Ghana

Author: James McQuilken

Major gold and diamond deposits with estimated ASM areas\(^{71}\)

![Map of Ghana showing major gold and diamond deposits with estimated ASM areas](image)

Materials mined by ASM

- Gold: 1.135 million ounces (produced in 2016)\(^{72}\)
- Diamond: 86,925 carats (exported in 2017)\(^{73}\)
- Salt: 250,000 tons (average per year)\(^{74}\)


\(^{72}\)MLNR, 2017.

\(^{73}\)Ghana Chamber of Mines, 2018.

\(^{74}\)Affam and Asamoah, 2011.
Mineral governance framework

Government priorities

- Lift the current ban on ASM (March 2017 to present)
- Mitigate pollution to the environment and water bodies
- Formalization of the sector through streamlined licensing, geological data, and access to finance

Laws and policy

- The Small-Scale Gold Mining Law (1989)
- Minerals and Mining Act, 2006 (Act 703)
- Multilateral Mining Integrated Project (2017)
- Signatory to Minamata Convention on Mercury
- Operation Vanguard

Government institutions

- Ministry of Lands and Natural Resources
- Minerals Commission
- Precious Minerals Marketing Cooperation

Associations and member organizations

- Ghana National Association of Small-Scale Miners (GNASSM)
- Women in Mining Ghana
- The Ghana Chamber of Mines
Economic and development data

2017 Population\textsuperscript{75}

\begin{itemize}
\item Total: 28,833,629
\item Labor force: 13,636,862
\item Women: 50.1% (5,799,588)
\item Men: 49.83% (6,837,274)
\end{itemize}

2017 Classification (GNI per capita)\textsuperscript{76}

\begin{itemize}
\item Lower middle income: USD 1,490
\end{itemize}

2017 Gross Domestic Product\textsuperscript{77}

\begin{itemize}
\item USD 47.33 billion
\end{itemize}

2012 Poverty headcount ratio\textsuperscript{78}

\begin{itemize}
\item Population on/below national poverty line: 24.2%
\item Population living on <USD 1.90 per day: 12%
\item Population living on <USD 5.50 per day: 60.5%
\end{itemize}

Livelihoods

Employment\textsuperscript{79}

\begin{itemize}
\item ASM: 1.1 million directly, 4.4 million indirectly
\item LSM: 10,503 direct employees, 100,000 indirectly
\item Active small-scale licenses: 109 (August 2018)
\item ASM informality estimate: 70–80% informal
\end{itemize}

Gender participation in ASM\textsuperscript{80}

\begin{itemize}
\item Women: 45–75%
\end{itemize}

\textsuperscript{75} World Bank, 2017b.
\textsuperscript{76} The World Bank classifications for country economies are based on GNI per capita, in current USD and using the Atlas method. See World Bank, 2018b for a detailed explanation of the methodology. The 2017 classification thresholds are low income (<USD 1,005), lower middle income (USD 1,006–3,995), upper middle income (USD 3,956–12,235), and high income (>USD 12,235) (World Bank, 2018a). Individual country values are based on 2017 World Bank data (World Bank, 2018c).
\textsuperscript{77} World Bank, 2017b.
\textsuperscript{78} World Bank, 2012.
\textsuperscript{79} All of the information presented here is from the literature that can be found on the Delve platform. See the Ghana country profile for an in-depth discussion of the employment and informality figures, as well as references to the original sources.
\textsuperscript{80} The main minerals industry association representing the collective interests of exploration, mining, and processing companies operating in the country.
FIGURE 1 PRODUCTION, EXPORT, AND DESTINATION OF GHANA GOLD FOR 2016

Gold production 2016
- ASM, 30%, 1,134,635 oz
- Large-scale mining, 70%, 2,620,033 oz

Gold export destination 2016, USD millions
- India, 13%, USD 1,257.5
- Switzerland, 44%, USD 4,181.4
- United Arab Emirates, 36%, USD 3,389.3
- South Africa, 4%, USD 344.0
- Rest of world, 2%, USD 90.7
- Lebanon, 2%, USD 148.0

Merchandise exports 2016, USD millions
- Gold, 44%, USD 4,919.5
- Cocoa beans and products, 23%, USD 2,572.2
- Other exports, 17%, USD 1,905.1
- Crude oil, 12%, USD 1,345.2
- Bauxite, 0.3%, USD 38.7
- Manganese, 0.9%, USD 100.2
- Diamonds, 0.02%, USD 2.1
- Timber and products, 2%, USD 254.3

