

Ghana's Mining Sector Report

November 2022





Contents

01

Why invest in
Ghana

Page 3

02

Sector
overview

Page 6

03

Sector
opportunities

Page 33

04

Key investment
considerations

Page 35

05

Testimonials

Page 37

06

Contact us

Page 39

07

Appendix

Page 41



1

Why invest in Ghana

Why invest in Ghana

Country overview

- Formerly known as the Gold Coast, Ghana was the first sub-Saharan nation to gain independence from colonial rule in 1957.
- Ghana is credited as being one of the most stable democracies in Africa, having successfully conducted 8 national elections and recorded no incidence of a coup d'état since 1992.

Airports



- 1 international airport
- 5 domestic airports

Railway



- 3 major railway networks with a total track length of 1,300 km

Dry ports



- Tema Port
- Takoradi Port

Road network



- Main roads: 67,291 Km
- Main arteries : 12,800 Km
- Paved roads: 3,800 Km

Internal infrastructure

Total land area

Overview: Ghana has total land area of 238,537 sq.km

Ghana has 16 administrative regions and 261 district assemblies.

Electricity supply

- Ghana's electricity supply is derived from hydropower generated from the Akosombo, Bui Power and Kpong dams, and 10 thermal plants at Aboadze in Western Region.
- According to World Bank, Ghana has an 86.63% (2021) access to electricity rate.

Water supply

Water is provided to citizens through the Ghana Water Company Limited, Community Water and Sanitation Agency and private water producers.

Locational advantage

- Ghana is geographically closer than any other country to the center of the earth.
- Ghana has 2 harbors with one being the largest in West Africa, making Ghana the gateway to West Africa.



Why invest in Ghana

Investment attractions

2nd largest economy in West Africa <ul style="list-style-type: none"> Ghana has an active retail market and healthy consumption levels. Fitch reports, household spending is expected to increase from US\$55bn in 2021 to USD81bn in 2025. AfCFTA presents an opportunity for intra-regional growth by leveraging access to common markets and knowledge transfer through labour mobility, thereby attracting foreign direct investments into the region. The AfCFTA secretariat is located in Ghana. 	Rich in natural resources <ul style="list-style-type: none"> Ghana was the largest (No.1) producer of gold in Africa and 6th largest in the world in 2021. 13,000 metric tonnes of manganese reserve. 16.86 million tonnes of high-grade trihydrate bauxite mined since 1997. Newly discovered deposits of lithium in 2021 amounting to 30.1million tonnes, setting Ghana up to become West Africa's first lithium producer. 	Preferred tourism destination <ul style="list-style-type: none"> International arrivals of tourist increased from 932,579 in 2016 to 1,130,307 in 2019, however 2020 saw a reduction to 355,108 due to lockdown measures in response to Covid -19. As at September 2021, international tourist arrivals increased by 18% while domestic tourists grew by 58%. 	Youthful population <ul style="list-style-type: none"> Ghana is blessed with a very youthful population, about 67% of the population is within the ages of 15 to 64 years. Government initiative such as free basic and secondary has ensured a 69.8% literacy rate for citizens who are 6 years and older as at 2021.
Stable political environment <ul style="list-style-type: none"> Ghana is ranked the second most peaceful country in Africa and the 38th most peaceful country in the world as per the 2021 Global Peace Index. Due to provisions made in the constitution of Ghana (article 20) and Free Zones Act (Act 504) there is a reduced threat of nationalism of private businesses. 	Investor-friendly government initiatives <ul style="list-style-type: none"> Government has initiated a plethora of incentives to ensure a conducive and enabling business environment. Government incentives include tax holidays, rebates, provision of industrial parks, provision of finance through partnering agencies and interest subsidies. Ghana has double taxation agreements with the United Kingdom, South Africa and other EU countries. 	Top investment destination <ul style="list-style-type: none"> Foreign Direct Investment (FDI) has averaged \$2.72b from 2017 to 2021, suggesting stability in the inflow of capital with investment focus in oil and gas, mining (including gold and manganese), and agriculture (cocoa). Ghana attracted US\$2.65bn in FDI inflows in 2020, one of the highest amount in West Africa. 	Agrarian economy <ul style="list-style-type: none"> Ghana is endowed with vast arable lands rich in agriculture. In 2020, Ghana was the 2nd largest producer of cocoa in the world, the 4th largest producer of cassava in the world. Ghana is blessed with fertile land for the production of maize, tomato, rice among many other food crops.

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Sector overview

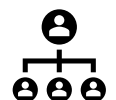


Sector overview

Overview of the mining sector of Ghana



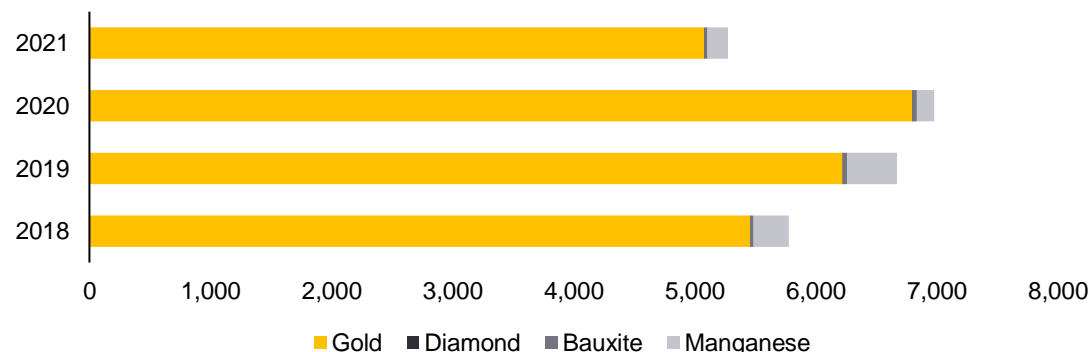
Largest producer of gold in Africa between 2018 and 2021.



6th largest producer of gold in the world in 2021

- ▶ Ghana's landscape is made up of a myriad of minerals ranging from gold, bauxite, diamond, manganese, iron ore, copper, chrome, nickel, limestone and quartz. Despite such a wide variety of minerals located in Ghana, gold, diamonds, manganese, and bauxite are the four major minerals mined on a commercial basis.
- ▶ The industry is currently dominated by foreign players with Government holding a 10% carried interest in most of the main active large-scale mining activities.
- ▶ Although there has been an influx of foreigners into the mining sector; the country's laws have reserved small-scale mining for Ghanaians only.

Minerals revenue (USD'000 millions)



96.32%

Gold

3.22%

Manganese

0.42%

Bauxite

0.04%

Diamond

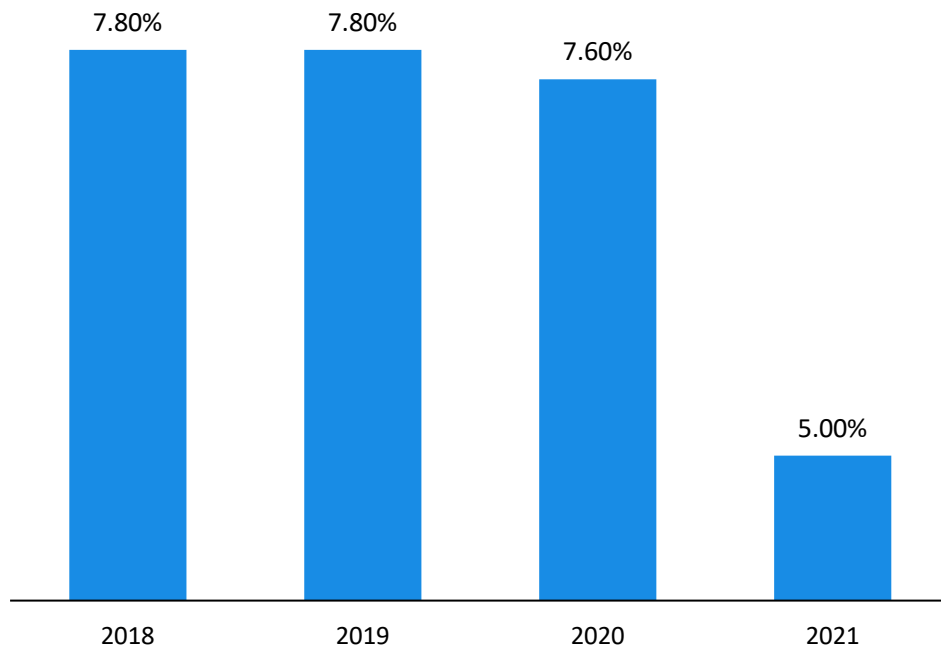
% contribution to gross mineral revenue as of end of 2021

Annual minerals production

	FY18A	FY19A	FY20A	FY21A
Gold (Ounces)	4,792,287	4,557,637	4,022,502	2,818,834
Diamonds (Carats)	57,531	33,789	25,292	54,174
Bauxite (Metric tonnes)	1,011,302	1,116,334	1,162,086	839,465
Manganese (Metric tonnes)	4,551,754	5,383,014	2,357,515	3,336,273

