GRI Sector Standards Project for Mining – Exposure draft

Comments to be received by 30 April 2023

Background
Sustainability reporting using the GRI Standards enables an organization to publicly disclose its most significant impacts and how it manages these impacts.

The purpose of the GRI Sector Standards is to increase transparency by focusing attention on the sustainability issues that matter most within sectors. They will identify and describe a sector’s most significant impacts from a sustainable development perspective and reflect the information needs and expectations of stakeholders.

The Mining Sector Standard is the fourth standard developed under the Sector Program and the first one following the pilot projects. More information about the Sector Program, including the full list of prioritized sectors prioritized for a Standard, can be found on the program webpage.

Public comment period
This exposure draft for mining is published for public comment by the Global Sustainability Standards Board (GSSB), the independent standard-setting body of GRI.

Any interested party can submit comments on this draft by 30 April 2023 via this online questionnaire. As required by the GSSB Due Process Protocol, only comments submitted in writing and in English will be considered. Comments will be published on the GRI website and considered a matter of public record. Instructions to submit comments are outlined on the first page of the online questionnaire.

An explanatory memorandum preceding the exposure draft summarizes the objectives of the project and the significant proposals contained within the draft.

This draft is published for comment only and may change before official publication.

For questions regarding the exposure draft or the public comment period, please send an email to mining@globalreporting.org.
Explanatory memorandum

This explanatory memorandum sets out the objectives of the GRI Sector Standards Project for Mining. It also includes the significant proposals resulting from this project and summarizes the Global Sustainability Standards Board (GSSB)’s involvement and views on the development of the draft.

Objectives for the project

Mining was identified by the Global Sustainability Standards Board (GSSB) in 2020 for prioritization for a reporting standard, due to its wide-ranging impacts on the environment, people, and economies on both local and global scales. The sector’s activities and resulting impacts are also similar to the two other extractive sectors that have Sector Standards - oil and gas (GRI 11: Oil and Gas Sector 2021), and coal (GRI 12: Coal Sector 2022), offering synergies in the development process.

The primary objective of the project is to develop a Sector Standard that improves transparency of the impacts of mining to enable complete and consistent reporting across the sector.

The aim is for the Standard to identify and describe the topics that are likely to be material for reporting by mining organizations based on the sector’s most significant impacts, provide evidence and authoritative references on these impacts, and list relevant disclosures for reporting on these topics by the sector.

A 20-person multi-stakeholder working group (WG) was engaged to contribute to the development of the Sector Standard, as required by the GSSB’s Due Process Protocol.

For more information on the project, consult the project proposal and terms of reference.

Significant proposals

An exposure draft for mining has been developed in line with the project objectives set out above.

Notable inclusions as regards the likely material topics and related reporting in the exposure draft are summarized below:

1. **25 topics identified as likely to be material for organizations in the mining sector to report.**
   For each likely material topic, the sector’s most significant impacts are described and disclosures listed to report information about the organization’s impacts and approach in relation to the topic (see Table 1 for the full list of likely material topics).

2. **Three of these likely material topics are new to the GRI Standards.**
   Most of the likely material topics in the exposure draft correspond to those listed in GRI 11: Oil and Gas Sector 2021 and GRI 12: Coal Sector 2022, however three topics have been introduced for the first time in the GRI Standards Two of the topics, ‘Tailings’, and ‘Conflict-affected and high-risk areas’ are mainly based on contents that formed part of other topics in GRI 11 and GRI 12, but were seen by the mining WG as salient enough to warrant independent treatment.
   - **Topic 14.7 Tailings** expands on the contents and reporting that in GRI 11 and GRI 12 were part of topic ‘Asset integrity and critical incident management’. The focus of the topic is on the safety of tailings facilities, which upon catastrophic failures can cause devastating impacts on the environment and people, including loss of life. The reporting disclosures listed are primarily based on and aligned with the multi-stakeholder developed Global Industry Standard on Tailings Management.²

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¹ ‘Mining organizations’ refers to organizations engaged in mining and quarrying activities. Please see page 18 of the exposure draft for more information on which organizations fall within the scope of this Standard.

• **Topic 14.25 Conflict-affected and high-risk areas** expands on the contents that in *GRI 11* and *GRI 12* were part of a topic called ‘Conflict and security’. The topic focuses on the importance of conducting robust due diligence when operating or sourcing from conflict-affected and high-risk areas, which present a heightened risk for severe human rights abuses and illicit financial flows. The reporting disclosures, and primarily draw from the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*.3

• **Topic 12.13 Artisanal and small-scale mining** has no corresponding topic or contents in previous Sector Standards. Individuals and communities engaged in artisanal and small-scale mining (ASM) are considered a key stakeholder group for many mining organizations. Impacts of these interactions range from disputes and incidents to impacts on ASM communities' livelihoods. While ASM happens mostly on an informal basis, expectations are emerging for mining organizations to engage with ASM operators and, where legitimate, support them to formalize and improve their operations.

3. **Most likely material topics list additional sector reporting recommendations.**

The mining sector is subject to significant transparency expectations, and this is reflected in the GRI Mining Sector Standard exposure draft. The vast majority of topics list supplementary disclosures. This additional sector reporting was identified by the WG as critical for reporting by the sector and the exclusion of this information from reporting would mean it was incomplete.

• Four topics do not list any disclosures from the GRI Topic Standards: 14.6 Tailings; 14.12 Land and resource rights; 14.13 Artisanal and small-scale mining; and 14.25 Conflict-affected and high-risk areas. For these topics, additional disclosures were developed by the WG or applied from other normative reporting instruments already used by reporting organizations in the sector to disclose their impacts.

• 17 topics that list disclosures from GRI Topic Standards also include additional sector reporting (see Table 1 for the full list of topics with additional sector disclosures). For these topics, additional disclosures were developed by the WG or applied from other normative reporting instruments already used by reporting organizations in the sector to disclose their impacts.

• Four topics only list Topic Standards disclosures and no additional sector reporting. Of these, topic 14.4 Biodiversity lists disclosures from the revised *GRI 304: Biodiversity exposure draft*, relevant to the mining sector's impacts, aiming to solicit more accurate feedback on potential sector-specific gaps. The disclosures listed are subject to change based on the final revisions to *GRI 304*.4

4. **Mine-site reporting included as a key expectation across several topics.**

Due to the significance of impacts experienced locally from mining activities, the WG indicated the need for transparent, timely, mine-site level reporting of environmental, social, and economic information. While this will increase the extent and granularity of reporting, the relevance of this type of reporting to meaningfully understanding impacts was acknowledged. It was also noted that many organizations are already collecting information on a site level for internal and/or corporate reporting purposes. The exposure draft includes mine-site reporting for topics such as GHG and air emissions, tailings, closure and rehabilitation, community-related impacts, critical incident management, and payments to governments.

5. **Impacts on and engagement with communities an emphasis throughout the Standard.**

Due to the scale, long time frames and subsequent impacts of mining projects, obtaining the approval and support of local communities around mine sites is essential for mining organizations

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4 The Standard *GRI 304: Biodiversity* is currently being revised, with the exposure draft open for public comment from 5 December 2022 until 28 February 2023.
to secure a social license to operate. Impacts on communities manifest throughout the lifetime of
a mine and span across economic, environmental, and social dimensions. These impacts are
outlined across several topics in the exposure draft, including from the perspective of economic
impacts and benefits; social, cultural, and health impacts; impacts in the context of resettlement
and use of security personnel, and a specific focus on the rights of Indigenous Peoples.

Some the additional sector disclosures on community impacts developed for this exposure draft
may also be relevant for other sectors. While these would generally be included as part of the
final recommendations to the GSSB for further Topic Standards development, these additions
were seen as essential to be included given the engagement and impact of the sector with local
communities.\(^\text{5}\)

6. **Importance of gender for the sector’s impacts established as a focus.**

   Feedback from the WG and peer reviewers underscored the importance of gender-related
   impacts. While the inclusion of a standalone topic of gender was considered, ultimately a
   “mainstreaming” approach was adopted, where a gender lens is applied to relevant topics along
   with additional reporting recommendations.

7. **Impacts and reporting on climate change increasingly important for the sector.**

   Addressing climate change impacts emerged as a key priority for the sector. Mining organizations
   have a role to play in the low-carbon transition, mitigating emissions across the value chain,
   supporting communities to adapt to physical impacts, and as providers of minerals necessary for
   new technologies. While the existing Topic Standards disclosures were not seen as always
   sufficient for reporting by the sector, given a review of GRI’s climate-related Standards is
   commencing in 2023, additional recommendations on reporting on climate-related impacts and
   issues will be considered as part of this broader process.

**Other outcomes from the development process**

**Topic statement changes**

Each likely material topic starts with a ‘topic statement’, which provides a brief general description of
the topic and its boundaries. The topic statement reflects the definition and approach to the topic
outlined in the Topic Standard, and is consistent across Sector Standards, wherever possible. A
change to a topic statement in one Standard thus has implications for all other existing Sector
Standards.

The mining WG submitted relevant feedback on a number of topic statements, which the Standards
Division recommends implementing. The revision proposals for the ‘GHG emissions’ and ‘Local
communities’ can be found in Table 2.

**GSSB involvement and views on the development of this draft**

The GSSB has been regularly updated on the content development process for mining through the
Chief of Standards updates of Standards development projects in the public GSSB meetings.

The GSSB confirmed its support for contents of the exposure draft for mining when it voted to
approve the draft for public exposure at its meeting on 24 January 2023. The recording of the
meetings can be accessed on the GSSB website.

**Superseded publications**

The GRI Sector Standard for Mining will be relevant for mining organizations previously using the G4
Mining and Metals Sector Disclosures. The content of these Sector Disclosures was not updated as
part of the transition from the G4 Guidelines to the GRI Standards.

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\(^{5}\) According to the draft GSSB work program 2023-2025, revision of community related Standards is planned to
begin in 2024.
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Introduction

GRI 14: Mining Sector 202X provides information for organizations involved in mining activities about their likely material topics. These topics are likely to be material for mining organizations on the basis of the sector’s most significant impacts on the economy, environment, and people, including on their human rights.

GRI 14 also contains a list of disclosures for mining organizations to report in relation to each likely material topic. This includes disclosures from the GRI Topic Standards and other sources.

The Standard is structured as follows:

• Section 1 provides a high-level overview of the mining sector, including its activities, business relationships, context, and the connections between the United Nations Sustainable Development Goals (SDGs) and the likely material topics for the sector.

• Section 2 outlines the topics that are likely to be material for mining organizations and, therefore, potentially merit reporting. For each likely material topic, the sector’s most significant impacts are described and disclosures to report information about the organization’s impacts in relation to the topic are listed.

• The Glossary contains defined terms with specific meanings when used in the GRI Standards. The terms are underlined in the text and linked to the definitions.

• The Bibliography contains authoritative intergovernmental instruments and additional references used in developing this Standard, listed by topic. It also lists further resources that the organization can consult.

The rest of the Introduction section provides an overview of the sector this Standard applies to, an overview of the system of GRI Standards, and further information on using this Standard.
Sector this Standard applies to

GRI 14 applies to organizations undertaking any of the following:

- Exploration, extraction, including quarrying, and primary processing of all types of minerals, metallic and non-metallic, except for oil, gas, and coal.\(^6\)
- Support activities for mining, such as transport and storage.
- Supply of specialized products and services to mining organizations, such as engineering, procurement, and construction (EPC) contractors.

This Standard can be used by any organization in the mining sector, regardless of size, type, geographic location, or reporting experience. While small mining organizations can use this Standard, it is not designed to apply to artisanal and small-scale mining (ASM) operators. However, this Standard does cover the impacts that mining organizations may cause or be involved with through their business relationships, interactions, or co-location of mining, with ASM.\(^7\)

The organization must use all applicable Sector Standards for the sectors in which it has substantial activities.

Sector classifications

Table 1 lists industry groupings relevant to the mining sector covered in this Standard in the Global Industry Classification Standard (GICS)\(^5\), the Industry Classification Benchmark (ICB)\(^3\), the International Standard Industrial Classification of All Economic Activities (ISIC)\(^7\), and the Sustainable Industry Classification System (SICS)\(^6\). The table is intended to assist an organization in identifying whether GRI 14 applies to it and is for reference only.

<table>
<thead>
<tr>
<th>Classification system</th>
<th>Classification number</th>
<th>Classification name</th>
</tr>
</thead>
<tbody>
<tr>
<td>GICS(^5)</td>
<td>151040</td>
<td>Metals and Mining, with the exclusion of the manufacturers of aluminum and steel, and metal recycling</td>
</tr>
<tr>
<td>ICB</td>
<td>551020000</td>
<td>General Mining</td>
</tr>
<tr>
<td></td>
<td>55102010</td>
<td>Iron and Steel (excluding manufacturers of steel and metal recycling)</td>
</tr>
<tr>
<td></td>
<td>55102035</td>
<td>Aluminum (excluding manufacturers of aluminum and metal recycling)</td>
</tr>
<tr>
<td></td>
<td>55102040</td>
<td>Copper (excluding smelters and metal recycling)</td>
</tr>
<tr>
<td></td>
<td>55102050</td>
<td>Nonferrous Metals (excluding smelters and metal recycling)</td>
</tr>
<tr>
<td></td>
<td>55103020</td>
<td>Diamonds and Gemstones</td>
</tr>
<tr>
<td></td>
<td>55103025</td>
<td>Gold Mining (excluding smelters and metal recycling)</td>
</tr>
<tr>
<td></td>
<td>55103030</td>
<td>Platinum and precious metals (excluding smelters and metal recycling)</td>
</tr>
</tbody>
</table>

\(^6\) Further stages of processing, such as smelting, refining, and metal recycling, will be the subject of a separate GRI Sector Standard.

\(^7\) In this Standard, ASM is understood to comprise mostly informal subsistence activities, characterized by minimal or no mechanization and lack of systematic implementation of environmental or social protections.

\(^8\) The relevant industry groupings in the Statistical Classification of Economic Activities in the European Community (NACE)\(^1\) and the North American Industry Classification System (NAICS)\(^2\) can also be established through available concordances with the International Standard Industrial Classification (ISIC).
System of GRI Standards

This Standard is part of the GRI Sustainability Reporting Standards (GRI Standards). The GRI Standards enable an organization to report information about its most significant impacts on the economy, environment, and people, including impacts on their human rights, and how it manages these impacts.

The GRI Standards are structured as a system of interrelated standards that are organized into three series: GRI Universal Standards, GRI Sector Standards, and GRI Topic Standards (see Figure 1 in this Standard).

Universal Standards: GRI 1, GRI 2 and GRI 3

GRI 1: Foundation 2021 specifies the requirements that the organization must comply with to report in accordance with the GRI Standards. The organization begins using the GRI Standards by consulting GRI 1.

GRI 2: General Disclosures 2021 contains disclosures that the organization uses to provide information about its reporting practices and other organizational details, such as its activities, governance, and policies.

GRI 3: Material Topics 2021 provides guidance on how to determine material topics. It also contains disclosures that the organization uses to report information about its process of determining material topics, its list of material topics, and how it manages each topic.

Sector Standards

The Sector Standards provide information for organizations about their likely material topics. The organization uses the Sector Standards that apply to its sectors when determining its material topics and when determining what to report for each material topic.

Topic Standards

The Topic Standards contain disclosures that the organization uses to report information about its impacts in relation to particular topics. The organization uses the Topic Standards according to the list of material topics it has determined using GRI 3.
Using this Standard

An organization in the mining sector reporting in accordance with the GRI Standards is required to use this Standard when determining its material topics and then when determining what information to report for the material topics.

Determining material topics

Material topics represent an organization’s most significant impacts on the economy, environment, and people, including their human rights.

Section 1 of this Standard provides contextual information that can help the organization in identifying and assessing its impacts.

Section 2 outlines the topics that are likely to be material for mining organizations. The organization is required to review each topic described and determine whether it is a material topic for it.

The organization needs to use this Standard when determining its material topics. However, circumstances for each organization vary, and the organization needs to determine its material topics according to its specific circumstances, such as its business model; geographic, cultural, and legal operating context; ownership structure; and the nature of its impacts. Because of this, not all topics listed in this Standard may be material for all mining organizations. See GRI 3: Material Topics 2021 for step-by-step guidance on how to determine material topics.

If the organization has determined any of the topics included in this Standard as not material, then the organization is required to list them in the GRI content index and explain why they are not material.

See Requirement 3 in GRI 1: Foundation 2021 and Box 5 in GRI 3 for more information on using Sector Standards to determine material topics.
Determining what to report

For each material topic, an organization reports information about its impacts and how it manages these impacts.

Once an organization has determined a topic included in this Standard to be material, the Standard also helps the organization identify disclosures to report information about its impacts relating to that topic.

For each topic in section 2 of this Standard, a reporting sub-section is included. These sub-sections list disclosures from the GRI Topic Standards that are relevant to the topic. They may also list additional sector disclosures and recommendations for the organization to report. This is done in cases where the Topic Standards do not provide disclosures, or where the disclosures from the Topic Standards do not provide sufficient information about the organization’s impacts in relation to a topic. These additional sector disclosures and recommendations may be based on other sources. Figure 2 illustrates how the reporting included in each topic is structured.

The organization is required to report the disclosures from the Topic Standards listed for those topics it has determined to be material. If any of the Topic Standards disclosures listed are not relevant to the organization’s impacts, the organization is not required to report them. However, the organization is required to list these disclosures in the GRI content index and provide ‘not applicable’ as the reason for omission for not reporting the disclosures. See Requirement 6 in GRI 1: Foundation 2021 for more information on reasons for omission.

The additional sector disclosures and recommendations outline further information which has been identified as relevant for organizations in the mining sector to report in relation to a topic. The organization should provide sufficient information about its impacts in relation to each material topic, so that information users can make informed assessments and decisions about the organization. For this reason, reporting these additional sector disclosures and recommendations is encouraged, however it is not a requirement.

When the organization reports additional sector disclosures, it is required to list them in the GRI content index (see Requirement 7 in GRI 1).

If the organization reports information that applies to more than one material topic, it does not need to repeat it for each topic. The organization can report this information once, with a clear explanation of all the topics it covers.

If the organization intends to publish a standalone sustainability report, it does not need to repeat information that it has already reported publicly elsewhere, such as on web pages or in its annual report. In such a case, the organization can report on a required disclosure by providing a reference in the GRI content index as to where this information can be found (e.g., by providing a link to the web page or citing the page in the annual report where the information has been published).

See Requirement 5 in GRI 1 for more information on using Sector Standards to report disclosures.

GRI Sector Standard reference numbers

GRI Sector Standard reference numbers are included for all disclosures listed in this Standard, both those from GRI Standards and additional sector disclosures. When listing the disclosures from this Standard in the GRI content index, the organization is required to include the associated GRI Sector Standard reference numbers (see Requirement 7 in GRI 1: Foundation 2021). This identifier helps information users assess which of the disclosures listed in the applicable Sector Standards are included in the organization’s reporting.

Defined terms

Defined terms are underlined in the text of the GRI Standards and linked to their definitions in the Glossary. The organization is required to apply the definitions in the Glossary.
References and resources

The authoritative intergovernmental instruments and additional references used in developing this Standard, as well as further resources that may help report on likely material topics and can be consulted by the organization are listed in the Bibliography. These complement the references and resources listed in GRI 3: Material Topics 2021 and in the GRI Topic Standards.

Figure 2. Structure of reporting included in each topic

1. Management of the topic
   The organization is required to report how it manages each material topic using Disclosure 3-3 in GRI 3: Material Topics 2021.

