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The Business Case for Gender-Responsive Climate-Smart Mining



Climate-Smart Mining



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Abbreviations and Acronyms

ASM	Artisanal and small-scale mining
BMZ	German Federal Ministry for Economic Cooperation and Development
CSM	Climate-smart mining
DRC	Democratic Republic of Congo
EBIT	Earnings before interest and taxes
ESG	Environmental, Social and Governance
EV	Electric vehicle
GBV	Gender-based violence
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GSMA	Global System for Mobile Communications
IFC	International Finance Corporation
ILO	International Labor Organization
IRENA	International Renewable Energy Agency
LSM	Large-scale mining
MSCI	Morgan Stanley Capital International
NAP	National adaptation plans
NDC	Nationally determined contributions
PWC	Pricewaterhouse Coopers
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SDG	Sustainable Development Goals
STEM	Science, technology, engineering, and mathematics
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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AngloAmerican

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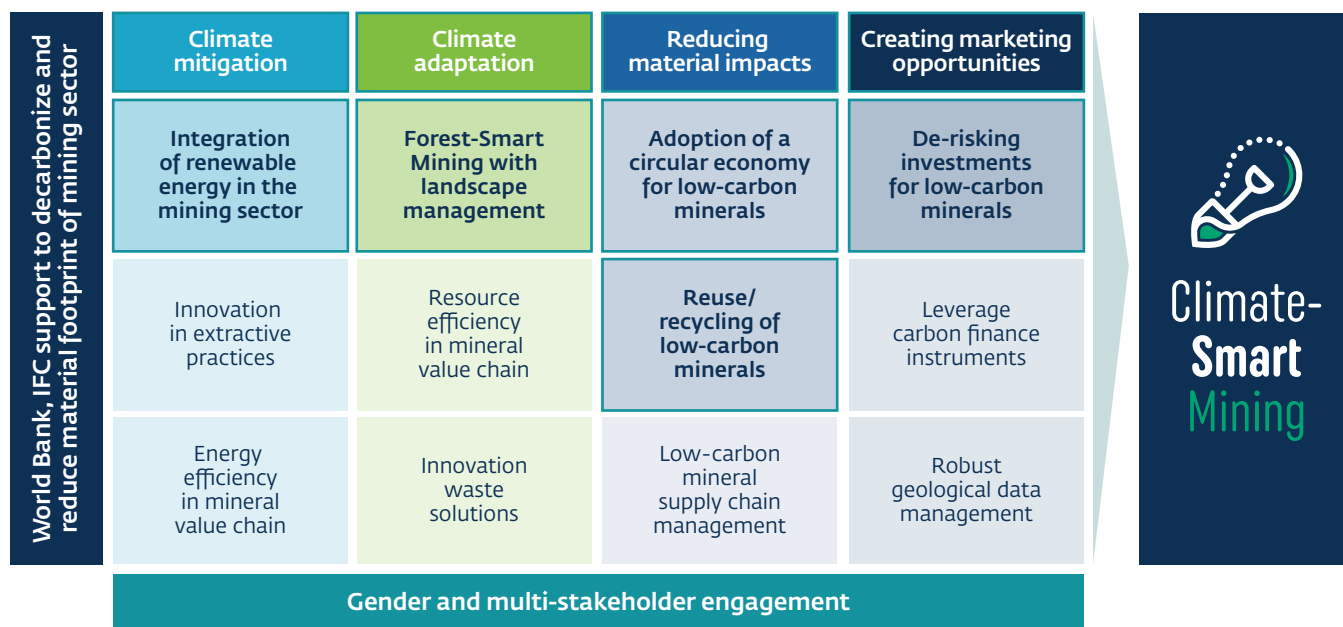
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Executive Summary

Transitioning to a low-carbon economy is critical to the sustainability of the planet. A recent World Bank report found that increasing demand for clean energy technologies could increase demand for minerals such as graphite, lithium, and cobalt by nearly 500 percent by 2050. Even though we expect recycling rates to go up in the future, mining will still be required to supply critical minerals: the shift to a low-carbon future will be mineral-intensive, and mining will remain a critical industry.

It is in this context that the World Bank Group established the Climate-Smart Mining Initiative (CSM), which is sustained by a partnership between industry and country governments. The initiative supports the sustainable extraction, processing, and recycling of the minerals and metals that are needed for low-carbon technologies. The concept is built upon four pillars : i) Climate Mitigation ii) Climate Adaptation iii) Reducing Material Impacts and iv) Creating Market Opportunities.

This graphic is interactive. You can navigate to various sections of the report by clicking on the appropriate squares. The highlighted boxes indicate topics where gender-responsiveness is further explored.



In order for mining to shift toward being climate-smart and equitable, it is important to consider gender-responsiveness and to reduce gaps every step of the way. Gender diversity in the workforce, on boards, in supply chains, and in engagement with communities not only minimizes risk, but also makes companies more productive, innovative, and competitive. Furthermore, since women tend to be disproportionately affected by the negative impacts of mining and climate change, their needs must be considered.

The literature shows that female employees often are more likely to follow safety protocols, treat equipment responsibly, and operate safely. As a result, women are increasingly in demand in mining operations as truck drivers and machine operators, because their behavior yields better safety outcomes, reduced equipment maintenance and repair, and a more safety-conscious operating environment.

PricewaterhouseCoopers (PwC) and Women in Mining found a positive correlation between the number of women on boards in the top 500 mining companies in the world, and financial performance indicators such as dividend yield and earnings per share, as well as increased transparency and disclosure of Environmental, Social and Governance (ESG) matters.

Improving women's participation in the community engagement of climate-smart mining projects is critical to their continued success. Gender-responsive community assessments, consultations, and benefit sharing can make the project more efficient, build a stronger social license to operate, prevent delays, and save both time and money.

Therefore, the active engagement of women and women's organizations at the local, national, regional, and global levels is essential in order to achieve a gender-equitable transition to clean energy.

1. Climate Change Mitigation: Gender-Responsiveness in the Integration of Renewables into Mining

As mining companies shift to more renewable energy sources, women can be particularly valuable in leadership roles; the research shows that they tend to be more receptive to issues related to local and global sustainability than men.

Women currently hold 32 percent of the jobs in the renewables sector, and as the number of jobs in this sector is expected to increase from 10.3 million in 2017 to nearly 29 million in 2050, it presents diverse career opportunities that require different skill sets and talents along the value chain.

Actively engaging women in the sale, repair and maintenance of off-grid renewable energy solutions such as solar lighting, heating can be profitable to renewable energy companies running these programs and to mining companies who wish to support energy solutions through community investments. But it will require a focus on training and skills development for women, awareness raising, helping them gain access to finance, and tapping into existing social networks such as savings and loans associations.

