



# 2014 Minerals Yearbook

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## TANZANIA

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# THE MINERAL INDUSTRY OF TANZANIA

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In 2014, Tanzania played a significant role in the global production of gold, accounting for about 1% of the world's gold mine output. The country was also the world's only producer of tanzanite. Other domestically significant mining and mineral processing operations included cement and natural gas. Tanzania was not a globally significant consumer of minerals or mineral fuels in 2014 (table 1; George, 2016, p. 31.15).

## Minerals in the National Economy

In 2014, the manufacturing sector accounted for 5.6% of the gross domestic product, and mining and quarrying, 3.7%. The value of output in the mining sector increased by 9.4% in 2014 compared with 3.9% in 2013. Large-scale mines employed 24,519 workers in 2014 compared with 17,351 workers in 2013. An estimated 700,000 artisanal miners produced bauxite, building materials, colored gemstones, copper, diamond, gold, tin, and other commodities. Artisanal miners accounted for 90% of employment in the gold-mining subsector (National Bureau of Statistics, 2015a, p. 70; 2015b, p. 37, 44; World Bank Group, 2015, p. 4).

## Government Policies and Programs

Tanzania is a signatory to the Kimberley Process Certification Scheme, which is a certification system established to reduce the trade in conflict diamond. The mining sector was governed by the Mining Act of 2010. The Minerals Division, which was part of the Ministry of Energy and Minerals, was responsible for mine inspections, licensing and mineral rights, and the regulation and promotion of artisanal and small-scale mining. Upstream natural gas and petroleum exploration and production were governed by the Petroleum Exploration and Production Act 1980. The Energy Division, which also was part of the Ministry of Energy and Minerals, was responsible for regulating natural gas and petroleum exploration and production.

## Production

In 2014, salt production increased by 120%; kaolin, by 110%; coal, by 97%; diamond, by 48%; pozzolanic materials, by 32%; aquamarine, by 26%; silver, by 24%; cement, by 20%; and copper and lime, by 17% each. The production of alexandrite decreased by 92%; limestone, by 71%; gypsum, by 29%; and bauxite, by 24% (table 1).

## Structure of the Mineral Industry

Most of Tanzania's gold mines were privately owned; the Minjingu phosphate mine and the Nyanza salt mine were also owned by private investors. In late 2013, Government-owned Stamico purchased the Tulawaka Mine, which subsequently was renamed the Biharamulo Mine, and a 50% stake in the large-scale tanzanite mining operations at Block C at Merelani.

The Government also held minority interests in the privately owned Ngaka coal mine and the Williamson diamond mine. Artisanal miners accounted for most of the country's colored gemstone production; crushed stone, diamond, and gold were also produced by artisanal miners.

## Mineral Trade

In 2014, minerals accounted for 26.1% of Tanzania's exports and at least 34.6% of its imports. Gold exports decreased in value to \$1.28 billion in 2014 from \$1.64 billion in 2013. The share of gold in total recorded exports was 23.5% in 2014; diamond, 1.3%; and colored gemstones, copper, silver, and other minerals combined, 1.2%. Imports of petroleum products decreased in value to \$3.66 billion in 2014 from \$4.31 billion in 2013. Petroleum products accounted for 33.5% of the value of total imports, and fertilizers, 1.1%. Industrial raw materials, which could include some minerals and mineral products, accounted for 8.1% of imports in 2014 (Bank of Tanzania, 2015, p. 32–33).

## Commodity Review

### Metals

**Copper and Nickel.**—Acacia Mining plc of the United Kingdom (formerly African Barrick Gold plc) (Barrick Gold Corp. of Canada, 63.9%) produced 6,382 metric tons (t) of copper as a joint product at the Bulyanhulu and the Buzwagi gold mines in 2014 compared with 5,430 t in 2013. Artisanal miners produced high-grade azurite and malachite ores at Mbesa (Acacia Mining plc, 2015, p. 26, 28).