2. Topic Standards disclosures
   Disclosures from the GRI Topic Standards that have been identified as relevant for organizations in the sector(s) are listed here. When the topic is determined by the organization as material, it is required to report those disclosures or explain why they are not applicable in the GRI context index. See the Topic Standard for the content of the disclosure, including requirements, recommendations, and guidance.

3. Additional sector recommendations
   Additional sector recommendations may be listed. These complement Topic Standards disclosures and are recommended for an organization in the sector(s).

4. Additional sector disclosures
   Additional sector disclosures may be listed. Reporting these, together with any Topic Standards disclosures, ensures the organization reports sufficient information about its impacts in relation to the topic.

5. Sector Standard reference numbers
   GRI Sector Standard reference numbers are required to be included in the GRI Content Index. This helps information users assess which of the disclosures listed in the Sector Standards are included in the organization’s reporting.
1. Sector profile

Minerals are essential for the functioning of modern societies and economies. They are used, for example, to make steel and other materials for infrastructure, critical components for transportation, communications, and technological solutions, and to create fertilizers for farming. Minerals are indispensable in the transition to a low-carbon economy, used for renewable energy sources such as wind and solar technologies and the manufacture of electric storage batteries.

Minerals are divided into metallic and non-metallic minerals. Metallic minerals (or metals) can be classified by their properties or function. They comprise precious metals (e.g., gold, silver, platinum); ferrous metals (containing iron); non-ferrous metals (e.g., aluminum, copper, zinc); and rare earth elements (e.g., neodymium, yttrium, scandium). Sand, stone, lime, and diamonds are examples of non-metallic minerals.

The capital-intensive mining sector represents a wide range of organizations. The sector includes large publicly-listed companies often vertically integrated across the value chain; state-owned enterprises (SOEs); and small and medium-sized organizations known as 'junior companies', specializing in exploration and prospecting. Organizations engaged in quarrying are typically smaller and characterized by less mechanized operations.

Sector activities and business relationships

Through their activities and business relationships, organizations can have an effect on the economy, environment, and people, and in turn make negative or positive contributions to sustainable development. When determining its material topics, the organization should consider the impacts of both its activities and its business relationships.

Activities

The impacts of an organization vary according to the types of activities it undertakes. The following list outlines some of the key activities of the mining sector, as defined in this Standard. This list is not exhaustive.

- **Prospecting and exploration**: Surveying of resources, including feasibility assessments, geologic mapping, aerial photography, geophysical measuring, and exploration drilling.
- **Development**: Design, planning, and construction of mines, access roads, and facilities for processing, waste management, and workers.
- **Mining operations**: Extraction of ores and minerals from the earth using different techniques, such as surface mining, placer mining, underground mining, or in situ techniques, as well as primary processing to separate commercially valuable minerals from their ores. This phase also includes the disposal of waste and management of tailings facilities.
- **Closure and rehabilitation**: Decommissioning of processing facilities, land reclamation, restoration, and rehabilitation in line with post-closure objectives, as well as closing and capping waste facilities and associated infrastructure.
- **Transportation**: Moving minerals and waste to the point of storage, consumption, or further processing by barge, conveyor belt, train, truck, or ship.
- **Storage**: Storage of minerals at mine sites or import and export terminals.
- **Sales and marketing**: Selling minerals, for example, for iron and steel production, cement production, and use in manufacturing.

Business relationships

An organization's business relationships include those with business partners, entities in its value chain, those beyond the first tier, and entities directly linked to the organization's operations, products, or services. The following types of business relationships are prevalent in the mining sector and relevant for identifying the impacts of organizations in the sector.
Joint ventures are common arrangements in mining in which organizations share the costs, benefits, and liabilities of assets or a project. They can also include partnerships with state-owned enterprises (SOEs). An organization in the mining sector can be involved with negative impacts as a result of participating in a joint venture, even if it is a non-operating partner.

Suppliers and contractors represent a significant share of spending by mine site and are commonly used to perform mining operations or to provide products or services. Some of the most significant impacts covered in this Standard concern the supply chain.

Customers and other parties downstream of the mining organization are increasingly voicing expectations for supply chain traceability to ensure the responsible production of minerals. They, therefore, constitute a key driver of transparency in the sector.

The sector and sustainable development

The mining sector plays an important role in many national economies and can make significant contributions to the economic development of regions and countries. Low- and middle-income countries are most likely to rely on their natural resources as a primary driver of economic activity—a dependence that has grown steadily over the last few decades. In mining-dependent economies, responsible mining practices can lead to reductions in levels of poverty and overall improvements in social well-being.

Financial flows around mining projects are substantial, deriving, for example, from taxes, royalties, other payments to governments, and spending on suppliers. Along with providing employment opportunities throughout the supply chain, the sector also invests in infrastructure and community development projects. Benefits like these can contribute to long-term development needs and priorities for rural areas and countries that have limited sources of additional revenue. These flows represent important benefit streams, but can also present risks such as corruption.

Locating, extracting, and processing minerals entails complex scientific, environmental, and socioeconomic planning. The scale of mining projects can be significant, sometimes spanning vast areas and taking place over several decades. National legislation, environmental protections, and tax regimes set out by the countries where mining occurs largely regulate mining projects. If operations are poorly managed, mining can create negative impacts with lasting implications for ecosystems, local communities, and workers’ health and safety. Climate change, with consequences for water management, biodiversity, extreme heat and other factors, has brought additional physical challenges to mining operations. Moreover, the decline of ore grades is likely to increase the amount of energy and resources needed to extract minerals, resulting in more pollution and waste generated.

Global demand for minerals is expected to increase due to continued economic growth, improved living standards, and the need to transition to a low-carbon economy. While minerals are essential to clean energy technologies that underpin global climate change mitigation goals, the sector is increasingly under scrutiny due to its contribution to GHG emissions and the need to reduce them across the value chain. The sector is facing expectations to transition to renewable energy sources, and to explore circular economy measures, such as recycling and reuse, to reduce the primary demand for minerals.

The boom to mine certain minerals needed for clean technologies has also raised concerns over risks of increased environmental and human rights impacts. When higher-grade ores and proven deposits are depleted, mining activities may be driven to more remote or ecologically sensitive areas, areas characterized by water stress or inhabited by Indigenous Peoples, or fragile, conflict-prone states.

Additionally, land use, displacement, environmental impacts, and the economic potential associated with mineral extraction can inflame conflict. In some cases, this can result in violence against or within local communities.

Due to the significance of the impacts of mining on a local level, expectations are increasingly emerging for mining organizations to publish transparent and timely mine-site level information of their impacts on the economy, environment, and people. This can contribute to meaningful engagement with affected stakeholders, such as help align expectations on the management of impacts and provision of benefits [9].
Box 1. Key international instruments and initiatives supporting responsible mining

Downstream actors, investors, and regulators increasingly expect mining organizations to conduct human rights due diligence. The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas has been widely adopted by organizations to prevent serious human rights impacts, fueling conflict and financial crime. The OECD guidance has also been adopted by a number of national and supranational regulatory instruments, such as the Dodd-Frank Act in the United States and the Mineral Supply Due Diligence Regulation in the European Union.

Initiatives such as the Extractive Industries Transparency Initiative, focused on transparency over natural resource management, and the Intergovernmental Forum on Mining, Minerals, Metals, and Sustainable Development (IGF) are helping nations to improve resource governance and financial benefit-sharing. These initiatives reflect the growing international pressure to illuminate how mineral revenues flow through governments and the economy, focusing on issues such as project-level payments, beneficial ownership structures, and transparency on agreements, permits, contracts, and licenses.

Government-to-government initiatives, such as through the World Bank and public-private collaboration, have generated greater focus and expectations for identifying, assessing, preventing, and mitigating impacts while increasing traceability and transparency in the mining sector.

Sustainable Development Goals

The Sustainable Development Goals (SDGs), part of the 2030 Agenda for Sustainable Development adopted by the 193 United Nations (UN) member states, comprise the world’s comprehensive plan of action for achieving sustainable development [11]. Since the SDGs and targets associated with them are integrated and indivisible, mining organizations have the potential to contribute to all SDGs by enhancing their positive impacts or by preventing and mitigating their negative impacts on the economy, environment, and people.

The sector has intrinsic connections to Goal 6: Clean Water and Sanitation and Goal 15: Life on Land due to the impacts that water consumption and land use by mining organizations can have on local communities and the environment.

The mining sector can make meaningful contributions to Goal 8: Decent Work and Economic Growth and Goal 1: No Poverty because it provides an essential source of revenue and employment in many regions while also providing materials for other industries that drive economic growth. With proper management of environmental impacts and the continuing supply of materials that enable infrastructure development, the mining sector can contribute to Goal 11: Sustainable Cities and Communities and Goal 12: Responsible Consumption and Production.

Table 2 presents connections between the likely material topics for the mining sector and the SDGs. These links were identified based on an assessment of the impacts described in each likely material topic, the targets associated with each SDG, and existing mapping undertaken for the sector (see reference [22] in the Bibliography).

Table 2 is not a reporting tool but presents connections between the mining sector’s significant impacts and the goals of the 2030 Agenda for Sustainable Development. See references [21] and [20] in the Bibliography for information on reporting progress towards the SDGs using the GRI Standards.
Table 2. Links between the likely material topics for the mining sector and the SDGs

<table>
<thead>
<tr>
<th>Likely material topics</th>
<th>Corresponding Sustainable Development Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic 14.1 GHG emissions</td>
<td>GOAL 13: Climate Action</td>
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<tr>
<td></td>
<td>GOAL 14: Life Below Water</td>
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<tr>
<td>Topic 14.2 Climate adaptation and resilience</td>
<td>GOAL 1: No Poverty</td>
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<tr>
<td></td>
<td>GOAL 7: Affordable and Clean Energy</td>
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<td></td>
<td>GOAL 8: Decent Work and Economic Growth</td>
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<td>GOAL 9: Industry, Innovation and Infrastructure</td>
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<tr>
<td></td>
<td>GOAL 13: Climate Action</td>
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<tr>
<td>Topic 14.3 Air emissions</td>
<td>GOAL 3: Good Health and Well-being</td>
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<tr>
<td></td>
<td>GOAL 11: Sustainable Cities and Communities</td>
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<td></td>
<td>GOAL 15: Life on Land</td>
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<tr>
<td>Topic 14.4 Biodiversity</td>
<td>GOAL 6: Clean Water and Sanitation</td>
</tr>
<tr>
<td></td>
<td>GOAL 12: Responsible Consumption and Production</td>
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<tr>
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<td>GOAL 14: Life Below Water</td>
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<td></td>
<td>GOAL 15: Life on Land</td>
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<tr>
<td>Topic 14.5 Waste</td>
<td>GOAL 3: Good Health and Well-being</td>
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<td>GOAL 6: Clean Water and Sanitation</td>
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<td>GOAL 12: Responsible Consumption and Production</td>
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<td>GOAL 15: Life on Land</td>
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<td>Topic 14.6 Tailings</td>
<td>GOAL 6: Clean Water and Sanitation</td>
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<td>GOAL 12: Responsible Consumption and Production</td>
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<td></td>
<td>GOAL 15: Life on Land</td>
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<tr>
<td>Topic 14.7 Water and effluents</td>
<td>GOAL 6: Clean Water and Sanitation</td>
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<tr>
<td></td>
<td>GOAL 12: Responsible Consumption and Production</td>
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<td>GOAL 14: Life Below Water</td>
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<td></td>
<td>GOAL 15: Life on Land</td>
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<tr>
<td>Topic 14.8 Closure and rehabilitation</td>
<td>GOAL 4: Quality Education</td>
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<tr>
<td></td>
<td>GOAL 6: Clean Water and Sanitation</td>
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<td>GOAL 8: Decent Work and Economic Growth</td>
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<td>GOAL 11: Sustainable Cities and Communities</td>
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<td></td>
<td>GOAL 15: Life on Land</td>
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<tr>
<td>Topic 14.9 Economic impacts</td>
<td>GOAL 1: No Poverty</td>
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<td>GOAL 4: Quality Education</td>
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<td>GOAL 5: Gender Equality</td>
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<td>GOAL 9: Industry, Innovation and Infrastructure</td>
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<td>GOAL 10: Reduced Inequalities</td>
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<tr>
<td>Topic 14.10 Local communities</td>
<td>GOAL 1: No Poverty</td>
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<td>GOAL 3: Good Health and Well-being</td>
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<td>GOAL 5: Gender Equality</td>
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<td></td>
<td>GOAL 6: Clean Water and Sanitation</td>
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<td></td>
<td>GOAL 16: Peace, Justice and Strong Institutions</td>
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<tr>
<td>Topic 14.11 Rights of Indigenous Peoples</td>
<td>GOAL 1: No Poverty</td>
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<td></td>
<td>GOAL 3: Good Health and Well-being</td>
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<tr>
<td></td>
<td>GOAL 5: Gender Equality</td>
</tr>
<tr>
<td></td>
<td>GOAL 11: Sustainable Cities and Communities</td>
</tr>
</tbody>
</table>
| Topic 14.12 Land and resource rights | GOAL 1: No Poverty  
GOAL 11: Sustainable Cities and Communities  
GOAL 16: Peace, Justice and Strong Institutions |
|-------------------------------------|---------------------------------------------------|
| Topic 14.13 Artisanal and small-scale mining (ASM) | GOAL 1: No Poverty  
GOAL 3: Good Health and Well-being  
GOAL 8: Decent Work and Economic Growth  
GOAL 15: Life on Land  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.15 Critical incident management | GOAL 3: Good Health and Well-being  
GOAL 11: Sustainable Cities and Communities |
| Topic 14.16 Occupational health and safety | GOAL 3: Good Health and Well-being  
GOAL 8: Decent Work and Economic Growth |
| Topic 14.17 Employment practices | GOAL 1: No Poverty  
GOAL 5: Gender Equality  
GOAL 8: Decent Work and Economic Growth  
GOAL 10: Reduced Inequalities |
| Topic 14.18 Child labor | GOAL 1: No Poverty  
GOAL 4: Quality Education  
GOAL 8: Decent Work and Economic Growth  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.19 Forced labor and modern slavery | GOAL 1: No Poverty  
GOAL 8: Decent Work and Economic Growth  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.20 Freedom of association and collective bargaining | GOAL 8: Decent Work and Economic Growth  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.21 Non-discrimination and equal opportunity | GOAL 4: Quality education  
GOAL 5: Gender Equality  
GOAL 8: Decent Work and Economic Growth  
GOAL 10: Reduced Inequalities  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.22 Anti-corruption | GOAL 12: Responsible Consumption and Production  
GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.23 Payments to governments | GOAL 1: No Poverty  
GOAL 16: Peace, Justice and Strong Institutions  
GOAL 17: Partnerships for the Goals |
| Topic 14.24 Public policy | GOAL 16: Peace, Justice and Strong Institutions |
| Topic 14.25 Conflict-affected and high-risk areas | GOAL 16: Peace, Justice and Strong Institutions  
GOAL 8: Decent Work and Economic Growth |
2. Likely material topics

This section comprises the likely material topics for the mining sector. Each topic describes the sector’s most significant impacts related to the topic and lists disclosures that have been identified as relevant for reporting on the topic by mining organizations. The organization is required to review each topic in this section and determine whether it is a material topic for the organization, and then to determine what information to report for its material topics.

Topic 14.1 GHG emissions

Greenhouse gas (GHG) emissions comprise air emissions that contribute to climate change. This topic covers direct (Scope 1) and energy indirect (Scope 2) GHG emissions related to an organization’s activities, as well as other indirect (Scope 3) GHG emissions that occur upstream and downstream of the organization’s activities.

Mining activities are energy-intensive and contribute to greenhouse gas (GHG) emissions that cause climate change, unless renewable energy sources provide the necessary power. Most GHG emissions from mining activities are associated with the consumption of self-generated and purchased electricity and the use of fossil fuel-powered vehicles. Therefore, most emissions in the mining sector are direct (Scope 1) GHG emissions from sources owned or controlled by the organization, and energy indirect (Scope 2) GHG emissions resulting from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by the organization.

Energy-intensive processes and activities include excavation, mine operations, and material transfer. The primary GHG emitted through the sector’s activities is carbon dioxide (CO₂). Other GHGs include methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The amount of energy used at a mine and the resulting emissions depend on several factors, such as mining method, mine depth, geology, mine productivity, and the degree and method of processing required. For example, open pit mines are typically more energy-intensive due to longer haul distances.

Beyond the total amount of energy used, the emissions intensity of mining activities can vary according to mine design and planning, operational practices, and the energy source used. Coal as a fuel source has the highest emissions intensity, compared to other fossil fuels, typically releasing more than twice the amount of GHGs than natural gas per unit of electricity produced.

GHG emissions can also increase due to land use change which occurs when land is converted from one land use category to another. For instance, when forests are cleared to enable mineral extraction along with the supporting infrastructure (see also topic 14.4 Biodiversity). Land use change emissions are more prevalent in surface mining due to the greater land use requirements and often lower-grade ores. Methane (CH₄) can also be released through extraction, venting, or as fugitive emissions.

Closure activities can further contribute to GHG emissions. However, the rehabilitation of mine sites can be used to capture carbon dioxide with appropriate reclamation and post-reclamation strategies (see also topic 14.8 Closure and rehabilitation).

Apart from Scope 1 and Scope 2 emissions, mining organizations are also under increasing scrutiny over other indirect (Scope 3) GHG emissions up and downstream from mining activities. There is a growing expectation for emissions reduction throughout the value chain. For some commodities, such as gold and other precious metals, the most substantial emissions tend to originate upstream from mining operations, namely, from purchased goods and services. For minerals that require extensive refining, such as smelting, most Scope 3 emissions tend to originate in the downstream processes from mining operations, in particular where coal is used as an energy source. Examples include the manufacture of steel, aluminium, and cement.
Organizations in the sector are increasingly expected to set emissions targets and reduce emissions aligned with scientifically established goals to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels [31] (see also topic 14.2 Climate adaptation and resilience). Scope 1 and Scope 2 GHG emissions can be reduced, for example, through energy efficiency measures, electrification of equipment, and switching to renewable or low-carbon fuel sources.

In some cases, emissions reduction initiatives such as the electrification of a mine may bring shared power to local communities and businesses. However, it can pose additional challenges to communities, including increased pressure on regional and national energy grids, energy supply disruptions, job losses, or new environmental challenges. To mitigate such impacts, organizations can partner with local and national governments and invest in solutions such as developing renewable energy infrastructure to support mines, including during the post-mining transition. These efforts can contribute to equitable and just outcomes for workers and the community (see also topic 14.9 Economic impacts).
Reporting on GHG emissions

If the organization has determined GHG emissions to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
<th>SECTOR STANDARD REF #</th>
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<tbody>
<tr>
<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics</td>
<td>14.1.1</td>
</tr>
<tr>
<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 302: Energy 2016</td>
<td>Disclosure 302-1 Energy consumption within the organization</td>
<td>14.1.2</td>
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<tr>
<td></td>
<td>Disclosure 302-2 Energy consumption outside of the organization</td>
<td>14.1.3</td>
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<tr>
<td></td>
<td>Disclosure 302-3 Energy intensity</td>
<td>14.1.4</td>
</tr>
<tr>
<td>GRI 305: Emissions 2016</td>
<td>Disclosure 305-1 Direct (Scope 1) GHG emissions Additional sector recommendations</td>
<td></td>
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<tr>
<td></td>
<td>• When reporting on gross direct (Scope 1) GHG emissions, include land use change emissions.†</td>
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<tr>
<td></td>
<td>• Report a breakdown of the gross direct (Scope 1) GHG emissions by mine site.</td>
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<tr>
<td></td>
<td>Disclosure 305-2 Energy indirect (Scope 2) GHG emissions Additional sector recommendations</td>
<td></td>
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<tr>
<td></td>
<td>• Report a breakdown of the gross location-based energy indirect (Scope 2) GHG emissions by mine site.</td>
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<tr>
<td></td>
<td>• If applicable, report a breakdown of the gross market-based energy indirect (Scope 2) GHG emissions by mine site.</td>
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<tr>
<td></td>
<td>Disclosure 305-3 Other indirect (Scope 3) GHG emissions</td>
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<tr>
<td></td>
<td>Disclosure 305-4 GHG emissions intensity Additional sector recommendations</td>
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<tr>
<td></td>
<td>Report a breakdown of the GHG emissions intensity ratio for direct (Scope 1) and energy indirect (Scope 2) GHG emissions by mine site.</td>
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<tr>
<td></td>
<td>Disclosure 305-5 Reduction of GHG emissions</td>
<td></td>
</tr>
</tbody>
</table>

References and resources

*GRI 302: Energy 2016* and *GRI 305: Emissions 2016* list authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on GHG emissions by the mining sector are listed in the Bibliography.