2. Climate Adaptation: Forest-Smart Mining and Women

Women are typically the main users and household providers of nontimber forest products.¹ The role of women in community forest management is increasingly recognized, as is the importance of including them in strategies for Reducing Emissions from Deforestation and Forest Degradation (REDD+) to minimize adverse impacts and maximize opportunities for women.

3. Reducing Material Impacts: The Case for Gender-Responsiveness in the Circular Economy and in Recycling

Engaging women in the circular economy and in recycling is critical. Women are the key decision makers when it comes to 70-80 percent of household purchases; thus, they can become key drivers of environmentally sustainable behaviors and consumption patterns.

In many countries, women do much of the work of informal waste handling. However, their presence is sparse in the ownership and senior management roles of recycling companies and landfill operations, where profit margins and income-earning capacity are the highest: this is a situation that begs for intervention.

4. Creating Market Opportunities: Gender Considerations in the De-Risking of Investments

More and more, mining companies are being assessed for their social and environmental impacts on both the local and global levels, by increasingly discerning investors, consumers, governments, and communities. As gender inclusivity has been gaining more traction in the mining sector in recent years, companies have begun to see gender equality issues as being relevant to risk mitigation strategies, as well as a business opportunity. Not only does proactively hiring, procuring, and engaging local women ensure that benefits will be shared with the community; it also facilitates community trust and provides a strong social license to operate. Companies realize that a social license without women's approval is not a true social license.

¹ Non-timber forest products include fruits, nuts, game, fish, resins, a range of barks and fibers such as bamboo.

Recommendations

Governments, companies, and civil society organizations should work individually as well as in partnership to ensure that women are part of the equation to design and implement climate-smart mining practices. The “top actions” that stakeholders can take to ensure that climate-smart mining practices are gender-responsive and are designed in partnership with women and women’s organizations are summarized below. These actions often reach across the CSM pillars, and many of them are applicable to multiple actors, as shown below.

Government, Companies, Civil Society:

1. Ensure that strategies and plans for climate mitigation and adaptation, climate-smart agriculture, forest governance, and disaster preparedness are designed in consultation with women’s community organizations, and that they integrate gender responsiveness and gender-specific commitments.
2. Meaningfully engage women from the beginning in participatory planning processes and consultations, especially those concerning land-use planning, in order to not perpetuate existing gender inequalities (especially when it comes to major changes such as land acquisition, resettlement, and compensation).
3. In climate adaptation and resilience policies and practices, consider the risks and impacts to surrounding communities, ecosystems, and supply chains.
4. Make gender-equality commitments in forest planning and governance, and promote private sector investment in women-owned and operated forest-based enterprises.
5. Encourage women’s leadership by supporting women’s groups and ensuring that women have equal access to leadership training programs.
6. Strengthen family incomes by supporting an enabling environment for women who are interested in entrepreneurship—for example by providing opportunities for training and income generation, supporting women in developing their skills to access markets for their products, and creating community-based banks for the benefit of women.

Government:

7. Include gender-equality measures in line with existing international norms and best practices within legislation and regulations for mining, labor, climate change, and the environment, and include them in environmental and social impact assessment requirements.
8. Include actions and strategies that demonstrate a strong commitment to gender responsiveness in national climate policies and programs, for example, in the nationally determined contributions (NDCs) under the Paris Agreement, and REDD+ activities under the United Nations Framework Convention on Climate Change (UNFCCC).

Companies:

9. Consider mechanisms to reduce risks and improve the climate resilience of host communities as part of social investment strategies, and facilitate partnerships between communities, women’s organizations, and companies around this issue.
10. Unlock opportunities for women’s continued participation in the workforce and in leadership roles in the mining and renewables (such as wind and solar energy) sectors through gender-responsive company policies; tailored training skills and development; and providing women with access to outside training and university programs, childcare, and flexible work options.
11. Create opportunities to equitably improve family incomes, train and employ women, and facilitate and promote the inclusion of women-owned and operated businesses within the company supply chain, and in company initiatives on sustainability and the circular economy.

The Business Case for Gender-Responsive Climate-Smart Mining seeks to create a more equitable and climate-smart mining sector, through awareness of the business case, collaboration and partnerships. The complete list of detailed actions categorized into pillars and actors can be consulted [here](#).



1. Introduction

A new era in mining is underway, with a view toward being both gender and climate-smart. As societies recognize the essential role that mining plays in the clean energy revolution, mining companies are not only valued for securing the minerals and metals needed to power clean energy technologies; they are also increasingly expected to lead by example. In this context, it is essential to minimize the negative climate, environmental, and social impacts of mining operations into companies' risk management strategies.

The last several years have seen increased awareness of the essential role of women within both the mining sector and the discourse on international climate change. Both local and global conversations among policymakers and international institutions are considering the importance of women's roles in climate mitigation and adaptation in ensuring that global targets are both effective and inclusive. Mining companies are learning that gender responsiveness in the workforce, on boards, in supply chains, and in community engagement not only minimizes risk, but also makes companies more productive, innovative, and competitive. This document illustrates how gender-responsive, climate-smart mining strategies are both good for business and good for the planet.

The climate-smart mining initiative

A successful transition to clean energy is essential in order to achieve the low-carbon economy the planet needs, and it is already underway. The 2020 World Bank report, *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*, found that increasing demand for clean energy technologies could make the demand for minerals such as graphite, lithium, and cobalt increase almost 500 percent by 2050, and that the renewable energy technology and energy storage that will be needed to limit the global temperature increase to less than 2 degrees Celsius will require more than 3 billion tons of minerals and metals. Demand for base minerals like aluminum and copper will also continue to rise. Even with anticipated future increases in recycling rates, mining will still be needed to supply critical minerals.²

Climate change also creates risks for mining operations, due to its impacts on the water cycle, causing floods and drought, rising temperature levels that affect working conditions, and environmental changes that threaten community resilience and increase the competition for natural resources.

It is in this context that the World Bank Group established the Climate-Smart Mining (CSM) Initiative, which aims to provide technical assistance and advisory support to resource-rich client countries for responsibly developing their strategic mineral reserves. CSM supports the sustainable extraction, processing, and recycling of the minerals and metals needed to secure the supply for low-carbon technologies by minimizing the climate and environmental footprints of these technologies throughout their value chain. The CSM Initiative is a public-private partnership funded with the support of the Netherlands Ministry of Foreign Affairs, Anglo American PLC, Rio Tinto, and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

The building blocks of climate-smart mining align along four pillars that contribute to the decarbonization and reduction in the material footprint of minerals that are critical in order to achieve a low-carbon future: (i) Climate Mitigation, (ii) Climate Adaptation, (iii) Reducing Material Impacts, and (iv) Creating Market Opportunities. Climate-smart mining practices aim to ensure that the operations that produce the minerals needed for a low-carbon future are themselves sustainable, carbon-efficient, and that they are not contributing to increased risks from climate impacts.

