantalum, tin, and tungsten mines. The IPIS reported that armed groups present at mines included Congolese (Kinshasa) military units, police, and various local groups (Matthysen and others, 2022, p. 5–7, 9).

In late March 2021, state-owned company La Générale des Carrières et des Mines (Gécamines) officially started its new subsidiary Entreprise Générale du Cobalt (EGC), which would have a monopoly on the purchasing, processing, and sale of cobalt produced by artisanal miners in Congo (Kinshasa). As of the end of September, companies would be allowed to purchase artisanally produced cobalt only from EGC. Underground mining operations would not be allowed on EGC's mining sites, and open pit mines were allowed a maximum depth of 10 meters. In May 2022, the Minister of Mines announced plans to cancel Gécamines' monopoly (Le Bec, 2021; Reid, 2022).

## Production

In 2022, the production of tungsten (W content) increased by an estimated 40%; mined copper, by 39%; niobium, by an estimated 34%; total refined copper and tantalum, by 31% each; cement, by 30%; smelted copper, by 28%; mined cobalt, by an estimated 22%; and tin (Sn content), by an estimated 11%. Manganese production decreased by 29% in 2022; zinc, by 16%; crude petroleum, by 13%; and diamond (artisanal), by 10% (Republique Democratique du Congo Ministere des Mines, 2022, p. 6, 29, 31–32, 44; 2023, p. 3–4, 17–19, 21; Banque Centrale du Congo, 2023, p. 2, 4).

Cement production increased in 2022 because of the recent opening of new plants. The increase in tin production was attributable to the ramping up of large-scale mining operations. Mined copper production increased because of several factors, including the recent opening of the Kamao Mine and the expansions of the Mashamba West and the Tenke Fungurume Mines. Data on mineral production are in table 1.

## Structure of the Mineral Industry

According to surveys conducted by IPIS between 2017 and 2022, the following were produced in Ituri, the former Katanga, Maniema, Nord-Kivu, and Sud-Kivu Provinces: gold, at a minimum of 1,230 mines; cassiterite, at a minimum of 620 mines; niobium, and tantalum, at a minimum of 258 mines; wolframite, at a minimum of 61 mines; diamond, at a minimum of 37 mines; and tourmaline, at a minimum of 9 mines. Some mines produced at least two different minerals (International Peace Information Service, 2023).

Gécamines produced coal, cobalt, copper, and sulfuric acid. Other cobalt- and copper-mining companies operating in Congo (Kinshasa) were privately owned; Gécamines held between 5% and 49% of shares in many of these operations. The large-scale gold mines in the country also were privately owned. The Government held shares in the large-scale diamond producers, including an 80% share in Société Minière de Bakwanga (MIBA) and a 50% share in Société Anhui-Congo d'Investissement Minier SPRL (SACIM).

Artisanal and small-scale miners accounted for most or all of Congo (Kinshasa)'s output of diamond, gemstones, niobium, tantalum, and tungsten. Artisanal and small-scale miners also played a significant role in the country's cobalt, gold, and tin mine production (Brussels Times, 2023; Republique Democratique du Congo Ministere des Mines, 2023, p. 3–4, 17–19). 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 \$22.2 billion in 2021, and total reported imports, \$18.2 billion. Copper accounted for 72.2% of the value of Congo (Kinshasa)'s total exports; cobalt, 15.8%; gold, 5.7%; crude petroleum, 2.7%; diamond, 0.6%; and lead, niobium, tantalum, tin, and zinc, a total of 1.9%. Other mineral exports included germanium, tourmaline, and tungsten (Banque Centrale du Congo, 2022, p. 37).

In 2022, 77% of Congo (Kinshasa)'s copper production was refined prior to export. An additional 6% was smelted prior to export (table 1). Cobalt mine production was exported after processing to intermediate products, such as cobalt carbonate and cobalt hydroxide. Most or all of Congo (Kinshasa)'s diamond, niobium, tantalum, tin, and tungsten production was exported prior to downstream processing.

## Commodity Review

### Metals

**Cobalt, Copper, and Germanium.**—Mined copper production increased to 2.47 million metric tons (Mt) from 1.77 Mt in 2021, and refined copper, to 1.9 Mt from 1.46 Mt. Mined cobalt production increased to 144,000 metric tons (t) in 2022 from 118,000 t in 2021 (table 1).

Ivanhoe Mines Ltd. of Canada started mining at the Kakula-Kamao Copper Complex in late May 2021 and produced 105,884 t of copper in concentrate by yearend. The company's production increased to about 333,500 t of copper in concentrate in 2022. At yearend, Ivanhoe had completed more than 90% of a debottlenecking program that would increase capacity to 450,000 metric tons per year (t/yr). Planned production for 2023 was between 390,000 and 430,000 t (Ivanhoe Mines Ltd., 2022, p. 1–2; 2023).

Sicomines (China Railway Group Ltd. and Sinohydro Corp., 68%; Gécamines, 20%; and Société Immobilière du Congo, 12%) operated the Mashamba West Mine in Lualaba Province. In June 2021, Sicomines completed the expansion of Mashamba West Mine's capacity to nearly 254,000 t/yr of refined copper and 5,180 t/yr of cobalt in hydroxide. Copper production at the mine increased to 252,600 t in 2022 from 194,802 t in 2021, and cobalt, to 3,200 t from 1,316 t (Agence Congolaise de Presse, 2021; China Railway Group Ltd., 2022, p. 31; 2023, p. 35).