In late 2013, IMX Resources Ltd. of Australia and MMG Ltd. of China formed a joint venture to explore at the Nachingwea project in southeastern Tanzania. IMX and MMG hoped to increase nickel resources; the Ntaka Hill deposit at Nachingwea had resources of 36 million metric tons (Mt) at grades of 0.66% nickel and 0.14% copper. MMG withdrew from the joint venture in July 2014; IMX was assessing its plans for Ntaka Hill at yearend (Washbourne, 2015).

In the fourth quarter of 2014, Kibaran Resources Ltd. of Australia was considering the divestment of its Kagera nickel project because of its plans to focus on the development of a new graphite mine. Kibo Mining plc of Ireland put the development of its Haneti project on hold because of its plans to focus on coal and gold projects (Breytenbach, 2014).

**Gold and Silver.**—In 2014, Acacia produced 8,516 kilograms (kg) of gold at the North Mara Mine compared with 7,985 kg in 2013 because of increased recovery rates and volumes of ore milled. At the Bulyanhulu Mine, output increased to 7,303 kg in 2014 from 6,167 kg in 2013 because of higher ore grades and the commissioning of a new plant to process tailings. Production also increased at the Buzwagi Mine to 6,534 kg in 2014 from

5,660 kg in 2013 because of increased ore grades and recovery rates (Acacia Mining plc, 2015, p. 26–28, 30).

Acacia planned to produce between 23,000 and 25,000 kg of gold at Bulyanhulu, Buzwagi, and North Mara combined in 2015 and nearly 26,500 kg in 2016. Production at Bulyanhulu was expected to reach nearly 11,000 kilograms per year (kg/yr) by the end of 2015 because of increased processing of tailings, improved mining practices, and the development of the Upper East Zone project. Production from the Upper East Zone project was likely to be about 1,900 kg/yr; the estimated life of the project was more than 25 years. The remaining life of the Bulyanhulu Mine was estimated to be more than 30 years; North Mara, 9 years; and Buzwagi, 5 years (Engineering & Mining Journal, 2014; Acacia Mining plc, 2015, p. 2, 13).

Geita Gold Mining Ltd. (a subsidiary of AngloGold Ashanti Ltd. of South Africa) produced about 14,800 kg of gold at the Geita Mine in 2014 compared with 14,300 kg in 2013. Increased volumes of ore milled more than offset decreased ore grades. Production was likely to be between 14,300 and 15,400 kg in 2015 (AngloGold Ashanti Ltd., 2015, p. 100–101, 118).

In October 2014, Shanta Gold Ltd. of the United Kingdom estimated that reserves at the New Luika Mine were 4.95 Mt at a grade of 4.33 grams per metric ton (g/t) gold. The company produced 2,614 kg of gold and 3,152 kg of silver at New Luika in 2014; production was 1,992 kg of gold and 776 kg of silver in 2013. Planned production at New Luika was likely to be between 2,200 and 2,300 kg of gold in 2015. Shanta planned to complete a study on extending the life of the mine by the third quarter of 2015. The company was upgrading a feasibility study on a new mine at the Singida project. Implementation of the Singida project was postponed because of the relocation of local residents (Shanta Gold Ltd., 2015, p. 3–4).

Stamigold Co. Ltd. (a subsidiary of Stamico) restarted mining at the Biharamulo Mine in August 2014. The company planned to produce about 330 kg of gold from a new pit at Biharamulo in 2014 and more than 1,200 kg in 2015. Actual production in 2014 was about 190 kg. The remaining life of the mine was 3 years; Stamigold was engaged in exploration to extend the mine's life (Inside Mining, 2014; Ngonyani, 2014).

Tanzanian Royalty Exploration Corp. of Canada and its joint-venture partner Stamico completed heap leach pads for a new mine at the Buckreef project in 2014. The companies planned to start gold production in 2015. Production was expected to start at the rate of more than 1,200 kg/yr of gold and increase subsequently to 4,700 kg/yr. By 2020, Tanzanian Royalty and Stamico were likely to produce 6,200 kg/yr (Tanzanian Royalty Exploration Corp., 2015).