² *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*. World Bank. 2020. <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>



Why make this investment?

- Climate models show that the global rise in temperature needs to be kept less than 2 degrees Celsius in order to shield the global community from the most catastrophic effects of climate change.
- The clock is ticking: in order to meet this 2-degree target, pressure is mounting from governments, investors, and society overall to reduce emissions, and quickly.
- Critical inputs for mining processes, such as water and energy, are likely to face greater constraints in the coming years.
- The health and safety of employees is at risk as communicable diseases, exposure to heat-related illnesses, and the likelihood of accidents can all increase with rising temperatures.
- Climate change will increase vulnerabilities and direct competition for limited resources in communities that are near mining operations, testing companies' social license to operate.
- Climate change may disrupt mining operations as a result of the increased frequency and intensity of extreme weather events.

- Women are often disproportionately affected by the negative impacts of both mining and climate change.

The role of gender in climate-smart mining

For mining to become climate-smart and equitable, it is important to reduce gender gaps in the workforce, in the leadership and supply chains of mining companies, and to increase women's participation in community consultations as well as regional and national-level discourse on mining and climate. The UN's 2030 Agenda for Sustainable Development—with its goal of eradicating extreme poverty and securing a sustainable future for the planet—has pledged to leave no one behind, and is urging a greater push for gender responsiveness. Gender responsiveness is an essential component of a sustainable, competitive, climate-smart mining operation that enjoys the benefits of diverse human capital and expertise, strong community relations, and benefit sharing. Gender responsiveness means examining and actively addressing gender norms, roles, and inequalities. It goes beyond just being sensitive to gender differences; it means actively seeking to promote gender equality.

This usually involves specific actions to empower women in their households and communities as well as broader policy and planning processes³ that often begin with gender assessments, in order to establish a baseline and to inform actions moving forward.

How to read this report

This document begins with a discussion of the relationships between mining, climate change, and women. It follows with a business case outlining what mining companies can gain by incorporating strategies that close the gaps between women and men in areas such as jobs, economic opportunities, and agency in climate-smart mining initiatives. It is intended for a varied audience, including private sector mining companies, governments, and civil society organizations. It aims to increase understanding of the links between gender equality and climate-smart mining, and the need for greater gender responsiveness in this space. It is the first in a series of gender-focused publications from the World Bank-IFC Climate-Smart Mining Initiative, and will be followed by a guidance

note that delves into the entry points for gender equality within the CSM blocks and a stakeholder guide.

A word about artisanal and small-scale mining

This document will focus on large-scale mining (LSM), since the vast majority of the minerals and metals needed for climate-smart mining come through LSM. That said, artisanal and small-scale mining (ASM) is also fraught with gender inequalities that warrant further discourse and inspection, and it represents a vital source of livelihood for more than 40 million people globally, particularly in rural and remote areas in developing countries. Women are very active in ASM, on average accounting for 30–50 percent of the workforce, and in some cases, more than 90 percent.⁴ However, the ASM sector is very gendered, with cultural beliefs and gender differences in access to and control of resources that leave women often participating in lower paying jobs, and with limited security, in a sector that can be hazardous to the environment and human health.⁵ Box A provides additional information about ASM.

BOX A

Artisanal and Small-Scale Mining

ASM is a highly gendered sector and can be associated with sexual violence and conflict, as it has been, for example in the eastern Democratic Republic of Congo (DRC), where rape and armed conflict in mining areas has long been commonplace.⁶ Governments, the private sector, and civil society all have a role to play, individually and in partnership, in order to reduce harm and inequality to women who make their living in ASM, by supporting the development of initiatives that address gender inequality, safety, and community engagement in mineral supply chains. A list of recommended actions can be found in the Women's Rights and Mining's "Stakeholder Statement on Implementing Gender-Responsive Due Diligence, and Ensuring the Human Rights of Women in Mineral Supply Chains."⁷

ADDITIONAL RESOURCES ON ASM

- [A new shine to gold: Reducing health hazards of artisanal and small-scale gold mining](#)
- [Access to Finance for Artisanal and Small-Scale Miners: Imagining Alternatives and Creating Opportunities](#)
- [ASM and climate change](#)

³ *Toolkit for a Gender-Responsive Process to Formulate and Implement National Adaptation Plans (NAPs)*. 2019. UNFCCC.

⁴ *State of the Artisanal and Small-Scale Mining Sector*. 2019. PACT and the World Bank. <https://www.pactworld.org/state%20of%20asm>

⁵ *Sexual and Gender-Based Violence in the Mining Sector in Africa. Evidence and Reflections from the DRC, South Africa, Tanzania & Uganda*. 2020. GIZ GmbH on behalf of BMZ. <https://www.kit.nl/wp-content/uploads/2020/09/SGBV-in-the-Mining-Sector-in-Africa.pdf>

⁶ Ibid.

⁷ *Stakeholder Statement on Implementing Gender-Responsive Due Diligence and Ensuring the Human Rights of Women in Mineral Supply Chains*. 2019. Women's Rights and Mining. <https://womenandmining.org/wp-content/uploads/2019/06/Stakeholder-Statement-Implementing-Gender-Responsive-Due-Diligence-and-ensuring-human-rights-of-women-in-Mineral-Supply-Chains.pdf>



2. Understanding the Links Between Mining, Climate Change, and Gender Equality

Mining and climate change are linked

The environmental impacts of mining

Mining touches almost every aspect of modern life: the buildings we live in, the cars we drive, the clothes we wear, the medical products we use, the technology we rely on. Despite the economic and lifestyle benefits it can yield, mining is an industry that has negative environmental impacts, and can often exacerbate social and economic inequalities in host communities and countries. Mining generates air and water pollutants, and can cause widespread environmental damage to wildlife and biological diversity. It is a significant contributor to carbon emissions, and is currently responsible for 4 to 7 percent of greenhouse gas (GHG) emissions globally. Direct CO₂ emissions from owned or controlled sources (known as “Scope 1” emissions), and indirect CO₂ emissions from the generation of purchased energy (known as “Scope 2”) from the mining sector amount to 1 percent of global emissions.⁸ Scope 3 emissions, which covers the full range of activities associated with the production and ultimate consumption of these minerals, such as the processing of ore, or the combustion of thermal coal represent a significantly higher share—in the vicinity of 28 percent of global GHG emissions. Thus mining has both direct and indirect effects on the environment. The direct impacts, such as the physical footprint of a mine and downstream pollution, are typically dwarfed by the indirect impacts on landscapes, like large-scale infrastructure development, and population inflows due to increased accessibility and potential economic opportunity.⁹ The mining sector is thus critical in tackling the challenge of climate change.