In 2022, output at the Tenke Fungurume Mine was 254,286 t of refined copper and 20,286 t of contained cobalt in hydroxide compared with 209,120 t of refined copper and 18,501 t of contained cobalt in 2021. Increased production was attributable to an expansion of Tenke Fungurume's capacity by nearly 89,000 t/yr of copper and 7,300 t/yr of cobalt in July 2021. Capacity could increase by an additional 200,000 t/yr of copper and 17,000 t/yr of cobalt by 2023. The Government suspended exports from Tenke Fungurume in the third quarter of 2022 because of a dispute over royalty payments; exports remained suspended at yearend. Planned production for 2023 was between 290,000 and 330,000 t of copper and between 21,000 and 24,000 t of cobalt. Tenke Fungurume was a joint venture of CMOC Group Ltd. of China (80%) and Gécamines (20%) (Mining Technology, 2021; CMOC Group Ltd., 2023, p. 24, 27, 40–41).

At the end of June 2022, CMOC announced plans to start production at the KFM Mine (formerly the Kisanfu Mine) in the first half of 2023. The company planned to produce 90,000 t/yr of refined copper and 30,000 t/yr of cobalt in hydroxide at KFM, which is in Lualaba Province, at full capacity (CMOC Group Ltd., 2022).

Katanga Mining Ltd. of Switzerland (Glencore plc of Switzerland, 75%, and Gécamines, 25%) produced copper and cobalt at the KOV and the KTO Mines and the Luilu refinery.

In 2022, Katanga Mining produced 220,100 t of refined copper and 25,500 t of cobalt in hydroxide compared with 264,400 t of copper and 23,800 t of cobalt in hydroxide in 2021. Decreased copper production was attributable to factors including power supply interruptions and mechanical problems at the acid plant (Glencore plc, 2023, p. 5, 9).

Mutanda Mining SPRL (Glencore, 100%) operated the Mutanda Mine and refinery in Lualaba Province. In 2022, copper output at Mutanda was 33,300 t, and cobalt output in concentrate and hydroxide was 14,700 t. In the fourth quarter of 2019, Glencore placed Mutanda on care-and-maintenance status because of low cobalt prices and other factors. The company restarted production at Mutanda in the fourth quarter of 2021 (Davies and Zou, 2019; Glencore plc, 2023, p. 9).

China Nonferrous Metals Corp. (CNMC) produced 79,412 t of refined copper at its operations in Haut-Katanga Province in 2022 compared with 84,173 t in 2021. CNMC Huachin Mining Mabende's production of refined copper increased to 37,865 t in 2022 from 36,389 t in 2021. Huachin Metal Leach SA's production decreased to 23,940 t in 2022 from 29,025 t in 2021, and that of CNMC Congo, to 17,607 t from 18,759 t. CNMC's production of cobalt in hydroxide increased to an estimated 1,700 t in 2022 from 300 t in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

In 2020, CNMC and Gécamines started production at the new Deziwa Mine and solvent extraction-electrowinning (SX-EW) plant in Lualaba Province. The companies planned to produce 80,000 t/yr of refined copper and 8,000 t/yr of cobalt in hydroxide at Deziwa. In 2022, CNMC and Gécamines produced 86,328 t of refined copper at Deziwa compared with 62,397 t in 2021. Cobalt production was estimated to be 8,100 t in 2022 compared with 7,800 t in 2021 (Luk, 2020; Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Black copper is a form of smelted copper that has a copper content of between 80% and 98%. CNMC operated the Lualaba Copper Smelter (LCS) in Lualaba Province, which had a capacity of 120,000 t/yr of smelted copper. The plant was producing at a rate of about 61,000 t/yr of black copper in March 2022. Rubamin SPRL (a subsidiary of Rubamin Ltd. of India) produced black copper at a rate of 13,000 t/yr in March (Holland, 2020; Division Provinciale des Mines de Haut-Katanga, 2022; Division Provinciale des Mines de Lualaba, 2022).

Eurasian Resources Group (ERG) of Luxembourg produced 102,400 t of copper in concentrate at the Frontier Mine in 2021 compared with 103,300 t in 2020. The company planned to produce an average of 58,000 t/yr from 2022 through 2024. ERG also was considering an expansion of the open pit at Frontier that could extend the mine's life by 10 years (Eurasian Resources Group, 2022, p. 19).

ERG operated the Roan Tailings Retreatment (RTR) project in Lualaba Province, which reprocessed tailings from previous mining operations near Kolwezi. RTR had a capacity of 120,000 t/yr of refined copper and 24,000 t/yr of cobalt in hydroxide. ERG's production of refined copper increased to 99,650 t in 2022 from 94,800 t in 2021, and cobalt in hydroxide, to 23,000 t from 20,700 t (Moore, 2020; Eurasian Resources Group, 2022, p. 19; Mining Review Africa, 2023; Republique Democratique du Congo Ministere des Mines, 2023, p. 26).

In November 2022, ERG and Gécamines restarted production at Boss Mining's Mukondo Mountain Mine. The companies planned to produce nearly 22,000 t/yr of refined copper and 3,600 t/yr of cobalt in hydroxide by re-treating previously mined fine material. ERG and Gécamines planned to reach full capacity by March 2023 (Toft, 2022).

Compagnie Minière de Musonoie (COMMUS) (Zijin Mining Group Company Ltd., 72%) produced 128,233 t of copper at the Kolwezi Mine in Lualaba Province in 2022, of which 73,834 t was refined. The company produced 121,072 t of copper at Kolwezi in 2021, of which 59,928 t was refined. Cobalt production increased to 2,506 t in 2022 from 1,607 t in 2021. Planned production for 2023 was 126,000 t of copper and nearly 2,400 t of cobalt (Zijin Mining Group Company Ltd., 2022, p. 37, 44; 2023, p. 47, 54).