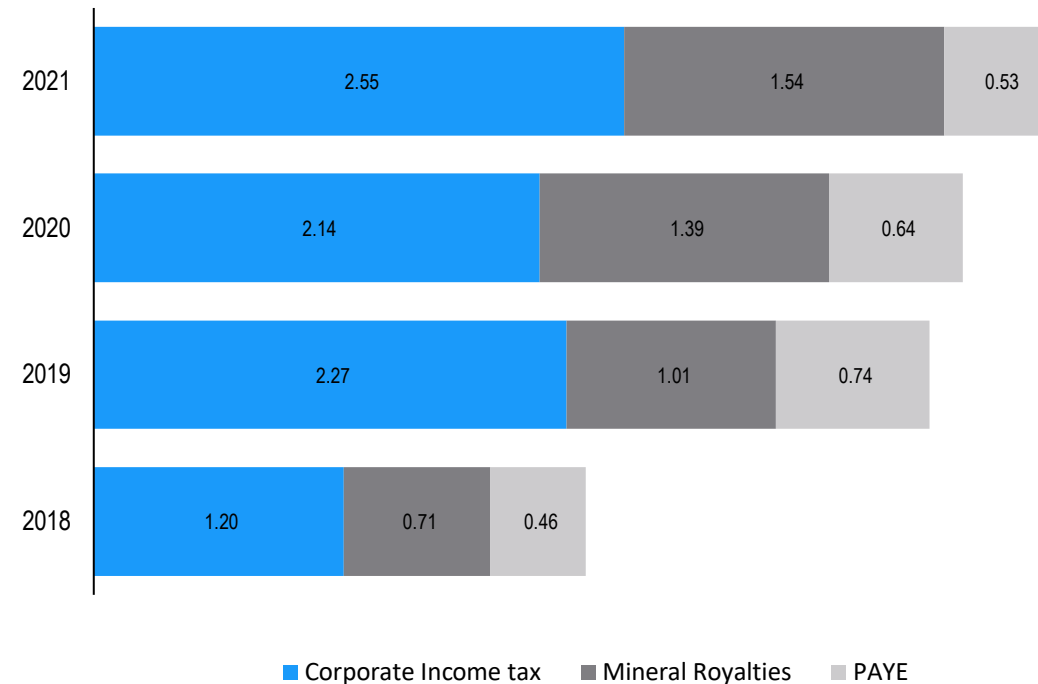
Sector overview

Contribution to GDP (%)



- The mining industry has consistently contributed above 7% of Ghana's GDP between 2018 to 2020 but dropped significantly to 5% due to the reduction in the production of gold and bauxite in 2021.
- In 2020, the sector was the fourth-largest contributor to the country's annual gross production behind crop production, manufacturing, and trade.

Contribution to Ghana Revenue Authority (GRA) collections (GHS billions)



- The mining industry has made significant contributions to Government's fiscal revenue collection from 2018 to 2021. Revenue from the mining sector recorded 60% jump between 2018 and 2019 due to the increase in commodity prices.
- A 5% mineral royalty on the total revenue earned from mining operations is paid to GRA annually.
- The mining industry contributed 18.12% of total GRA collections in 2020.

2.1

Sector overview: Gold

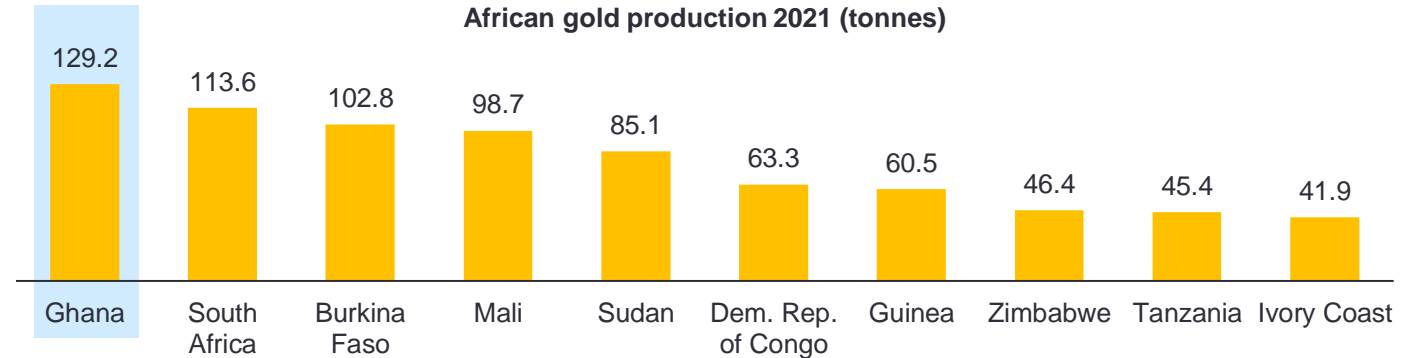


Sector overview

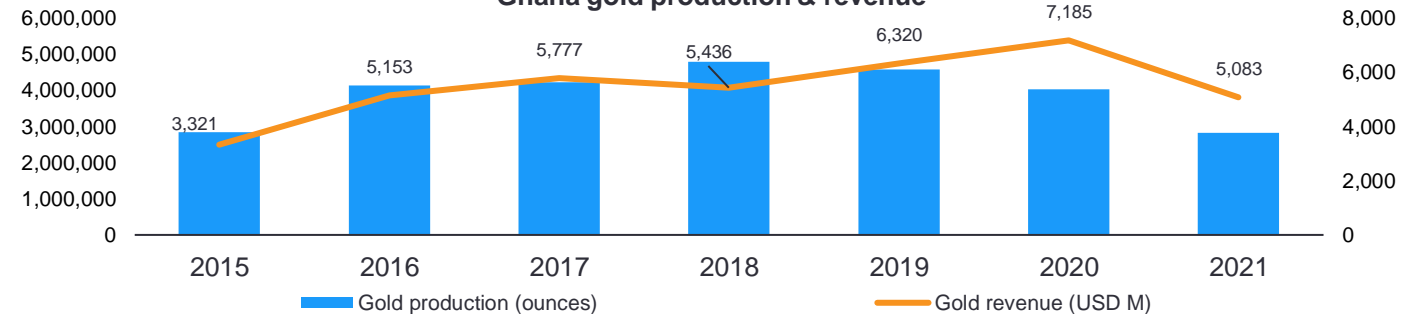
Overview of the gold mining sector

- The top three gold producers in Africa are Ghana, South Africa and Burkina Faso, who collectively produced 346 tonnes of gold in 2021.
- In 2021, Ghana was Africa's top gold producer**, surpassing South Africa with 129 tonnes produced.
- Gold accounts for nearly all the country's mining export revenue (approximately 96% in 2021).
- Ghana's mining industry was once state-owned, but currently has significant private sector participation. This is evidenced by the presence of key leading multinational mining companies such as Newmont Goldcorp, Anglo Gold Ashanti and Gold Fields operating in Ghana.
- Gold Fields Ghana was the highest producing gold company in 2021, producing 521,688 ounces of gold which was a 0.87% decrease from the previous year producing 526,256 ounces in 2020.
- Current operating mines for gold production include Obuasi, Iduapriem (Tarkwa), Damang, Prestea, Bogoso, Wassa, Kenyasi, Akyem, Chirano, Teleku Bokazo, Kwabeng, Osino.

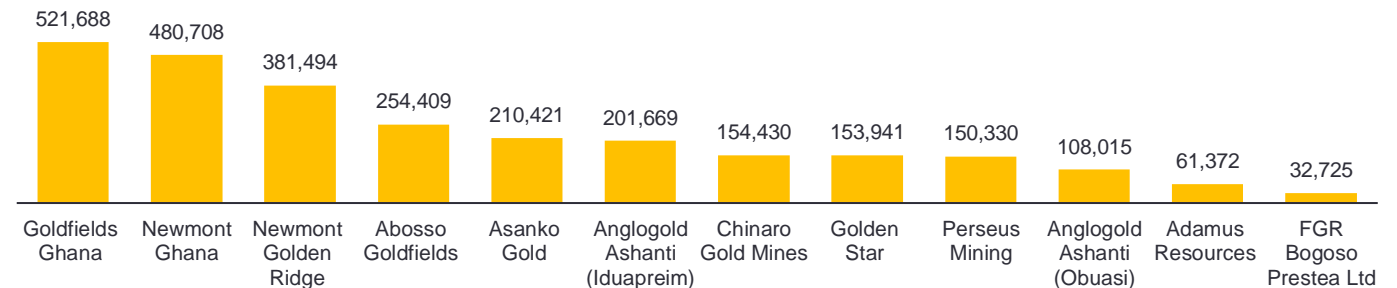
African gold production 2021 (tonnes)