The effects of climate change on mining

The mining industry itself is also heavily susceptible to the negative effects of climate change, which can disrupt operations and communities. Climate change

is affecting water cycles globally, resulting in either not enough water (drought and desertification), or too much (hurricanes, cyclones, and floods). Scarcity of water can alter the supply of water to mining sites, affecting operations and potentially increasing tensions with local communities. Flooding, cyclones, and hurricanes can lead to unsafe water levels in tailing dams, which can collapse, damaging roads and halting operations. Rising temperatures and extreme heat, particularly in already hot places like Australia, China, and northern and western Africa can decrease worker productivity, increase cooling costs, and potentially put workers’ lives and health at risk. Increased exposure to pests and disease, which impacts nutrition security and the health of workers and their families has also been attributed to climate change in some parts of the world. Climate change can also have indirect socioeconomic consequences that in turn can raise the political tensions surrounding a mine. In addition, mining operations are often in socially and politically fragile parts of the world, where the industry serves as a key driver of economic growth; negative impacts on mining due to climate change could therefore mean dire consequences for economic growth and development in host countries.

The sector’s response to climate change needs to expand beyond a focus on the supply of critical minerals to include committed efforts to decarbonize mining operations and reduce emissions through the use of renewable energy to power operations (and processing), to integrate recycling into the value chain, and to use electric or hydrogen-powered truck fleets, among other things.¹⁰ These “climate-smart” actions can help to contribute to GHG mitigation, climate adaptation, reduction of material impact, and/or the creation of market opportunities—which are the very areas identified earlier as the building blocks of climate-smart mining.

⁸ *Climate Risk and Decarbonization: What Every Mining CEO Needs to Know*. 2020. McKinsey and Company. <https://www.mckinsey.com/-/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Climate%20risk%20and%20decarbonization%20What%20every%20mining%20CEO%20needs%20to%20know/Climate-risk-and-decarbonization-What-every-mining-CEO-needs-to-know.ashx>

⁹ *Making Mining Forest-Smart: Executive Summary Report*. 2020. World Bank Group. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/369711560319906622/making-mining-forest-smart-executive-summary-report>

¹⁰ *Seven Trends Shaping the Future of Mining and Metals*. 2019. World Economic Forum. <https://www.weforum.org/agenda/2019/03/seven-trends-shaping-the-future-of-the-mining-and-metals-sector/> Accessed October 2019.

Gender-responsive mining is more transformative, and cost-effective

A male-dominated sector, despite a growing pool of qualified women

The large-scale mining industry has traditionally been male-dominated. Recent studies show that women are underrepresented in the mining and natural resources workforce, making up just 17.9 percent in Canada in 2018,¹¹ 14.3 percent in Australia in 2015,¹² 13.8 percent in the United States in 2018,¹³ and only 10 percent of the global mining workforce in 2012.¹⁴ When considering the gender diversity of boards and senior leadership, mining fares more poorly than most other sectors globally. In 2014, women had 7.9 percent of board seats in the top 500, and 11.1 percent of the top 100 mining companies. At the current rate of change, it would take until 2039 for the top 100, and 2045 for the top 500 companies, to reach a critical mass of 30 percent board representation by women.¹⁵

Meanwhile, globally, more women than men are enrolled in universities (114 women for every 100 men). They also have higher graduation rates,¹⁶ and the share of women graduates in scientific fields has increased markedly since 2001 in all developing regions except Latin America and the Caribbean, where women's participation in these fields was already high.¹⁷ In 2018, in Australia, the percentage of women receiving postgraduate degrees in engineering and related technologies was 22 percent.¹⁸ In India, women earned 31 percent of the engineering and technology undergraduate degrees in 2018.¹⁹ Data from the Colorado School of Mines in the United States shows that 13 percent of mining engineering degrees were

awarded to women in 2013, as compared to 6 percent in 1998²⁰—slow change, but progress nonetheless. Meanwhile, traditionally held arguments that excluded women from the sector, such as claims that they are not strong enough to handle heavy manual labor, are less valid today as the mining industry has become increasingly mechanized and less reliant on such labor.

Barriers to entry and retention

Many reasons contribute to low participation of women in the workforce and in the leadership of mining companies. Explicit industry-specific barriers remain embedded in legal codes concerning mining in 60 countries. And even though more than 80 percent of the world's countries now prohibit gender discrimination in employment, only 46 percent of them mandate equal remuneration for work of equal value.²¹ The International Labour Organization (ILO) estimates that globally, women are paid 20 percent less than men, with large variations across countries.²² Identifying unexplained wage gaps by gender is a complex issue that requires considering various employee attributes (age, experience, tenure, performance, education, etc.). A Mercer study of gender pay gaps in 11 countries found that even after controlling for such attributes, gender gaps remained, although to a lesser degree.²³ While evidence from the infrastructure sectors is scant, a global survey of 371 chief human resource officers found that respondents in infrastructure-related industries were some of the most likely to report wage gaps between women and men performing the same role.²⁴

Mining has traditionally been viewed as “men's work,” and this translates to an unconscious bias at several levels. Recruitment materials often use only images

¹¹ “Quick Take: Women in Energy: Gas, Mining, and Oil.” 2019. *Catalyst*. <https://www.catalyst.org/research/women-in-energy-gas-mining-oil/>

¹² “Promoting Gender Diversity and Inclusion in the Oil, Gas and Mining Extractive Industries.” 2019. The Advocates for Human Rights. https://www.theadvocatesforhumanrights.org/uploads/promoting_gender_diversity_and_inclusion_in_the_oil_gas_and_mining_extractive_industries.pdf

¹³ “Quick Take: Women in Energy: Gas, Mining, and Oil.” 2019. *Catalyst*. <https://www.catalyst.org/research/women-in-energy-gas-mining-oil/> Accessed October 2019.

¹⁴ *Mining for Talent: A Study of Women on Boards in the Mining Industry*. 2013. PricewaterhouseCoopers.

¹⁵ *Mining for Talent*. <https://www.pwc.ru/ru/mining-and-metals/publications/assets/women-in-mining-2015.pdf> 2015. Women in Mining.

¹⁶ *The Equality Equation*. 2020. World Bank. <https://openknowledge.worldbank.org/handle/10986/34317>

¹⁷ Sophia Huyer. 2015. *Is the Gender Gap Narrowing in Science and Engineering?* UNESCO.