Wanbao Kingco Ltd. of China and Managem S.A. of Morocco produced 49,586 t of refined copper and about 4,800 t of cobalt in hydroxide at the Pumpi project in 2022. The companies produced 38,508 t of refined copper and 3,186 t of cobalt in hydroxide at Pumpi, which is in Lualaba Province, in 2021. In 2022, Comika Mining SAS (Wanbao, 80%) produced 51,214 t of refined copper at Kamoya in Lualaba Province compared with 33,379 t in 2021. Comika's production of cobalt in concentrate and hydroxide increased to an estimated 4,700 t in 2022 from 4,200 t in 2021 (Managem S.A., 2022, p. 116; Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Ruashi Mining SPRL (Jinchuan Group of China, 75%, and Gécamines, 25%) produced cobalt and copper from the Ruashi Mine; refined copper and cobalt hydroxide were produced at the company's SX-EW plant. In 2022, production was 30,353 t of refined copper and 3,961 t of contained cobalt compared with 33,063 t of refined copper and 3,379 t of contained cobalt in 2021. At the end of 2021, Jinchuan completed a new plant to treat low-grade ore that could extend the mine's life. The estimated remaining life of Ruashi was 9 years (Jinchuan Group International Resources Co. Ltd., 2023, p. 14–15, 17).

In 2022, Jinchuan produced 29,087 t of copper in concentrate at the Kinsenda Mine compared with 28,197 t in 2021. Increased production was partially attributable to higher recovery rates. Kinsenda's estimated remaining life was 12 years (Jinchuan Group International Resources Co. Ltd., 2023, p. 17–18).

Jinchuan and joint-venture partner Gécamines started construction of a new mine and SX-EW plant at the Musonoie project in 2022. The companies planned to produce 38,000 t/yr of refined copper and 7,400 t/yr of cobalt. The estimated life of the mine was 19 years (Jinchuan Group International Resources Co. Ltd., 2022, p. 17; 2023, p. 20–21).

Chengtun Congo Ressources SARL (CCR) of China produced 56,735 t of refined copper from the Kalongwe Mine in Lualaba Province in 2022. The company produced 34,941 t of refined copper in 2021. CCR's production of cobalt in hydroxide at Kalongwe increased to an estimated 4,700 t in 2022 from 3,900 t in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

MMG Ltd. of China operated the Kinsevere Mine and SX–EW plant. In 2022, production was 49,070 t of refined copper compared with 48,017 t in 2021. MMG planned to produce between 40,000 and 48,000 t of refined copper at Kinsevere in 2023 because the mine’s oxide ore reserves were depleted. The company was engaged in an expansion of Kinsevere through sulfide ore mining and cobalt production, a development expected to extend the mine’s life by at least 13 years. Planned production, once fully ramped up, was 80,000 t/yr of refined copper and between 4,000 and 6,000 t/yr of cobalt in hydroxide. Cobalt production was expected to start in 2023 (MMG Ltd., 2023, p. 3, 7, 16).

Congo Dongfang International Mining SPRL (CDM) of China processed cobalt ore produced by artisanal miners at Kasulo to cobalt concentrate and cobalt hydroxide. In 2022, the company produced an estimated 2,400 t of cobalt compared with 3,200 t in 2021. In 2022, CDM produced 48,128 t of refined copper at its SX–EW plant in Haut-Katanga Province compared with 56,131 t in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Shituru Mining Corp. SPRL (Pengxin International Mining Co. of China, 72.5%) operated the Shituru Mine in Haut-Katanga Province. In 2022, the company produced 38,695 t of refined copper at its SX–EW plant compared with 40,280 t in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26).

In 2022, Minière de Kasombo S.A. (Huayou Cobalt Co. Ltd. of China, 72%) produced 26,789 t of refined copper and 4,800 t of cobalt in hydroxide at its operations in Haut-Katanga Province. The company produced 23,135 t of refined copper and 1,200 t of cobalt in hydroxide in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Kisanfu Mining produced 22,409 t of refined copper and about 1,900 t of cobalt in hydroxide at its operations in Lualaba Province in 2022. The company’s production was 16,580 t of copper and 1,200 t of cobalt in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Metal Mines produced about 3,200 t of cobalt in hydroxide from its operations in Haut-Katanga Province in 2022 compared with 3,700 t in 2021. The company’s refined copper production increased to 17,031 t in 2022 from 16,894 t in 2021. Metal Mines planned an expansion that could increase its cobalt production by 3,000 t/yr (Republique Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

Gécamines operated the Kamfundwa and the Kilamusembu Mines in Haut-Katanga Province. The company’s refined copper production decreased to 11,422 t in 2022 from 26,644 t in 2021. Gécamines also operated the Big Hill tailings treatment plant in Lubumbashi. About 4,200 t of cobalt in a copper-cobalt alloy was produced at the plant in 2022 compared with 4,400 t in 2021. Gécamines also produced about 16,000 kilograms (kg) of germanium in 2022 compared with 17,000 kg in 2021 (table 1; République Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

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 10,233 t in 2022 from 19,541 t in 2021. Cobalt production in hydroxide decreased to an estimated 3,100 t in 2022 from 5,300 t in 2021. Shalina planned to increase production at Etoile to 30,000 t/yr of copper and 4,000 t/yr of cobalt. The company also planned to start mechanized mining at the Mutoshi Mine in 2023; planned production was 50,000 t/yr of refined cobalt and 16,000 t/yr of cobalt in hydroxide (Kinch, 2022; République Democratique du Congo Ministere des Mines, 2022, p. 47; 2023, p. 26; Darton Commodities Ltd., 2023, p. 9).