FIGURE 2 ANNUAL GHANA GOLD PRODUCTION IN THOUSANDS OF OUNCES 1990–2016

Average contribution of ASM to total production per decade
- 1990s: 5%
- 2000s: 11%
- 2010s: 30%

Year
- 1990: 518
- 1995: 127
- 2000: 1,582
- 2005: 2,169
- 2010: 2,624
- 2015: 2,852

Large-scale mining: Artisanal and small-scale mining

---

81 Though depicted side-by-side, there is no relationship between gold produced, exported, and export destination in a given year as these data are from separate sources. Sources (left to right): MLNR, 2017; Bank of Ghana, 2017; The Observatory of Economic Complexity, 2018a.

82 Sources: MLNR, 2017; multiple data sets cited in McQuilken, 2018.


**Mining sector summary**

Ghana’s minerals sector is dominated by large-scale gold mining, making the country the world’s tenth top producer in 2017, and the second largest gold producer in Africa, after South Africa. While gold is also the main commodity extracted on an artisanal and small-scale, diamonds are the second most important in terms of export value, making these two precious minerals the focus of this country profile. Notably, however, Ghana’s ASM activities are also essential to the production of a (currently) unquantified amount of construction materials, such as sand, clays, and gravels found throughout the country, as well for salt winning, which is produced largely through solar evaporation along coastal regions. Yet, given the country’s dominance in gold stretching back many hundreds of years, it is highly likely that the current ASM employment estimates do not account for development minerals.

Overall, according to currently available official statistics, the ASM sector accounts for approximately 30% of Ghana’s annual mineral production, which, if predominantly gold, would have been worth an estimated USD 1,419.1 million in 2016. The sector also supports many millions of jobs. Yet it is characterized by a very high degree of informality and negative impacts on the environment, especially through the release of mercury into water bodies associated with poorly managed gold operations. Better access to and distribution of more complete, accurate, and reliable data to improve the understanding of ASM activities, inform evidence-based policy making, and demonstrate the sector’s significant socioeconomic development potential are, as this profile makes clear, desperately needed in Ghana.

**Mineral governance framework**

The mineral governance framework for ASM in Ghana is based on two key legal instruments:

- The Small-Scale Gold Mining Law, 1989, PNDLC, 218 legalized activities for the first time, allowing for Ghanaian citizens only (aged 18 and over) to purchase an ASM license (of a plot not greater than 0.1 km²), and established district centers of the Minerals Commission
- The Minerals and Mining Act, 2006 (Act 703) empowered the Minister of the Ministry of Lands and Natural Resources (MLNR) to designate ASM zones and repealed and replaced earlier laws to consolidate regulations on the sale of mercury and minerals, use of explosives, and the need for an environmental permit

In addition to the key government institutions that regulate ASM (Table 4), the Ghana National Association of Small-Scale Miners (GNASSM) and the advocacy organization Women in Mining Ghana represent the interests and participation of licensed small-scale miners. Though both organizations have active membership bodies, the extent to which they are consulted on decisions and able to effect change remains limited.

---

84Mustapha and Michae, 2013.
85Affam and Asamoah, 2011.
86MLNR, 2017.
87Calculated by multiplying 1,134,635 ounces produced by ASM in 2016 (MLNR, 2017) by the 2016 average world gold price of USD 1,250.74 per troy ounce (Statistica, 2018).
88McQuilken, 2018.
89McQuilken, 2018; McQuilken and Hilson, 2018; McQuilken and Hilson, 2016.
**TABLE 4** Key government institutions regulating ASM in Ghana

<table>
<thead>
<tr>
<th>Institution</th>
<th>Governance role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Lands and Natural Resources (MLNR)</td>
<td>Mandated to ensure the sustainable management of natural resources for socioeconomic growth and development.</td>
</tr>
<tr>
<td>Minerals Commission</td>
<td>The technical and regulatory body for the minerals sector. Operates a national office in Accra and nine small-scale mining district centers to support applicants and monitor and enforce activities locally.</td>
</tr>
<tr>
<td>Precious Minerals Marketing Corporation (PMMC)</td>
<td>The main marketing agency for the minerals sector. Licensed to purchase diamonds and gold from ASM, assay all shipments for export, and appoint licensed gold and diamond buying agents.</td>
</tr>
<tr>
<td>Geological Survey Department</td>
<td>The technical agency that is also mandated to improve knowledge of geology for small-scale miners, which in turn would help miners access formal channels of finance but lacks the funding to do so.</td>
</tr>
</tbody>
</table>