Ghana gold production & revenue

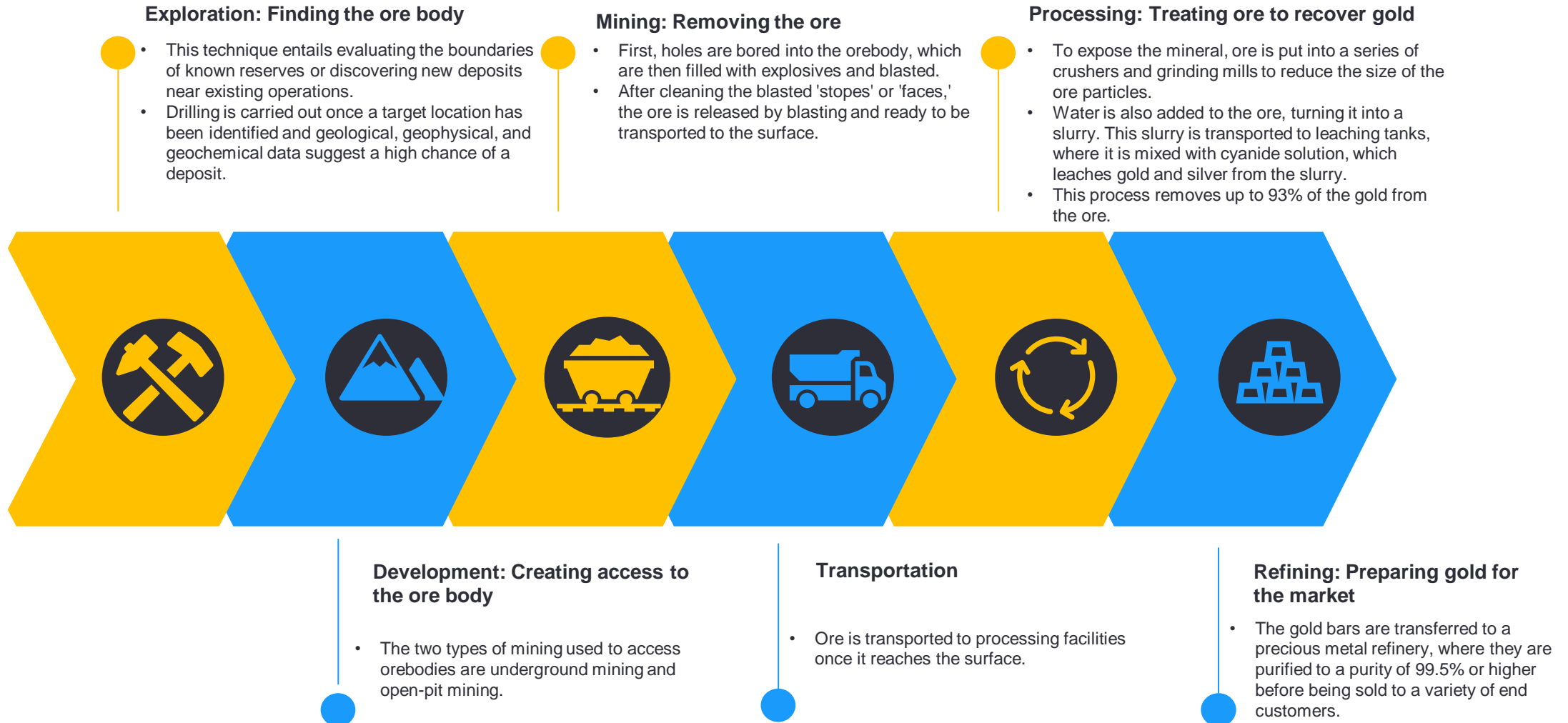


Gold production of member companies in Ghana 2021 (ounces)



Sector overview

Gold production process



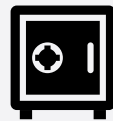
Demand and supply analysis

Trends in the gold market

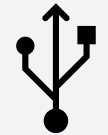
Composition of gold demand by sector (2021)



Jewellery
55%



Investments
(bars, coins & ETFs)
25%

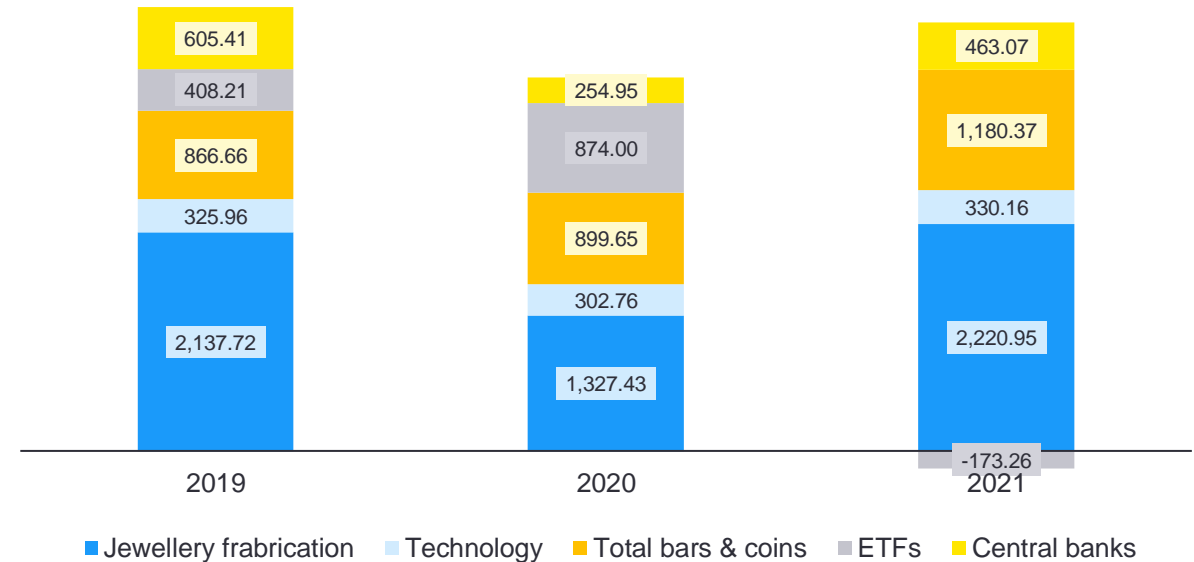


Technology
8%



Central banks
12%

Global annual demand by sector (tonnes)



- Demand for gold jewellery declined by 38% from 2,137.72 tonnes in 2019 to 1,327.43 tonnes in 2020, owing to a simultaneous drop in demand in key regions such as China due to Covid-19 induced restrictions.
- Demand for gold as an investment, which includes physical bars and coins as well as gold-backed exchange-traded funds (ETFs), varied across countries, with ETFs drastically falling to a negative (173.26) tonnes in 2021. Surging inflation was a key factor in the deteriorating demand for ETFs in 2021.
- Technology and industrial use for gold accounted for the smallest demand in 2021, it however increased by 9% from the previous year. The World Gold Council notes the move to electric vehicles will further drive demand for gold.

Demand and supply analysis

Supply of gold

- The global supply of gold, which comprises mine production output, recycled gold and net producer hedging, increased from 3,475 tonnes in 2020 to 3,580.1 tonnes in 2021, showing a 3% increase from supply 2020 due to ease in covid-19 restrictions in 2021, South Africa's gold output surpassed Ghana's by 43%.
- Africa, accounts for approximately 27% of total gold production in 2021 of which Ghana contributes 8%.

Top gold producing countries in 2021

Country	Production (tonnes)	Rank
China	332	1 st
Russia	331	2 nd
Australia	315	3 rd
Canada	193	4 th
United States	187	5 th
Ghana	129	6 th
Peru	127	7 th
Mexico	125	8 th
Indonesia	118	9 th
South Africa	114	10 th