¹⁸ “Quick Take: Women in Science, Technology, Engineering and Mathematics (STEM).” 2020. *Catalyst*. <https://www.catalyst.org/research/women-in-science-technology-engineering-and-mathematics-stem/>

¹⁹ Ibid

²⁰ *Are Women in the Mining Industries the Most Underdeveloped Resource?* <https://minesmagazine.com/8749/> 2013: Colorado School of Mines.

²¹ *Women, Business and Law*. 2020. World Bank. <https://openknowledge.worldbank.org/bitstream/handle/10986/32639/9781464815324.pdf>

²² International Labour Organization (ILO). 2018. *Global Wage Report*.

²³ World Bank. 2020. *Stepping up Women's STEM Careers in Infrastructure*. <http://documents1.worldbank.org/curated/en/192291594659003586/pdf/An-Overview-of-Promising-Approaches.pdf>

²⁴ World Economic Forum. 2016. *The Industry Gender Gap*. http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_GenderGap.pdf



Business benefits of gender-diversity in the workforce and senior leadership

The transition to climate-smart mining should be a gender-diverse one—and there is a business case to support it. The mining sector in many countries is facing a shortage of skilled workers and women represent an untapped talent pool. Hiring more women can help **ease labor shortages and enable companies to recruit more employees locally**. The literature shows that female employees often are more likely to follow safety protocols, treat equipment responsibly, and operate safely.²⁶ This may be due to socialized differences between men and women, since men may have a greater tendency toward bravado, while women are more likely to be receptive to coaching and to approach potentially dangerous and hazardous situations more cautiously. As a result, in mining operations women are increasingly in demand as truck drivers and machine operators, because their behavior yields **better safety outcomes, reduced equipment maintenance and repair, and a safer operating environment**.²⁷

of men and male voices, and target sectoral and social networks that primarily include men, which helps to maintain the status quo. Same-sex work environments can breed a culture of sexism, creating an unsupportive work culture for women. Even as the number of women at various levels of mining companies increases, many companies lack gender-responsive policies that promote equality and work-life balance, and that would facilitate the retention of female employees. Likewise, as women employees increase in numbers, companies may lack mentors, sponsors, female role models, or gender-sensitive training that could provide women with guidance in navigating the gender-specific challenges they often encounter in mining companies. In the United States, a study using 2003 and 2010 data from the National Survey of College Graduates found higher exit rates from engineering jobs of women compared to men relative to other fields; this was explained by women's dissatisfaction with pay and promotion opportunities in the workplace.²⁵

A 2015 McKinsey report on 366 companies found that those in the top quartile for gender diversity are 15 percent more likely to have financial returns above the industry mean. While the study is unable to attribute direct causation, the presumed drivers for these higher returns in gender-diverse companies come from **attracting the best talent, having a strong customer orientation, improved decision making, and increased employee satisfaction**.²⁸ Gender-diverse teams also experience more innovation; a study of 4,277 companies in Spain found that companies with more women were more likely to introduce radical new innovations over a two-year period.²⁹ In general, well-managed, broadly diverse teams—not only in terms of gender—have been shown to outperform homogenous teams on several metrics.³⁰ PricewaterhouseCoopers and Women in Mining found a positive correlation between the number of women on boards in the top 500 mining companies in the world and financial performance indicators such as the dividend yield (the ratio of dividends paid out to

²⁵ Jennifer Hunt. 2016. *Why Do Women Leave Science and Engineering?*

²⁶ *Investing in Women's Employment: Good for Business, Good for Development*. 2013. IFC.

²⁷ *Welcoming Women: An Action Plan for Canada's Mining Employers*. 2016. Women in Mining Canada.

²⁸ *Why Diversity Matters*. 2015. McKinsey and Company. <https://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters>

²⁹ Christina Garcia et al. 2013. *Gender Diversity Within R&D Teams: Its Impact on Radicalness of Innovation*. <https://www.tandfonline.com/doi/abs/10.5172/impp.2013.15.2.149>

³⁰ *Putting All Our Minds to Work: An Assessment: Business Survey Results*. 2014. Deloitte and BIA.

investors to the price per share) and earnings per share (which indicates profitability), as well as **increased transparency and disclosure of ESG matters**.

Women face unique risks and challenges as community stakeholders

When it comes to the presence of climate-smart mining in communities, the key roles women play in their communities cannot be ignored—and it is important to get their support and buy-in in order to ensure companies' sustained **social license to operate**, which is a community's perception of the acceptability of a company and its operation. When this is lacking, it can be a significant cause of risk. For the year 2021, EY ranked social license to operate the number-one risk facing mining and metals for the third year in a row, with 63 percent of survey respondents listing it in the top three.³¹ In this regard, men and women often have different experiences of mining operations, given

that the risks and benefits from these projects are often unequally distributed between men and women in affected communities. For instance, women often do not have the same training and the same kinds of opportunities for mining-related jobs, owing to a systemic differences in access to education, as well as cultural barriers and expectations. In addition, due to traditional gender norms, and the resulting disproportionate burden of domestic responsibilities placed on them, women are more vulnerable to changes in water and land access and quality, whether it is caused by mining activities or by climate change. The influx of a predominantly male workforce, often of a temporary nature, also commonly leads to a sudden influx of cash incomes, as well as higher rates of alcohol abuse, gender-based violence, teen pregnancy, school dropout rates, and higher rates of sexually transmitted diseases.



³¹ *Top 10 Business Risks and Opportunities for Mining and Metals in 2021*. 2020. EY. https://www.ey.com/en_gl/mining-metals/top-10-business-risks-and-opportunities-for-mining-and-metals-in-2021

Considering women's perspectives pays off

Improving women's participation in community engagement of climate-smart mining projects is critical to the continued success of projects. Gender-responsive community assessments, consultations, and benefit sharing can all help to build a stronger social license to operate. Ensuring women's full participation, and engaging with women's organizations in the community can also make the consultation process more efficient, as a body of experiences is now demonstrating. One such case was found during a World Bank study on gender-sensitive approaches in Peru's natural resources industry. Men who participated in initial consultations with a mining company and reached an agreement later took back what they had said after "thinking better of it." They then explained that "thinking better of it" meant they had spoken with their wives.³² Taking a gender-responsive approach, which means consulting with both women and men from the beginning, can prevent delays and save both time and money.

Women are key to effective climate solutions

Women are disproportionately affected by climate change

Women are statistically the most vulnerable during conflicts, emergencies, and disasters, in both urban and rural contexts in both developing and developed countries; their lower socioeconomic status on average leaves them less resilient to environmental and economic disturbances and hardships. Furthermore, they are likely to have less access to the relief provided in response to disasters.³³ For example, it has been well documented around the world that the COVID-19 pandemic has had greater negative economic and social impacts on women than on men.³⁴ Climate change is such a massive and pervasive threat to global and human development that it threatens to set back progress on environmental, economic, health, and human development gains—on both the individual and global levels.