There are many challenges in the mineral governance framework that artisanal and small-scale miners must navigate to become formalized. Despite concerns raised repeatedly about its accessibility and appropriateness and recent support to develop an online repository, the ASM license process has remained a challenging and centralized endeavor since its inception. The 14-step process necessitates the completion of multiple forms, fees, and informal payments (often totaling more than USD 1,000), and approval from different agencies. Each application also requires the signature of the Minister of the MLNR, and the process must be repeated every three to five years in order to renew the license. This complexity disincentivizes and prevents many artisanal and small-scale miners from gaining a license, thus helping to confine them to the informal economy.

The licensing challenges are further complicated by somewhat overlapping and siloed government departments. This is especially true at the local level, where despite ASM being a crosscutting development issue requiring the coordinated effort of all agencies, it is often left solely to the underfunded and understaffed Minerals Commission district centers to address. These issues are made worse by a complex land tenure system, which does little to empower women, who are particularly marginalized (both formally and informally) by Ghana’s mineral governance framework, and by wider societal norms. Women in ASM are largely confined to low-paid and labor-intensive roles, struggle to access bank loans without the signature of a male relative, and face gender-based discrimination in owning land, becoming license holders, and managing concessions.

The most recent development, reminiscent of past government task forces, is the ban on all ASM activities across the country, including licensed activities. Carried out as part of the MLNR-led Operation Vanguard, which drew on 400 security personnel to shut down illegal mines and confiscate equipment, the temporary six-month ban has been extended several times and remained in place at the time of writing. Beginning in March 2017, following the assumption of President Nana Akufo-Addo’s newly elected New Patriotic Party to office in January of the same year, the ban was implemented with the aim of formalizing and sanitizing the sector before a new roadmap could be deployed to manage activities. However, the ban has been criticized for being a heavy-handed and ineffective strategy over the long term because it does not address the root causes of illegality and informality.

---

90 Sources: McQuilken, 2018; McQuilken and Hilson, 2016; McQuilken and Hilson, 2018.
91 Hilson, 2001, 2007; Hilson and Okoh, 2013; McQuilken and Hilson, 2016; Hilson et al., 2017b.
92 Financing to develop the online repository was provided by the Australian High Commission, in partnership with technical and implementation support from the Revenue Development Foundation (2015-2017).
93 Aryee et al., 2003; McQuilken, 2018, pp. 110–113.
94 Hinton et al., 2003; Yakovleva, 2007; AMDC, 2015; McQuilken and Hilson, 2016; Hilson et al., 2018.
95 McQuilken and Hilson, 2016; Hilson, 2017.
**Economy**

Ghana’s economy and foreign exchange earnings depend significantly on the mining sector, particularly gold (Figure 1). For 2016 (January to December), the Bank of Ghana\(^6\) reported that total merchandise exports were valued at USD 11,136.9 million, accounting for 21% of gross domestic product (GDP). Of this, mineral and metal exports totaled USD 5,060.5 million (45%), with gold making up the major share, valued at USD 4,919.5 million and comprising 44% of overall exports. Therefore, gold accounted for more than 97% of total mineral export revenue in 2016. Similarly, in 2017, gold was again the top earner, netting the government USD 5,786.16 million in revenue and accounting for 42% of the total merchandise exports.

To determine ASM’s contribution to the national economy, the best available data originate from the Minerals Commission, the agency responsible for promoting and regulating the mining sector and housed under the MLNR. These data show a dramatic increase in the proportion of gold from ASM sources, increasing from an average of 5% in the 1990s to more than 30% over the last decade (Figure 2). Though not readily available as a public data set, again emphasizing the need for the Delve initiative, the production figures given here are from a draft report on the Multilateral Mining Integrated Project\(^7\) that was obtained through a direct communication. In 2016, Ghana produced 3,754,688 ounces of gold, comprised of 2,620,033 ounces (70%) from large-scale mining and 1,134,635 ounces (30%) from ASM.