2.2

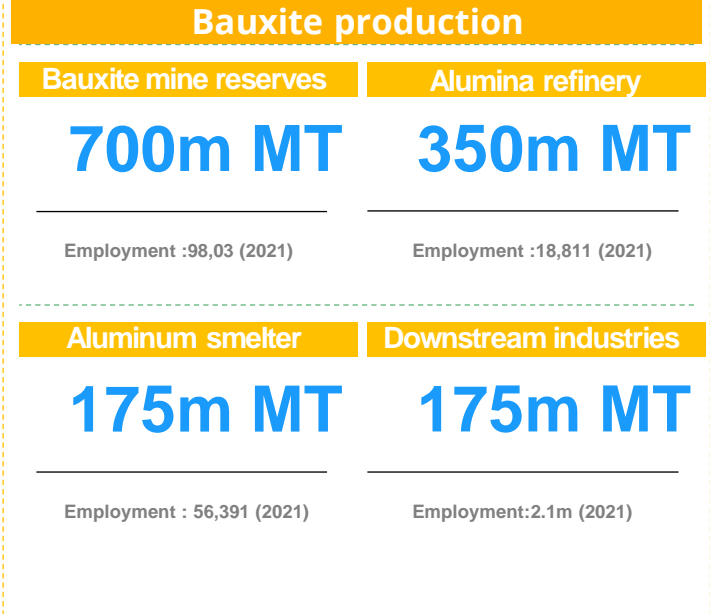
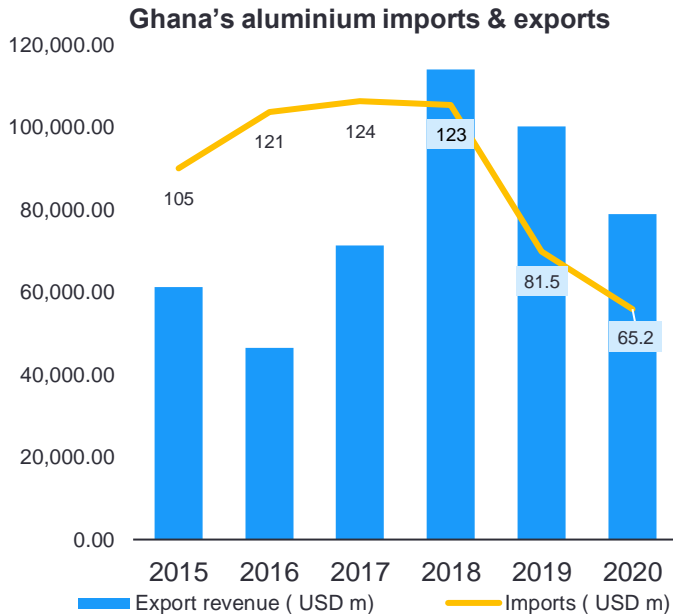
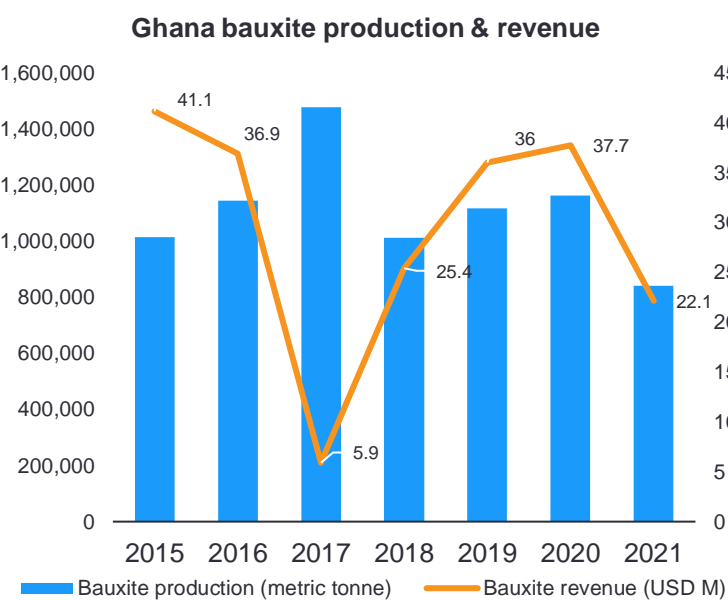
Sector overview: Bauxite



Sector overview

Overview of bauxite industry in Ghana

- Ghana's bauxite industry dates as far back as 1914.
- Bauxite is currently mined in Awaso by Ghana Bauxite Company owned by the Government of Ghana (20% stake) and other private investors (80%). The country recorded its highest production in 2017, producing 1.1 million metric tonnes but recorded the lowest value in revenue terms in the same year due to a global slump.
- There is no integrated aluminium industry in the country due to the lack of an alumina plant to process the bauxite ore. Despite this absence, VALCO's alumina smelting production has met the majority of industry demands to date. However, as demand grows, VALCO's volume provided to the local market must grow in order to meet the increased demand.



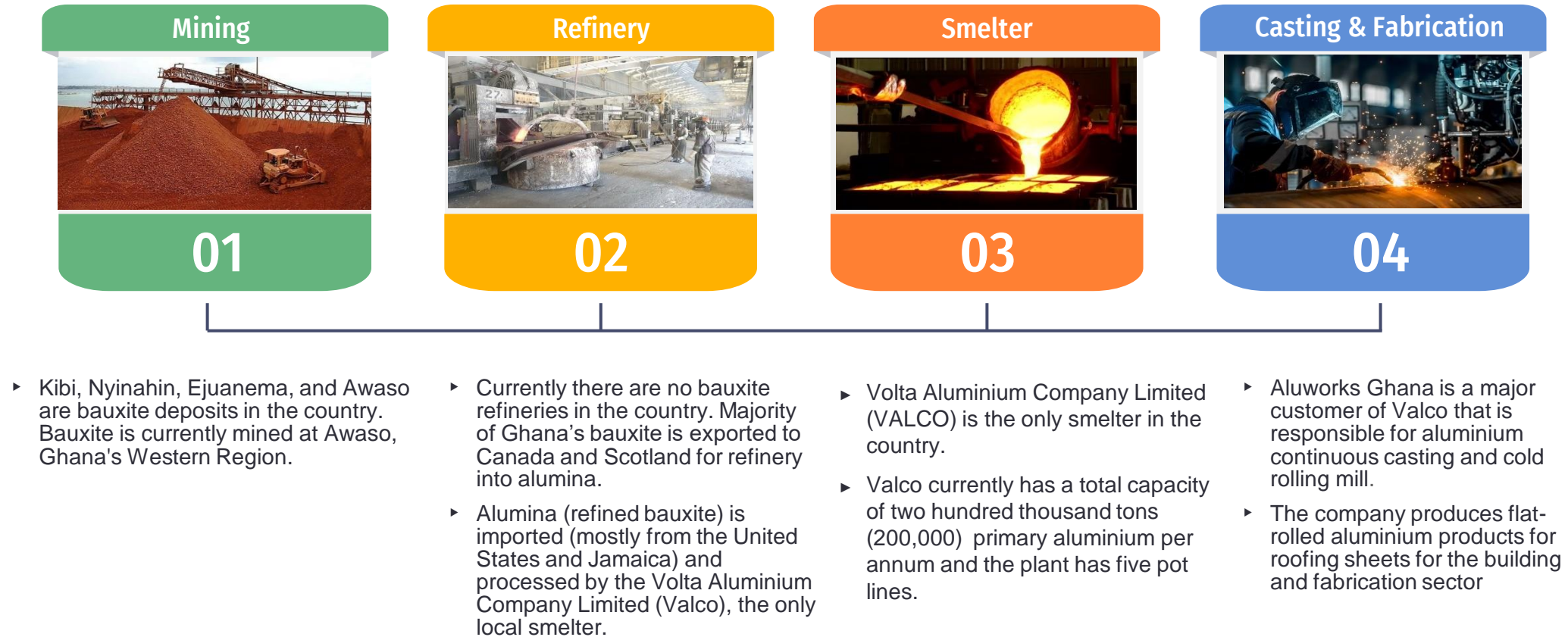
Source: Valco

Sector overview

Value chain

The aluminium value chain can be divided into **upstream and downstream**. Upstream consists of mining and refining operations and the downstream involves smelting, casting, and fabricating to refined alumina.

Ghana is home to almost all major production steps in aluminium processing, however, VALCO imports alumina for processing into aluminium, despite Ghana's large bauxite reserves.