Tanzanian Royalty received a mining license for the Kigosi project. As of August 2014, the development of Kigosi was on hold because of environmental concerns. The company also held the Itetemia project, which had resources of 4.23 Mt at a grade of 3.1 g/t gold, and the Luhala project, which had resources of 1.86 Mt at a grade of 1.87 g/t gold. Tanzanian Royalty relinquished 39 prospecting and other licenses between September 2013 and August 2014 because of its plans to focus on the development of Buckreef (Tanzanian Royalty Exploration Corp., 2015).

In October 2014, Kibo announced plans to complete prefeasibility and feasibility studies of a new mine at its Imerwu Gold project within 12 months. Resources at Imerwu were estimated to be 15 Mt at a grade of 1.14 g/t gold (Kibo Mining plc, 2014a).

Resolute Mining Ltd. of Australia engaged in exploration at the Nyakafuru project, which had estimated reserves of 7.36 Mt at a grade of 1.6 g/t gold. Nyakafuru had additional resources of 25.4 Mt at a grade of 1.1 g/t gold. The company hoped to identify additional reserves at Nyakafuru; production levels of more than 3,100 kg/yr over a lifetime of at least 6 to 7 years were estimated to be necessary to build a new mine (Mining Review Africa, 2013; Resolute Mining Ltd., 2014, p. 6, 8, 26–27).

In 2014, Helio Resource Corp. of Canada engaged in drilling at its SMP property in the Lupa Goldfield in southwestern Tanzania. Tembo Gold Corp. of Canada drilled at its Tembo project, which was adjacent to the Bulyanhulu Mine. Rift Valley Resources Ltd. of Australia started drilling at the Kitongo project in September; resources at Kitongo were estimated to be 4.4 Mt at a grade of 2 g/t gold. IMX engaged in exploration at the Kishugu gold prospect at the Nachingwea project in 2014 (African Mining, 2014; Rift Valley Resources Ltd., 2014, p. 1, 6; Washbourne, 2015).

**Iron and Steel, Iron Ore, Titanium, and Vanadium.**—State-owned National Development Corp. (NDC) and Sichuan Hongda Company Ltd. of China were engaged in a joint venture to develop the Liganga iron ore deposits, which also contained titanium and vanadium. Inferred resources at Liganga were estimated to be more than 1.5 billion metric tons at grades of 50% iron, 13% titanium dioxide, and 0.4% vanadium pentoxide. NDC and Sichuan Hongda planned to produce 2.9 million metric tons per year (Mt/yr) of iron ore for consumption in a new steel plant; crude steel output was likely to be 1.1 Mt/yr. The companies planned to process the iron ore to direct-reduced iron and subsequently to steel. In September 2014, the Government announced plans to start construction in 2015. The mine and plant were expected to start production in 2018 or 2019. The estimated capital cost of the mine and plant was \$1.7 billion (Ministry of Energy and Minerals, 2005, p. 87; Magomba, 2014; Stone, 2015).

**Niobium.**—In January 2014, Cradle Resources Ltd. of Australia completed a scoping study with favorable results on a new mine at the Panda Hill carbonatite deposit, which is located 35 kilometers (km) southwest of Mbeya. The company was considering the production of about 6,900 metric tons per year (t/yr) of niobium pentoxide ( $\text{Nb}_2\text{O}_5$ ) that would be processed into ferroniobium, which had a niobium content of about 66%. Cradle planned to complete prefeasibility and feasibility studies at Panda Hill by the first and fourth quarters of 2015, respectively. Depending on the results of the studies, construction could start in 2016. Resources at Panda Hill were estimated to be 96 Mt at a grade of 0.52%  $\text{Nb}_2\text{O}_5$ . The estimated life of the mine was 28 years (Cradle Resources Ltd., 2014, p. 10; 2015, p. 7–8, 10–11).