For diamonds, the figures are drawn from The Ghana Chamber of Mines’ 2018 report *Performance of the Mining Industry in 2017*, which states the total amount of diamonds exported by PMMC was 143,005 carats in 2016 compared to 86,925 carats in 2017, a reduction of 39%, which is likely a reflection of the ban on ASM. Uniquely, all diamonds won in Ghana originate from several hundred Tributers (small-scale mining operations licensed to work on Great Consolidated Diamonds Ltd.’s concession) located in Akwatia, a town in Ghana’s Eastern Region.\(^8\)

Here lies a key example of the challenges with data on ASM specifically and mining more generally in Ghana: the need to produce consistent and reliable data sets that enable year-on-year comparison. For example, the Bank of Ghana’s 2016 Annual Report disaggregates merchandise exports by gold, manganese, bauxite, and diamonds, while the 2017 Annual Report consolidates the latter three under the category of “other exports,” making an annual comparison for small-scale diamond mining impossible with this data.

A lack of consistency and accompanying explanations also make easy comparison and reconciliation of figures with other data sets challenging. For example, PMMC’s 2016 gold purchase and export figure (also referenced as production) was, as reported by the Ghana Chamber of Mines, 1,570,029 ounces, worth USD 1,999.9 million.\(^9\) This figure can be taken to represent the approximate annual production of ASM, given PMMC’s role as a state buyer and exporter of gold and diamonds from the sector. But, without an explanation alongside this data, easily reconciling these figures with the production values quoted from the Minerals Commission\(^10\) at the start of this country profile becomes challenging. Furthermore, the different terminology ascribed to the figure in the same document and again in the 2017 report,\(^11\) where it is referred to as the “gold assayed” by PMMC, adds to the confusion.

A further challenge, and one that Delve needs to consider carefully, concerns the data’s origin and, as such, reliability. Despite the Ghana Chamber of Mines’ 2017 report referencing the source of the quoted production data throughout the text as “Minerals Commission, 2018,” the actual source is missing from the final reference list at the end of the document. This leads the reader to (tentatively) assume that the data has been received via a direct communication with the Commission. If this is true and fully referenced in

---

\(^6\)See Bank of Ghana, 2018 for all figures in this paragraph.

\(^7\)MLNR, 2017.

\(^8\)McQuilken and Hilson, 2018.


\(^10\)MLNR, 2017.

the document, it would have the added benefit of adding to the credibility and improving the reliability of the report, as well as the data contained within.

**Livelihoods**

Despite being the most difficult statistic to accurately quantify on ASM in Ghana, the number of people directly working in the sector, estimated at more than 1.5 million in addition to the 4–5 million supported by its activities, dwarf those in comparison to large-scale mining. The most recent (2017) figure reported by The Ghana Chamber of Mines\(^{102}\) is that its 12 producing member companies directly employ 10,503 people (159 expatriates, 10,344 Ghanaians),\(^{103}\) down from the previous report of 11,628 (190 expatriates, 11,438 Ghanaians) for the year 2016.\(^{104}\) The reason, it is stated, is due to the move at several key sites from owner to contract mining and a transition to solely mechanized underground operations. To compare, a 2015 study\(^{105}\) of seven large-scale gold mines in Ghana,\(^{106}\) which is based on historical data for the years 2010–2013 (inclusive) and a projected future decline of the national labor force required by such companies from 1.3% in 2013 to 0.6% by 2022, estimates that their sample of large-scale operations employ on average a total of 7,000 people directly, create 66,000 jobs through local sourcing (direct suppliers and supplier’s suppliers), and support a combined\(^{107}\) average total of approximately 111,000 jobs annually (2014–2022).

The breakdown of these figures and projections again highlights the challenges with obtaining accurate and reliable data. Accurate and verifiable estimates on the numbers employed and, crucially, disaggregation by gender, age, education, ethnicity, job type, income, duration, formality, and location are far more challenging, if not nonexistent. Without any countrywide baseline studies, a handful of reports and scholars have instead presented wide-ranging estimates over the years, which have grown steadily from 50,000–300,000 people mining directly in the late 1990s\(^{108}\) to approximately 1.1 million people directly engaged, and an estimated 4.4 million who today derive a livelihood from associated income-earning activities.\(^{109}\) The participation rate of women in the ASM sector is equally as challenging to quantify, with estimates ranging from 45–75%, and with 50% being an often-quoted figure.\(^{110}\)