2.3

Sector overview: Manganese

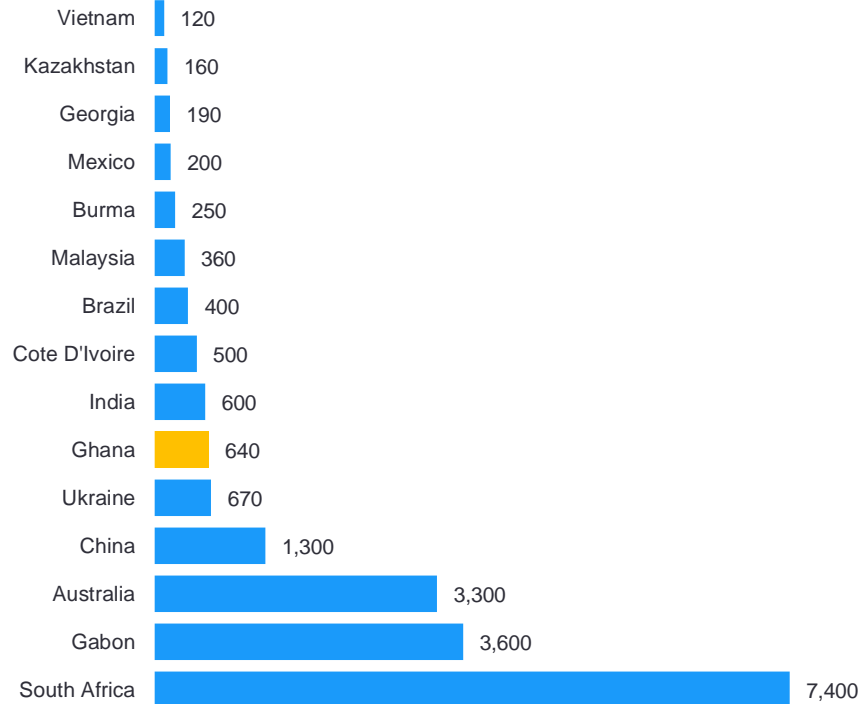


Sector overview

Global trends in manganese mining

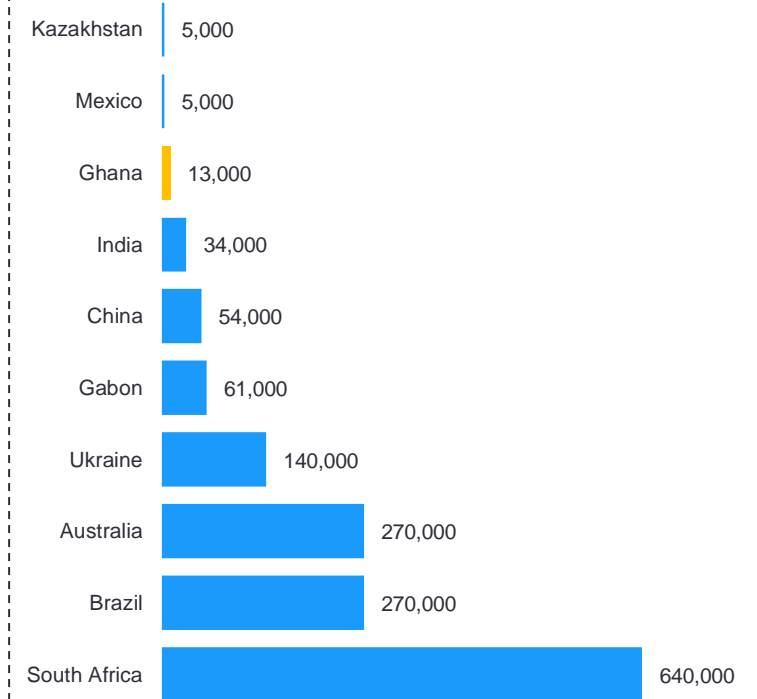
- Manganese is the fourth most popular metal in metallurgy behind iron, copper, and aluminum. It is also the fifth most abundant metal in the world.
- The use of manganese can broadly be categorized into three major categories:
 - Production of steel;
 - Production of batteries;
 - Other sectors.
- About 90% of processed manganese is used as an alloying element in the production of steel. Ferromanganese and silicomanganese are the two examples of alloys used in the production of steel.
- Manganese is also used in the water treatment industry, production of micronutrients to produce fertilizers, and the creation of different color pigments in the production of paints.
- The major importers of manganese as of 2020 are China, India, Norway, Russia, and South Korea.

Global manganese production 2021 ('000 metric tonnes)



Ghana is the sixth-largest producer of manganese in the world; producing 3.2% of global production.

Global manganese reserves 2021 ('000 metric tonnes)



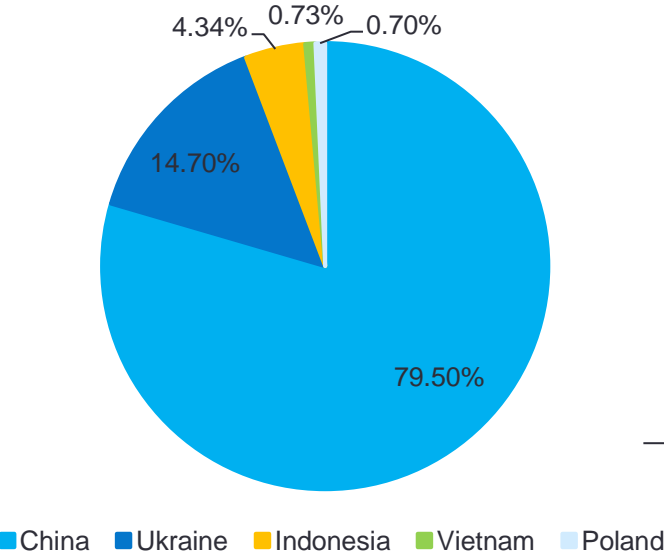
Ghana currently has less than 1% of global manganese reserves; indicative of more efforts needed in exploration.

Sector overview

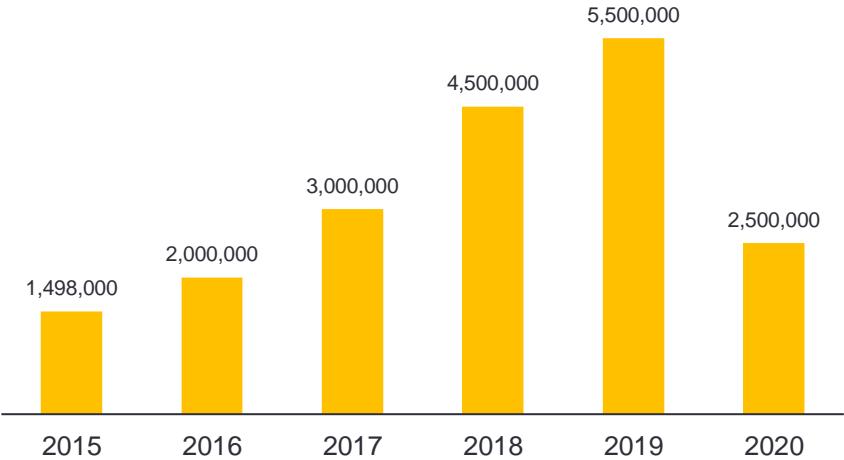
Overview of manganese industry in Ghana

- Manganese ore production in Ghana began in 1914, when it was discovered in Nsuta-Wassa.
- The Ghana Manganese Company (GMC) is Ghana's only manganese producer and exporter. It is a privately held mining company (Consolidated Minerals Africa Limited has a 90% stake and the Government of Ghana holds 10% free carried interest) that holds a manganese mining concession covering 170 square kilometres in and around Nsuta in Ghana's Western Region. Only about 3% of the concession has been mined to date.

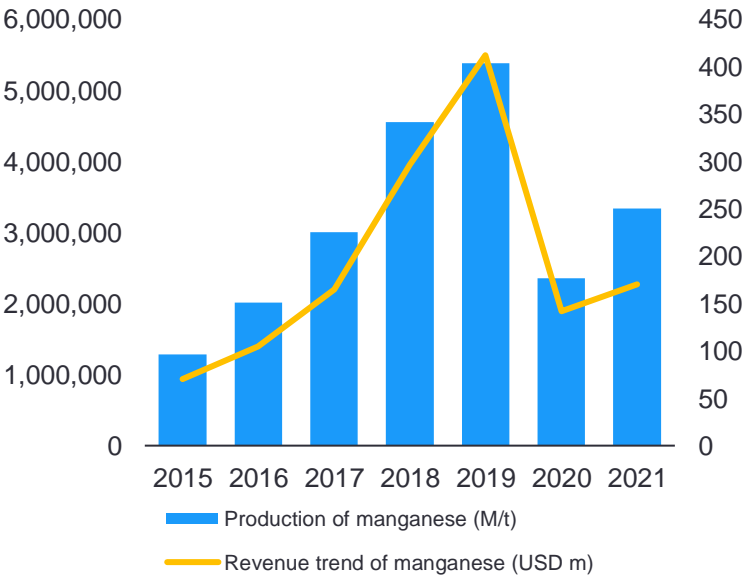
Distribution of manganese ore exported from Ghana as of 2019, by country of destination



Export trend for manganese (Tonnes)



Ghana manganese production & revenue



Sector overview

Value chain

The method of ore extraction is exclusively open-cast, comprising drilling, blasting, loading and hauling.



Drilling

- Blast holes with a diameter of 115mm are drilled with Sandvik Pantera DP1500i drill rigs.
- To meet present production, 3,000 meters are drilled everyday on average.
- The survey team draws a specified drilling plan on the bench (block) to show the drillers where each blast hole is to be bored.



Blasting

- Almost every day, blasting takes place at the GMC mining site. Bulk emulsion, initiation, and auxiliary products are the types of explosives employed.



Loading

- GMC's major loading and hauling equipment consists of its own diesel-hydraulic backhoe excavator fleets, as well as 100t and 150t dump trucks.
- The manganese ore is transported to a processing plant, while the trash is transported to a landfill.



Hauling

- All manganese ore is transported to a primary crusher at the pit rim's outlet, where it is stored in a rompad. The trash stone are taken to the landfill.
- Manganese ore from the rompad stockpile is treated (crushed and filtered without adding chemicals or water) and stacked in various sizes for rail and vehicle delivery to Takoradi Port.