**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 20,000 kilograms per year (Brussels Times, 2023).

IPIS conducted a survey between 2017 and 2022 that found gold was produced at a minimum of 1,230 mines in eastern Congo (Kinshasa). The Paris Soir-Bagdad Mine in Sud-Kivu Province employed about 5,000 miners; the Bigobe Mine, 3,500 miners; the Ngoma Mine, nearly 2,800 miners; the Katuba-Liziba Mine, nearly 2,300 miners; the Kadumwa Mine, more than 2,200 miners; the Mitondo Mine, 1,500 miners; and the Bivuye, the Carrière D 18 Sud-Kasopo, the Milanga, and the Umoja-Mosoko Mines, 1,000 miners each. The Vumilia-Ilubo Mine in Nord-Kivu Province employed 6,000 miners; the Vunzenegere Mine, 3,500 miners; the 7 eme Seau Mine, 3,000 miners; and the Malimongi Mine, nearly 1,300 miners. The Muchacha Mine in Ituri Province employed 3,500 miners; the Kolwezi Mine, 2,600 miners; the Lony Mokili, the Magnida, and the Senzere Mine, 2,500 miners each; and the Boma Mine, 1,500 miners (International Peace Information Service, 2023).

AngloGold Ashanti Ltd. of South Africa and Barrick Gold Corp. of Canada produced gold at the Kibali Mine in Haut-Uele Province. Production in 2022 decreased to about 23,300 kg from 25,300 kg in 2021 because of lower ore grades and recovery rates. Planned production for 2023 was between 22,000 and 25,000 kg. The estimated remaining life of the mine was more than 10 years (Barrick Gold Corp., 2023, p. 32, 64, 74, 89).

**Niobium (Columbium) and Tantalum.**—In 2022, national columbite-tantalite output was 2,221 t compared with 1,441 t in 2021 and 1,712 t in 2020. Artisanal mines in Nord-Kivu Province produced 1,081 t in 2022; in the former Katanga Province, 714 t; in Sud-Kivu Province, 416 t; and in Maniema Province, 10 t (Republique Democratique du Congo Ministere des Mines, 2022, p. 42; 2023, p. 18).

IPIS’s survey found that a minimum of 137 columbite-tantalite mines were active in eastern Congo (Kinshasa); columbite-tantalite also was mined as a co-product of cassiterite or gold at a minimum of 121 mines. The D4 Gakombe and the Birambo columbite-tantalite mines in Nord-Kivu Province employed about 2,000 and 500 miners, respectively. About 700 miners were employed at the Tuluga Mine in Tanganyika Province, and 500 miners at the Ngoya Mine in Haut-Lomani Province (International Peace Information Service, 2023).

Niobium and tantalum were also contained in cassiterite produced in Congo (Kinshasa). Based on Congo (Kinshasa)'s historical niobium and tantalum production from slag at smelters, the estimated niobium and tantalum content of cassiterite in 2022 was 320 t and 490 t, respectively. In 2021, the estimated niobium and tantalum content of cassiterite was 280 t and 430 t, respectively (World Mining, 1979; Ellis, 1981; Republique Democratique du Congo Ministere des Mines, 2022, p. 29; 2023, p. 17).

**Tin.**—Tin was produced by Alphamin Resources Corp. of Mauritius and by artisanal and small-scale miners. Alphamin produced tin from a mine at the Mpama North deposit, which was part of the Bisie project in Nord-Kivu Province. The company exported 22,681 t of cassiterite in 2022 compared with 20,022 t in 2021. The tin content of Alphamin's production was 12,493 t in 2022 compared with 10,969 t in 2021. Alphamin planned to produce about 12,000 t of contained tin in 2023. In 2022, Alphamin was engaged in the development of a new mine at the Mpama South deposit, which was part of the Bisie project. The company planned to start mining at Mpama South in December 2023; contained tin production at Bisie could increase to about 20,000 t/yr (Republique Democratique du Congo Ministere des Mines, 2022, p. 33; 2023, p. 15; Alphamin Resources Corp., 2023, p. 2–3).

Artisanal and small-scale miners produced cassiterite in Maniema, Nord-Kivu, Sud-Kivu, and the former Katanga Provinces. Cassiterite output by artisanal and small-scale miners was 8,547 t in 2022. Miners in Maniema Province produced 3,701 t in 2022; in Sud-Kivu Province, 3,214 t; in Nord-Kivu Province, 848 t; and in the former Katanga Province, 784 t (Republique Democratique du Congo Ministere des Mines, 2023, p. 15–16).

IPIS's survey found that a minimum of 541 cassiterite mines were active in eastern Congo (Kinshasa); cassiterite also was mined as a co-product of columbite-tantalite, gold, or wolframite at a minimum of 79 mines. In the Manono Territory of Tanganyika Province, the Mille Beches mine employed 1,000 miners; the Congo Mine, 800 miners; and the Djibende Mine, 500 miners. The Kalimbi-T20 Mine in Sud-Kivu Province employed 1,000 miners; the Misheke G 18 Mine, 600 miners; and the Kibuye Mine, 500 miners. In Nord-Kivu Province, the Bisie Mpama Mine employed about 1,100 miners; the Nyagisenyi Mine, about 1,000 miners; and the Luwovo-Gasasa and the Misoke Mines, about 500 miners each. The Camp Tembo Mine in Maniema Province employed 500 miners (International Peace Information Service, 2023).