Access to sufficient land and water for agriculture and subsistence can be a make-it-or-break-it factor that can lead to other development challenges that may not at first glance seem to be associated with climate change, but that in recent years, experts have found to be rooted there. Famine, conflict, and migration (both internal displacement and the migration of refugees across country borders) are increasing because of climate change's effects on the quality and availability of land and water. A case in point is the conflict in Darfur, Sudan, often referred to as "the world's first climate-change conflict" because of the rapid climate change-induced desertification and drought that has decreased the availability of arable land and therefore increased tensions between nomadic, ethno-African agriculturalists and pastoralists of mostly Arab descent.³⁵

³² Bernie Ward and John Strongman. 2011. *Gender-Sensitive Approaches for the Extractive Industry in Peru: Improving the Impact on Women in Poverty and Their Families: Guide for Improving Practice*.

³³ *Gender and Health in Disasters*. 2002. World Health Organization. https://www.who.int/gender/other_health/genderdisasters.pdf

³⁴ *Gender and COVID-19: Key Considerations, Resources and Support for Infrastructure and Natural Resource Companies in Emerging Markets*. IFC. 2020. <https://www.commdev.org/publications/gender-and-covid-19-key-considerations>

³⁵ *The First Climate Change Conflict*. 2017. World Food Program USA. <https://www.wfpusa.org/articles/the-first-climate-change-conflict>

Women, as often the most economically vulnerable members of their households and communities, and typically the primary providers of food and nutrition for their households, are the first to suffer from hardships related to land and nutrition. Studies have shown that in situations of nutrition insecurity, women have been known to forgo their own food in order to secure sufficient amounts for their families.³⁶ They are also more land-insecure than men overall, since in many cultural and country contexts they are either not expected to own land or are legally prevented from doing so. Negative impacts from mining and climate change could decrease the availability of clean water,

firewood, forest products, and access to agricultural land, which can also directly increase the distances women have to walk to collect water and resources, impacting their time poverty, and increasing the risk of gender-based violence (GBV). (See Box B for more on the links between mining and GBV.) Women are usually the main users of nontimber forest resources, and are responsible for providing food, material, and fodder from forest products. Deforestation from mining has an impact on global carbon emissions, but also takes away critical resources from communities at the local level, and can expose communities to increased risk from floods and soil erosion.

BOX B

Gender-Based Violence in the Mining Sector in Africa

Gender-Based Violence (GBV) is a term that encompasses harmful acts perpetrated against a person's will, based on gender norms and unequal power relationships. Critical to understanding GBV is the concept of gender relations—forms of power relations between women and men in a given society. GBV is a harmful expression of unequal gender relations that is permitted through constraining or discriminatory gender norms. Globally, 35 percent of women and girls have reported experiencing some form of physical and/or sexual violence other than sexual harassment during their lifetime, and GBV is known to be underreported, making understanding the true prevalence of it challenging.

In the context of the mining sector, the changes that mining brings to an area—whether through increased cash flow or labor migration—are thought to lead to increased risks of GBV. For women working as large-scale mining (LSM) employees, this review found that sexual harassment is the most commonly evidenced form of violence noted in South Africa and Tanzania, with evidence of women having to provide sexual services to men in return for assistance. There are also noted cases of rape, other forms of sexual violence, and even murder of women working in mines in South Africa. While the masculine nature of the mining sector is offered as an explanation for much of this violence, this can eclipse company responsibility toward their workers' safety.

Excerpt from *Sexual and Gender-Based Violence in the Mining Sector in Africa. Evidence and Reflections from the DRC, South Africa, Tanzania and Uganda* <https://www.kit.nl/wp-content/uploads/2020/09/SGBV-in-the-Mining-Sector-in-Africa.pdf>

USEFUL RESOURCES

In the context of COVID-19, the mining sector is facing a major economic toll, while workers and community members living near mine sites also face the potential of enhanced risks of GBV. Below are some useful resources to help address these increased risks, including an interesting initiative by De Beers Group to provide support to women's shelters and support organizations in Botswana, Canada, Namibia, and South Africa.

- [Gender and COVID-19: Key Considerations, Resources and Support for Infrastructure and Natural Resource Companies in Emerging Markets](#)
- [Oxfam's top three recommendations for mining companies during the COVID-19 crisis](#)
- [De Beers helps fight GBV amid COVID-19](#)

³⁶ *The World Bank Group and the Global Food Crisis*. 2013. Independent Evaluation Group. <https://ieg.worldbankgroup.org/evaluations/world-bank-group-and-global-food-crisis>

Climate change is increasing the frequency and intensity of severe weather events and natural disasters globally. Women have higher death rates in natural disasters, due to differences in their access to early warning information, different daily patterns and responsibilities than men, and the lower likelihood that they know how to swim.³⁷ Furthermore, following disasters, women often have measurably lower levels of access to adequate relief support, which can increase their recovery time and exacerbate secondary and tertiary impacts.³⁸ One clear example of how involving women in disaster preparedness planning can save lives comes from the experience of Bangladesh after the Bhola Cyclone in 1970, in which 300,000 lives were claimed, with a 14:1 ratio of female to male casualties. After this disaster, the government increased women's involvement in disaster preparedness efforts, and began designing shelters in ways that addressed their security and sanitation needs. When the equally powerful Cyclone Sidr hit in 2007, there were only 3,500 casualties, with a 5:1 female to male ratio.³⁹

Women are agents of change

While women are most vulnerable to the effects of climate change, they are also uniquely positioned to influence climate solutions. Women and women's organizations can be powerful agents of change, and can strengthen social license and company-community relations. At the community level, women's tight-knit social networks and their household roles as the primary users of energy make them irreplaceable in the design and implementation of local climate mitigation and adaptation strategies. This includes opportunities for entrepreneurship roles in leading and supporting the delivery of off-grid energy solutions and recycling programs. Actively engaging women in the sale, repair, and maintenance

of off-grid renewable energy solutions such as solar lighting, cookstoves, and heating can be profitable to companies; but it will require a focus on training and skills development, awareness raising, helping women gain access to finance, and tapping into existing social networks such as savings and loans associations (see Box C). Women's voices are also crucial in ensuring that climate adaptation and mitigation strategies are gender-equitable, and that they consider the needs of children and youth. The active engagement of women's organizations at the local, national, regional, and global levels is essential if we are to achieve a gender-equitable transition to clean energy.