2.4

Sector overview: Diamond

Sector overview

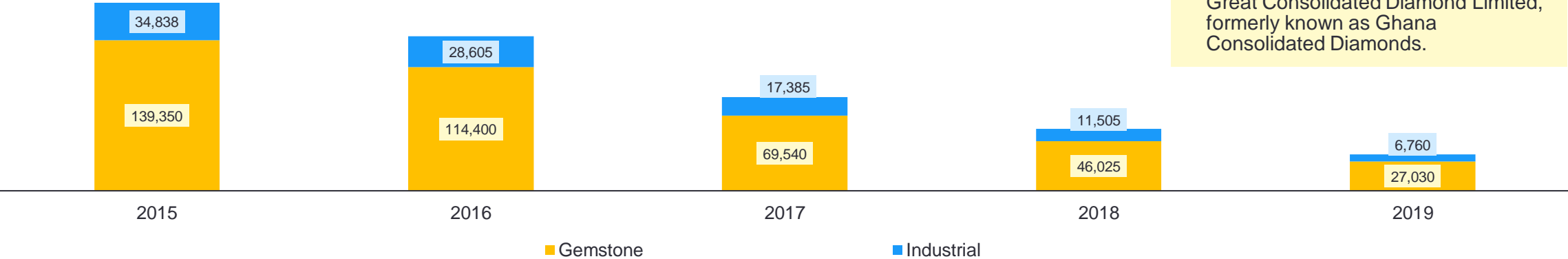
Overview of the diamond industry in Ghana

- Diamond mining in Ghana is concentrated in the Birim Valley, near Akwatia in the Eastern region. Usually, diamonds are mined by small-scale miners from alluvial as well as in-situ deposits.
- Like other countries in West Africa, Ghana has several deposits of diamonds. However, Ghana is yet to feature in the global list of major diamond producers.
- The main miner of diamonds is the state-owned Ghana Consolidated Diamond Limited (GCDL), which operates in the Birim River Basin.
- Ghana produced a little more than 25,000 carats of rough diamonds in 2020, and this was seen as a major reduction in the production of diamonds in terms of volume.

Annual diamond production and export (2020)

	Volume (carats)	Value (USD)	USD/Carat
Production	26,461	\$679,814	\$25.69
Imports	0	\$0	\$0
Exports	25,291	\$660,705	\$26.12

Production volume of diamond in Ghana by type (carats)



- The decline in production volumes since 2015 was the result of the Akwatia mine closure a decade ago.
- In 2019, Government took over the Great Consolidated Diamond Limited, formerly known as Ghana Consolidated Diamonds.

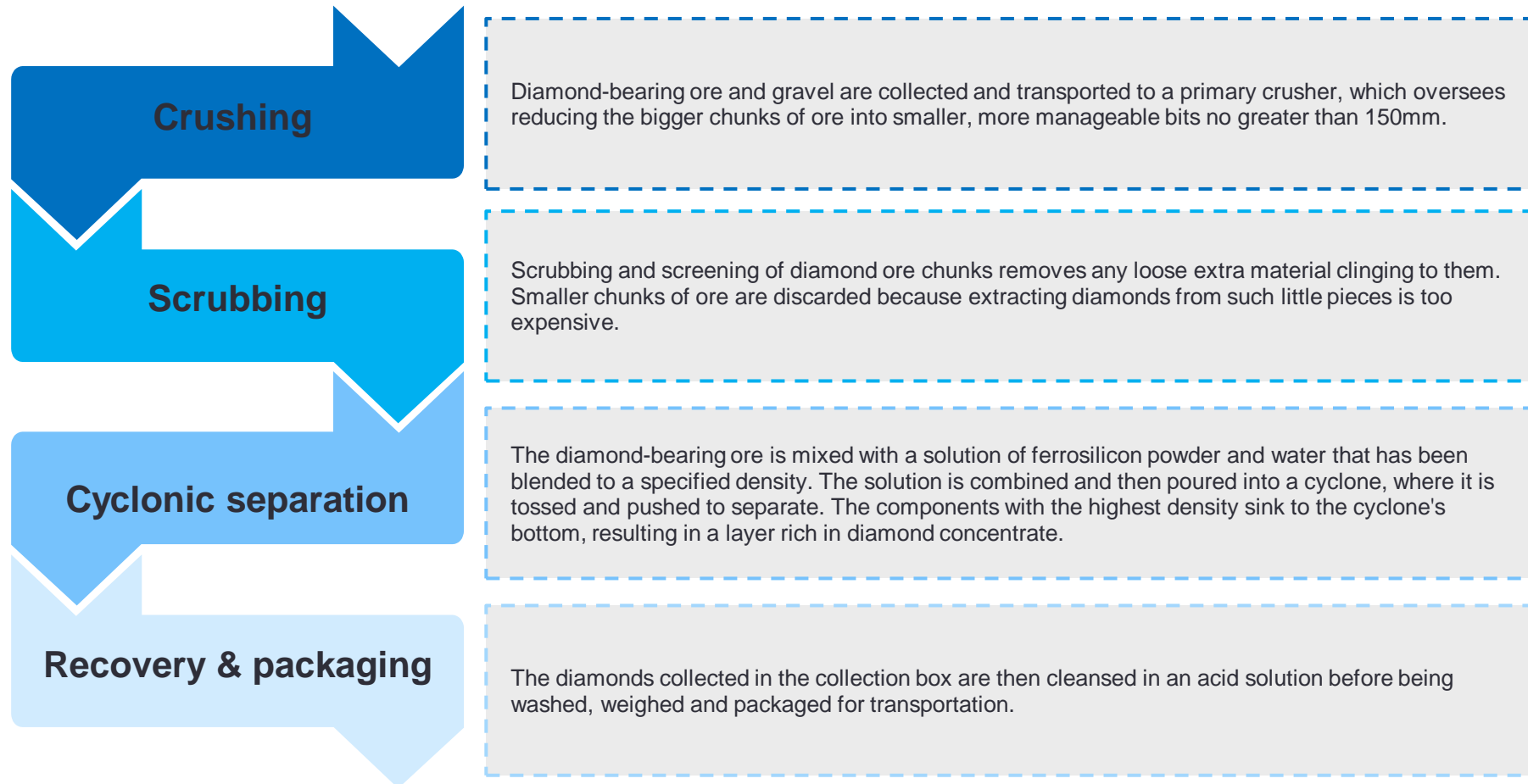
Diamond production drastically reduced due to the temporary ban of artisanal mining (small-scale mining), the downward trend continued due to the suspension of production by the only large-scale producer, Great Consolidated Diamond Company.

Source: Kimberly process, Statista, Ghana Chamber of Mines, The Global Economy, Reuters

Sector overview

Diamond mining value chain

There are three types of diamond mining namely: pipe mining, alluvial mining and marine mining. In Ghana, diamond production is done through **alluvial mining**. These diamonds are frequently discovered in the gravel layer of other materials such as mud, clay, and marine life. The industrial alluvial method entails constructing a big wall to collect water in one area (Akwatia-Birim valley), where the gravel is gathered, carried to the surface and processed.

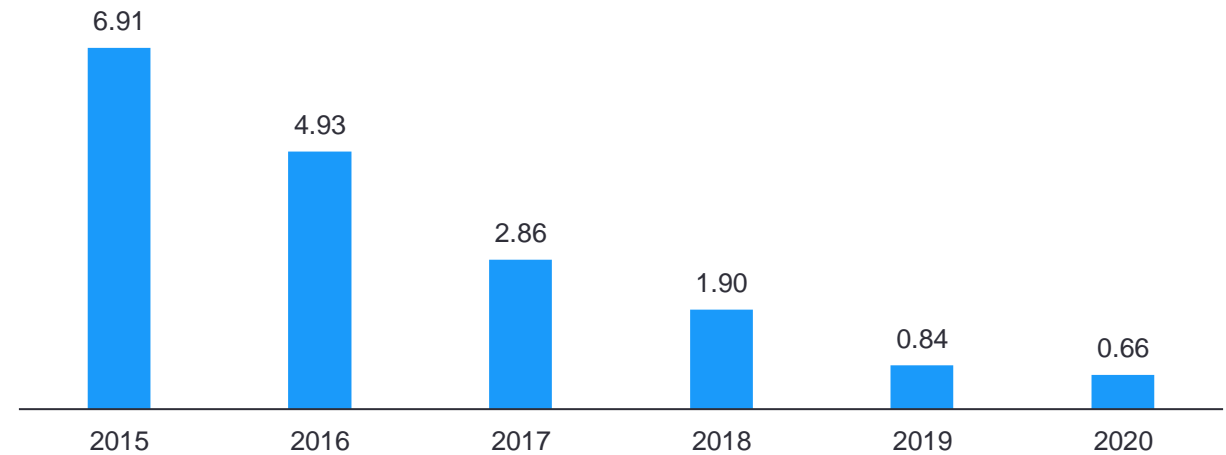


Demand and supply analysis

Demand and supply analysis

- Ghana exports diamonds to two main countries; Belgium and the Netherlands. Compared to other countries, Ghana's export of diamonds is fairly low.
- Exports of diamond from Ghana has seen a steady decrease due to the shut down of Ghana Consolidated Diamond Limited in 2019.
- Ghana's diamond output dropped sharply in 2017 because of curbs on the small-scale mining that lifted production but was causing damage to the environment.
- The President of Ghana temporarily banned artisanal mining, in a renewed effort to clamp down on those who do it illegally, causing a severe drop in the exploration of diamond since it is mainly extracted by small-scale mines.