**Tungsten.**—Wolframite was mined in Maniema, Nord-Kivu, and Sud-Kivu Provinces and in the former Katanga Province. Congo (Kinshasa)'s production of wolframite increased to 297 t in 2022 from 220 t in 2021. Production in Sud-Kivu Province was nearly 130 t in 2022, and in the former Katanga Province, 115 t (Republique Democratique du Congo Ministere des Mines, 2022, p. 42; 2023, p. 19).

**Zinc.**—Gécamines, which was the only producer of zinc in Congo (Kinshasa), produced zinc at the Big Hill tailings treatment plant in Lubumbashi. In 2022, the company's zinc production decreased to 13,578 t from 16,079 t in 2021 and 15,305 t in 2020 (Republique Democratique du Congo Ministere des Mines, 2023, p. 24).

In February 2022, Ivanhoe completed a feasibility study on reopening the Kipushi zinc-copper mine, which is 30 kilometers southwest of Lubumbashi. Planned production in the study was 240,000 t/yr of zinc in concentrate during the estimated 14-year life of the mine. Capital costs of reopening the mine were estimated to be \$382 million. Ivanhoe signed an agreement with Gécamines to reopen the Kipushi Mine; production was expected to restart by late 2024 (Gleeson, 2022).

### *Industrial Minerals*

**Cement.**—National cement production increased to 2.12 Mt in 2022 from 1.63 Mt (revised) in 2021 and 398,749 t in 2015. Increased production since 2015 was attributable to the opening of new plants in Songololo in 2016, near Kimpese in 2017, and near Kolwezi in 2020. As of January 2022, PPC Barnet DRC Manufacturing S.A. (PPC Ltd. of South Africa, 69%, and Barnet Group, 21%) was producing at a rate of between 400,000 and 500,000 t/yr of cement at its plant near Kimpese. Cement consumption in Congo (Kinshasa) increased to 2.39 Mt in 2022 from 1.54 Mt in 2021 and 397,970 t in 2015 (International Cement Review, 2017, 2018; Global Cement, 2020; Kaapa and Gray, 2022; Banque Centrale du Congo, 2023, p. 4).

**Diamond.**—In 2022, Congo (Kinshasa)'s diamond production decreased to 11.7 million carats from 13 million carats in 2021 and 19.7 million carats in 2012. Decreased production from artisanal and small-scale miners more than offset the production from the large-scale Tshibwe Mine. In 2022, artisanal and small-scale diamond production was 7.4 million carats compared with 9.2 million carats in 2021 and 19.2 million carats in 2012. Artisanal and small-scale miners in Kasai-Oriental Province produced 8.72 million carats in 2021; in Kasai Province, 223,861 carats; and in Kasai Central Province, 200,957 carats. Industrial-quality diamond accounted for 85% of the country's diamond production in 2022, and gem-quality diamond, 15% (Banque Centrale du Congo, 2020, p. 2; Republique Democratique du Congo Ministere des Mines, 2022, p. 3–4; 2023, p. 3–4).

SACIM (Anhui Foreign Economic Construction Group of China, 50%, and Government-owned Société Congolaise d'Investissement Minier, 50%) produced mostly industrial-quality diamond at the Tshibwe Mine in Kasai-Oriental Province. In 2022, SACIM produced about 4.32 million carats compared with 3.61 million carats in 2021 (Republique Democratique du Congo Ministere des Mines, 2022, p. 2; 2023, p. 4).

**Lithium.**—AVZ Minerals Ltd. of Australia completed a feasibility study on a new mine at its Manono project in 2020. Planned production in the study was 700,000 t/yr of spodumene concentrates at a grade of 6% lithium oxide and 46,000 t/yr of primary lithium sulfate. The estimated life of Manono, which is in Tanganyika Province, was at least 20 years. As of the end of 2022, the company was engaged in a dispute regarding its purchase of a 15% share in Manono from Dathomir Mining Resources SARL (AVZ Minerals Ltd., 2021, p. 6–7; 2022).

### **Outlook**

Cobalt and copper production is expected to increase in the near future with the restart of the Mutanda Mine, the

expansion of the Kakula-Kamoa, Kinsevere, Mutoshi, and Tenke Fungurume Mines, and the startup of the KFM and Musonoi Mines. Tin production is expected to increase in 2023 because of the development of the Mpama South deposit. Zinc production could increase between 2024 and 2027 with the reopening of the Kipushi 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<sup>1</sup>

(Metric tons, gross weight, unless otherwise specified)