## **Industrial Minerals**

**Cement.**—Tanzania's cement production capacity increased to 5 Mt/yr in 2014 from 3.7 Mt/yr in 2013. Tanzania Portland Cement Company Ltd. (TPCC) increased its cement production capacity at Wazo Hill to 2.2 Mt/yr from 1.4 Mt/yr in September. ARM Cement Ltd. of Kenya completed its new plant at Tanga with a capacity of 1.2 Mt/yr of clinker in November. The company planned to complete a new cement plant at Tanga with a capacity of 750,000 t/yr by mid-2016. In July 2014, Lake Cement Ltd. started production at its new plant at Kimbiji in Temeke District. Lake Cement planned to increase its capacity to 750,000 t/yr from 500,000 t/yr because of high demand (ARM Cement Ltd., 2015, p. 18, 28, 32; International Cement Review, 2015a; Property International Magazine, 2015).

Dangote Cement plc of Nigeria planned to complete a new cement plant at Mtwara in southern Tanzania with a capacity of 3 Mt/yr in 2015. The company planned to export its production to other countries in the East African Community, Democratic Republic of the Congo [Congo (Kinshasa)], and Malawi. Tanga Cement Company Ltd. planned to increase the capacity of its clinker plant by 910,000 t/yr in the second half of 2015 (International Cement Review, 2014, 2015b).

**Diamond.**—Petra Diamonds Ltd. of the United Kingdom operated the open pit Williamson Mine, which produced most of the diamond mined in Tanzania. The company mined 201,105 carats from open pit and alluvial operations in 2014 compared with 158,562 carats in 2013. Production was limited by heavy rainfall in the first quarter of 2014 and constraints in the processing plant. Petra planned to increase production to 300,000 carats per year by mid-2016. Resources at Williamson were estimated to be 33.1 million carats (Mining Weekly, 2014; Petra Diamonds Ltd., 2015, p. 14–15; World Bank Group, 2015, p. 30).

**Gemstones.**—Tanzania produced a variety of gemstones that included amethyst, aquamarine, cordierite, emerald, garnet, ruby, sapphire, spinel, tanzanite, and tourmaline. In 2014, aquamarine production increased to 1,540 kg from 1,222 kg in 2013 and alexandrite production decreased to 1 kg from 13 kg.

Tanzanite accounted for 59% of the value of domestic gemstone mining in 2014. Large-scale mines accounted for 64% of the value of tanzanite produced in 2014, and artisanal and small-scale miners, 36%. Artisanal and small-scale miners accounted for 74% of the value of other gemstones produced in 2014, and large-scale mines, 26% (World Bank Group, 2015, p. 31).

Merelani, which is located near Arusha, was the world's only source of tanzanite. Artisanal and small-scale miners operated in Blocks B and D of the Merelani deposit. Kilimanjaro Mines Ltd. and Tanzanite Africa Ltd. operated medium-scale mines in Block A and the Block D Extension, respectively (table 2).

Richland Resources Ltd. of Bermuda mined tanzanite in Block C; the company also cut high-quality tanzanite at its lapidaries in Tanzania. In 2014, Richland produced 615 kg of rough tanzanite compared with 690 kg in 2013. Output was limited by incursions of artisanal miners from Blocks B and D. In December, Richland's shareholders approved the

sale of the company's 50% share to Sky Associates Group Ltd. (Richland Resources Ltd., 2015, p. 6, 12).

Tsavorite, which is a green grossular garnet that obtains its color from trace amounts of chromium and vanadium, was mined near Merelani. Richland put its Lemshuku-Shamberai tsavorite exploration project on hold in 2014; the project was located about 20 km southwest of the tanzanite mines (Richland Resources Ltd., 2015, p. 6).

**Graphite.**—In August 2014, Kibaran estimated that resources at the Epanko project were 22.7 Mt at a grade of 9.8% graphite. The company was engaged in a feasibility study on a new mine at Epanko; the study was likely to be completed by mid-2015. Depending on the results of the study, mining was expected to start in 2016. Epanko planned to produce 40,000 t/yr of graphite concentrate during the estimated 27-year life of the mine (Breytenbach, 2014).