BOX C

Women Entrepreneurs as Important Partners for Community Solutions

PEG, a company that sells solar-powered electricity solutions in remote parts of West Africa, set out with the goal of creating more employment opportunities for women, reaching more women customers, and demonstrating positive business results from these measures. As a result of its efforts, including increasing women's participation in the last-mile deployment of products, PEG achieved a 14 percent increase in female leadership which coincided with a 60 percent growth in revenue, a 26 percent increase in earnings before interest and taxes (EBIT), and improved collaboration and more meaningful engagement in meetings—all pointing to the business benefits that PEG is reaping as a result of greater gender balance in its operations.⁴⁰

³⁷ *Gender in Agriculture Sourcebook*. 2009. World Bank, Food and Agriculture Organization, International Fund for Agricultural Development. <http://hdl.handle.net/10986/6603>

³⁸ *Gender and Health in Disasters*. 2002. World Health Organization. https://www.who.int/gender/other_health/genderdisasters.pdf

³⁹ *Realizing Gender Equality in Cities: A Guidance Note for Development Practitioners*. 2019. Cities Alliance. <https://citiesalliance.org/resources/knowledge/cities-alliance-knowledge/realizing-gender-equality-cities>

⁴⁰ *Promoting Gender Equality in the Off-Grid Energy Sector*. 2019. PEG Africa. <https://pegafrica.com/wp-content/uploads/PEG-case-study-Promoting-Gender-Equality.pdf>



d.light Solar Home System D20

2 YEAR WARRANTY


Illustration of a house with solar panels on the roof and interior lighting.

3. Entry Points for Gender in Climate-Smart Mining

The Climate-Smart Mining (CSM) Initiative will deepen knowledge, provide analytical tools, and operationalize CSM practices in resource-rich developing countries. The Initiative’s four building blocks are described in further detail below. Integrating a gender-responsive approach into each of these areas will set companies on a path toward receiving the highest return on their investments in climate-smart mining.

Pillars of the Climate-Smart Mining Initiative

The highlighted boxes indicate topics where gender-responsiveness is further explored.

World Bank, IFC support to decarbonize and reduce material footprint of mining sector	Climate mitigation	Climate adaptation	Reducing material impacts	Creating marketing opportunities	 Climate-Smart Mining
	Integration of renewable energy in the mining sector	Forest-Smart Mining with landscape management	Adoption of a circular economy for low-carbon minerals	De-risking investments for low-carbon minerals	
	Innovation in extractive practices	Resource efficiency in mineral value chain	Reuse/recycling of low-carbon minerals	Leverage carbon finance instruments	
	Energy efficiency in mineral value chain	Innovation waste solutions	Low-carbon mineral supply chain management	Robust geological data management	
Gender and multi-stakeholder engagement					



PILLAR 1: CLIMATE CHANGE MITIGATION

The Paris Agreement, the first-ever universal, legally binding global climate change agreement, adopted in December 2015 by 196 countries at the 21st Conference of the Parties to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) aims to limit global warming to 1.5 to 2 degrees Celsius above preindustrial levels. A significant part of the Paris Agreement is the commitment by each country to submit nationally determined contributions (NDCs) that outline the targets each country will work toward to contribute to the goals of the agreement, with a primary focus on climate change mitigation. The Paris Agreement calls for parties “when taking action to address climate change, respect, promote and consider their respective obligations on human rights, including ‘gender equality’ and the ‘empowerment of women,’” and specifies that climate adaptation and capacity-building actions and activities should be gender-responsive.⁴¹ Furthermore, integrating renewable energy into mining operations, which is seen as a critical act of mitigation, can be fortified by applying a gender lens⁴² that focuses on relevant gaps between men and women, and can deliver additional benefits in electrifying surrounding communities and reducing the negative health impacts on women from cooking over fires.⁴³

Integration of renewable energy in the mining sector

Renewable energy is a critical tool in decarbonizing mining operations.

The mining sector is energy-intensive, contributing to 11 percent of global energy use.⁴⁴ Integrating renewable energy into mining operations is critical to decarbonizing the extraction, processing, and final production of clean energy technologies. Due to their

location in remote areas, mining operations often have limited access to the energy grid, and are thus reliant on diesel generators; however, this is one of the main sources of GHG emissions in the sector.⁴⁵ Switching to renewable sources of energy at mining sites is becoming increasingly feasible as the cost of battery packs is projected to decline 50 percent from 2017 to 2030.⁴⁶ This will present several benefits, such as reduced operating costs, and hedging against volatile fossil fuel prices and transportation costs, as well as reducing GHG emissions and mitigating against carbon tax risks. Some mining companies are doing this already: Codelco used solar power for one of its copper mines in Chile, and Fortescue Metals is investing in renewable energy at its iron ore mines in the Pilbara region in Australia and BHP recently signed contracts for its Escondida and Spence copper mines to be powered by renewable energy.⁴⁷

Renewable energy projects can help host communities and improve community relations.

Integrating renewable energy into mining operations can help companies strengthen their social license to operate as well as bolster their “shared value” proposition. Renewable energy production is less polluting than fossil fuel-based power plants, reducing negative externalities such as air and noise pollution to host communities. The negative impacts from the trucking of fuel, such as traffic and road accidents, can be reduced as well. Furthermore, in remote areas, renewable energy mini-grids on mine sites can provide electricity to surrounding communities and contribute to significant development outcomes well after the lifetime of the mining project, since the lifespan of solar grids often far exceeds that of mines. Given the low operating costs of renewable energy plants following the initial capital expenditure, this kind of legacy project is affordable for local governments and communities to maintain and operate, leaving a long-lasting imprint of

⁴¹ *Gender Equality and Women’s Empowerment in Updated and New Nationally Determined Contributions (NDCs)*. 2020. Women’s Environment and Development Organization. <https://wedo.org/brief-gender-equality-and-womens-empowerment-in-updated-and-new-nationally-determined-contributions-ndcs/>

⁴² *Gender Equality in National Climate Action: Planning for Gender-Responsive Nationally Determined Contributions*. 2017. United Nations Development Programme (UNDP).

⁴³ Ibid.