Commodity <sup>2</sup>	2018	2019	2020	2021	2022
<b>METALS</b>					
<b>Cobalt:</b>					
Mine, Co content, recoverable <sup>e,3</sup>	104,000	107,000	100,000 <sup>r</sup>	118,000 <sup>r</sup>	144,000
Refinery, metal <sup>4</sup>	60	--	--	--	--
<b>Copper:</b>					
<b>Mine:</b>					
Concentrates, Cu content <sup>e,5</sup>	239,546 <sup>r</sup>	300,901 <sup>r</sup>	240,618 <sup>r</sup>	345,717 <sup>r</sup>	584,279
Solvent extraction	945,607	1,126,500	1,325,600	1,428,975 <sup>6</sup>	1,890,359 <sup>6</sup>
<b>Total mine, Cu content<sup>e</sup></b>	<b>1,185,153<sup>r</sup></b>	<b>1,427,400<sup>r</sup></b>	<b>1,566,200<sup>r</sup></b>	<b>1,774,692<sup>r</sup></b>	<b>2,474,638</b>
Smelter, black, primary	47,000 <sup>e</sup>	62,000 <sup>e</sup>	119,059 <sup>6</sup>	123,037 <sup>6</sup>	157,017 <sup>6</sup>
<b>Refinery, primary:</b>					
Electrowon	945,607	1,126,500	1,325,600	1,428,975 <sup>6</sup>	1,890,359 <sup>6</sup>
Other	7,631	14,838	21,663	26,691 <sup>6</sup>	11,422 <sup>6</sup>
<b>Total primary refinery</b>	<b>953,238<sup>r</sup></b>	<b>1,141,800<sup>r</sup></b>	<b>1,347,300<sup>r</sup></b>	<b>1,455,666<sup>r</sup></b>	<b>1,901,781</b>
Germanium, mine, Ge content kilograms	--	3,000 <sup>e</sup>	14,000 <sup>e</sup>	17,000 <sup>e</sup>	16,000 <sup>e</sup>
Gold, mine, Au content <sup>e</sup> do.	44,000	42,000 <sup>r</sup>	42,000 <sup>r</sup>	42,000 <sup>r</sup>	43,000
Lead, mine, Pb content	--	625	--	-- <sup>e</sup>	-- <sup>e</sup>
Manganese, mine, ore	14,884	11,347	--	21,190	14,943
<b>Niobium and tantalum, mineral concentrates:</b>					
<b>Cassiterite:</b>					
Gross weight	16,273	18,532	26,678	28,628	32,855
Nb content <sup>e</sup>	160	180	260	280 <sup>r</sup>	320
Ta content <sup>e</sup>	240	280	400	430	490
<b>Columbite-tantalite:</b>					
Gross weight	1,839	1,313	1,712	1,441	2,221
Nb content <sup>e</sup>	320	230	300	250	390
Ta content <sup>e</sup>	410	290	380	320	490
<b>Tin, mine, concentrate:</b>					
Gross weight	16,273	18,532	26,678	28,628	32,855
Sn content	9,800 <sup>e</sup>	11,200	16,400 <sup>e</sup>	16,700 <sup>e</sup>	18,600 <sup>e</sup>
<b>Tungsten, mine:</b>					
Gross weight	380	504	226	220	297
Concentrate, W content <sup>e,7</sup>	180	240	110	100	140
Zinc content of mine production <sup>6</sup>	1,129	1,607	15,305	16,079	13,578
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic	1,168,643	1,382,769	1,283,968 <sup>r</sup>	1,629,327 <sup>r</sup>	2,122,295
<b>Diamond, by type:</b>					
Artisanal thousand carats	11,929	9,464	8,515	9,206	7,354 <sup>6</sup>
Large-scale do.	3,202	4,005	4,429	3,768	4,323 <sup>6</sup>
Gemstones, tourmaline	11 <sup>e</sup>	14 <sup>e</sup>	18	18 <sup>e</sup>	18 <sup>e</sup>
Stone, crushed, unspecified	396,800	324,000	323,200	411,000 <sup>r,e</sup>	410,000 <sup>e</sup>
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal, bituminous <sup>e</sup>	8,000	8,300	8,600	9,000	3,900
Petroleum, crude thousand 42-gallon barrels	8,393	8,162	8,737	8,578	7,485

<sup>e</sup>Estimated. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through September 11, 2023. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

<sup>2</sup>In addition to the commodities listed, amethyst, crude construction materials including brick, and sulfuric acid may have been produced, but available information is inadequate to make reliable estimates of output.

<sup>3</sup>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).

<sup>4</sup>Does not include production of cobalt in alloys, carbonate, hydroxide, and other materials that would require further refining.

<sup>5</sup>Recoverable content.

<sup>6</sup>Reported exports.

<sup>7</sup>Production estimated based on reported exports.

TABLE 2  
CONGO (KINSHASA): STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(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 Kongo Central 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.	Ciment et Matériaux du Katanga [Générale des Carrières et des Mines SA, (Gécamines), 97%]	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.
<b>Copper and cobalt:</b>			
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.	Mutanda Mining SPRL (Glencore plc, 100%)	Mutanda Mine in Lualaba Province	200,000 copper; 28,000 <sup>c</sup> cobalt.
Do.	Ivanhoe Mines Ltd.	Kakula-Kamoa Copper Complex in Lualaba Province	350,000 <sup>c</sup> copper.
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	314,000 copper; 25,000 <sup>c</sup> cobalt.
Do.	Sicomines [China Railway Group Ltd. and Sinohydro Corp., 68%; La Générale des Carrières et des Mines SA (Gécamines), 20%; and Société Immobilière du Congo (SIMCO), 12%]	Mashamba West Mine in Lualaba Province	254,000 copper; 5,180 cobalt.
Do.	La Minière de Kalumbwe Myunga (MKM) (China Railway Group Ltd., 80.2%)	Mine near Kolwezi	29,000 <sup>c</sup> copper; 2,200 <sup>c</sup> cobalt.
Do.	Eurasian Resources Group (ERG), 100%	Roan Tailings Retreatment project near Kolwezi	120,000 copper; 24,000 cobalt.
Do.	Eurasian Resources Group (ERG), 95%	Frontier Mine in Haut-Katanga Province	100,000 copper.
Do.	Boss Mining SPRL [Eurasian Resources Group plc, 51%, and Générale des Carrières et des Mines SA (Gécamines), 49%]	Mukondo Mountain Mine near Kakanda	22,000 copper; 3,600 cobalt.
Do.	Somidez Co. Ltd. [China Nonferrous Metals Corp. (CNMC), 51%, and La Générale des Carrières Carrières et des Mines SA (Gécamines), 49%]	Deziwa Mine in Lualaba Province	80,000 copper.
Do.	CNMC Huachin Mining Mabende (China Nonferrous Mining Corp. Ltd., 67.5%)	Mine at Mabende	39,000 <sup>c</sup> copper.
Do.	CNMC-Mabende Metal Leach SPRL (China Nonferrous Mining Corp. Ltd., 65%)	Plant at Lwisha	32,000 <sup>c</sup> copper.
Do.	CNMC Congo	Plant in Haut-Katanga Province	21,000 <sup>c</sup> copper.
Do.	La Compagnie Minière de Musonoie Global SAS (Zijin Mining Group Company Ltd., 72%)	Kolwezi Mine in Lualaba Province	130,000 <sup>c</sup> copper; 3,000 cobalt.
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 <sup>c</sup> copper.
Do.	Congo Dongfang International Mining SPRL <sup>2</sup> (Zhejiang Huayou Cobalt Co. Ltd., 98%)	Plants in former Katanga Province	73,000 <sup>c</sup> copper; 8,700 <sup>c</sup> cobalt.
Do.	Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Etoile Mine near Lubumbashi	51,500 copper; 8,700 <sup>c</sup> cobalt.