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9 Land use change occurs when land is converted from one land use category to another; for instance, when forests are converted to enable mineral extraction and supporting infrastructure.
Topic 14.2 Climate adaptation and resilience

Organizations contribute to climate change and are simultaneously affected by it. Climate adaptation and resilience refer to how an organization adjusts to current and anticipated climate change-related risks, as well as how it contributes to the ability of societies and economies to withstand from climate change.

Across the value chain, mining activities contribute to climate change by releasing GHG emissions (see also topic 14.1 GHG emissions). Changing climatic conditions, rising sea levels, and increasing intensity and frequency of extreme weather events already affect every region of the globe, causing negative impacts on the health, livelihoods, and human rights of millions of people. Physical impacts also pose risks to mining organizations, their workers, suppliers, local communities, and infrastructure around mine sites, including transportation routes.

Climate change has been found to aggravate the impacts of mining on the local environment, disrupting biodiversity (see also topic 14.4 Biodiversity), affecting water quality and quantity and exacerbating water stress (see also topic 14.7 Water and effluents), and increasing the risks of tailings facilities failures (see also topic 14.6 Tailings). Rising temperatures can have negative impacts on air quality through the retention of particulate matter, which can exacerbate the impacts of air pollution (see also topic 14.3 Air emissions). In addition, climate change has the propensity to create drier climates where mining takes place, increasing the likelihood of dust events while diminishing the availability of water to suppress dust. Such impacts can, in turn, affect the well-being and livelihoods of local communities and increase competition for natural resources (see also topic 14.10 Local communities). Mining organizations can help strengthen local communities' resilience to climate change-related impacts. Adaptation strategies with a focus on community resilience may include consideration and planning for the availability of natural resources for agricultural activities after mining activities have ceased, post-mining land use, climate-resilient economic growth, and long-term emergency planning. Organizations may also support communities' access to energy and water by developing shared renewable energy infrastructure, energy efficiency and energy-saving programs, and by sharing water resources.

To combat climate change, parties to the Paris Agreement have committed to transition to a low-carbon economy. Achieving these goals will mean a greater deployment of clean energy technologies, increasing the demand for certain minerals, such as cobalt, copper, lithium, and nickel. If managed well, this can translate into positive economic development from increased host state revenues and local employment. However, there is also a risk of increased negative impacts on the environment and human rights. Many of these minerals are mined in high-risk areas susceptible to political instability, institutional weakness, and human rights abuses. Mining in these areas can trigger or exacerbate conflict, corruption, environmental damage, and labor exploitation (see also topic 14.25 Conflict-affected and high-risk areas).

Box 2: Scenario analysis

Scenario analysis allows for the simultaneous consideration of alternative forms of future states affected by climate change and can be used to explore climate change-related risks. Organizations typically define scenarios according to the transition speed, expressed in the average global temperature changes. A scenario compatible with the Paris Agreement will require a temperature rise well below 2°C, pursuing efforts to limit the temperature rise to 1.5°C. Other scenarios can be defined according to an organization’s national context. For more guidance, see TCFD, The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities, 2017 [63].
Reporting on climate adaptation and resilience

If the organization has determined climate adaptation and resilience to be a material topic, this subsection lists the disclosures identified as relevant for reporting on the topic by the mining sector.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
<th>SECTOR STANDARD REF #</th>
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<tbody>
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<td><strong>Management of the topic</strong></td>
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</tr>
<tr>
<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics</td>
<td>14.2.1</td>
</tr>
</tbody>
</table>

*Additional sector recommendations*

- Describe the climate change-related scenarios used to assess the resilience of the organization’s strategy, including a well-below 2°C or 1.5°C scenario.\(^{10}\)
- Report whether the organization has a climate change adaptation plan in place and if so, provide a summary of the plan and the progress made in implementing the plan, and describe how engagement with stakeholders has informed the plan.

| Topic Standard disclosures | | |
|---------------------------|-----------------------|
| GRI 201: Economic Performance 2016 | Disclosure 201-2 Financial implications and other risks and opportunities due to climate change | 14.2.2 |

*Additional sector recommendations*

Describe how the substantive changes in operations, revenue, or expenditure due to climate change affect or could affect the organization’s workers and suppliers, its contributions to economic development, and its payments to governments.

References and resources

GRI 201: Economic Performance 2016 lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on climate adaptation and resilience by the mining sector are listed in the Bibliography.

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\(^{10}\) The Paris Agreement aims at holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels [50]. Scientific evidence released after the Paris Agreement came into force shows that limiting global warming to 1.5°C “would substantially reduce projected losses and damages related to climate change in human systems and ecosystems compared to higher warming levels” [48].
Topic 14.3 Air emissions

Air emissions include pollutants that have negative impacts on air quality and ecosystems, including human and animal health. This topic covers impacts from emissions of sulfur oxides (SOx), nitrogen oxides (NOx), particulate matter (PM), volatile organic compounds (VOC), carbon monoxide (CO), and heavy metals, such as mercury.

In addition to greenhouse gas (GHG) emissions, mining activities are a source of other anthropogenic air emissions classified as pollutants. Globally, air pollution causes acute health problems and millions of deaths annually by contributing to heart and lung diseases, strokes, respiratory infections, and neurological damage [70]. Air emissions are a major concern for the sector’s workers (see also topic 14.16 Occupational health and safety) and local communities adjacent to mine sites and transportation routes (see also topic 14.10 Local communities). These emissions disproportionately affect children, the elderly, and the poor [69]. Air emissions from mining activities can also have negative impacts on nearby ecosystems (see also topic 14.4 Biodiversity).

Mining activities release air emissions during drilling, blasting, excavation, overburden removal, storage, mineral processing, and transportation. Fugitive emissions can result from earthmoving, crushing, transportation, and evaporation from tailings facilities. These emissions mostly comprise dust and other types of particulate matter (PM) (see Box 3). Depending on the mineral being mined, air emissions can also include heavy metals, carbon monoxide (CO), sulfur dioxide (SO2), nitrogen oxide (NOx), hydrogen sulfide (H2S), and volatile organic compounds (VOCs). The severity of impacts from air emissions can be determined by the proximity of local communities and workers, and the sensitivity of ecosystems.

The extraction and smelting of zinc and other non-ferrous metals produce mercury gases, which lead to severe health impacts. Mercury (Hg) is frequently used in artisanal and small-scale gold mining activities, sometimes located adjacent to mining organization’s concessions (see also topic 14.13 Artisanal and small-scale mining). Many gold operations and refineries use cyanide to extract gold from ore, causing hydrogen cyanide (HCN) to be discharged into tailings storage facilities (see also topic 14.6 Tailings). HCN, when volatilized into the air, can lead to negative health impacts for people in the immediate proximity of the mine.

Nitrogen oxide emissions from transportation can have negative impacts on ecosystems. They can enter waterways and oceans, have negative impacts on marine life, and generate ground-level ozone (O3) or smog. Sulfur oxides from burning fossil fuels and smelting mineral ores containing sulfur can lead to acid rain and contribute to ocean acidification. In addition to negative impacts on human health, acid rain and smog can degrade water and soil quality, impairing the functions of natural environments and thereby affecting food chains.

Box 3. Dust and particulate matter

Mining activities release significant amounts of particulate matter (PM), a pollutant mixture of solid particles and liquid droplets in the air. Dust is the main type of PM from mining, generated during blasting, digging, and hauling, as well as through conveyors, vehicles, and ore crushing. Dust can also be generated from exposed surfaces such as dirt roads, pits, waste piles, or dry tailings. Exposure to dust is associated with increased risks of heart and lung conditions for workers and communities. Dust can also impede the photosynthetic functions of trees and other plants.

Mining has a large geographic footprint that can make the management of dust challenging. Organizations utilize dust control measures to avoid or mitigate dust exposure for workers and communities. These measures can include ventilation systems, dust collectors, irrigation bars, dry fog, water cannons, and air quality surveys to assess the adequacy of those controls.
Reporting on air emissions

If the organization has determined air emissions to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<thead>
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**Topic Standard disclosures**

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<tbody>
<tr>
<td>GRI 305: Emissions 2016</td>
<td>Disclosure 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions</td>
<td>14.3.2</td>
</tr>
</tbody>
</table>

**Additional sector recommendations**
- For each mine site, report a breakdown of the hazardous air pollutants (HAP) emissions, by:
  - hydrogen cyanide (HCN);
  - mercury (Hg).
- For each mine site, report a breakdown of the particulate matter (PM) emissions, by:
  - PM_{10};
  - PM_{2.5}.
- For each mine site, report significant air emissions, in kilograms (kg) or multiples, for each of the following:
  - carbon monoxide (CO);
  - ground-level ozone (O_3);
  - hydrogen sulfide (H_2S).

**References and resources**

*GRI 305: Emissions 2016* lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional references used in developing this topic, as well as resources that may be helpful for reporting on air emissions by the mining sector are listed in the Bibliography.
Biodiversity is the variability among living organisms. It includes diversity within species, between species and of ecosystems. Biodiversity not only has intrinsic value, but is also vital to human health, food security, economic prosperity, and mitigation of climate change and adaptation to its impacts. This topic covers impacts on biodiversity, including on plant and animal species, genetic diversity, and natural ecosystems.

Mining activities typically require large-scale developments that have impacts on biodiversity and ecosystem services. These impacts can limit the availability and accessibility of natural resources or degrade their quality. Impacts on biodiversity may also affect the well-being and livelihoods of local communities and Indigenous Peoples (see also topic 14.10 Local communities and 14.11 Rights of Indigenous Peoples).

Biodiversity impacts from mining include the contamination of air, soil, and water, as well as soil erosion, sedimentation of waterways, and ecosystem conversion, such as deforestation. Other impacts can include animal mortality, habitat fragmentation, and the introduction of invasive species.

Sources of biodiversity impacts include:

- land clearance for mining, access routes, and waste management facilities;
- effluent discharges such as through riverine tailings disposal (see also topic 14.7 Water and effluents);
- waste storage, disposal, and tailings facility failures (see also topic 14.5 Waste and 14.6 Tailings);
- emissions to air, including dust and fumes (see also topic 14.3 Air emissions);
- noise, illumination, and vibration.

Different mining methods present distinct risks for biodiversity. Open-pit mines generate more severe impacts than underground mines due to the progressive deepening and widening of the mine site which expand the affected areas over time. Open-pit mining is a prominent cause of deforestation, with nearly a third of all forests estimated to be affected by mining projects worldwide [92]. Removing carbon sinks and topsoil can also exacerbate GHG emissions (see also topic 14.1 GHG emissions), contributing to erosion and desertification. Underground mining, in turn, can have negative impacts resulting from ground subsidence and groundwater contamination.

The area that is or could be affected by mining activities is not limited to the area within a mine site but can extend beyond it. Impacts can be more severe when they take place in an area of high biodiversity value. For example, mining activities can overrun wildlife corridors and disrupt the ecological functioning of an area of high biodiversity value. Inactive mine pits, underground workings, and hazardous waste can also cause biodiversity impacts beyond closure (see also topic 14.8 Closure and rehabilitation).

The increasing demand for minerals is expected to further drive mining activities to areas of high biodiversity value, including previously undeveloped locations and marine ecosystems (see also topic 14.2 Climate adaptation and resilience). While the potential impacts of deep-sea mining are not fully understood, this form of mining is likely to disrupt marine ecosystems, compact or alter seafloor areas, create sediment plumes, and pose a risk of leaks, accidents, and spills on fragile habitats [84].

To limit and manage impacts on biodiversity, many mining organizations use the mitigation hierarchy tool to help inform their actions with the ambition of halting and reversing the loss of biodiversity. It presents a prioritized sequence of measures for the sustainable management of natural resources, with preventive actions taking precedence over remediation. Priority is given to avoidance and, where avoidance is impossible, to minimization of impacts. Remediation measures are taken after the adoption of all preventative steps and can include the rehabilitation or restoration of degradation or damage and offsetting residual impacts [82].
Reporting on biodiversity

If the organization has determined biodiversity to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>Disclosure 3-3 Management of material topics</td>
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<tr>
<th>Topic Standard disclosures</th>
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<tbody>
<tr>
<td>GRI 304: Biodiversity (Exposure draft)</td>
<td>Disclosure 304-1 Location of operational sites with the most significant impacts</td>
<td>14.4.2</td>
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<td></td>
<td>Disclosure 304-2 Direct drivers of biodiversity loss</td>
<td>14.4.3</td>
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<td>Disclosure 304-3 State of biodiversity</td>
<td>14.4.4</td>
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<td>Disclosure 304-4 Ecosystem services</td>
<td>14.4.5</td>
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<td></td>
<td>Disclosure 304-5 Management of biodiversity-related impacts</td>
<td>14.4.6</td>
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<td></td>
<td>Disclosure 304-6 Halting and reversing the loss of biodiversity</td>
<td>14.4.7</td>
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</tbody>
</table>

References and resources

The exposure draft of the revised *GRI 304: Biodiversity* Standard lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on biodiversity by the mining sector, are listed in the Bibliography.
Topic 14.5 Waste

Waste refers to anything that a holder discards, intends to discard, or is required to discard. When inadequately managed, waste can have negative impacts on the environment and human health, which can extend beyond the locations where waste is generated and discarded. This topic covers impacts from waste and the management of waste.

Mining activities typically generate high volumes of waste, including hazardous waste. The largest waste streams derive from the extraction or processing of minerals and comprise overburden, rock waste, and tailings. These waste streams can contain toxic or noxious substances, such as hazardous heavy metals and minerals like asbestos and antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, and thallium.

Waste from mining activities may contaminate surface water, groundwater, and seawater (see also topic 14.7 Water and effluents), as well as food sources. Waste also has negative impacts on human health (see also topic 14.10 Local communities) and animal and plant species (see also topic 14.4 Biodiversity). Land use for waste storage, along with soil contamination, leads to erosion and loss of productive land, which can further have effects on local communities’ livelihoods. The waste impacts from mining activities can depend on an organization’s approach to waste management, regulations, application of technologies, and the availability of recovery and disposal facilities near mine sites.

Mining activities often require using and storing hazardous materials, such as chemicals, for mineral processing. These materials can be released into the environment during exploration, extraction, processing, and transport. Hazardous materials can accumulate and remain in the environment beyond the life of a mine. There are specific concerns regarding the use of cyanide in processing minerals such as gold and silver, which, when improperly used, stored, or disposed of, can have negative impacts on human health and the environment (see also topic 14.15 Critical incident management). Mercury can occur as a by-product in other commodities, potentially releasing toxic vapors when processed. While most mining organizations no longer use mercury in the extraction of gold, it is still used by many artisanal and small-scale operators (see also topic 14.13 Artisanal and small-scale mining).

Overburden from surface mining is usually stored in overburden emplacement facilities or dumps on adjacent land until the pit is backfilled or the overburden dump is stabilized and revegetated. These dumps require physical and chemical stabilization to avoid failures, which can have impacts on the environment and the safety of people. Overburden can also contribute to the formation of highly acidic water rich in heavy metals, known as acid rock drainage, which can seep into the environment. Rock waste is usually managed in heaps or disposed of in waste rock dumps or former open-pit operations and can generate dust (see also topic 14.3 Air emissions). Tailings, a by-product of the processing of minerals, are often treated and discarded into ponds, filtered, stored in heaps, or disposed of in underground voids. Runoff from tailings and tailings facility failures can cause widespread environmental contamination and pose risks to the health, safety, and livelihoods of local communities (see also topic 14.6 Tailings).

The amount of waste produced by mining activities depends on the type of mineral extracted and the ore grade. Generally, surface mining produces more waste than underground mining due to the possibility of obtaining lower-grade sediments and rocks from which the mineral is extracted. The type and quantity of waste often requires management beyond the productive phase of a mining operation and may require long-term aftercare. Closure can also yield significant waste, for example, from decommissioned processing plants and other facilities (see also topic 14.8 Closure and rehabilitation).

Other common waste streams from mining activities include oils and chemicals, tires, e-waste, spent catalysts, solvents, other industrial wastes, packaging, and construction wastes. Mining organizations may also need to manage substantial domestic wastes at mine camps or in dedicated mining towns.
Box 4. Circular economy

The mining sector is both a supplier of materials and a major user of natural resources, materials, and products. To improve resource efficiency, mining organizations are increasingly implementing circularity measures across upstream and downstream activities to decrease the need for raw materials, prevent waste generation, and reuse waste for productive purposes. For example, mining organizations can reuse tailings and waste rock for backfill, landscaping, and as construction materials. Other examples include the treatment and recycling of processed water for reuse in the mining process. Many circularity measures can be designed in collaboration with and for the benefit of local communities.

Reusing and recycling metals can significantly contribute to the circular economy, as many metals can be melted and reused infinitely. Recycling of metals can also be less energy-intensive than the extraction and processing of virgin materials (see also topic 14.1 GHG emissions). Some mining organizations are already transitioning to more circular business models, expanding their operations beyond the primary extraction of minerals to incorporate the processing of recycled metals.

Circularity measures can be reported by using GRI 306: Waste 2020, and the use of materials is addressed in GRI 301: Materials 2016.
Reporting on waste

If the organization has determined waste to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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**Topic Standard disclosures**

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<tbody>
<tr>
<td>GRI 306: Waste 2020</td>
<td>Disclosure 306-1 Waste generation and significant waste-related impacts</td>
<td>14.5.2</td>
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<tr>
<td></td>
<td>Disclosure 306-2 Management of significant waste-related impacts</td>
<td>14.5.3</td>
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</table>
| | Disclosure 306-3 Waste generated Additional sector recommendations When reporting the composition of the waste generated, include a breakdown of the following waste streams, if applicable:  
  - rock waste;  
  - tailings.  
| | Disclosure 306-4 Waste diverted from disposal Additional sector recommendations When reporting the composition of the waste diverted from disposal, include a breakdown of the following waste streams, if applicable:  
  - rock waste;  
  - tailings. | 14.5.4 |
| | Disclosure 306-5 Waste directed to disposal Additional sector recommendations When reporting the composition of the waste directed to disposal, include a breakdown of the following waste streams, if applicable:  
  - rock waste;  
  - tailings. | 14.5.5 |

**References and resources**

*GRI 306: Waste 2020* lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on waste by the mining sector are listed in the *Bibliography*.

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11 The additional sector recommendations to report a breakdown of tailings under Disclosures 306-6, Disclosure 306-4, and Disclosure 306-5, is asking for the total weight, in metric tons, of tailings produced. Note that the management of tailings facilities is reported in Topic 14.6 Tailings.
Topic 14.6 Tailings

Tailings are a by-product of mining that need management throughout the life of a mine and beyond closure. Poor design or management of tailings facilities can, at worst, lead to catastrophic failures with lasting impacts on workers, local communities, and damage to infrastructure and natural resources.