Ghana diamond exports ('000 US\$)







2.5

Sector overview





Recent developments

	01	Newmont Ghana <ul style="list-style-type: none">▶ Newmont Corp announced in October 2021 that finance for its Ahafo North project had been granted. Ahafo North has about 3.5 million ounces of reserves, which might extend the mine's life beyond the existing 13 years.
	02	Gold Stone Resources <ul style="list-style-type: none">▶ Goldstone Resources commenced mining and ore stacking in April 2021 at its Homase mine, which is part of the Akrokeri Homase gold project. The mine is expected to produce 25,000 ounces of gold annually.
	03	New Core Gold <ul style="list-style-type: none">▶ Newcore Gold released a preliminary economic assessment for its Enchi gold project in June 2021, outlining plans for an open pit and heap leach plant that would handle 6.6 million tonnes per year.
	04	Resolute Mining <ul style="list-style-type: none">▶ Government of Ghana restored Resolute Mining's mining lease for the Bibiani mine in April 2021. Resolute Mining sold its Bibiani gold mine to Asante Gold Corp for USD90 million in August 2021.

Overview of key players

 Anglo Gold Ashanti	
Annual production (2020)	2,806 ('000 ounces)
Operating mines	The Obuasi and Iduapriem mines.







 Ghana Manganese Company	
Annual production (2020)	2.4 million (metric tonnes)
Operating mines	The Nsuta mine

 Newmont Ghana	
Annual production (2020)	5,824 ('000 ounces)
Operating mines	The Ahafo mine and Akyem mines.

 Ghana Bauxite Company Ltd	
Annual production (2020)	1.2 million (metric tonnes)
Operating mines	The Awaso mine

Current sector investors:





An overview of the major investors in the major mines in Ghana.

Operating Mines	Mineral Type	Mine Location	Investors
AngloGold Ashanti (Ghana) Limited	Gold	Obuasi	 ANGLO GOLD ASHANTI
AngloGold Ashanti (Iduapriem) Limited	Gold	Iduapriem (Tarkwa)	
Future Global Resources	Gold	Wassa	 Blue Group INTERNATIONAL
Gold Fields Ghana Limited	Gold	Tarkwa	 GOLD FIELDS
Abosso Goldfields Limited	Gold	Damang	
Golden Star Limited	Gold	Prestea/Bogoso	 GOLDEN STAR RESOURCES LTD.
Kibi Goldfields	Gold	Osino	
Chirano Gold Mines Limited	Gold	Chirano	 KINROSS





Current sector investors: An overview of the major investors in the major mines in Ghana.

Operating Mines	Mineral Type	Mine Location	Investors
Newmont Ghana Gold Limited	Gold	Kenyasi (Ahafo)	
Newmont Golden Ridge Limited	Gold	Akyem	
Perseus Mining (Ghana)	Gold	Ayanfuri	
Xtra Gold	Gold	Kwabeng (Kibi)	
Adamus Resources Limited	Gold	Teleku Bokazo	 
Asanko Gold Mine	Gold	Amansie West	 
Ghana Bauxite Ghana Limited	Bauxite	Awaso	
Ghana Manganese Company Limited	Manganese	Nsuta	
Ghana Consolidated Diamond Limited	Diamond	Akwatia-Birim	

Regulatory overview

Regulatory agency	Scope of activity	Responsibilities	Nature of activity		
			Oversight function	Inspection/ licensing	Policy making
 <p>MINISTRY OF LANDS & NATURAL RESOURCES REPUBLIC OF GHANA</p>	General	Ensure the sustainable management and utilization of the nation's lands, forests and wildlife resources as well as the efficient management of the mineral resources for socio-economic growth and development.	✓	✓	✓
 <p>MINERALS COMMISSION GHANA</p>	General	Develop and coordinate mineral sector policies and monitoring their implementation.	✓	✓	
 <p>FC® Forestry Commission</p>	General	Responsible for the regulation of the utilization of forest and wildlife resources and the conservation and management of these resources.	✓	✓	
 <p>LANDS COMMISSION GHANA CLIENT SATISFACTION IS OUR GOAL</p>	General	Manage public lands and any other lands vested in the President by the Constitution or any other law, as well as any lands vested in the Commission.	✓	✓	

Regulatory overview

	Regulatory agency	Scope of activity	Responsibilities	Nature of activity		
				Oversight function	Inspection/ licensing	Policy making
	Ghana Integrated Aluminum Development Corporation	General	Ensure the sustainable management and utilization of the nation's lands, forests and wildlife resources as well as the efficient management of the mineral resources for socio-economic growth and development.	✓	✓	✓
	Precious Minerals Marketing Company	General	Grade, test, value, and process precious minerals, as well as to license buying agents for precious minerals.	✓	✓	
	The Ghana Chamber of Mines	General	Represent the interests of companies involved in mineral exploration, production and processing in Ghana	✓	✓	
	Environmental Protection Agency	General	Responsible for regulating the environment and ensuring the implementation of Government policies on the environment	✓	✓	

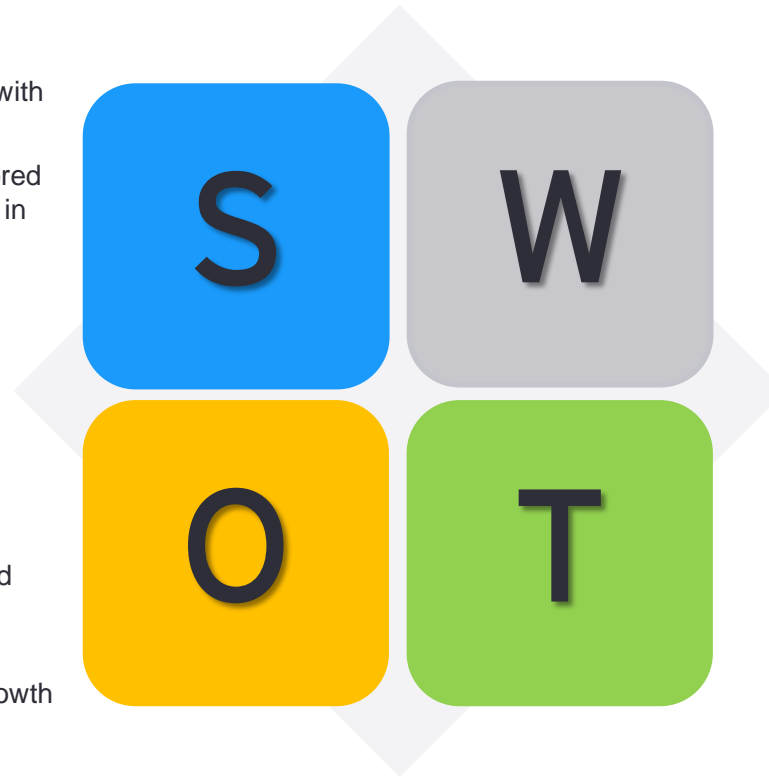
Sector SWOT analysis

Strengths

- In 2020, Ghana was Africa's largest gold producer, with significant untapped reserves that need to be explored.
- Gold is the most important commodity in the mining sector, accounting for over 90% of total income in Ghana. Other resource mining is still in its infancy.
- Ghana is one of Africa's most politically stable countries, with a stable economic environment.
- Largest artisanal mining industry, which is mainly unexplored and is now being integrated into overall gold mine output, in contrast to the rest of West Africa.

Opportunities

- Large amount of untapped bauxite reserves.
- Government plans to increase electrification, which would benefit a major player (VALCO) in the value chain.
- A new memorandum of understanding with China for the development of bauxite reserves presents huge future growth opportunities.



Weaknesses

- Absence of bauxite- alumina refinery.
- Expansion initiatives in the industry are hampered by high exploration taxes.
- Due to the environmental harm caused by illegal mining, miners' legal license are usually revoked, lowering investor confidence in Ghana's mining sector.

Threats

- Illegal gold mining is on the rise as a result of the lucrativeness of unregulated gold rush opportunities, with negative effects for sustainable agriculture and food systems resilience.
- Exploration & production mining activities invariably inflict physical and material damage to the environment as well as the people who live nearby.
- Chemicals and explosives are used in many areas of mining, creating health and safety risks by releasing contaminants into the environment.

3

Sector opportunities



Sector opportunities

Ghana's current goal is to shift its focus away from gold and toward other minerals such as manganese, bauxite, and other base metals, which have been mostly overlooked in the past.