See footnotes at end of table.

TABLE 2—Continued  
 CONGO (KINSHASA): STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(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 Minière de Kalukundi (Wanbao Kingco Ltd., 75%, and Managem S.A., 20%).	Pumpi Mine in Lualaba Province	40,000 copper; 5,000 cobalt.
Do.	Shituru Mining Corp. SPRL (Pengxin Group, 72.5%)	Mines in Haut-Katanga Province	40,000 <sup>c</sup> copper.
Do.	La Générale des Carrières et des Mines SA (Gécamines) (Government, 100%)	Kamfundwa and Kilamusembu Mines in Haut-Katanga Province	20,000 <sup>c</sup> copper; 900 <sup>c</sup> cobalt. <sup>1</sup>
Do.	Société Minière du Katanga SPRL (Somika) (Kalyan Ltd., 50%, and Shukrana Ltd., 50%)	Mine near Lubumbashi	20,000 <sup>c</sup> copper; 3,500 <sup>c</sup> 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 <sup>c</sup> cobalt.
Do.	Comika Mining SAS (Wanbao Kingco Ltd., 70%)	do.	4,700 <sup>c</sup> cobalt.
Do.	Macrolink Jiayuan Mining SARL (Jiayuan Cobalt Holding Ltd., 99%)	do. <sup>1</sup>	3,800 <sup>c</sup> cobalt.
Do.	Minière de Kasombo (Zhejiang Huayou Cobalt Co. Ltd., 72%)	do.	2,600 <sup>c</sup> cobalt.
Do.	MPC	Mines in former Katanga Province	2,400 <sup>c</sup> cobalt.
Do.	Feza Mining SPRL	do. <sup>1</sup>	1,000 <sup>c</sup> cobalt.
Smelted <sup>3</sup>	China Nonferrous Metals Corp.	Plant in Lualaba Province	100,000 copper.
Do.	La Compagnie Minière de Musonoie Global SAS (Zijin Mining Group Company Ltd., 72%)	Plant in former Katanga Province	34,000 <sup>c</sup> copper.
Do.	Rubamin SPRL (Rubamin FZC, 80%)	Plant in Likasi	25,000 copper.
Refined <sup>3</sup>	Katanga Mining Ltd. [Glencore International AG, 75%, and Générale des Carrières et des Mines (Gécamines), 25%]	Luilu plant near Kolwezi	300,000 copper.
Do.	Mutanda Mining SPRL (Glencore plc, 100%)	Plant near Mutanda Mine	200,000 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	314,000 copper.
Do.	Sicomines [China Railway Group Ltd. and Sinohydro Corp., 68%; La Générale des Carrières et des Mines SA (Gécamines), 20%; and Société Immobilière du Congo (SIMCO), 12%]	Plant near Mashamba West Mine	254,000 copper.
Do.	La Minière de Kalumbwe Myunga (MKM) (China Railway Group Ltd., 80.2%)	Plant near Kolwezi	29,000 <sup>c</sup> copper.
Do.	Eurasian Resources Group (ERG), 100%	Roan Tailings Retreatment plant	120,000 copper
Do.	Boss Mining SPRL [Eurasian Resources Group plc, 51%, and Générale des Carrières et des Mines SA (Gécamines), 49%]	Luita plant near Kakanda	40,000 copper.
Do.	Somidez Co. Ltd. [China Nonferrous Metals Corp. (CNMC), 51%, and La Générale des Carrières et des Mines SA (Gécamines), 49%]	Deziwa Mine in Lualaba Province	80,000 copper.
Do.	CNMC Huachin Mining Mabende (China Nonferrous Mining Corp. Ltd., 67.5%)	Plant at Mabende	38,000 <sup>c</sup> copper.
Do.	CNMC-Mabende Metal Leach SPRL (China Nonferrous Mining Corp. Ltd., 65%)	Plant at Lwisha	26,000 <sup>c</sup> copper.
Do.	CNMC Congo	Plant in Haut-Katanga Province	21,000 <sup>c</sup> copper.
Do.	MMG Ltd., 100%	Kinsevere plant near Kinke	80,000 <sup>c</sup> 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 <sup>c</sup> 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 <sup>c</sup> copper.

See footnotes at end of table.