Tailings are generated as a by-product of mining and are usually one of the largest waste streams related to mining operations (see also topic 14.5 Waste). Often in the form of liquid slurry, tailings consist of processed rock or soil, usually mixed with chemicals left over when separating minerals from the rock or soil within which they are found.

Tailings are often treated and discarded into tailings facilities, filtered, stored in heaps, or disposed of in underground voids. Surface tailings facilities are contained by dams and can cover vast areas. Other disposal methods, such as riverine, lake, and ocean tailings disposal, are widely discouraged due to the significant potential impacts on the environment and local communities.

Tailings containing heavy metals, cyanide, chemical-processing agents, sulfides, or suspended solids can pose a health risk when released into the environment. Catastrophic failures of tailings facilities can pose detrimental risks to the safety and well-being of workers and local communities, sometimes leading to loss of life and, at worst, the destruction of whole communities. Further impacts include damage to infrastructure, natural resources, and the activities of other sectors, ultimately disrupting lives and livelihoods. Failures of tailings facilities result from, for example, inadequate water management, overtopping, foundation or drainage failure, erosion, and earthquakes. Extreme weather events due to climate change will also pose more frequent challenges to the long-term management of tailings (see also topic 14.2 Climate adaptation and resilience).

Runoff from tailings can contaminate groundwater, surface water, and seawater, cause damage to ecosystems and agricultural operations, and have impacts on the health and livelihoods of local communities (see also topic 14.7 Water and effluents and 14.10 Local communities). Dry tailings can also generate dust (see also topic 14.3 Air emissions). The inefficient processing of precious metal ores can spur re-encroachment and re-mining of tailings by artisanal and small-scale operators, which can mobilize toxic tailings into the environment (see also topic 14.13 Artisanal and small-scale mining).

Tailings management and storage options depend on various factors, including the presence of local communities and other receptors, such as areas of high biodiversity value, seismicity, the amount of rainfall, and local topography. Each facility, dependent on its context, requires unique design and technical considerations that are evaluated and updated regularly.

Organizations are expected to devise site-specific emergency preparedness and response plans to identify hazards, prepare for and assess their capacity to respond to emergencies, and anticipate long-term remediation [119] (see also topic 14.15 Critical incident management).
**Reporting on tailings**

If the organization has determined tailings to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics Additional sector recommendations</td>
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<td></td>
<td>• Report whether the organization complies with or has committed to comply with the Global Industry Standard on Tailings Management (GISTM) and, if so, provide a link to the most recent information disclosed in line with GISTM Principle 15.</td>
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<td></td>
<td>• Describe actions taken to:</td>
</tr>
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<td>- manage impacts from tailings facilities, including during closure and post-closure;</td>
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<td>- prevent catastrophic failures of tailings facilities.</td>
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**Management of the topic**

**Additional sector disclosures**

Report the types of tailings disposal methods used by the organization.

- List the organization's tailings facilities, and report the name, location, and ownership status.
- For each tailings facility:
  - describe the tailings facility;
  - report whether the facility is active, inactive, or closed;
  - report the maximum permitted storage capacity and the total weight of tailings stored, in metric tons;
  - report the Consequence Classification;
  - report the date and main findings of the most recent risk assessment;
  - report the date and main findings of the most recent independent technical review, and the date of the next review.

**References and resources**

The authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on tailings by the mining sector are listed in the Bibliography.

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12 Note that actions taken to remediate impacts from critical incidents, including from catastrophic failures of tailings facilities, are reported in topic 14.15 Critical incident management.

13 For further guidance, including definitions for terms used in the additional sector disclosure 14.6.3, see Principle 15, Requirement 15.1 in the Global Industry Standard on Tailings Management (GISTM) [119].
Recognized as a human right, access to fresh water is essential for human life and well-being. The amount of water withdrawn and consumed by an organization and the quality of its discharges can have impacts on ecosystems and people. This topic covers impacts related to the withdrawal and consumption of water and the quality of water discharged. Mining can have significant impacts on water availability and quality, which in turn can result in long-term consequences on biodiversity, human health and development, and food security (see also topic 14.4 Biodiversity, 14.10 Local communities, and 14.11 Rights of Indigenous Peoples). Impacts on water occur throughout the life of a mine and beyond closure.

Mining organizations use water across their activities, such as for transporting ore and waste as slurries for mineral extraction and processing, cooling, and dust suppression. Mining activities can reduce water availability for local communities and other water users, potentially affecting people’s right to clean drinking water. The amount of water needed for activities depends on operational efficiency and mining methods. The volume of water withdrawn can also vary according to an organization’s ability to substitute freshwater, the quality of water required, reservoir characteristics, and recycling infrastructure.

Mining organizations can improve local communities’ access to freshwater by bolstering water and sanitation infrastructure and improving water quality, for example, by treating naturally occurring acid rock drainage. However, when mining occurs in an area characterized by water stress, mining activities can further limit water availability for other users and increase the competition for water.

Mining organizations can also influence hydrology and have impacts on the livelihoods of local communities by altering groundwater levels, shifting river flow regimes, and use of dams for freshwater needs in mining activities. These impacts can exacerbate tensions between, as well as within, sectors or local communities, especially in cases where water rights and regulations are poorly managed or enforced.

The impacts of mining activities on the quality of surface water, groundwater, rainwater, and seawater can be due to discharges and runoff, heavy metal contamination, spills, leaks or leeching of chemicals, and failure of tailings facilities (see also topics 14.5 Waste and 14.6 Tailings). Acid mine drainage can be one of the most significant water impacts from metal mines, occurring when water reacts with rocks containing sulfur-bearing minerals, forming an acidic runoff.

Underground operations might also disrupt or contaminate aquifers. Contamination risks can be higher when mining occurs in areas with frequent heavy rainfall events, which can cause flooding and make the containment of effluents more challenging. The level of water treatment and quality standards applied to effluent discharges, as well as the sensitivity of the local ecosystem, can affect the impact that mining organizations have on the receiving waterbody.

Droughts, floods, and other extreme weather events due to climate change will likely pose more frequent challenges to water availability and quality (see also topic 14.2 Climate adaptation and resilience), requiring collaborative approaches by the mining sector to prevent or mitigate impacts on local communities [126].
Reporting on water and effluents

If the organization has determined water and effluents to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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</table>
| GRI 3: Material Topics 2021 | Disclosure 3-3 Management of material topics  
Additional sector recommendations  
Describe actions taken to prevent or mitigate negative impacts from acid mine drainage. | 14.7.1       |
|          | **Topic Standard disclosures**                                              |              |
| GRI 303: Water and Effluents 2018 | Disclosure 303-1 Interactions with water as a shared resource | 14.7.2       |
|          | Disclosure 303-2 Management of water discharge-related impacts              | 14.7.3       |
|          | Disclosure 303-3 Water withdrawal                                           | 14.7.4       |
|          | Disclosure 303-4 Water discharge                                            | 14.7.5       |
|          | Disclosure 303-5 Water consumption                                          | 14.7.6       |

References and resources

GRI 303: Water and Effluents 2018 lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on water and effluents by the mining sector are listed in the Bibliography.
Topic 14.8 Closure and rehabilitation

At the end of commercial use, organizations are expected to close assets and facilities and rehabilitate operational sites. Impacts can occur during and after closure. This topic covers an organization’s approach to closure and rehabilitation, including how the organization considers the impacts on the environment, local communities, and workers.

Mine closure is the process by which mining operations are ceased, with the aim of rehabilitating the land to a stable and productive condition. Mining organizations are expected to begin closure planning many years ahead of closure to mitigate impacts on the environment and people. Once complete, the closure of mine sites should result in sustainable ecosystems compatible with planned post-closure land use that considers local stakeholders’ needs and continued livelihoods.

When not managed adequately, the closure of a mine can result in various environmental impacts, including the contamination of surface water and groundwater, soil contamination from overburden heaps, changes to landforms, and disturbance to biodiversity (see also topic 14.4 Biodiversity, 14.5 Waste, and 14.7 Water and effluents). The presence of or contamination by hazardous materials can result in long-lasting health and safety impacts on people (see also topic 14.10 Local communities).

Failure to rehabilitate sites can also render land unsuitable for other productive purposes, such as agriculture, leading to the potential loss of livelihoods. Closure activities can comprise:

- stabilization of open-pit or underground workings to prevent subsidence;
- decommissioning of processing facilities;
- land reclamation and rehabilitation, including management of waste rock stockpiles to control erosion and land degradation;
- closing and sealing waste facilities (see also topic 14.6 Tailings);
- removal of workers’ facilities;
- post-closure environmental and socioeconomic monitoring to ensure that post-closure objectives are being achieved and to identify further areas of attention.

Mining organizations can implement closure and rehabilitation activities progressively during the operating life of the mine by, for example, backfilling and revegetating unused areas as mining operations move to other zones.

Despite the fact that closure and rehabilitation may offer new employment opportunities, it also leads to employment loss when workers are retrenched. Suppliers to the mine can also lose their jobs when the mine is closed. In locations where the mine has been the primary economic driver by providing employment, income, taxes, community development, and other benefits, closure can leave local communities to face economic downturns and social disruption.

The impacts of mine closure can be exacerbated if there is insufficient notice or inadequate planning for economic revitalization and social transition. Without clearly assigned responsible parties or allocated funds to cover the costs of mine closure and post-closure activities, closed or abandoned mine sites can leave a long-lasting legacy of environmental issues and financial burdens for communities and governments. Mining organizations can collaborate with local and national governments, unions, and workers to mitigate negative impacts and work towards a sustainable post-mining economy. This can be done by, for example, reskilling and retraining workers or offering worker transfer programs and relocation assistance programs.

Many jurisdictions require organizations to make financial provisions for mine closure and rehabilitation, covering social and environmental legacy impacts that can occur after closure. These financial assurances can be in the form of a cash deposit or a financial instrument held by a third party to guarantee that the closure liabilities are met. Financial assurances can be made regardless of the organization’s financial circumstance or in the case of mergers or acquisitions. However, closure costs are often misunderstood, poorly regulated, or underestimated, resulting in insufficient financial
assurance to cover the actual closure costs. Providing transparency over these provisions can improve the relationship with stakeholders and local governments.
Reporting on closure and rehabilitation

If the organization has determined closure and rehabilitation to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<tr>
<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics Additional sector recommendations Describe how engagement with workers, suppliers, local communities, and other relevant stakeholders has informed closure planning and implementation, including post-mining land use.</td>
<td>14.8.1</td>
</tr>
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</table>

**Topic Standard disclosures**

| GRI 402: Labor/Management Relations 2016 | Disclosure 402-1 Minimum notice periods regarding operational changes | 14.8.2 |
| GRI 404: Training and Education 2016 | Disclosure 404-2 Programs for upgrading employee skills and transition assistance programs | 14.8.3 |

**Additional sector disclosures**

For each mine site, report whether it:
- has a closure and rehabilitation plan in place;
- is undergoing closure and rehabilitation activities;
- has been closed and rehabilitated.

For each closure and rehabilitation plan:
- report whether the plan has been approved by relevant authorities;
- report the dates of the most recent and next reviews of the plan.

For each mine site, report the estimated life of the mine (LOM).\(^{14}\)

For financial provisions made by the organization for closure and rehabilitation, including environmental and socioeconomic post-closure monitoring and aftercare for mine sites, report:
- the total undiscounted monetary value, and a breakdown of this total by mine site;
- the methodology used to calculate the undiscounted financial provisions for closure and rehabilitation.

Describe non-financial provisions made by the organization to manage the local community’s socioeconomic transition to a sustainable post-mining economy, including collaborative efforts, projects, and programs.

**References and resources**

GRI 402: Labor/Management Relations 2016 and GRI 404: Training and Education 2016 list authoritative intergovernmental instruments relevant to reporting on this topic.

\(^{14}\) The definition of life of mine (LOM) used by the organization for this additional sector disclosure should be the same as the definition used in its consolidated financial statements or equivalent documents.
The additional references used in developing this topic, as well as resources that may be helpful for reporting on closure and rehabilitation by the mining sector are listed in the Bibliography.
An organization's impacts on the economy refers to how the value it generates affects economic systems, for example, as a result of its procurement practices and employment of workers. Infrastructure investments and services supported by an organization can also have impacts on a community's well-being and long-term development. This topic covers economic impacts at local, national, and global levels.

Mining activities can be an important source of investment and income for local communities, countries, and regions. Economic contributions can manifest locally through procurement spending, capacity building, or employment provision, and at the national, subnational, or regional level through taxes and royalties (see also topic 14.23 Payments to governments). Impacts vary according to the scale of operations, the project's duration, interactions with other economic activities, the effectiveness of resource governance by local and national governments, and employment and procurement practices used. At a global scale, the sector's contributions are prevalent through, for example, the provision of minerals for the low-carbon transition, essential infrastructure and buildings, and food production.

The economic impacts of mining change over time according to the phase of the mining project. During mine development, infrastructure investments are at their peak, procurement of goods and services are high, and many workers are needed. When the mine is in operation, economic impacts are mainly generated through procurement spending and employment, along with community investments, taxes, and payments to governments. Mine closure and post-mining phases require economic restructuring, characterized by out-migration, reduced government revenues, and limited need for infrastructure, goods, and services.

Through local procurement, mining organizations can foster employment and raise demand for goods and services. Workers of mining organizations and their suppliers also drive local economic growth by spending their earnings. Long-lasting positive impacts can be generated by capacity building of suppliers, along with training and skill transfer to the community. Mine construction and operation can also involve the development of infrastructure, such as roads, railways, and other transport networks, that local communities can use. Production linkages with other sectors can also drive economic diversification and community development.

The extent to which local communities benefit from mining activities depends on their existing development and industrialization levels, their capacity to provide qualified workers to meet new employment opportunities, and the commitment of organizations in the sector to train local workers. The net employment impact of mining also depends on how existing jobs in other sectors are affected, as well as the employment practices of the mining organization (see also topic 14.7 Employment practices). For example, using a fly-in fly-out work arrangement to supply workers can reduce the employment opportunities available to local communities, detracting from the potential economic benefits at the local level.

Changes in technology in industrial-scale mining, such as the increased use of automation and robotics, can affect economic impacts and benefit sharing. While it can introduce new skills and increase work opportunities for women and other underrepresented groups, it can also reduce local labor requirements for mining activities.

Additionally, a poorly planned or executed mine closure can generate legacy impacts with economic consequences for communities and governments (see also topic 14.8 Closure and rehabilitation). Lasting negative impacts can be mitigated in consultation with the community by incorporating inclusive development, benefit-sharing mechanisms, and impact-driven community development programs aimed at structural transformation of local economies. Mining organizations can also promote economic inclusion, for example, by recruiting or using suppliers that that recruit workers
from vulnerable groups, including women-owned enterprises (see also topic 14.21 Non-discrimination and equal opportunity). Extending skills development to workers who are not employees and to the local community can also contribute to positive impacts and promote a just transition after a mine is closed.
**Reporting on economic impacts**

If the organization has determined economic impacts to be a **material topic**, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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| GRI 3: Material Topics 2021 | Disclosure 3-3 Management of material topics  
*Additional sector recommendations*  
Describe the approach to providing employment, procurement, and training opportunities to local communities. | 14.9.1 |
| **Topic Standard disclosures** | | |
| GRI 201: Economic Performance 2016 | Disclosure 201-1 Direct economic value generated and distributed  
*Additional sector recommendations*  
Report direct c by mine site. | 14.9.2 |
| GRI 203: Indirect Economic Impacts 2016 | Disclosure 203-1 Infrastructure investments and services supported  
*Additional sector recommendations*  
For each mine site, report whether a community needs assessment was conducted to determine the need for infrastructure and other services, and describe the results.  
Disclosure 203-2 Significant indirect economic impacts  
*Additional sector recommendations*  
Report the number and total spend of education and skills programs deployed for workers who are not employees, describe the programs, and the extent to which the programs have been effective. | 14.9.3 |
| GRI 204: Procurement Practices 2016 | Disclosure 204-1 Proportion of spending on local suppliers  
*Additional sector recommendations*  
Report the percentage of the organization's procurement spending on local suppliers by mine site. | 14.9.4 |
| **Additional sector disclosures** | | |
| | Report the percentage of workers hired from the local community by mine site and the organization's definition used for 'local community'. | 14.9.5 |

**References and resources**

*GRI 201: Economic Performance 2016* and *GRI 202: Market Presence 2016* list authoritative intergovernmental instruments and additional references relevant to reporting on this topic. The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on economic impacts by the mining sector are listed in the **Bibliography**.

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15 Workers hired from the local community include those individuals either born or who have the legal right to reside indefinitely (such as naturalized citizens or permanent visa holders) in the same geographic market as the mining operation. The geographical definition of ‘local’ can include the community surrounding operations, a region within a country, or a country. This recommendation is based on Disclosure 202-2 Proportion of senior management hired from the local community in *GRI 202: Market Presence 2016*. 
Topic 14.10 Local communities

Local communities comprise individuals living or working in areas that are affected or that could be affected by an organization’s activities. An organization is expected to conduct community engagement to understand the vulnerabilities and priorities of local communities and how they may be affected by the organization’s activities. This topic covers socioeconomic, cultural, health, and human rights impacts on local communities.

Mining activities can create social and economic benefits for local communities through local procurement and employment, taxes and other payments to governments, infrastructure investments, and community development programs (see also topics 14.9 Economic impacts and 14.23 Payments to governments). However, mining activities can also trigger negative socioeconomic, cultural, health, and human rights impacts on communities near mine sites, including Indigenous Peoples, throughout the life of a mine and beyond closure (see also topic 14.11 Rights of Indigenous Peoples).

Negative impacts can result from land use requirements that limit the accessibility and availability of land and natural resources, leading to the loss of tradition, culture, or cultural identity (see also topic 14.12 Land and resource rights). Mining activities can also damage cultural heritage sites. Other negative impacts on community health and well-being can be caused by:

- exposure to pollution, hazardous substances, and dust (see also topic 14.3 Air emissions);
- contamination of groundwater and surface water (see also topic 14.7 Water and effluents);
- increased levels of traffic and pollution from light, noise, and vibration;
- degradation of ecosystem services; and
- reduced fishing and agricultural yields.

Critical incidents such as explosions, fires, mine collapses, spills, and tailings facility failures pose further risks on the safety of communities (see also topic 14.15 Critical incident management).

The influx of workers, job seekers, or others aiming to benefit from the economic activity of a mine can generate social disruption and greater economic inequalities within the local community. This influx can place local services and resources under pressure, induce inflation, and increase housing costs. There may also be an increase in substance abuse, gambling, and prostitution, as well as communicable diseases. Women, in particular, are affected due to the potential rise in sexual violence and trafficking resulting from the gender imbalance of predominantly male workers. Documented cases also show the presence of domestic and gender-based violence on mine sites and in mining-adjacent communities [160].

Mining can also trigger social conflicts with human rights impacts. When the interests of the mining organization are at odds with the interests of the local community, disagreements or grievances can escalate (see also topic 14.14 Security practices). Conflict can occur, for example, due to negative environmental impacts, inadequate engagement with the local community, uneven distribution of economic benefits, or disputes over land use and natural resources during mining and post-closure.

Mining organizations can assess impacts on communities throughout the life of a mine by undertaking environmental and social impact assessments. This can help ensure that negative impacts are identified, prevented where possible, and addressed and remedied on time. To balance the negative impacts of mining, organizations can provide benefits to local communities that contribute to long-term development. For example, community development agreements can outline obligations for infrastructure development, land and water use, ASM collaboration, and local employment and procurement [162].