In late December 2014, Magnis Resources Ltd. of Australia (formerly Uranex Ltd.) completed a prefeasibility study on a new mine at the Nachu graphite project with favorable results. Magnis planned to complete environmental and feasibility studies on Nachu by the end of the second quarter of 2015. Depending on the results of the studies, mining could start by the end of 2016. Production was projected to be 180,000 t/yr of concentrate at a grade of 94% graphite; Magnis signed offtake agreements for 5 years of the mine's entire output in December. Resources at Nachu were estimated to be 156 Mt at a grade of 5.2% graphite (Cann, 2015; Magnis Resources Ltd., 2015, p. 3–6).

In 2014, IMX and MMG were engaged in drilling at the Chilalo graphite prospect at the Nachingwea project. IMX planned an initial resource estimate at Chilalo by the end of the first quarter of 2015 (Washbourne, 2015).

**Rare Earths.**—In March 2014, Peak Resources Ltd. of Australia estimated that reserves at its Ngualla Rare Earth project were 20.7 Mt at a grade of 4.54% rare-earth oxide (REO). Peak Resources also completed a prefeasibility study on a new mine at Ngualla in March with favorable results; the company planned to complete a feasibility study in 2015. Depending on the results of the study, production could be 10,000 t/yr of rare-earth oxides starting in 2018. Neodymium oxide was likely to account for 46% of the value of production at Ngualla; praseodymium oxide, 27%; cerium oxide, 9%; lanthanum oxide, 7%; and heavy rare-earth oxides, 11% (Peak Resources Ltd., 2015).

## **Mineral Fuels and Related Materials**

**Coal.**—Intra Energy Corporation Ltd. of Australia and its joint-venture partner NDC operated a coal mine at the Ngaka coalfield in Ruvumu District. Production increased in 2014 to 249,495 t from 128,920 t in 2013 because of increased demand; Intra Energy and NDC planned to increase production to 500,000 t/yr by the end of 2015. Intra Energy also planned to build a new coal-fired power station with a capacity of 600 megawatts (MW) in the Mbinga District, of which 200 MW would be completed by 2017 (Stone, 2015).

NDC and Sichuan Hongda planned to build a new mine at the Mchuchuma coal deposits in western Tanzania that

would produce 3 Mt/yr of coal. Reserves at Mchuchuma were estimated to be 526 Mt. The companies also planned to build a new coal-fired power station with a capacity of 600 MW at Mchuchuma; power from the new plant would be consumed at Liganga. In September 2014, the Government announced plans to start construction in 2015. The mine and plant were expected to start production in 2018 or 2019. The estimated capital cost of the mine and plant was \$1.2 billion (Magomba, 2014; Stone, 2015).

In December 2014, Kibo completed a feasibility study of a new mine at the Rukwa project in southwestern Tanzania with favorable results. The mine would produce an average of 1.48 Mt/yr of coal for use in a new power station with a capacity of 300 MW. The estimated life of the mine was 27 years. Kibo also completed a prefeasibility study of the new power station with favorable results in December. Depending on the results of a feasibility study of the power station, the company planned to complete the mine and power station by 2018 (Africa Project Newsletter, 2014; Kibo Mining plc, 2014b, c).

In November 2014, Edenville Energy plc of the United Kingdom started a feasibility study of a new coal-fired power station with a capacity of at least 100 MW. Edenville planned to complete the study in the first quarter of 2015. Depending on the results of the study, the company could open a new coal mine with an estimated 30-year life to supply its power station. Measured and indicated resources at the Mkomolo, the Muze, and the Namwele coal deposits were estimated to be 170 Mt (Edenville Energy plc, 2014).

**Natural Gas.**—In 2014, Orca Exploration Group Inc. produced 928 million cubic meters of natural gas from Songo Songo Island compared with 995 million cubic meters in 2013. Gas-fired power stations and cement and glass plants were the leading consumers of gas from Songo Songo. The capacity of Orca's gas processing plant was 1.14 billion cubic meters per year, and the pipeline, 1.05 billion cubic meters per year. At yearend, the production capacity of the gasfields was limited to 920 million cubic meters per year. The company planned to engage in drilling in mid-2015 to increase the gasfields' capacity to 1.05 billion cubic meters per year (Orca Exploration Group Inc., 2015, p. 22–23, 35, 44).