Establishment of new bauxite mines & refineries

- Ghana's Integrated Aluminium Development Corporation (GIADEC) has chosen and signed an agreement with its first strategic partner, Rocksure International, to build a bauxite mine and refinery at a cost of USD 1.2 billion in 2021
- Under the terms of the deal, Rocksure will establish a new bauxite mine in the Ashanti Region's Nyinahin-Mpasaaso and a refinery to turn the raw bauxite into alumina within the next 24 months (September 2022) as part of Project Two of the country's four-phase development of an integrated aluminium sector.



Development of Ghana's diamond industry

- The Akwatia Diamond mine, which is ran by Ghana Consolidated Diamond Limited (GCDL) has produced more than 100 million carats of diamond since it started operations in 1924.
- The Akwatia Mine was temporarily shut down in 2005 and reopened in 2011 when GCDL took over operations.
- Increased private investment in the diamond sector can assist in preventing the mine from closing and improve diamond production since GCDL is now owned by the government and the only diamond producer in the country.



Development of Ghana's iron and steel reserves

- The Ghana Integrated Iron and Steel Development Corporation (GIISDEC) is prepared to prudently exploit Ghana's iron and steel deposits in order to boost the country's economy.
- Ghana presently has about 6 billion metric tonnes of the material, with the potential to grow. In Pudu, Sheini near Zabzugu, Opong Mansi in the Amenfi East district, and around Akpafu in the Oti region, large iron ore resources can be found.



Establishment of an aluminium smelter

- VALCO (Volta Aluminium Company Limited) is the only smelter in Ghana.
- VALCO and GIADEC collaborated on a five-year, \$10 billion recovery plan for the country's bauxite mining sector.
- The improvement would increase production to 180,000 tonnes/year (t/yr), in the first phase, and 300,000 t/yr in the second. VALCO's nameplate capacity is 200,000 t/yr however, three out of five potlines are now down, limiting output to 80,000 t/yr.

4

Key investment highlights



Key investment considerations

01



Sectoral incentives

- Mining companies get concessionary rates for the import of plant, machinery and equipment meant purposely for mining.
- In addition, mining companies enjoy a capital allowance of 20% straight line on mining assets for 5 years and an investment allowance of 5% in the first year.

02



One of Africa's top gold producer

- Ghana produced approximately 129 tonnes of gold in 2021 surpassing South Africa, to be the top gold producer in Africa and the sixth largest producer globally.

03



Exploration rights

- Reconnaissance and prospecting licenses are the two types of licenses that Ghana issues to individuals and corporations to conduct prospecting and exploring activities.
- The type of mineral or the location of the mineral activity are not factors in granting reconnaissance and prospecting licenses. It is given in compliance with Ghana's mineral and mining laws.

04



Unexploited deposits

- Ghana's main resources include gold, diamonds, manganese, and bauxite, but the country also has untapped reserves of iron ore, copper, chrome, nickel, limestone, quartz, and mica.
- These minerals are produced on a very modest scale, with the primary four receiving most of the interest. Ghana's iron reserves was estimated to be above 6 billion tonnes in 2020.

5

Testimonials



“Rocksure International Limited has recorded significant growth since inception in 2009, growing from 8 units of machinery to more than 128 heavy equipment as of August 2019. Ghana is blessed with a wide variety of minerals including gold, bauxite, manganese and newly found deposits of lithium.

On-going negotiations between industry and regulators promise significant gains to promote local content participation in the extractive industry. Notwithstanding the huge capital requirements to play in the sector, opportunities available in the industry include training the indigenous human capital base, domestic manufacture and/or assembling of mining equipment.”

Rocksure International Limited

6

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7

Appendix



Appendix I: Sector porter's five forces

Threat	Severity of threat	Description
Threat of new entrants		<ul style="list-style-type: none"> ▶ The industry is highly regulated hence, there are barriers to entry. In addition, cost of entry is restrictive due to the capital-intensive nature of the business. Therefore, the barrier to entry is high due to the capital requirements.
Threat of substitutes		<ul style="list-style-type: none"> ▶ The world is currently shifting towards the use of lighter, stronger and reliable materials in the construction, aerospace, automotive, body armour, etc. making it more efficient to use magnesium alloys rather than aluminum products. ▶ This new trend is however somewhat negated by cost as aluminum is cheaper than magnesium. Magnesium as better substitute but more expensive
Competitive rivalry		<ul style="list-style-type: none"> ▶ Competitive rivalry within the industry is perceived to be low since there are few players. This indicates opportunities across the value chain to boost local demand and export to other countries
Bargaining power of suppliers		<ul style="list-style-type: none"> ▶ The minerals value chain industry in Ghana is somewhat monopolistic with few suppliers across the value chain giving suppliers high control hence high bargaining power as they are easily able to transfer increases in cost to customers.
Bargaining power of customers		<ul style="list-style-type: none"> ▶ Customers have strong bargaining power because the country is not currently listed among the world's leading bauxite producers. Because the country currently lacks a refinery, its bargaining power is limited, as smelting factories (VALCO) require alumina to function.

 Low
  Medium
  High

Appendix II: Ghana Landscape Restoration & Small Scale Mining Project (GLRSSMP)

General Overview

- The Ghana Land Restoration and Small-Scale Mining Project (GLRSSMP) is a World Bank and Ghanaian government collaboration funded by an IDA credit line.
- The Ghana ASM Formalisation Project (GASMFP) was previously proposed with the goal of formalizing the Artisanal Small Scale Mining (ASM) industry, encouraging sustainable ASM practices, and increasing institutional ability to oversee ASM activities.
- The project development objective of the GLRSSMP is “To strengthen integrated natural resource management and increase benefits to communities in the targeted degraded savannah and cocoa landscapes”

Key Components of GLRSSMP

01

Institutional strengthening of governance and partnerships for participatory landscape management

02

Enhanced governance in support of sustainable ASM

03

Sustainable crop and forest landscape management

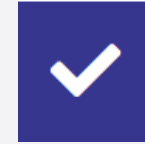
04

Project monitoring and knowledge management

05

Contingency emergency response

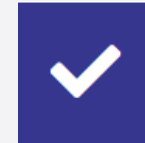
Core Interventions of Project



Restoration of degraded lands for agricultural productivity



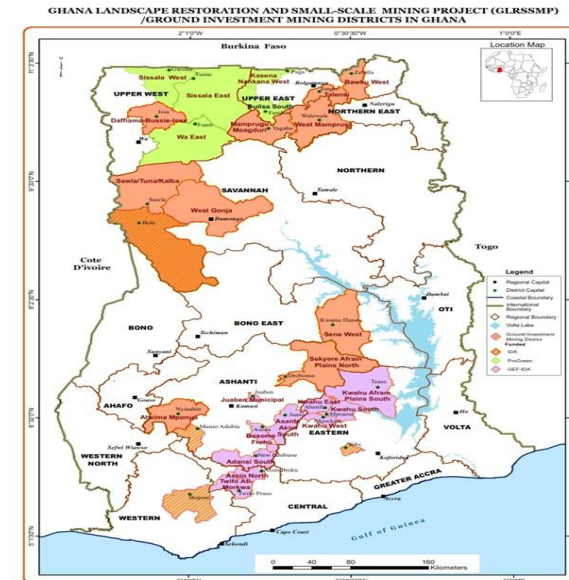
Formalization of illegal ASM for sustainable mining



Strengthening sustainable management of forest landscapes



Land use planning for integrated landscape management



A map of Ghana showing the project districts under the Ghana Land Restoration and Small-Scale Mining project (GLRSSMP)

Appendix III: Mining fiscal regime

Fiscal instruments

Fiscal instrument	Application rate
Mineral Royalty	5%
Corporate Income Tax	35%
Capital Allowance	20% straight line on mining assets for 5 years
Losses carried forward	5 years
Thin Capitalization	03:01
VAT	12.5% (Refundable)
NHIL & GET Fund Levy	2.5% each and tax deductible
Pay As You Earn (PAYE tax)	Graduated rate
Dividend tax	8%
National Fiscal Stabilization Levy (NFSL)	5% of profit before tax
Government Carried Equity	10%
Withholding tax on resident entities	Goods 3%, Works 5%, Service 7.5%
Withholding tax on interest payable to non-residents	8%
Withholding tax on royalties, natural resource payments and rent	15%

Appendix IV: List of abbreviations

ASM	Artisanal Small Scale Mining
c.	Approximately
CAGR	Compound Annual Growth Rate
ETF	Exchange Traded Funds
FY	Financial Year
GASMFP	Ghana ASM Formalisation Project
GCD	Ghana Consolidated Diamonds
GCDL	Ghana Consolidated Diamond Limited
GIADEC	Ghana Integrated Aluminium Development Corporation
GIISDEC	Ghana Integrated Iron and Steel Development Corporation

GIISDEC	Ghana Integrated Iron and Steel Development Corporation
GLRRSMP	Ghana Land Restoration and Small-Scale Mining Project
GMC	Ghana Manganese Company
MT	Metric Tonnes
PAYE	Pay As You Earn
t/yr	Tonnes per year
USD b	United States Dollars in Billions
USD m	United States Dollars in Millions
VALCO	Volta Aluminium Company Limited