Meaningful engagement with local communities, characterized by two-way communication that is responsive and ongoing, can also alleviate tensions and improve community relations. This includes engaging with stakeholders before decisions are made, acknowledging the potential power imbalance between the organization and the local community, and ensuring accessible and relevant information. Mining organizations can enable women's and other vulnerable groups’ voices to be heard in community engagement processes to obtain information that is representative of local priorities while ensuring the equitable distribution of benefits. Establishing or participating in grievance mechanisms and other remediation processes tailored to community needs can help organizations address negative impacts.
Reporting on local communities

If the organization has determined local communities to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

### Management of the topic

**GRI 3: Material Topics 2021**

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<td>- Describe the approach to identifying stakeholders within local communities.</td>
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<td>- List the vulnerable groups that the organization has identified within</td>
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<td>local communities by mine site.</td>
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<td>- Describe the approach to engaging with local communities at each</td>
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<td>- how the organization seeks to ensure meaningful engagement;</td>
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<td>- Describe the approach to developing and implementing community</td>
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<td>development programs, including how engagement with local</td>
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<td>stakeholders, impact assessments, and community needs</td>
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<td>assessments have informed the programs.</td>
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### Topic Standard disclosures

**GRI 413: Local Communities 2016**

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<td>Disclosure 413-1 Operations with local community engagement, impact</td>
<td>14.10.2</td>
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<td>assessments, and development programs</td>
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<td>organization, by mine site.</td>
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<td>Disclosure 413-2 Operations with significant actual and potential negative</td>
<td>14.10.3</td>
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<td>impacts on local communities</td>
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<td>Describe impacts on the health and safety of local communities by mine</td>
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### Additional sector disclosures

Report the number and types of grievances from local communities identified by mine site, including:

- the percentage of grievances that were addressed and resolved during the reporting period;
- the percentage of the grievances that were resolved through remediation during the reporting period.

### References and resources

**GRI 413: Local Communities 2016** lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on local communities by the mining sector are listed in the **Bibliography**.
Topic 14.11 Rights of Indigenous Peoples

Indigenous Peoples are at higher risk of experiencing negative impacts more severely as a result of an organization’s activities. Indigenous Peoples have both collective and individual rights, as set out in the United Nations Declaration on the Rights of Indigenous Peoples and other authoritative international human rights instruments. This topic covers impacts on the rights of Indigenous Peoples.

Mining activities can present economic opportunities and benefits for Indigenous Peoples through financial payments, employment, procurement, training, and community development programs (see also topic 14.9 Economic impacts). However, they can also disrupt Indigenous Peoples’ ties to their lands or natural environments, compromise their rights and well-being, and cause displacement (see also topic 14.12 Land and resource rights). Mining can have impacts on the availability and access to water, which is a key concern for many Indigenous Peoples. Mining activities can further cause damage to cultural heritage that consists of tangible sites, artifacts, or intangible forms of culture, such as traditional lifestyles and cultural knowledge.

An influx of workers from other areas can result in discrimination toward Indigenous Peoples regarding access to jobs and opportunities. It can further undermine social cohesion, well-being, and safety. Indigenous women can be more exposed to risks of prostitution, forced labor, violence, and communicable diseases than Indigenous men (see also topic 14.10 Local communities).

Indigenous Peoples’ collective and individual rights are recognized in authoritative intergovernmental instruments. Indigenous Peoples often have a special legal status in national legislation and can be customary or legal owners of lands to which organizations in the mining sector are granted use rights by governments. Organizations are expected to obtain free, prior, and informed consent (FPIC) before initiating operations that could have impacts on land or resources that Indigenous Peoples use or own. This right is recognized in the United Nations Declaration on the Rights of Indigenous Peoples, which allows Indigenous Peoples to give or withhold consent to a project that may affect them or their territories and to negotiate project conditions [179]. Therefore, mining organizations have a responsibility for respecting Indigenous Peoples’ rights, independent of governments’ abilities or willingness to fulfill their own human rights obligation.

Mining organizations can foster positive relations with Indigenous Peoples through mutually beneficial agreements and transparent engagement practices. However, organizations in the sector continue to have disputes and conflicts with Indigenous Peoples over land ownership and rights. Documented cases show an absence of good faith consultations and undue pressure on Indigenous Peoples to accept projects, with opposition to such projects sometimes leading to violence or death [180].
Reporting on rights of Indigenous Peoples

If the organization has determined rights of Indigenous Peoples to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

### Management of the topic

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**Additional sector recommendations**
- Describe the approach to identifying Indigenous Peoples who are or could be affected by the organization’s activities.
- Describe the approach to engaging with Indigenous Peoples, including:
  - how the organization seeks to ensure meaningful engagement;
  - how the organization seeks to ensure safe and equitable gender participation.
- Describe policies, commitments, and actions taken to respect Indigenous Peoples’ cultural heritage.
- Describe the community development programs in place that are intended to enhance positive impacts for Indigenous Peoples.

### Topic Standard disclosures

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<tr>
<td>GRI 411: Rights of Indigenous Peoples 2016</td>
<td>Disclosure 411-1 Incidents of violations involving rights of Indigenous Peoples</td>
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**Additional sector recommendations**
Describe the identified incidents of violations involving the rights of Indigenous Peoples.

### Additional sector disclosures

List the locations of operations and proven reserves where Indigenous Peoples are present and are or may be affected by the activities of the organization.

Report whether the organization has been involved in a process of seeking free, prior, and informed consent (FPIC) from Indigenous Peoples for any of the organization’s activities and, if so, report for each case:
- whether the process has been mutually accepted by the organization and the affected Indigenous Peoples;
- whether an agreement has been reached, and if so, if the agreement is publicly available.

### References and resources

- **GRI 411: Rights of Indigenous Peoples 2016** lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.
- The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on rights of Indigenous Peoples by the mining sector are listed in the Bibliography.
Land and resource rights encompass the rights to use, manage and control land, fisheries, forests, and other natural resources. An organization’s impacts on the availability and accessibility of these can affect local communities and other users. This topic covers impacts from an organization’s use of land and natural resources on human rights and tenure rights, including from resettlement of local communities.

Mining activities require significant land use for prospecting, exploration, extraction, waste storage, processing, transportation, and distribution. When adjacent to local communities, these activities sometimes restrict access to culturally significant locations and natural resources, lead to involuntary resettlement, and disrupt traditional livelihoods such as agriculture and artisanal mining. The impacts on land and resource rights can lead to unemployment, marginalization, food insecurity, increased health risks, and impoverishment. Impacts derived from land use can vary according to the extraction and transportation method, the size and location of the mine, and the processing required. For example, displacement is more often associated with surface mining. In many cases, vulnerable groups are more severely affected (see also topic 14.11 Rights of Indigenous Peoples).

Unclear rules regarding the tenure rights which regulate access, use, and control of land can lead to disputes, economic and social tensions, and conflict. This can be exacerbated by insufficient consultation with and compensation to affected communities (see also topic 14.10 Local communities). For example, in areas where formal statutory tenure laws overlap or go against traditional customary rules, conflict can be stoked when there is a lack of clarity or unmet expectations between communities and mining organizations. These disputes can be about compensation, access, or documentation for customary titleholders who might depend on their land for food, culture, and livelihood.

Involuntary resettlement of local communities, including both physical displacement (e.g., relocation or shelter loss) and economic displacement (e.g., loss of access to assets), can result in the loss of social networks, cultural identity, and physical assets, such as schools, places of worship, and cemeteries. Mining organizations may provide monetary compensation or land equivalent to lost assets, including the value of crops cultivated by customary titleholders. The impacts of resettlement on livelihoods can be more severe for communities engaged in artisanal and small-scale mining due to the often informal nature of these activities. In the absence of recognized rights to land and minerals, these communities may not be compensated (see also topic 14.13 Artisanal and small-scale mining). In some cases, community members resisting resettlement may face threats and intimidation, as well as violent, repressive, or life-threatening removal from lands.

Addressing impacts related to land and resource rights and resettlement requires extensive and ongoing assessment of impacts. This can ensure that impacts are identified and prevented, for example, by avoiding involuntary resettlement where feasible. Measures such as fair compensation and improvements to living conditions can help mitigate impacts and provide a timely remedy. Ongoing inclusive engagement with local communities throughout the life of a mine and beyond, for example, through consultations and public hearing processes, is essential to ensure the viability and continuity of community livelihoods. This includes ensuring that women and other groups more vulnerable to impacts are sufficiently represented. Organizations can also seek free, prior, and informed consent when mining activities may impact land or resources that local communities use or own.
Reporting on land and resource rights

If the organization has determined land and resource rights to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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- Describe the approach to engaging with stakeholders whose rights to land and resources are or could be affected, including:
  - how the organization seeks to ensure meaningful engagement;
  - how the organization seeks to ensure safe and equitable gender participation.
- Describe the policies or commitments to providing remediation to local communities or individuals subject to involuntary resettlement, and the process for establishing compensation for loss of assets or other assistance to improve or restore standards of living or livelihoods. |
| SECTOR STANDARD REF # | 14.12.1 |

Additional sector disclosures

List the mine sites where involuntary resettlement has taken place or is planned. For each mine site, describe how peoples’ livelihoods and human rights are or could be affected and restored. 14.12.2

List the locations of mine sites where conflicts or violations of land and resource rights (including customary, collective, and informal tenure rights) occurred, and describe the incidents and the stakeholders whose rights were affected. 14.12.3

References and resources

The authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on land and resource rights by the mining sector are listed in the Bibliography.
**Topic 14.13 Artisanal and small-scale mining**

Artisanal and small-scale mining (ASM) refers to mining by individuals, groups, families, or cooperatives with minimal or no mechanization and often operating informally. ASM occurs throughout the world, but is particularly widespread in developing countries where it is an important source of income and livelihood. This topic covers impacts on and from ASM that occur as a result of direct and indirect interaction with mining organizations.

An estimated 40 million people around the world are engaged in artisanal and small-scale mining (ASM) [205]. ASM activities are largely informal and often associated with limited access to mining technology, high labor intensity, and low productivity levels. Mining organizations can come into contact with ASM at the beginning of mining projects when mineral deposits are exposed and ASM operators migrate to mine sites. In other cases, an existing ASM presence might exist before mining organizations commence exploration and extraction.

ASM can be legally recognized through artisanal and small-scale mining permits. ASM can be considered legitimate when consistent with applicable laws or when there are good faith efforts to operate within the applicable legal framework and to engage in formalization opportunities [204]. However, ASM can often be considered illegal, especially when undertaken on mining organizations’ concessions. Though mining organizations may be vested with concessions to mine by national regulators, informal ASM operations may have the support of the local community that may be consistent with social and cultural norms or the informal rules and practices developed over time.

When ASM operates in the absence of a regulatory environment, interactions and contact with mining organizations can lead to conflicts over land, access and control of mineral deposits, as well as the right to mine (see also topic 14.12 Land and resource rights). In such cases, mining organizations’ use of security personnel to protect their assets can lead to human rights violations (see also topic 14.14 Security practices).

The proximity of mining organizations to informal ASM activities can hinder the effectiveness of mitigation strategies for managing an organization’s environmental impacts. For example, efforts to maintain air or water quality may be impeded due to the use of chemicals or heavy metals in ASM operations. Areas of high biodiversity value that the organization has an obligation to protect may also be damaged as a result of uncontrolled access by ASM operators.

Mining organizations can become involved with negative impacts when purchasing minerals extracted by ASM operators. These impacts include lower levels of occupational health and safety and insufficient environmental practices. In particular, the frequent use of mercury in ASM gold extraction is a major concern for the environment and the health of workers and local communities.

ASM can also involve considerable numbers of children, who often work in mines to supplement family income (see also topic 14.18 Child labor). Mining organizations can also be involved with incidences of forced labor through their interaction with ASM, as well as face higher risks of being involved with illegal activities.

Mining organizations can undertake community engagement and consultation with ASM operators to build constructive relationships. These would start at the exploration phase to identify and regularly assess, prevent, and mitigate the impacts linked by their business relationships, interactions, or colocation of mining with ASM. Mining organizations can support legitimate ASM activities through capacity building, allocating areas for ASM operators to mine, and providing resources and technical assistance. Mining organizations can also invest in local procurement initiatives, foster collaboration through buy-back arrangements, and provide support for formalization at regional and national levels.
Reporting on artisanal and small-scale mining

If the organization has determined artisanal and small-scale mining to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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Additional sector recommendations

- Describe the approach to engaging with legitimate ASM operators, and the process used to determine whether they are legitimate.
- Describe the programs in place to enhance positive impacts or mitigate negative impacts involving ASM, and how engagement with local authorities and communities has informed them.

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Additional sector disclosures

List the mine sites where ASM occurs on or in close proximity to the site.

Report the total number and nature of incidents and conflicts involving ASM and actions taken to address them.\(^\text{16}\)

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References and resources

The authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on artisanal and small-scale mining by the mining sector are listed in the Bibliography.

\(^\text{16}\) In the context of this disclosure, an ‘incident’ refers to a legal action or complaint registered with the reporting organization or competent authorities through a formal process, or an instance of non-compliance identified by the organization through established procedures (management system audits, formal monitoring programs, or grievance mechanisms).
The use of security personnel can play an essential role in allowing an organization to operate safely and productively, but also has the potential to lead to human rights violations. This topic covers impacts as a result of the use or presence of security providers.

Many organizations in the mining sector make use of security personnel to protect the organizations’ assets or ensure workers’ safety and security. Organizations can employ their own security but more commonly use private security contractors, or the host government provides security.

Documented cases show human rights violations by security personnel during encounters with local communities or activists, ranging from threats and intimidation to sexual and physical violence. Security providers may also be connected to military or paramilitary groups. While security personnel are deployed across geographies, the risk of human rights violations is heightened in conflict-affected and high-risk areas (see also topic 14.25). Risks can also be heightened where mining occurs adjacent to Indigenous Peoples and other vulnerable groups (see also topic 14.11 Rights of Indigenous Peoples). Artisanal and small-scale mining (ASM) operators can also face higher risks, particularly when concerns exist around ASM encroachment on mining organizations’ concessions (see also topic 14.13 Artisanal and small-scale mining).

Actions taken by security personnel against local community members and human rights defenders can violate the rights to freedom of assembly and speech, which can lead to injuries and loss of life. Such human rights violations can occur, for example, during protest activities against mining or when communities protect their land and resources affected by mining activities (see also topic 14.12 Land and resource rights). Human rights defenders are accorded particular rights and protections, as outlined in the United Nations Declaration on Human Rights Defenders, but frequently still suffer human rights abuses and harassment.

Organizations in the sector are responsible for ensuring that security practices are consistent with respect to human rights [222]. This involves assessing security-related impacts, identifying situations where impacts on human rights are likely to occur, and working with security providers to ensure that human rights are respected. Impacts can also be mitigated more broadly by a better understanding of the local context, such as the presence of vulnerable groups and the gender composition of the local community.
**Reporting on security practices**

If the organization has determined security practices to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>Describe the approach to ensuring respect for human rights by public and private security providers, including whether the organization has committed to implementing the Voluntary Principles on Security and Human Rights.</td>
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<td><strong>Topic Standard disclosures</strong></td>
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**References and resources**

*GRI 410: Security Practices 2016* lists additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on security practices by the mining sector are listed in the **Bibliography**.
Topic 14.15 Critical incident management

Critical incident management deals with the prevention and control of incidents that can lead to fatalities, injuries or ill health, environmental impacts, and damage to local communities and infrastructure. This topic covers impacts from such incidents and an organization’s approach to managing them.

Critical incidents in the mining sector not only cause damage to the organization’s assets but can have catastrophic consequences for workers, local communities, and the environment, for example, through air, soil, and water contamination, ecosystem and habitat degradation, and animal mortality. These impacts have the potential to disrupt other economic activities that depend on natural resources, such as agriculture and fishing, affecting livelihoods and compromising food safety and security.

Critical incidents in the mining sector can be related to the release of hazardous chemicals and gases, tailings facility failures (see also topic 14.6 Tailings), stope collapses, ground subsidence, improper use and storage of explosives, fires, floods, and vehicle collisions. Incidents can be attributed to, for example, human error, mechanical errors, equipment failure (see also topic 14.16 Occupational health and safety), and poor management of waste and hazardous materials (see also topic 14.5 Waste). Incidents can also be attributed to mining-induced seismicity, climactic conditions, and weather events. Critical incidents can occur across the supply chain, for example, involving contractors performing on-site mining activities or transportation companies involved in highway accidents while dispatching minerals.

Implementing a critical control management approach to anticipate incidents can help identify factors that can lead to incidents. Negative impacts from critical incidents can be more effectively prevented and mitigated when an emergency preparedness and response plan is in place. The timely implementation of these measures when critical incidents occur is essential. Mining organizations can also bolster preparedness for an emergency by establishing effective communication channels and engaging with local communities about potential health and safety threats related to mining activities (see also topic 14.10 Local communities).
Reporting on critical incident management

If the organization has determined critical incident management to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>Describe the organization’s approach to emergency preparedness and response plans, and how engagement with local stakeholders has informed the plans.</td>
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<td><strong>GRI 306: Effluents and Waste 2016</strong></td>
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<td>Disclosure 306-3 Significant spills</td>
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<td>Report the number of critical incidents in the reporting period, describe their impacts, and actions taken to remediate them.</td>
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<td>Report the percentage of mine sites that have emergency preparedness and response plans in place, and a list of the sites that do not.</td>
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References and resources

*GRI 306: Effluents and Waste 2016* lists authoritative intergovernmental instruments relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on critical incident management by the mining sector are listed in the Bibliography.


**Topic 14.16 Occupational health and safety**

- **Healthy and safe work conditions** are recognized as a human right. Occupational health and safety involves the prevention of physical and mental harm to workers and promotion of workers’ health. This topic covers impacts related to workers’ health and safety.

- The health and safety of workers engaged in mining activities is an ongoing concern for organizations in the sector. Hazards include working with heavy machinery, poor mine structures, and exposure to or handling of explosive, flammable, poisonous, or harmful substances. Hazards can be associated with working in confined spaces or isolated locations, long working hours, and repetitive tasks.

- Extraction methods can also determine the severity of hazards, with workers in underground mines often facing higher risks. Additionally, workers in developing countries, especially in remote mine sites, are at a higher risk of workplace injuries and ill health.

- Hazards associated with the mining sector can result in high-consequence work-related injuries. Injuries can result from explosives use, the release of gas or dust in confined areas, electrical faults or fires, the collapse of mine structures or facility failures (see also topics 14.15 Critical incident management and 14.6 Tailings), or the malfunctioning or misuse of mining equipment. Transportation accidents frequently occur in the mining sector, particularly among suppliers.

- Health hazards can be biological, chemical, ergonomic, or physical in origin. The use of chemicals and exposure to hazardous substances, such as cyanide or mercury in mineral extraction and processing can lead to long-term health impacts for workers. Exposure to extreme temperatures, harmful radiation, and machinery noise or vibration can result in illness among workers. Health hazards also include poor hygiene, reduced food or water quality in mine sites and workers' accommodation that can result in diseases. Vulnerable groups, including pregnant women, can be particularly susceptible to health hazards in the sector.

- Psychosocial hazards related to common employment practices in the sector include fly-in fly-out work arrangements, long travel times, rotational work, long shifts, night work, irregular working hours, solitary work, living in the workplace, and inadequate rest (see also topic 14.17 Employment practices). These practices can also cause fatigue, increasing the risk of injury. In addition, workplaces characterized by gender imbalance can contribute to increased stress, discrimination, or sexual harassment (see also topic 14.21 Non-discrimination and equal opportunity).