Etablissements Maurel et Prom SA of France and its joint-venture partners operated the Mnazi Bay offshore gas project in the Rovuma Basin. Natural gas from Mnazi Bay was consumed at a power station with a capacity of 18 MW. In 2014, China National Petroleum Corp. was building a new 487-km pipeline from Mnazi Bay to gas-fired power stations in Dar es Salaam. The completion of the pipeline was scheduled for the first quarter of 2015; a new gas processing plant with a capacity of 2.17 billion cubic meters per year was also under construction. Maruel et Prom and its joint-venture partners planned to produce 830 million cubic meters in early 2015 and to increase production to more than 1.3 billion cubic meters by yearend (Wentworth Resources Ltd., 2014, p. 5–8).

In 2014, BG Group plc and Ophir Energy plc (both of the United Kingdom) discovered 48 billion cubic meters of additional reserves at the offshore Blocks 1 and 4. The companies estimated that total recoverable reserves in Blocks 1, 3, and 4 were 484 billion cubic meters of natural gas at yearend.

Ophir and Mubadala Petroleum of the United Arab Emirates explored in Block 7 in 2014; the Mkuki-1 well was not prospective for hydrocarbons (Ophir Energy plc, 2015, p. 25).

In June 2014, Statoil ASA of Norway and ExxonMobil of the United States estimated that reserves were between 57 billion and 85 billion cubic meters at the newly drilled Piri-1 well in the offshore Block 2. Total recoverable reserves at Block 2 were estimated to be 385 billion cubic meters (Musarra, 2014).

BG and Statoil were considering the development of a liquefied natural gas (LNG) plant near Mtwara that would use natural gas from Blocks 1, 2, 3, and 4. The plant would have a capacity of 10 Mt/yr of LNG, which was equivalent to 13.8 billion cubic meters per year of natural gas. BG and Statoil could make an investment decision by 2015 or 2016; production could start between 2020 and 2022. The estimated capital cost of the project was more than \$20 billion (Baunsgaard, 2014, p. 10; Musarra, 2014).

**Uranium.**—Uranium One Inc. of Canada (Rosatom of Russia, 100%) completed a new feasibility study on a mine at the Mkuju River project in December 2013. A previous feasibility study estimated that Mkuju River could support a new uranium mine with average production of 1,900 t/yr of uranium oxide ( $U_3O_8$ ) over an estimated 12-year mine life. Uranium One was in negotiations with the Government over the terms of a mining agreement at yearend; as a result, the beginning of construction at Mkuju River was delayed (Thompson, 2011; Uranium One Inc., 2015, p. 20–21).

Uranium Resources plc of the United Kingdom held the license to explore for uranium at the Mtonya project, which had contained resources of more than 910 t of  $U_3O_8$ . The company planned to start a new exploration program at Mtonya in June 2015. East Africa Resources Ltd. of Australia announced plans to relinquish its Mkuju South licenses in 2014 after its joint-venture partner decided not to proceed further with the project (East Africa Resources Ltd., 2014; Uranium Resources plc, 2015).

## Outlook

Tanzania's production of cement, coal, diamond, and natural gas is expected to increase in the near future. Cement output is likely to increase from 2015 through 2018 because of the opening of new plants and the expansion of existing plants. Coal production is expected to increase from 2014 through 2020 because of the rampup at the Ngaka Mine and the opening of the Mchuchuma and the Rukwa projects. Diamond production is likely to increase from 2015 through 2017 because of the expansion at the Williamson Mine. The outlook for natural gas production is to increase from 2015 through 2017 and from 2021 through 2023 because of the expansion of the Mnazi Bay project and the new LNG plant near Mtwara. The mining of graphite is expected to start in 2016, and iron ore, niobium, and rare earths in 2018. Uranium production also could start in the near future.

Gold output is likely to increase between 2015 and 2018 because of the expansion of the Bulyanhulu Mines and the opening of the Buckreef, the Kigosi, and the Singida Mines. Starting in 2019, gold production is likely to decrease because of the closure of the Buzwagi Mine.