In terms of (in)formality, and leaving aside the ban, there are a reported 109 active ASM licenses out of 209 on the online repository of the Ghana Minerals Commission.\(^{111}\) However, this figure is highly unreliable as an estimate for the size of Ghana’s formal ASM workforce because it does not include those legally mining on large-scale concessions, such as Tributers, nor does it indicate how many people each operation employs. Furthermore, a study from the late 1990s estimated 117 licensed and 6,000 illegal mining sites in Tarkwa alone,\(^{112}\) while a later study of the same town reported 36 licensed concessions in 2008.\(^{113}\) For a country-wide figure, a number of publications\(^{114}\) estimate that 70–80% of small-scale mining operations in Ghana are informal, referred to as galamsey.\(^{115}\) This is based on conservative assumptions that there are approximately 1,000 mine sites (licensed and unlicensed), each employing 200–300 people, and a total 1 million people directly engaged in the sector. What is clear from these varied and wide-ranging values is the need for reliable data on the true number of people supported by ASM, those operating informally, and details on their characteristics and backgrounds.

---

\(^{102}\) The Ghana Chamber of Mines is the main minerals industry association representing the collective interests of exploration, mining, and processing companies operating in the country.

\(^{103}\) Ghana Chamber of Mines, 2018.


\(^{106}\) Adamus Resources; Chirano Gold Mines; Gold Fields, Damang; Gold Fields, Tarkwa; Golden Star Resources, Wassa; Newmont, Ahafo; and Newmont, Akyem; See International Council on Mining and Metals, 2015.

\(^{107}\) This combined figure includes directly by mining companies, direct suppliers, supplier’s suppliers, and re-spending of salaries.

\(^{108}\) ILO, 1999.

\(^{109}\) UNECA, 2011, p. 69, based on estimates from CASM.

\(^{110}\) Hilson 2001, 2002; Hentschel et al., 2002; Hinton et al., 2003; Hilson et al., 2018.


\(^{113}\) Opoku-Antwi et al., 2012.

\(^{114}\) Crawford and Botchwey, 2016; McQuilken and Hilson, 2016.

\(^{115}\) **Galamsey** is an adulteration of the English phrase “gather them and sell.”
Key data needs

In addition to the need for a single platform to collate and allow side-by-side comparison of data sets on ASM in Ghana directly obtained from reliable government sources, listed here are specific data needs for the country that were identified during analysis:

- The true number and location of artisanal and small-scale miners operating in the country, disaggregated by characteristics such as gender, age, education, ethnicity, job type, income, duration, and formality
- Production and export data that are accurate, from reliable sources, and comparable and reconcilable
- Statistical modelling of the economic contribution of current and future government revenues generated from the ASM sector to support the rationale for formalization efforts
- Geological data that quantify the location and value of deposits for ASM activities and zones to enable small-scale operators to access formal financial channels


——. 2018. *India Map of Minerals*. Available at www.cse.org


Gonzalez, D. 2016. *Opportunities, not oppression, to stop illegal mining in the Peruvian Amazon*. Available at https://yaleglobal.yale.edu/content/opportunities-not-oppression-stop-illegal-mining-peruvian-amazon


and UNDP. Available at http://www.ug.undp.org/content/dam/uganda/docs/UNDPUGt18%20-%20DevMinBaseLineUganda_Vol.1.pdf


Hrutschka, F. 2018, November 22. Personal communication and feedback following review of an earlier version of this report.


ILO. n.d. Facts on Small-Scale Mining. Geneva: ILO.


ITSCI. 2018. Understanding ITSCI. Available at https://www.itsci.org/


MANAGEM. 2018. MANAGEM website. Available at http://www.managemgroup.com/


NSO. 2016. *Artisanal and Small-scale miners’ survey summary*. NSO and SDC.


Olivo, J., Mendonza, C., and Mestre, J. 1995. Hair mercury levels in different occupational groups in a gold mining zone in the north of Colombia.


UNDP, UN Habitat, and Global Taskforce of Local and Regional Governments. 2016. *Roadmap for Localizing the SDGs: Implementation and Monitoring at Subnational Level*.


UNEP. 2012. *Analysis of formalization approaches in the artisanal and small-scale gold mining sector based on experiences in Ecuador, Mongolia, Peru, Tanzania and Uganda*. Geneva: UNEP.


Université du Québec à Montréal. n.d. *Baseline Survey of Small-Scale Mining in Kyrgyz Republic*.