- In the mining sector, the incidence of high-consequence work-related injury tends to be higher for workers who are not employees, such as contractors. This can be attributed to imbalances in occupational health and safety management systems coverage and the application of safety standards, which may not cover contract workers in the same way employees are covered. They might also be less familiar with workplace safety mechanisms and practices or be less committed to them.
Reporting on occupational health and safety

If the organization has determined occupational health and safety to be a material topic, this subsection lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics</td>
<td>14.16.1</td>
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<tr>
<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 403: Occupational Health and Safety 2018</td>
<td>Disclosure 403-1 Occupational health and safety management system</td>
<td>14.16.2</td>
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<td>Disclosure 403-2 Hazard identification, risk assessment, and incident investigation</td>
<td>14.16.3</td>
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<td></td>
<td>Disclosure 403-3 Occupational health services</td>
<td>14.16.4</td>
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<tr>
<td></td>
<td>Disclosure 403-4 Worker participation, consultation, and communication on occupational health and safety</td>
<td>14.16.5</td>
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<td><strong>Additional sector recommendation</strong></td>
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<td></td>
<td>Report how the organization ensures women’s participation in formal joint management-worker health and safety committees, and the percentage of women represented in these committees.</td>
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<td></td>
<td>Disclosure 403-5 Worker training on occupational health and safety</td>
<td>14.16.6</td>
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<td></td>
<td>Disclosure 403-6 Promotion of worker health</td>
<td>14.16.7</td>
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<tr>
<td></td>
<td>Disclosure 403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships</td>
<td>14.16.8</td>
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<tr>
<td></td>
<td>Disclosure 403-8 Workers covered by an occupational health and safety management system</td>
<td>14.16.9</td>
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<tr>
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<td>Disclosure 403-9 Work-related injuries</td>
<td>14.16.10</td>
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<tr>
<td></td>
<td>Disclosure 403-10 Work-related ill health</td>
<td>14.16.11</td>
</tr>
</tbody>
</table>

References and resources

GRI 403: Occupational Health and Safety 2018 lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on occupational health and safety by the mining sector are listed in the Bibliography.
Topic 14.17 Employment practices

Employment practices refer to an organization’s approach to job creation, terms of employment, and working conditions for its workers. This topic also covers the employment and working conditions in an organization’s supply chain.

While mining can offer well-paid work opportunities, negative impacts on workers can derive from challenging working conditions and ineffective labor-management consultations. Job insecurity due to closures, fluctuating commodity price cycles, and technological advances, including automation, provide additional challenges for workers.

Employment practices can vary in relation to remuneration, hours of work, health and safety coverage, training opportunities, social protection, job security, and access to grievance mechanisms. Full-time employees generally have access to benefits that might not be available to part-time employees. Employment terms can vary between local workers and migrant workers, whereby remuneration for these workers may be unequal, and benefits, such as bonuses, housing allowances, and private insurance plans, may only be offered to high-skilled migrant workers.

Various activities in the mining sector may be outsourced to suppliers. This practice is common during all phases in the life of the mine, such as during construction or maintenance, or for specific activities, such as catering, drilling, security, and transportation. Outsourcing activities could allow organizations in the mining sector to reduce their labor costs or bypass collective agreements that are in place for employees, potentially increasing disparities between workers (see also topic 14.20 Freedom of association and collective bargaining).

Many jobs in the mining sector have complex shift patterns involving long hours and night work to ensure the continuity of operations around the clock. This can cause high levels of fatigue and increase risks related to health and safety. The remote locations of many mine sites might necessitate the use of fly-in fly-out or other transportation arrangements. Workers who are transported to mine sites for several weeks at a time and often required to work irregular shifts can experience negative impacts on their psychosocial health (see also topic 14.16 Occupational health and safety). Irregular work shifts and time required away from families can also act as a barrier to the employment of primary caregivers - often women - in the sector (see also topic 14.21 Non-discrimination and equal opportunity).

Mining organizations can support workers by addressing transformations in the sector, such as automation, the deployment of new technologies, and the low-carbon transition, by providing resources for training, education, and the development of long-term skills and capacities.
Reporting on employment practices

If the organization has determined employment practices to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 202: Market Presence 2016</td>
<td>Disclosure 202-1 Ratios of standard entry-level wage by gender compared to local minimum wage</td>
<td>14.17.2</td>
</tr>
<tr>
<td>GRI 401: Employment 2016</td>
<td>Disclosure 401-1 New employee hires and employee turnover</td>
<td>14.17.3</td>
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<tr>
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<td>Disclosure 401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees</td>
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<td>Additional sector recommendation</td>
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<td></td>
<td>Report benefits provided to employees that are not provided to workers who are not employees and whose work and workplace are controlled by the organization.</td>
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<td>Disclosure 401-3 Parental leave</td>
<td>14.17.5</td>
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<tr>
<td>GRI 402: Labor/Management Relations 2016</td>
<td>Disclosure 402-1 Minimum notice periods regarding operational changes</td>
<td>14.17.6</td>
</tr>
<tr>
<td>GRI 404: Training and Education 2016</td>
<td>Disclosure 404-1 Average hours of training per year per employee</td>
<td>14.17.7</td>
</tr>
<tr>
<td></td>
<td>Disclosure 404-2 Programs for upgrading employee skills and transition assistance programs</td>
<td>14.17.8</td>
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<tr>
<td>GRI 414: Supplier Social Assessment 2016</td>
<td>Disclosure 414-1 New suppliers that were screened using social criteria</td>
<td>14.17.9</td>
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<td>Disclosure 414-2 Negative social impacts in the supply chain and actions taken</td>
<td>14.17.10</td>
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References and resources


The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on employment practices by the mining sector are listed in the Bibliography.
Topic 14.18 Child labor

Child labor is defined as work that deprives children of their childhood, their potential, and their dignity, and that is harmful to their development, including by interfering with their education. It is a violation of human rights and can lead to lifelong negative impacts. Abolition of child labor is a fundamental principle and right at work.

Children face multiple hazards when working in a mine, such as falling rocks, explosions, fires, and the collapse of mine walls. Because mining often occurs in remote areas with weak law enforcement, lacking schools, social services, and family and community support, work in mines can also be morally and psychologically hazardous for children. The ILO considers mining and quarrying as hazardous work and one of the worst forms of child labor, the elimination of which is a priority.

Mining organizations are more likely to become involved with child labor through their suppliers than through their own activities, for example, during the construction of mine sites where work is carried out by suppliers. Mining organizations that purchase minerals extracted by artisanal and small-scale mining (ASM) operators can also become involved with child labor when the ASM operators use child labor (see also topic 14.13 Artisanal and small-scale mining). There are an estimated one million children between the ages of five and 17 engaged worldwide in ASM and quarrying activities [251][252].

Mining organizations can be more exposed to risks of child labor when operating in conflict-affected and high-risk areas (see also topic 14.25). Increased poverty in rural areas owing to a lack of employment opportunities and poor wages can drive the incidence of child labor in ancillary or support activities.

To fulfill their responsibility to respect human rights, mining organizations are expected to carry out due diligence to identify activities and business relationships that are at significant risk for incidents of child labor and use their leverage to contribute to the effective abolition of child labor. As part of a global effort, several governments have issued legislation requiring public reporting to address child labor. Such legislation applies to organizations in the mining sector.

Box 5. Holistic approach to combat child labor

Although the use of child labor has declined globally, increased artisanal and small-scale mining (ASM) activity over the past decades may have resulted in higher levels of children working in mining. Local economic circumstances and the need for additional family income are key drivers for child labor in mines. Studies have found that disengagement from ASM by mining organizations to avoid the negative impacts of child labor can paradoxically exacerbate the issue and drive ASM to operate in more informal environments with more hazardous working conditions. To holistically address the issue, mining organizations can collaborate with ASMs and local communities to identify which activities are being performed by children and who the children are and work with authorities to assist and support sustained economic growth [254].
Reporting on child labor

If the organization has determined child labor to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 408: Child labor 2016</td>
<td>Disclosure 408-1 Operations and suppliers at significant risk for incidents of child labor</td>
<td>14.18.2</td>
</tr>
<tr>
<td>GRI 414: Supplier Social Assessment 2016</td>
<td>Disclosure 414-1 New suppliers that were screened using social criteria</td>
<td>14.18.3</td>
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</tbody>
</table>

References and resources

GRI 408: Child labor 2016 and GRI 414: Supplier Social Assessment 2016 list authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on child labor by the mining sector are listed in the Bibliography.
Forced labor is defined as all work or service which is exacted from any person under the menace of penalty and for which a person has not offered themselves voluntarily. Freedom from forced labor is a human right and a fundamental right at work. This topic covers an organization’s approach to identifying and addressing forced labor and modern slavery.

It is estimated that 4% of all forced labor happens in mining and quarrying [264]. Forced labor and modern slavery occur in situations of involuntary recruitment through trafficking, difficulty leaving the employer without penalty, violent threats, debt bondage, deceptive recruitment, withholding of wages, or the retention of identification documents.

Cases of forced labor and modern slavery are especially prevalent in artisanal and small-scale mining (see also topic 14.13) and in conflict-affected and high-risk areas (see also topic 14.25). Migrant workers in the mining sector are also more likely to work under conditions of coercion. They may not have valid work permits, be unaware of their legal status, and even can have their passports or identification documents taken away.

Mining organizations can be involved with incidents of forced labor and modern slavery through their business relationships, such as with suppliers who may operate in countries with low enforcement of human rights. In order to fulfill their responsibility to respect human rights, mining organizations are expected to carry out due diligence to identify mine sites and business relationships that are at significant risk for incidents of forced labor and modern slavery. Organizations can also use leverage to improve labor conditions to combat forced labor and modern slavery throughout the supply chain.

As part of a global effort, several governments have issued legislation requiring public reporting on addressing modern slavery, including forced labor practices. Such legislation applies to organizations in the mining sector.
Reporting on forced labor and modern slavery

If the organization has determined forced labor and modern slavery to be a material topic, this subsection lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<tr>
<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 409: Forced or Compulsory Labor 2016</td>
<td>Disclosure 409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor</td>
<td>14.19.2</td>
</tr>
<tr>
<td>GRI 414: Supplier Social Assessment 2016</td>
<td>Disclosure 414-1 New suppliers that were screened using social criteria</td>
<td>14.19.3</td>
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</table>

References and resources

GRI 409: Forced or Compulsory Labor 2016 and GRI 414: Supplier Social Assessment 2016 list authoritative intergovernmental instruments and additional references relevant to reporting on this topic. The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on forced labor and modern slavery by the mining sector are listed in the Bibliography.
Topic 14.20 Freedom of association and collective bargaining

Freedom of association and collective bargaining are human rights and fundamental rights at work. They include the rights of employers and workers to form, join, and run their own organizations without prior authorization or interference, and to collectively negotiate working conditions and terms of employment. This topic covers an organization's approach and impacts related to freedom of association and collective bargaining.

Freedom of association and collective bargaining can help improve working conditions in the mining sector, including occupational health and safety, wages, and job security. They address the right of workers to assemble, organize, belong to trade unions or political parties, elect representatives, and strike without interference from their employers.

Many workers in the mining sector have traditionally been represented by trade unions, with jobs covered by collective bargaining agreements. However, some mining activities take place in countries where workers' rights are restricted or not efficiently enforced. Restrictions on effective worker representation might exist even in jurisdictions where unions are legal, and workers who join unions might face intimidation or unfair treatment, harassment, payment cuts, or even employment termination.

Documented cases of interference with freedom of association and collective bargaining in the sector include the detention of managers and other employees, the invasion of privacy, the non-adherence to collective agreements, and the prevention of trade union access to workplaces to assist workers. Other documented cases include the refusal to bargain in good faith with workers' chosen trade unions, as well as trade union members and leaders being subjected to threats, harassment, forced disappearance, violence, and death. Unfair dismissals and unilateral cancellation of collective bargaining agreements are other forms of interference with freedom of association and collective bargaining.

Differing terms and conditions of employment in the sector can cause disparity among workers in implementing workers' rights. Contract workers, for example, are often excluded from the scope of collective bargaining agreements and might receive less favorable employment conditions and lower base salaries or benefits compared to employees. Lack of access to freedom of association and collective bargaining can result in adverse working conditions such as low wages and long working hours that exacerbate impacts on workers who already face increased work-related vulnerabilities and isolation (see also topic 14.21 Non-discrimination and equal opportunity).

Trade unions have reported restrictions on temporary workers or workers employed by suppliers accessing the same rights as other employees. In some cases, organizations have hired workers on short-term contracts or outsourced jobs to prevent workers from joining unions. Similarly, migrant workers are also less likely to be covered by labor agreements or to be able to participate freely in unions.

Mining organizations can ensure that workers of all employment conditions have access to grievance mechanisms, often facilitated or partly designed by unions, to help resolve stakeholder concerns before they develop into grievances and conflicts. According to the International Labour Organization (ILO), all workers should enjoy the right to freedom of association and collective bargaining, and organizations should ensure that these rights are not unreasonably affected.
Reporting on freedom of association and collective bargaining

If the organization has determined freedom of association and collective bargaining to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<tr>
<td>Topic Standard disclosures</td>
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<tr>
<td>GRI 407: Freedom of Association and Collective Bargaining 2016</td>
<td>Disclosure 407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk</td>
<td>14.20.2</td>
</tr>
</tbody>
</table>

References and resources


The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on freedom of association and collective bargaining by the mining sector are listed in the Bibliography.
Topic 14.21 Non-discrimination and equal opportunity

Freedom from discrimination is a human right and a fundamental right at work. Discrimination can impose unequal burdens on individuals or deny fair opportunities on the basis of individual merit. This topic covers impacts from discrimination and practices related to diversity, inclusion, and equal opportunity.

The nature of work in the mining sector, including its conditions, locations, necessary skills, and types of work, can inhibit diversity and equal opportunity for workers. While various barriers to entry in mining can be detrimental to creating a diverse and equitable workplace, discrimination within mining organizations can also impede job access and career development and lead to disparities in treatment, base salary, and benefits.

Discrimination can occur within mining organizations and the activities that they directly undertake as well as in their supply chain. Discrimination can occur based on age, gender, race, religion, nationality, sexual orientation, or worker status. Individuals and vulnerable groups often face a higher risk of discrimination. They include Indigenous Peoples, persons from ethnic or other minorities, migrant workers, or workers with HIV/AIDS or other chronic health issues.

The mining sector is characterized by a significant gender imbalance among workers, including senior management. Examples of unequal treatment for women workers include impeded access to jobs, less pay compared to male counterparts, and hiring discrimination. Other challenges are the effects of fly-in fly-out work arrangements, long hours, limited parental leave and childcare, and a lack of appropriate facilities and protective equipment for women at mine sites. All of which create barriers to entry for women and primary caregivers.

In addition, male-dominated work cultures and gendered organizational norms have contributed to the likelihood of sexual harassment in the workplace, documented in fly-in fly-out worker camps. The remoteness of mine sites can also contribute to gender-based discrimination due to having less access to protective services, legal representation, and law enforcement personnel. Recognizing women’s rights at work, providing gender-appropriate facilities and equipment, and ensuring equal opportunities are examples of actions organizations can take to achieve gender equity and inclusion in the workplace.

Local workers and Indigenous Peoples can experience racial and ethnic discrimination at all organizational levels. Jobseekers from local communities are sometimes excluded from the hiring process or might receive lower pay than expatriate employees recruited for skill-specific roles. Migrant workers, especially when low-skilled or working at the mine site on a temporary basis, can face additional forms of discrimination in employment and treatment (see also topic 14.17 Employment practices). Contract workers can also be more vulnerable to discrimination if organization-wide discrimination policies do not protect their working arrangements.

Alongside accessible and effective grievance mechanisms, understanding how specific groups may be subject to discrimination across different locations of mining activities can help the sector effectively address discriminatory practices. Establishing and supporting transparent workplace policies on inclusion and diversity, such as training workers about cultural sensitivity and non-discrimination, can help foster a respectful workplace and prevent discrimination.
### Reporting on non-discrimination and equal opportunity

If the organization has determined non-discrimination and equal opportunity to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td><strong>Topic Standard disclosures</strong></td>
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<tr>
<td>GRI 401: Employment 2016</td>
<td>Disclosure 401-3 Parental leave</td>
<td>14.21.3</td>
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<tr>
<td>GRI 404: Training and Education 2016</td>
<td>Disclosure 404-1 Average hours of training per year per employee</td>
<td>14.21.4</td>
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<tr>
<td>GRI 405: Diversity and Equal Opportunity 2016</td>
<td>Disclosure 405-1 Diversity of governance bodies and employees. Additional sector recommendations Report whether the organization has a gender equality plan or policy in place and, if so, provide a summary of the plan, and progress made in implementing the plan. Disclosure 405-2 Ratio of basic salary and remuneration of women to men Additional sector recommendations • Report the ratio of basic salary and remuneration of women to men by mine site. • Report the ratio of basic salary and remuneration by other indicators of diversity, by mine site, where relevant.</td>
<td>14.21.5</td>
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### References and resources

GRI 202: Market Presence 2016, GRI 401: Employment 2016, GRI 404: Training and Education 2016, GRI 405: Diversity and Equal Opportunity 2016, and GRI 406: Non-discrimination 2016 list authoritative intergovernmental instruments relevant to reporting on this topic. The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on non-discrimination and equal opportunity by the mining sector are listed in the Bibliography.
Topic 14.22 Anti-corruption

Anti-corruption refers to how an organization manages the potential of being involved with corruption. Corruption is practices such as bribery, facilitation payments, fraud, extortion, collusion, money laundering, or the offer or receipt of an inducement to do something dishonest or illegal. This topic covers impacts related to corruption and an organization’s approach related to contract and ownership transparency.

Corruption in the mining sector can occur throughout the value chain, irrespective of the country of operation or the country’s economic development, location, and political context. Negative impacts of corruption include misallocation of resource revenues, damage to the environment and people by mining projects when mineral rights are granted to unqualified or unethical organizations, abuse of democracy and human rights, and political instability.

Corruption can also divert resource revenues to private beneficiaries at the expense of public investments in infrastructure or services. This can be particularly critical in countries with high poverty levels where existing inequalities might be intensified. The risk of corruption is prevalent in conflict-affected and high-risk areas since increased pressure on the supply of resources and instability might be exploited (see also topic 14.25 Conflict-affected and high-risk areas).

Characteristics of the mining sector that increase the likelihood of corruption include frequent interaction between mining organizations and politically exposed persons, such as government officials for licenses and regulatory approvals. Other relevant characteristics include the complex financial transactions and the international reach of the sector (see also topic 14.23 Payments to governments).

State-owned enterprises (SOEs) in the mining sector are more exposed to corruption, particularly in awarding permits, procuring goods and services, commodity trading, and non-commercial activities such as social expenditures [288]. SOEs might have less effective internal controls and fewer transparency expectations than public companies and often receive preferential treatment due to their special legal status in a country. In addition to driving profit, SOEs sometimes pursue broader objectives such as community development. However, without adequate oversight, measures for community development might be abused for corrupt purposes. Private mining organizations partnering with SOEs are thus more prone to corruption due to their business relationship.

In the mining sector, corruption has been detected in awarding exploration and production contracts and licenses, for example, to obtain confidential information, to influence decision-making, or to avoid environmental or local content requirements. Corruption can also occur in the consultation process when seeking consent and when compensating local communities, either directly or through local governments, which might lack transparent financial procedures (see also topic 14.12 Land and resource rights and 14.11 Rights of Indigenous Peoples). Corruption in these processes may result in licenses being awarded to less qualified organizations, jeopardizing public investments, or negatively impacting the environment and local communities.