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

(Metric tons unless otherwise specified)

Commodity <sup>2</sup>	2010	2011	2012	2013	2014 <sup>e</sup>
Bauxite <sup>e</sup>	39,000	37,700 <sup>r</sup>	59,030 <sup>r,3</sup>	33,940 <sup>r,3</sup>	25,641 <sup>3</sup>
Calcite	152	70 <sup>e</sup>	--	5 <sup>r</sup>	5
Cement, hydraulic thousand metric tons	2,312	2,409	2,581	2,346 <sup>r</sup>	2,809 <sup>3</sup>
Coal, bituminous	179	80,710	78,672	128,920	254,456 <sup>3</sup>
Copper, contained in concentrates and dore	6,392	6,748	8,800 <sup>r</sup>	15,400 <sup>r</sup>	18,000
Diamond <sup>4</sup> carats	80,498	28,378	127,174	171,391 <sup>r</sup>	252,875 <sup>3</sup>
Gemstones, excluding diamond: <sup>e,5</sup>					
Alexandrite kilograms	-- <sup>3</sup>	--	--	13 <sup>r,3</sup>	1 <sup>3</sup>
Amethyst do.	160	160	160	160	160
Aquamarine do.	466 <sup>3</sup>	470	470	1,222 <sup>r,3</sup>	1,540 <sup>3</sup>
Garnet do.	9,934 <sup>3</sup>	10,000	10,000	10,000	10,000
Ruby do.	1,600	1,600	1,600	1,700	1,700
Sapphire do.	800	800	800	900	900
Tanzanite <sup>3</sup> do.	2,001	823	759	900	900
Tourmaline do.	9,530 <sup>3</sup>	9,600	9,600	9,600	9,600
Gold do.	39,448	42,300	40,650	42,534	40,481 <sup>3</sup>
Gypsum and anhydrite, crude	26,918	9,288	91,610	280,476	200,179 <sup>3</sup>
Kaolin	58	178	2,161	1,816	3,809 <sup>3</sup>
Lime <sup>e</sup>	30,000	50,000	85,000	120,000	140,000
Natural gas <sup>6</sup> million cubic meters	790	869	992	995	928 <sup>3</sup>
Phosphate rock:					
Gross weight	17,180	18,000 <sup>e</sup>	19,984	20,000 <sup>e</sup>	20,000
P <sub>2</sub> O <sub>5</sub> content	5,200	5,400 <sup>e</sup>	5,600	5,600 <sup>e</sup>	5,600
Salt, all types	34,455	32,297	34,016	34,032	74,967 <sup>3</sup>
Silver, contained in concentrates and dore kilograms	12,470	10,399	11,227	11,721 <sup>r</sup>	14,493 <sup>3</sup>
Steel:					
Crude <sup>e</sup>	190,000	180,000	200,000	180,000	190,000
Rolled	126,054	118,249	133,239	121,362 <sup>r</sup>	129,555 <sup>3</sup>
Stone, sand, and gravel:					
Aggregates	152,781	150,000 <sup>e</sup>	150,000 <sup>e</sup>	150,000 <sup>e</sup>	150,000
Limestone, crushed	1,436,600	1,972,100	1,224,475	3,899,151	1,116,827 <sup>3</sup>
Marble	1,109	1,100 <sup>e</sup>	2,153	10,719	11,000
Pozzolanic materials	60,320	113,489	75,193	52,349	68,925 <sup>3</sup>

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. <sup>r</sup>Revised. do. Ditto. -- Zero.

<sup>1</sup>Table includes data available through August 24, 2015.

<sup>2</sup>In addition to the commodities listed, smelter copper and modest quantities of crude construction materials, including brick clay, were produced, but available information was inadequate to make reliable estimates of output.

<sup>3</sup>Reported figure.

<sup>4</sup>Estimated to represent 85% gem-quality and 15% industrial-quality stones. Does not include smuggled artisanal production.

<sup>5</sup>Other precious and semiprecious stones produced include chrysoprase, kyanite, moonstone, opal, peridot, quartz, and spinel. Does not include smuggled artisanal production.

<sup>6</sup>Orca Exploration Group Inc. only; Artumas Group Inc. also produced small amounts of natural gas.