TABLE 2—Continued  
 CONGO (KINSHASA): STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Copper and cobalt—Continued:				
Refined—Continued <sup>3</sup>		Compagnie Minière de Luisha (COMILU)	Plant near Kolwezi	31,000 <sup>c</sup> copper.
Do.		Congo International Mining Corp. (China Railway Group Ltd., 51%,)	Plant in former Katanga Province	30,000 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 <sup>1</sup>	1,200 cobalt.
Do.		Société Minière du Katanga SPRL (Somika) (Kalyan Ltd., 50%, and Shukrana Ltd., 50%)	Plant near Lubumbashi	20,000 <sup>c</sup> copper.
Diamond	carats	Artisanal and small-scale miners	Mines in Kasai-Oriental Province	13,000,000. <sup>c</sup>
Do.	do.	do.	Mines in Kasai Province	2,200,000. <sup>c</sup>
Do.	do.	do.	Mines in Kasai-Central Province	1,400,000. <sup>c</sup>
Do.	do.	do.	Mines in Sankuru Province	370,000. <sup>c</sup>
Do.	do.	do.	Mines in Kwango Province	150,000. <sup>c</sup>
Do.	do.	do.	Mines in Tshopo Province	130,000. <sup>c</sup>
Do.	do.	Societe Anhui-Congo d'Investissement Minier SPRL (SACIM) [Anhui Foreign Economic Construction Group, 50%, and Société Congolaise d'Investissement Minier, 50%]	Tshibwe Mine in Kasai-Oriental Province	6,000,000.
Do.	do.	Société Minière de Bakwanga (MIBA) [Government, 80%, and Sibeka Group, 20% (which was owned by Mwana Africa plc)]	Mines at Mbuji Mayi in Kasai-Oriental Province <sup>1</sup>	900,000.
Do.	do.	Société Minière de Lupatapata (SMDL)	Mines in Kasai-Oriental Province <sup>1</sup>	220,000. <sup>c</sup>
Gemstones		Artisanal and small-scale miners	Mines at Rwangara and Shakubangwa in Nord-Kivu Province	20 <sup>c</sup> 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: Maniema Province 7 <sup>e</sup> me Seau, Musigha, Omate, and other mines in Nord-Kivu Province Bigobe, Carrière D 18 Nord, Carrière G7 Nord, Msisi, Ngoma, Paris Soir/Bagdad, and other mines in Sud-Kivu Province Tanganyika Province Amani Mbi, Maginda, Nokono, Paradise, Senzere and other mines in Ituri Province	22,000. <sup>c</sup> NA. NA. NA. NA. NA.
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 <sup>1</sup>	4,100.
Do.	do.	do.	Twangiza Mine in Sud-Kivu Province <sup>1</sup>	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 <sup>c</sup> columbite-tantalite.
Do.	do.	do.	Kahemba Nord, Kalongwe, Katutu, and other mines in Tanganyika Province	1,000 <sup>c</sup> columbite-tantalite.

See footnotes at end of table.

TABLE 2—Continued  
 CONGO (KINSHASA): STRUCTURE OF THE MINERAL INDUSTRY IN 2022

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Niobium (columbium) and tantalum—Continued		Artisanal and small-scale miners	Mines in Haut-Lomani Province	700 <sup>c</sup> columbite-tantalite.
Do.		do.	Mines in Haut-Katanga Province	340 <sup>c</sup> columbite-tantalite.
Do.		do.	Mines in Sud-Kivu Province	300 <sup>c</sup> columbite-tantalite.
Do.		do.	Mines in Maniema Province	80 <sup>c</sup> columbite-tantalite.
Petroleum, crude	thousand 42-gallon barrels	Perenco REP (subsidiary of Perenco plc), 100%	Kifuku, Kinkasi, Liawenda, Makelekese, Muanda, Nsiamfuma, and Tchiende onshore wells	5,480.
Do.	do.	Muanda International Oil Co. (subsidiary of Perenco plc), 50%; Inpex Corp., 32.3%; and ODS Ltd., 17.7%	Mibale, Motoba, and Tshiala offshore wells	3,650.
Stone, crushed		Chemaf SPRL (Shalina Resources Ltd., 99.68%)	Kilimasimba quarry near Lubumbashi	440,000.
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 in Lualaba Province	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 <sup>c</sup> cassiterite.
Do.		do.	Malenge, Musafiri, and other mines in Haut-Lomani Province	5,300 <sup>c</sup> cassiterite.
Do.		do.	Camp Tembo, Mukuku, and other mines in Maniema Province	4,400 <sup>c</sup> cassiterite.
Do.		do.	Lula, Mitwaba, and other mines in Haut-Katanga Province	3,800 <sup>c</sup> cassiterite.
Do.		do.	Kalimbi/T20, Kasenge, Kibuye, Nzombe, and other mines in Sud-Kivu Province	3,700 <sup>c</sup> cassiterite.
Do.		do.	Mines in Nord-Kivu Province	2,300 <sup>c</sup> cassiterite.
Do.		do.	Busanga and other mines in Lualaba Province	NA.
Do.		Alphamin Resources Corp., 84.14%	Mpama North Mine in Nord-Kivu Province	12,000 tin in concentrate.
Tungsten		Artisanal and small-scale miners	Mines in Sud-Kivu Province	240 <sup>c</sup> wolframite.
Do.		do.	Mines in Maniema Province	110 <sup>c</sup> wolframite.
Do.		do.	Mines in Nord-Kivu Province	90 <sup>c</sup> 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.

<sup>c</sup>Estimated. Do., do. Ditto. NA Not available.

<sup>1</sup>Not operating at the end of 2022.

<sup>2</sup>Company processed ore produced by artisanal miners

<sup>3</sup>Largest facilities listed; also several more small producers