Corrupt practices can also be aimed at blocking or shaping policies and regulations or influencing their enforcement. This is particularly common to land and resource rights regulations, taxes and other government levies, or environmental protections (see also topic 14.24 Public policy).

A lack of transparency in procurement practices can have significant economic impacts on host countries and local economic development (see also topic 14.9 Economic impacts). Examples of this can include paying bribes to get regulations or quality requirements waived, receiving kickbacks for

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18 Politically exposed person is defined by the Financial Action Taskforce (FATF) as ‘an individual who is or has been entrusted with a prominent public function’ [287].
securing contracts at inflated prices, profiting from inflated prices charged by an entity established as a front organization, and favoring companies connected to local regulators.

Lack of disclosure on contracts and licensing over mineral resource extraction may obstruct public scrutiny of investments and transactions related to project-related negative impacts and benefits, including negotiated terms and obligations of organizations. Fair terms for sharing risks and rewarding benefits are particularly relevant because of the long-term time horizons and widespread impacts of mining projects. Contract transparency helps local communities hold governments and organizations accountable for their negotiated terms and obligations. Opaque ownership structures, in turn, can make it difficult to determine who benefits from these financial transactions. Beneficial ownership transparency has been identified as a vehicle to deter conflicts of interest, corruption, tax avoidance, and evasion.

Stakeholders, the marketplace, and international norms expect organizations in the mining sector to demonstrate their adherence to national laws, integrity, governance, and responsible business practices to combat corruption and prevent the negative impacts that stem from it.
Reporting on anti-corruption

If the organization has determined anti-corruption to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

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<td>Additional sector recommendations</td>
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<td>Describe how potential impacts of corruption or risks of corruption are managed in the organization's procurement practices and throughout the supply chain.</td>
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<tr>
<td>GRI 205: Anti-corruption 2016</td>
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<tr>
<td>Disclosure 205-1 Operations assessed for risks related to corruption</td>
</tr>
<tr>
<td>Disclosure 205-2 Communication and training about anti-corruption policies and procedures</td>
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<td>Disclosure 205-3 Confirmed incidents of corruption and actions taken</td>
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<th>Additional sector disclosures</th>
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<tr>
<td>Describe the approach to contract transparency, including:</td>
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<td>• whether contracts and licenses are made publicly available and, if so, where they are published;</td>
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<td>• if contracts or licenses are not publicly available, the reason for this and actions taken to make them public in the future.¹⁹</td>
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<td>List the organization’s beneficial owners and explain how the organization identifies the beneficial owners of business partners, including joint ventures and suppliers.²⁰</td>
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<td>14.22.5</td>
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<tr>
<td>14.22.6</td>
</tr>
</tbody>
</table>

**References and resources**

*GRI 205: Anti-corruption 2016* lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on anti-corruption by the mining sector are listed in the *Bibliography*.

¹⁹ This additional sector disclosure is based on Requirement 2.4. Contracts in the *EITI Standard 2019*. Definitions for contracts and licenses can be found in the *EITI Standard 2019* [305].

²⁰ This additional sector disclosure is based on Requirement 2.5. Beneficial ownership c., d., and f. in the *EITI Standard 2019* [305].
**Topic 14.23 Payments to governments**

Lack of transparency about payments to governments can contribute to inefficient management of public funds, illicit financial flows, and corruption. This topic covers impacts from an organization’s practices related to payments to governments and the organization’s approach to transparency of such payments.

The mining sector can have significant impacts on national incomes, fiscal revenues, and foreign exchange revenues by means of various payments to governments (see also topic 14.9 Economic impacts). These payments include commodity trading revenues, exploration and production licensing fees, taxes and royalties, and signature, discovery, and production bonuses.

Organizations that apply aggressive tax practices or tax non-compliance can diminish national tax revenues to the detriment of the public good. Avoidance of taxes and other payments to governments can be facilitated by tax minimization practices such as transfer pricing or illicit financial flows, which include the cross-border movement of money that is illegally earned, transferred, or used [302].

Organizations can also receive financial assistance from governments in the form of tax reliefs, subsidies, grants, or financial incentives, potentially hindering government revenue collection and reducing the financial benefits of mining. These risks are more prevalent in developing countries as well as conflict-affected and high-risk areas where the need for public revenue is often higher.

Reporting on payments to governments can help distinguish the economic importance of the mining sector to countries, enable public debate, and inform government decision-making. It can also provide insights into the terms of contracts, increase accountability, and strengthen revenue collection and management. On the other hand, a lack of transparency by mining organizations can impede the detection of potentially misallocated revenues and corruption (see also topic 14.22 Anti-corruption).

When disclosing information on payments to governments, organizations in the mining sector often report aggregate payments at an organizational level. However, this can provide limited insight into payments made in each country or related projects. Reporting country-by-country and by mine site allows for comparisons of the payments made to those stipulated in fiscal, legal, and contractual terms. It also allows for an assessment of the financial contribution of mining activities to host countries and communities. Full disclosure enables governments to address tax avoidance and evasion, correct information asymmetry, and level the playing field for governments when negotiating contracts.
Reporting on payments to governments

If the organization has determined payments to governments to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
<th>SECTOR STANDARD REF #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Management of the topic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics</td>
<td>14.23.1</td>
</tr>
<tr>
<td><strong>Topic Standard disclosures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRI 201: Economic Performance 2016</td>
<td>Disclosure 201-1 Direct economic value generated and distributed</td>
<td>14.23.2</td>
</tr>
<tr>
<td></td>
<td>Disclosure 201-4 Financial assistance received from government</td>
<td>14.23.3</td>
</tr>
<tr>
<td></td>
<td>Additional sector recommendation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>For state-owned organizations (SOEs):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Report the financial relationship between the government and the SOE.(^{21})</td>
<td></td>
</tr>
<tr>
<td>GRI 207: Tax 2019</td>
<td>Disclosure 207-1 Approach to tax</td>
<td>14.23.4</td>
</tr>
<tr>
<td></td>
<td>Disclosure 207-2 Tax governance, control, and risk management</td>
<td>14.23.5</td>
</tr>
<tr>
<td></td>
<td>Disclosure 207-3 Stakeholder engagement and management of concerns related to tax</td>
<td>14.23.6</td>
</tr>
<tr>
<td></td>
<td>Disclosure 207-4 Country-by-country reporting</td>
<td>14.23.7</td>
</tr>
<tr>
<td></td>
<td>Additional sector recommendation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Report a breakdown of the payments to governments levied at the project-level, by project, and the following revenue streams, if applicable:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- The host government’s production entitlement;</td>
<td></td>
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<tr>
<td></td>
<td>- National state-owned company production;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Royalties;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Dividends;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Bonuses (e.g., signature, discovery, production bonuses);</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- License fees, rental fees, entry fees, and other considerations for licenses or concessions;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Any other significant payments and material benefits to government.(^{22})</td>
<td></td>
</tr>
</tbody>
</table>

---

\(^{21}\) This additional sector recommendation is based on Requirement 2.6 State participation in the *EITI Standard 2019* [305].

\(^{22}\) This additional sector recommendation is based on Requirement 4.1 Comprehensive disclosure of taxes and revenues and Requirement 4.7. Level of disaggregation in the *EITI Standard 2019*. A definition for project can be found in the *EITI Standard 2019* [305].
• Report the value of any thresholds\textsuperscript{23} that have been applied and any other contextual information necessary to understand how the project-level payments to governments reported have been compiled.

### Additional sector disclosures

For minerals purchased from the state or from third parties appointed by the state to sell on their behalf, report:

- volumes and types of minerals purchased;
- full names of the buying entity and the recipient of the payment;
- payments made for the purchase.\textsuperscript{24}

\textsuperscript{14.23.8}

### References and resources

\textit{GRI 201: Economic Performance 2016} and \textit{GRI 207: Tax 2019} list authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on payments to governments by the mining sector are listed in the Bibliography.

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\textsuperscript{23} The \textit{EITI Standard 2019} specifies that in countries implementing the EITI, the multi-stakeholder group for the country agrees which payments and revenues are material, including appropriate thresholds \textsuperscript{305}. The organization can use the relevant threshold set by the EITI multi-stakeholder group. If there is no relevant threshold set, the organization can use a threshold equivalent to that established for the European Union, which specifies that “Payments, whether a single payment or a series of related payments, below EUR 100,000 within the reporting period can be excluded” \textsuperscript{297}.

\textsuperscript{24} This additional sector disclosure is based on Requirement 4.2 Sale of the state’s share of production or other revenues collected in kind in the \textit{EITI Standard 2019} \textsuperscript{305} and \textit{EITI Reporting Guidelines for companies buying oil, gas and minerals from governments} \textsuperscript{296}.
Topic 14.24 Public policy

An organization can participate in public policy development, directly or through an intermediary organization, by means of lobbying or making financial or in-kind contributions to political parties, politicians, or causes. While an organization can encourage the development of public policy that benefits society, participation can also be associated with corruption, bribery, undue influence, or an imbalanced representation of the organization’s interests. This topic covers an organization’s approach to public policy advocacy and the impacts that can result from the influence an organization exerts.

Organizations in the mining sector can influence public policy development through lobbying and advocacy at local, regional, and national levels. These measures can allow access to government representatives and increase organizations’ influence over public policy decisions affecting the mining sector. Advocacy and lobbying can be carried out directly by the organization or through industry groups or other associations supported by the mining organization.

The sector can use its influence to advance responsible sector practices by safeguarding existing jobs, assisting in community development, and fostering foreign investment in a country. However, public policy and lobbying activities can also be used to:

- secure mining license approvals;
- influence legislation on environmental and social assessments;
- lower taxes and other government levies (see also topic 14.23 Payments to governments);
- shape environmental policies which can ultimately obstruct sustainable development.

For example, mining organizations are under increasing scrutiny for links to industry groups that have advocated for policies that are inconsistent with the organizations’ own publicly stated positions and the goals of the Paris Agreement [307].

Mining organizations can also influence public policy at local levels to have mining developments approved, for example, by colluding with local leaders while excluding the wider community from decision-making processes (see also topic 14.10 Local communities).

In some cases, direct contributions to political parties or through intermediaries can be used to engender favor for private sector interests. These contributions can be linked to corruption, especially in areas where regulations on political donations and lobbying are weak (see also topic 14.22 Anti-corruption). Mining organizations also employ former government representatives to acquire sensitive or insider knowledge about future policies to gain a commercial advantage.

Transparency about lobbying activities and political donations by mining organizations and affiliated industry groups can help accountability bodies, the public, and the media scrutinize whether mining organizations, through their own activities or those of the interest groups they are affiliated with, have unduly influenced laws, policies, and approvals.
Reporting on public policy

If the organization has determined public policy to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
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</thead>
<tbody>
<tr>
<td><strong>Management of the topic</strong></td>
<td></td>
</tr>
<tr>
<td>GRI 3: Material Topics 2021</td>
<td>Disclosure 3-3 Management of material topics</td>
</tr>
</tbody>
</table>

Additional sector recommendation
- Describe the organization’s stance on significant issues that are the focus of its participation in public policy development and lobbying; and any differences between these positions and its stated policies, goals, or other public positions.
- Report whether the organization is a member of, or contributes to, any representative associations or committees that participate in public policy development and lobbying, including:
  - the nature of this contribution;
  - any differences between the organization’s stated policies, goals, or other public positions on significant issues and the positions of the representative associations or committees.\(^{25}\)

**Topic Standard disclosures**

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRI 415: Public Policy 2016</td>
<td>Disclosure 415-1 Political contributions</td>
</tr>
</tbody>
</table>

References and resources

**GRI 415: Public Policy 2016** lists authoritative intergovernmental instruments and additional references relevant to reporting on this topic.

The additional authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on public policy by the mining sector are listed in the Bibliography.

\(^{25}\) These additional sector recommendations are based on reporting recommendations 1.2.1 and 1.2.2 in **GRI 415: Public Policy 2016**.
Topic 14.25 Conflict-affected and high-risk areas

When operating in or sourcing from conflict-affected and high-risk areas, organizations are more likely to be involved in human rights and legal violations and be implicated in corruption and financial flows contributing to conflict. This topic covers an organization’s approach and impacts related to operating in or sourcing from conflict-affected and high-risk areas.

Many organizations in the mining sector operate in or have business relationships with entities in conflict-affected and high-risk areas. In these areas, the heightened risk of serious human rights abuses includes incidents of forced labor, child labor, sexual violence, and violations of international humanitarian law. The sheer presence of mining activities can exacerbate conflict. Extraction by nature has higher risks of significant negative impacts, such as financing conflict or fuelling, facilitating or exacerbating conditions of conflict [318].

In conflict-affected and high-risk areas, armed groups or their affiliates often illegally control mine sites, transportation routes, or points where minerals are traded [318]. These groups can illegally tax or extort money and minerals, use forced labor, or commit other human rights abuses. Profits from these activities are often used to finance armed conflict. Mining organizations can be linked, directly or through their suppliers, to conflict by procuring minerals from, making payments to, or otherwise providing logistical assistance or equipment to armed groups or their affiliates.

While the security practices commonly used by mining organizations safeguard mine workers and assets in conflict-affected and high-risk areas, security personnel can be linked to human rights abuses and other illegal activities (see also topic 14.14 Security practices). ASM operators, vulnerable groups such as Indigenous Peoples, and human rights defenders are often severely affected by violence and harassment in these areas.

Organizations are also more likely to be implicated in corrupt practices, such as bribery and money laundering, in conflict-affected and high-risk areas. Corrupt practices also include opaque financial flows such as taxes, fees, and royalties paid to governments which are often difficult to trace and may end up financing conflict (see also topics 14.22 Anti-corruption and 14.23 Payments to governments).

When operating in or sourcing from conflict-affected and high-risk areas, mining organizations should conduct robust due diligence to ensure that they respect human rights and do not contribute to conflict [318]. International humanitarian law is binding on any organization whose activities are closely linked to an armed conflict and can also provide guidance to limit the effects of armed conflict.

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26 According to Organisation for Economic Co-operation and Development (OECD), conflict-affected and high-risk areas are identified by the presence of armed conflict, widespread violence or other risks of harm to people. High-risk areas may include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence [318].
Reporting on conflict-affected and high-risk areas

If the organization has determined conflict-affected and high-risk areas to be a material topic, this sub-section lists the disclosures identified as relevant for reporting on the topic by the mining sector.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>DISCLOSURE</th>
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</thead>
<tbody>
<tr>
<td><strong>Management of the topic</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GRI 3: Material Topics 2021</th>
<th>Disclosure 3-3 Management of material topics</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Additional sector recommendations</em></td>
<td></td>
</tr>
<tr>
<td>Describe the approach to ensuring adherence to international humanitarian law when operating in conflict-affected and high-risk areas.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Additional sector disclosures</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>List the locations of operations in conflict-affected or high-risk areas and how these were identified.</em></td>
</tr>
<tr>
<td><em>Describe the due diligence process applied for operations in, or when sourcing from, conflict-affected and high-risk areas and whether it aligns with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. If so, provide a link to the most recent due diligence 5-step report.</em></td>
</tr>
<tr>
<td><em>In the absence of a due diligence 5-step report, provide a summary of an impact assessment conducted, including potential impacts on workers and local communities.</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>References and resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The authoritative instruments and references used in developing this topic, as well as resources that may be helpful for reporting on conflict-affected and high-risk areas by the mining sector are listed in the <em>Bibliography</em>.</td>
</tr>
</tbody>
</table>
This glossary provides definitions for terms used in this Standard. The organization is required to apply these definitions when using the GRI Standards. The definitions included in this glossary may contain terms that are further defined in the complete GRI Standards Glossary. All defined terms are underlined. If a term is not defined in this glossary or in the complete GRI Standards Glossary, definitions that are commonly used and understood apply.

- area of high biodiversity value
- area protected
- business partner
- business relationship
- carbon dioxide (CO2) equivalent
- child/children
- conflict of interest
- corruption
- community development program
- direct (Scope 1) GHG emissions
- discrimination
- disposal
- due diligence
- effluent
- employee
- energy indirect (Scope 2) GHG emissions
- entry level wage
- exposure
- financial assistance
- freedom of association
- freshwater
- greenhouse gas (GHG)
- grievance
- grievance mechanism
- groundwater
- hazardous waste
- high-consequence work-related injury
- human rights
- impact
- Indigenous Peoples
- infrastructure
- local community
- local supplier
- recovery
- material topic
- mitigation
- occupational health and safety management system
- other indirect (Scope 3) GHG emissions
- parental leave
- protected area
- remuneration
- remedy/remediation
- renewable energy source
- reporting period
- runoff
- seawater
- security personnel
- severity (of impact)
- significant air emission
- spill
- stakeholder
- supplier
- supply chain
- surface water
- sustainable development
- value chain
- vulnerable group
- waste
- water stress
- worker
Bibliography

This section lists authoritative intergovernmental instruments and additional references used in developing this Standard, as well as resources that the organization can consult.

Introduction


Sector profile

Authoritative instruments:


Additional references:

**Resources:**


**Topic 14.1 GHG emissions**

**Authoritative instruments:**


29. Intergovernmental Panel on Climate Change (IPCC), *Special Report on Climate Change and Land*, 2019.

30. Intergovernmental Panel on Climate Change (IPCC), *Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways*, 2019.


**Additional references:**


42. World Steel, Climate change and the production of iron and steel, 2021.

Resources:


45. Science-Based Targets, Science-Based Target Setting Manual, version 4.1, 2020

**Topic 14.2 Climate adaptation and resilience**

Authoritative instruments:

46. Intergovernmental Panel on Climate Change (IPCC), Global Warming of 1.5°C, 2018.

47. Intergovernmental Panel on Climate Change (IPCC), Sixth Assessment Report—Working Group 1 Contribution, 2021.


Additional references:


55. Responsible Mining Foundation (RMF), Beyond emissions reductions: climate change and mining, 2021.


57. USAID, Mining and the green energy transition, 2021.


Resources:


**Topic 14.3 Air emissions**

**References:**

- 70. World Health Organization (WHO), *Air pollution, who.int/health-topics/air-pollution*, accessed on 12 December 2022.

**Resources:**


**Topic 14.4 Biodiversity**

**Authoritative instruments:**

- 76. Intergovernmental Panel on Climate Change (IPCC), *Climate Change and Biodiversity*, 2002.
- 77. Intergovernmental Panel on Climate Change (IPCC), *Climate Change and Land*, 2019.

**Additional references:**


89. World Bank, Forest-Smart Mining: Identifying Factors Associated with the Impacts of Large-Scale Mining on Forests, 2019.


Resources:


Topic 14.5 Waste

Authoritative instruments:


Additional references:


103. United Nations Environment Programme (UNEP), Towards a Pollution-Free Planet, 2017

Resources:

Topic 14.6 Tailings

Authoritative instruments:

Additional references:

Resources:

Topic 14.7 Water and effluents

Authoritative instruments:
- 121. Intergovernmental Panel on Climate Change (IPCC), Sixth Assessment Report—Working Group 1 Contribution, 2021.