TABLE 2  
TANZANIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2014

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Tanzania Portland Cement Company Ltd. (TPCC) (Scancem International DA, 69.25%)	Plant at Wazo Hill	2,200,000.
Do.		Tanga Cement Company Ltd. [Afrisam Consortium (Pty) Ltd., 62.5%]	Plant at Tanga	1,200,000.
Do.		ARM Cement Ltd.	Plant at Dar es Salaam	750,000.
Do.		Lake Cement Ltd.	Plant at Kimbiji	500,000.
Do.		Mbeya Cement Company Ltd. (LaFarge Group, 61.5%)	Plant at Mbeya	350,000.
Coal, bituminous		Intra Energy Corp. Ltd and National Development Corp.	Ngaka Mine	420,000.
Copper, mine		Acacia Mining plc (Barrick Gold Corp., 63.9%)	Bulyanhulu Mine near Kahama	6,400.
Do.		do.	Buzwagi Mine	4,200.
Diamond	carats	Williamson Diamonds Ltd. (Petra Diamonds Ltd., 75%, and Government, 25%)	Williamson Mine near Shinyanga	220,000.
Do.	do.	New Alamasi	Near Shinyanga	13,000. <sup>c</sup>
Do.	do.	Mwadui Mpya Pit	do.	6,000. <sup>c</sup>
Do.	do.	Artisanal miners	Near Shinyanga	NA.
Gold	kilograms	Geita Gold Mining Ltd. (AngloGold Ashanti Ltd., 100%)	Geita Mine near Nyakabale	15,000.
Do.	do.	Acacia Mining plc	North Mara Mine in Tarime District	10,200.
Do.	do.	do.	Bulyanhulu Mine near Kahama	9,800.
Do.	do.	do.	Buzwagi Mine	7,500.
Do.	do.	Shanta Gold Ltd.	New Luika Mine	3,600.
Do.	do.	Stamigold Co. Ltd. (a subsidiary of Stamico)	Biharamulo Mine	1,200. <sup>c</sup>
Do.	do.	Small-scale miners	At least 39 plants in various locations	1,100. <sup>c</sup>
Lime		Neelkanth Lime Ltd.	Plant at Tanga	144,000.
Do.		Athi River Mining Ltd. (ARM)	Plant at Tanga	40,000.
Natural gas	million cubic meters	Orca Exploration Group Inc.	Gasfield on Songo Songo Island	1,140.
Do.	do.	Etablissements Maurel et Prom SA, 38.22%, and Wentworth Resources Ltd., 25.4%	Gasfield at Mnazi Bay	100.
Phosphate rock		Minjingu Mines and Fertilizers Ltd. (subsidiary of Mac Group of Companies)	Mine at Minjingu	100,000.
Salt		Nyanza Mines (Tanganyika) Ltd. (subsidiary of Group of Companies)	Nyanza Mines at Uvinza	60,000.
Silver	kilograms	Acacia Mining plc	Bulyanhulu Mine near Kahama	8,900.
Do.	do.	Shanta Gold Ltd.	New Luika Mine	4,800.
Steel		Aluminum Africa Ltd.	Plant at Dar es Salaam	70,000 <sup>c</sup> rolled.
Do.		MM Integrated Steel Mills Ltd.	do.	36,000 <sup>c</sup> rolled.
Do.		Steel Masters Ltd.	do.	22,000 rolled.
Do.		Aluminum Africa Ltd.	do.	70,000 galvanized.
Do.		MM Integrated Steel Mills Ltd.	do.	36,000 galvanized.
Tanzanite	kilograms	Richland Resources Ltd., 50%, and State Mining Co., 50%	Mine at Merelani, Block C	1,200.
Do.	do.	Tanzanite Africa Ltd. (IPP Media Ltd.)	Mine at Merelani, Block D Extension	NA.
Do.	do.	Kilimanjaro Mines Ltd.	Mine at Merelani, Block A	NA.
Do.	do.	Small-scale and artisanal miners	Mines at Merelani, Blocks B and D	7,500. <sup>c</sup>

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.