Additional references:


**Resources:**


**Topic 14.8 Closure and rehabilitation**

**References:**


**Resources:**


**Topic 14.9 Economic impacts**

**Authoritative instruments:**


**Additional references:**


Resources:


Topic 14.10 Local communities

Authoritative instruments:


Additional references:

154. Guo, G., Song, B., Lei, M., Wang, Y, Rare earth elements (REEs) in PM10 and associated health risk from the polymetallic mining region of Nandan County, China, 2018.
159. Song, J., Liu, Q., Sheng, Y, Distribution and risk assessment of trace metals in riverine surface sediments in gold mining area, 2019.
162. World Bank, Mining Community Development Agreements, 2012.
1959 Topic 14.11 Rights of Indigenous Peoples

1960 Authoritative instruments:


1963 Additional references:


1977 Resources:


Topic 14.12 Land and resource rights

Authoritative instruments:


Additional references:


Resources:


Topic 14.13 Artisanal and small-scale mining

Authoritative instruments:


References:


Resources:


Topic 14.14 Security practices

Authoritative instruments:


References:


Resources:


Topic 14.15 Critical incident management

References:


Resources:

Topic 14.16 Occupational health and safety

Authoritative instruments:

References:

Resources:

Topic 14.17 Employment practices

Authoritative instruments:

References:
Resources:


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Topic 14.18 Child labor

Authoritative instruments:


Additional references:


Resources:

257. Organisation for Economic Co-operation and Development (OECD), Practical actions for companies to identify and address the worst forms of child labour in mineral supply chains, 2017.

---

Topic 14.19 Forced labor and modern slavery

Authoritative instruments:


Additional references:


Topic 14.20 Freedom of association and collective bargaining

References:


Resources:


Topic 14.21 Non-discrimination and equal opportunity

Authoritative instruments:


References:


Resources:

Topic 14.22 Anti-corruption

Authoritative instruments:

References:

Resources:

Topic 14.23 Payments to governments

Authoritative instruments:

References:


Resources:


Topic 14.24 Public policy

Authoritative instruments:


 References:


Topic 14.25 Conflict-affected and high-risk areas

Authoritative instruments:


Additional references:


323. United Nations Environmental Programme (UNEP), From Conflict to Peacebuilding: The Role of Natural Resources and the Environment, 2009.

Resources:


### Table 1: Likely material topics included in the exposure draft for mining

Note: Reporting on the topics is subject to an organization’s materiality assessment. The organization is only required to report the disclosures from the Topic Standards it has determined to be material. If any of the Topic Standards disclosures listed are not relevant to the organization’s impacts, the organization is not required to report them. The additional sector disclosures and recommendations outline further information which has been identified as relevant for organizations in the sector to report in relation to a topic. Reporting these additional sector disclosures and recommendations is encouraged, however it is not a requirement.

<table>
<thead>
<tr>
<th>Topic</th>
<th>#</th>
<th>GRI Topic Standards disclosures</th>
<th>Sector disclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>required reporting</td>
<td>recommended reporting</td>
</tr>
<tr>
<td>GHG emissions</td>
<td>1</td>
<td>Disclosure 3-3 Management of material topics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Disclosure 302-1 Energy consumption within the organization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Disclosure 302-2 Energy consumption outside of the organization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Disclosure 302-3 Energy intensity</td>
<td></td>
</tr>
</tbody>
</table>
|                  | 5   | Disclosure 305-1 Direct (Scope 1) GHG emissions                       | - When reporting on gross direct (Scope 1) GHG emissions, include land use change emissions.  
|                  |     |                                                                       | - Report a breakdown of the gross direct (Scope 1) GHG emissions by mine site.          |
|                  | 6   | Disclosure 305-2 Energy indirect (Scope 2) GHG emissions              | - Report a breakdown of the gross location-based energy indirect (Scope 2) GHG emissions by mine site.  
<p>|                  |     |                                                                       | - If applicable, report a breakdown of the gross market-based energy indirect (Scope 2) GHG emissions by mine site.  |
|                  | 7   | Disclosure 305-3 Other indirect (Scope 3) GHG emissions               |                                     |
|                  | 8   | Disclosure 305-4 GHG emissions intensity                             | Report a breakdown of the GHG emissions intensity ratio for direct (Scope 1) and energy indirect (Scope 2) GHG emissions by mine site.  |
|                  | 9   | Disclosure 305-5 Reduction of GHG emissions                          |                                     |
|                  | 10  | Disclosure 3-3 Management of material topics                         | - Describe the climate change-related scenarios used to assess the resilience of the organization’s strategy, including a well below 2°C, preferably 1.5°C, scenario.  |</p>
<table>
<thead>
<tr>
<th><strong>Climate adaptation and resilience</strong></th>
<th><strong>Air emissions</strong></th>
<th><strong>Biodiversity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11</strong> Disclosure 201-2 Financial implications and other risks and opportunities due to climate change</td>
<td><strong>11</strong> Disclosure 201-2 Financial implications and other risks and opportunities due to climate change</td>
<td><strong>17</strong> Disclosure 3-3 Management of material topics</td>
</tr>
<tr>
<td><strong>12</strong> Disclosure 3-3 Management of material topics</td>
<td><strong>13</strong> Disclosure 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions</td>
<td><strong>18</strong> Disclosure 304-1 Location of operational sites with the most significant impacts</td>
</tr>
<tr>
<td><strong>14</strong> For each mine site, report a breakdown of the hazardous air pollutants (HAP) emissions, by: - hydrogen cyanide (HCN); - mercury (Hg).</td>
<td><strong>15</strong> For each mine site, report a breakdown of the particulate matter (PM) emissions, by: - PM10; - PM2.5.</td>
<td><strong>19</strong> Disclosure 304-2 Direct drivers of biodiversity loss</td>
</tr>
<tr>
<td><strong>16</strong> For each mine site, report significant air emissions, in kilograms or multiples, for each of the following: - Carbon monoxide (CO); - Ground-level ozone (O3); - Hydrogen sulphide (H2S).</td>
<td></td>
<td><strong>20</strong> Disclosure 304-3 State of biodiversity</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>21</strong> Disclosure 304-4 Ecosystem services</td>
</tr>
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<td></td>
<td></td>
<td><strong>22</strong> Disclosure 304-5 Management of biodiversity-related impacts</td>
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<td></td>
<td></td>
<td><strong>23</strong> Disclosure 304-6 Halting and reversing the loss of biodiversity</td>
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<tr>
<td>Waste</td>
<td>24</td>
<td>Disclosure 3.3 Management of material topics</td>
</tr>
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<td>-------------------------------------------</td>
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<tr>
<td>25</td>
<td>Disclosure 306-1 Waste generation and significant waste-related impacts</td>
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<tr>
<td>26</td>
<td>Disclosure 306-2 Management of significant waste-related impacts</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Disclosure 306-3 Waste generated When reporting the composition of the waste generated, include a breakdown of the following waste streams, if applicable: - rock waste; - tailings.</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Disclosure 306-4 Waste diverted from disposal When reporting the composition of the waste diverted from disposal, include a breakdown of the following waste streams, if applicable: - rock waste; - tailings.</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Disclosure 306-5 Waste directed to disposal When reporting the composition of the waste directed to disposal, include a breakdown of the following waste streams, if applicable: - rock waste; - tailings.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Tailings</th>
<th>30</th>
<th>Disclosure 3.3 Management of material topics</th>
</tr>
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<tbody>
<tr>
<td>31</td>
<td>Report the types of tailings disposal methods used by the organization.</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>List the organization’s tailings facilities, and report the name, location, and ownership status.</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>For each tailings facility: - describe the tailings facility; - report whether the facility is active, inactive, or closed; - report the maximum permitted storage capacity and the total weight of tailings stored, in metric tons; - report the Consequence Classification; - report the date and main findings of the most recent risk assessment;</td>
<td></td>
</tr>
</tbody>
</table>
### Water and effluents

<table>
<thead>
<tr>
<th>Disclosures</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Disclosure 3-3 Management of material topics</td>
</tr>
<tr>
<td>35</td>
<td>Disclosure 303-1 Interactions with water as a shared resource</td>
</tr>
<tr>
<td>36</td>
<td>Disclosure 303-2 Management of water discharge-related impacts</td>
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<td>37</td>
<td>Disclosure 303-3 Water withdrawal</td>
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<td>38</td>
<td>Disclosure 303-4 Water discharge</td>
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<td>39</td>
<td>Disclosure 303-5 Water consumption</td>
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### Closure and rehabilitation

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<td>41</td>
<td>Disclosure 402-1 Minimum notice periods regarding operational changes</td>
</tr>
<tr>
<td>42</td>
<td>Disclosure 404-2 Programs for upgrading employee skills and transition assistance programs</td>
</tr>
<tr>
<td>43</td>
<td>For each mine site, report whether it:</td>
</tr>
<tr>
<td></td>
<td>- has a closure and rehabilitation plan in place;</td>
</tr>
<tr>
<td></td>
<td>- is undergoing closure and rehabilitation activities;</td>
</tr>
<tr>
<td></td>
<td>- has been closed and rehabilitated.</td>
</tr>
<tr>
<td>44</td>
<td>For each closure and rehabilitation plan:</td>
</tr>
<tr>
<td></td>
<td>- report whether the plan has been approved by relevant authorities;</td>
</tr>
<tr>
<td></td>
<td>- report the dates of the most recent and next reviews of the plan.</td>
</tr>
<tr>
<td>45</td>
<td>For each mine site, report the estimated life of the mine (LOM).</td>
</tr>
<tr>
<td>46</td>
<td>For financial provisions made by the organization for closure and rehabilitation, including environmental and socioeconomic post-closure monitoring and aftercare for mine sites, report:</td>
</tr>
<tr>
<td></td>
<td>- the total undiscounted monetary value, and a breakdown of this total by mine site;</td>
</tr>
<tr>
<td></td>
<td>- the methodology used to calculate the undiscounted financial provisions for closure and rehabilitation.</td>
</tr>
<tr>
<td>47</td>
<td>Economic impacts</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>49</td>
<td>Disclosure 201-1 Direct economic value generated and distributed</td>
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<tr>
<td>50</td>
<td>Disclosure 203-1 Infrastructure investments and services supported</td>
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<tr>
<td>51</td>
<td>Disclosure 203-2 Significant indirect economic impacts</td>
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<tr>
<td>52</td>
<td>Disclosure 204-1 Proportion of spending on local suppliers</td>
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<tr>
<td>53</td>
<td>Disclosure 204-1 Proportion of spending on local suppliers</td>
</tr>
<tr>
<td>54</td>
<td>Local communities</td>
</tr>
<tr>
<td>56</td>
<td>Disclosure 413-2 Operations with significant actual and potential negative impacts on local communities</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>
| 57 |   | Report the number and type of grievances from local communities identified by mine site, including:  
- the percentage of the grievances that were addressed and resolved during the reporting period;  
- the percentage of the grievances that were resolved through remediation during the reporting period. |
| Rights of Indigenous Peoples | 58 | Disclosure 3-3 Management of material topics  
- Describe the approach to identifying Indigenous Peoples who are or could be affected by the organization's activities.  
- Describe the approach to engaging with Indigenous Peoples, including:  
  > how the organization seeks to ensure meaningful engagement;  
  > how the organization seeks to ensure safe and equitable gender participation.  
- Describe policies, commitments, and actions taken to respect Indigenous Peoples’ cultural heritage.  
- Describe the community development programs in place that are intended to enhance positive impacts for Indigenous Peoples. |
|   | 59 | Disclosure 411-1 Incidents of violations involving rights of Indigenous Peoples  
Describe the identified incidents of violations involving the rights of Indigenous Peoples. |
|   | 60 | List the locations of operations and proven reserves where Indigenous Peoples are present and are or may be affected by the activities of the organization. |
|   | 61 | Report whether the organization has been involved in a process of seeking free, prior, and informed consent (FPIC) from Indigenous Peoples for any of the organization's activities and, if so, report for each case:  
- whether the process has been mutually accepted by the organization and the affected Indigenous Peoples;  
- whether an agreement has been reached, and if so, if the agreement is publicly available. |
| Land and resource rights | 62 | Disclosure 3-3 Management of material topics  
- Describe the approach to engaging with stakeholders whose rights to land and resources are or could be affected, including:  
  > how the organization seeks to ensure meaningful engagement;  
  > how the organization seeks to ensure safe and equitable gender participation.  
- Describe the policies or commitments to providing remediation to local communities or individuals subject to involuntary resettlement, and the process for establishing compensation for loss of assets or other assistance to improve or restore standards of living or livelihoods. |
<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>63</td>
<td>List the mine sites where involuntary resettlement has taken place or is planned. For each mine site, describe how peoples’ livelihoods and human rights are or could be affected and restored.</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>List the locations of mine sites where conflicts or violations of land and resource rights (including customary, collective, and informal tenure rights) occurred, and describe the incidents and the stakeholders whose rights were affected.</td>
<td></td>
</tr>
</tbody>
</table>
| **Artisanal and small-scale mining** | **Disclosure 3-3 Management of material topics** | - Describe the approach to engaging with legitimate ASM operators, and the process used to determine whether they are legitimate.  
- Describe the programs in place to enhance positive impacts or mitigate negative impacts involving ASM, and how engagement with local authorities and communities has informed them. |
| 65 | List the mine sites where ASM occurs on or in close proximity to the site. |
| 66 | Report the total number and nature of incidents and conflicts involving ASM and actions taken to address them. |
| **Security practices** | **Disclosure 3-3 Management of material topics** | Describe the approach to ensuring respect for human rights by public and private security providers, including whether the organization has committed to implementing the Voluntary Principles on Security and Human Rights. |
| 68 | Report the number of critical incidents in the reporting period, describe their impacts, and actions taken to remediate them. |
| 69 | Report percentage of mine sites that have emergency preparedness and response plans in place, and a list of the sites that do not. |
| **Critical incident management** | **Disclosure 3-3 Management of material topics** | Describe the organization’s approach to emergency preparedness and response plans, and how engagement with local stakeholders has informed the plans. |
| 70 | Report percentage of mine sites that have emergency preparedness and response plans in place, and a list of the sites that do not. |
| 71 | Disclose 3-3 Management of material topics  
**Disclosure 306-3 Significant spills** |
| 72 | Disclose 3-3 Management of material topics  
**Disclosure 403-1 Occupational health and safety management system** |
| 73 | Disclose 3-3 Management of material topics  
**Disclosure 403-2 Hazard identification, risk assessment, and incident investigation** |
| 74 | Disclose 3-3 Management of material topics  
**Disclosure 403-3 Occupational health services** |
<table>
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<tr>
<th>Disclosure 403-4</th>
<th>Worker participation, consultation, and communication on occupational health and safety</th>
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<tr>
<td>Disclosure 403-5</td>
<td>Worker training on occupational health and safety</td>
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<td>Disclosure 403-6</td>
<td>Promotion of worker health</td>
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<td>Disclosure 403-7</td>
<td>Prevention and mitigation of occupational health and safety impacts directly linked by business relationships</td>
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<td>Disclosure 403-8</td>
<td>Workers covered by an occupational health and safety management system</td>
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<td>Disclosure 403-9</td>
<td>Work-related injuries</td>
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<td>Disclosure 403-10</td>
<td>Work-related ill health</td>
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**Employment practices**

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<td>Disclosure 202-1</td>
<td>Ratios of standard entry-level wage by gender compared to local minimum wage</td>
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<td>Disclosure 401-1</td>
<td>New employee hires and employee turnover</td>
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<tr>
<td>Disclosure 401-2</td>
<td>Benefits provided to full-time employees that are not provided to temporary or part-time employees</td>
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<td>Disclosure 401-3</td>
<td>Parental leave</td>
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<td>Disclosure 402-1</td>
<td>Minimum notice periods regarding operational changes</td>
</tr>
<tr>
<td>Disclosure 404-1</td>
<td>Average hours of training per year per employee</td>
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<td>Disclosure 404-2</td>
<td>Programs for upgrading employee skills and transition assistance programs</td>
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<tr>
<td>Disclosure 414-1</td>
<td>New suppliers that were screened using social criteria</td>
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<tr>
<td>Disclosure 414-2</td>
<td>Negative social impacts in the supply chain and actions taken</td>
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</table>

**Child labor**

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<tr>
<td>Disclosure 408-1</td>
<td>Operations and suppliers at significant risk for incidents of child labor</td>
</tr>
<tr>
<td>Disclosure</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
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<tr>
<td>97</td>
<td>Disclosure 414-1 New suppliers that were screened using social criteria</td>
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<td>98</td>
<td>Forced labor and modern slavery</td>
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<tr>
<td>99</td>
<td>Disclosure 409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor</td>
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<tr>
<td>100</td>
<td>Disclosure 414-1 New suppliers that were screened using social criteria</td>
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<tr>
<td>101</td>
<td>Freedom of association and collective bargaining</td>
</tr>
<tr>
<td>102</td>
<td>Disclosure 407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk</td>
</tr>
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<td>103</td>
<td>Non-discrimination and equal opportunity</td>
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<tr>
<td>104</td>
<td>Disclosure 202-2 Proportion of senior management hired from the local community</td>
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<td>105</td>
<td>Disclosure 401-3 Parental leave</td>
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<td>106</td>
<td>Disclosure 404-1 Average hours of training per year per employee</td>
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<td>107</td>
<td>Disclosure 405-1 Diversity of governance bodies and employees</td>
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<td>108</td>
<td>Disclosure 405-2 Ratio of basic salary and remuneration of women to men</td>
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<td>109</td>
<td>Disclosure 406-1 Incidents of discrimination and corrective actions taken</td>
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<td>110</td>
<td>Anti-corruption</td>
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<td>111</td>
<td>Disclosure 205-1 Operations assessed for risks related to corruption</td>
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<tr>
<td>112</td>
<td>Disclosure 205-2 Communication and training about anti-corruption policies and procedures</td>
</tr>
<tr>
<td>113</td>
<td>Disclosure 205-3 Confirmed incidents of corruption and actions taken</td>
</tr>
</tbody>
</table>
| 114 | Describe the approach to contract transparency, including:  
|     | - whether contracts and licenses are made publicly available and, if so, where they are published;  
|     | - if contracts or licenses are not publicly available, the reason for this and actions taken to make them public in the future.  
| 115 | List the organization's beneficial owners and explain how the organization identifies the beneficial owners of business partners, including joint ventures and suppliers.  

### Payments to governments

| 116 | Disclosure 3-3 Management of material topics  
| 117 | Disclosure 201-1 Direct economic value generated and distributed  
| 118 | Disclosure 201-4 Financial assistance received from government  
| 119 | Disclosure 207-1 Approach to tax  
| 120 | Disclosure 207-2 Tax governance, control, and risk management  
| 121 | Disclosure 207-3 Stakeholder engagement and management of concerns related to tax  
| 122 | Disclosure 207-4 Country-by-country reporting  

Report a breakdown of the payments to governments levied at the project-level, by project and the following revenue streams, if applicable:  
- The host government's production entitlement;  
- National state-owned company production;  
- Royalties;  
- Dividends;  
- Bonuses (e.g., signature, discovery, production bonuses);  
- License fees, rental fees, entry fees; and other considerations for licenses or concessions;  
- Any other significant payments and material benefits to government.  

Report the value of any thresholds that have been applied and any other contextual information necessary to understand how the project-level payments to governments reported have been compiled.
<table>
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<tr>
<th>Disclosure</th>
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<td><strong>123</strong></td>
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<tr>
<td><strong>Public policy</strong></td>
</tr>
<tr>
<td><strong>124</strong> Disclosure 3-3 Management of material topics</td>
</tr>
<tr>
<td>- Describe the organization’s stance on significant issues that are the focus of its participation in public policy development and lobbying; and any differences between these positions and its stated policies, goals, or other public positions;</td>
</tr>
<tr>
<td>- Report whether the organization is a member of, or contributes to, any representative associations or committees that participate in public policy development and lobbying, including: &gt; the nature of this contribution; &gt; any differences between the organization’s stated policies, goals, or other public positions on significant issues and the positions of the representative associations or committees.</td>
</tr>
<tr>
<td><strong>125</strong> Disclosure 415-1 Political contributions</td>
</tr>
</tbody>
</table>