⁴⁴ *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition*. 2020. World Bank. <http://pubdocs.worldbank.org/en/961711588875536384/Minerals-for-Climate-Action-The-Mineral-Intensity-of-the-Clean-Energy-Transition.pdf>

⁴⁵ J.J.S. Guilbaud. 2016. *Hybrid Renewable Power Systems for the Mining Industry: System Costs, Reliability Costs, and Portfolio Cost Risks*. <https://discovery.ucl.ac.uk/id/eprint/1528681>

⁴⁶ *Climate Risk and Decarbonization: What Every Mining CEO Needs to Know*. 2020. McKinsey and Company. <https://www.mckinsey.com/-/media/McKinsey/Business%20Functions/Sustainability/Our%20insights/Climate%20risk%20and%20decarbonization%20What%20every%20mining%20CEO%20needs%20to%20know/Climate-risk-and-decarbonization-What-every-mining-CEO-needs-to-know.ashx>

⁴⁷ Ibid.

positive socioeconomic impact by the mining company.⁴⁸ IAMGOLD, which operates the Essakane gold mine in Burkina Faso, set up a 15 megawatt solar power project that will benefit local communities when the mine site closes. The mine has a lifespan of only 10 years, while the solar plant is expected to work for 20-25 years; and given the low operating expenditure of running it, the project will be affordable to sustain locally.⁴⁹

Women in the renewable energy sector

Women can play a significant role in the burgeoning renewable energy sector. A new study by IRENA finds that globally, women represent 32 percent of workers in renewable energy, compared to 22 percent in traditional industries like oil and gas, and more than 48 percent in global labor force participation. But while the average share of jobs in renewables held by women is 32 percent, there is much variation in the types of jobs they hold—women occupy 45 percent of the administrative jobs, 28 percent of STEM jobs, and 35 percent of non-STEM technical jobs. The same study estimates that the number of jobs in renewables could increase from 10.3 million in 2017 to nearly 29 million in 2050⁵⁰—offering a variety of career opportunities, requiring different skill sets and talents along the value chain. Applying a gender perspective to hiring, recruitment and encouraging women to pursue education and careers in the renewable energy sector would open an untapped talent pool to this rapidly growing sector, while ensuring more equity in the distribution of socioeconomic benefits. Embedding a focus on gender equality by adopting gender-responsive policies, tailoring training skills and development, offering childcare and flexible work options, and other policies helpful to women can increase their participation in the workforce and in leadership roles. Women can be particularly valuable in leadership roles in mining companies as companies shift to more renewable energy sources; the research shows that women tend to be more receptive to issues related to local and global sustainability. Using data from MSCI Inc., which evaluates industry-specific

ESG risks and opportunities, one study found that increases in gender diversity on boards were correlated with more investment in renewable energy, greater attention paid to environmental considerations such as measuring and reducing carbon emissions of products throughout the value chain, the implementation of carbon reduction programs with suppliers, and a reduction in the amount of packaging.⁵¹ There are also good examples of indigenous community-run renewable energy enterprises which, if supported through partnerships with the extractives sector, could benefit indigenous women.⁵²

Renewable energy can boost women's employment and education and generate health and other benefits.

Access to energy is a critical factor that can elevate economic opportunities for communities. However, men and women benefit from access to energy in different ways. For instance, a study in South Africa found that rural electrification raised women's employment in electrified communities by 9.5 percent, while having an indeterminate impact on male labor rates in the same population; this is likely due to the freeing up of women's time with the introduction of electric lighting and heating options that ease the burden of household chores.⁵³ Women also engage in micro-entrepreneurship and income-generating activities as a result of increased access to energy.⁵⁴ There are also links to women's improved health through cleaner cooking technology, better nutrition and food safety, and information acquired from better access to mass media.⁵⁵ Efforts to advance the transition of communities to renewable energy sources such as solar and wind power, as well as clean cooking solutions help to improve energy access and the quality of life in poor households, with direct gender dividends such as women's reduced time poverty, improved health of women and children from reduced indoor pollutants, and women's economic empowerment through enterprise development and employment opportunities.

⁴⁸ *The Renewable Power of the Mine*. 2018. Columbia Center on Sustainable Investment. <http://ccsi.columbia.edu/files/2018/12/3418-CCSI-RE-and-mining-report-09-1r-reduced-optimized-07-no-links.pdf>

⁴⁹ When a mine closes, legal regulations often require that all infrastructure be removed and cleared. In this regard, the closure and reclamation regulations for dismantling the mine site must be altered so that the physical infrastructure of the renewable energy power plant can remain. Source - Ibid

⁵⁰ K. McElhane, et al. *Renewable Energy: A Gender Perspective*. 2019. IRENA. <https://irena.org/publications/2019/Jan/Renewable-Energy-A-Gender-Perspective>

⁵¹ *Women Create a Sustainable Future*. 2012. https://www.eticanews.it/wp-content/uploads/2012/11/Report-Women_Create_Sustainable_Value.pdf

⁵² For example: <https://fnpa.ca>

⁵³ Taryn Dinkelman. 2011. *The Effects of Rural Electrification on Employment: New Evidence from South Africa*.

⁵⁴ April Allerdice et al. 2000. *Renewable Energy for Microenterprise*.

⁵⁵ World Bank. 2011. *Energy, Gender, and Development: What Are the Linkages? Where Is the Evidence?*

PILLAR 2: CLIMATE CHANGE ADAPTATION

While land degradation and deforestation from mining operations contribute to climate change, climate change can also affect both mining operations and the livelihoods of communities impacted by or close to mine sites. These changes can increase competition and exacerbate social tensions between mining companies, host governments, and communities over issues that are already delicate in mining contexts, like water scarcity. Climate resilience and adaptation measures therefore need to consider not only the risks and impacts to mining operations but also to the surrounding communities, ecosystems, and supply chains. The same holds true for National Adaptation Plans under the United Nations Framework Convention on Climate Change (UNFCCC), and community adaptation plans should also consider both current and planned mining operations. This can be achieved through a variety of strategies and nature-based climate solutions including forest-smart mining, sustainable land management practices, and the preservation or restoration of natural capital. Mechanisms to improve the climate resilience of host communities can be considered as part of companies' social investment strategies, which in return can help to secure trust and establish a strong social license to operate. These activities, when carried out in a gender-responsive way, can also address the disproportionate and unique impacts of environmental changes, natural disasters, and climate change on women. Additionally, because of the roles women play in their families and communities, involving them in planning processes will ensure that these activities have the highest returns for local families and communities overall.

Climate resilience and adaptation strategies

Land degradation and deforestation from mining have an impact on global carbon emissions, causing approximately 7 percent of global forest loss.⁵⁶ They can also compromise the availability of critical resources and reduce ecosystem services such as flood control, soil protection, and the availability of arable land, thereby negatively impacting the resilience of communities at the local level, and leaving them more vulnerable environmentally,

socially, and economically. This vulnerability can lead to unrest, conflict, and loss of social license, threatening a mining company's relationship with its host communities and host government.

Climate change adaptation, climate-smart agriculture, forest governance, biodiversity conservation, ecosystem restoration, and disaster risk reduction, when carried out in a gender-responsive way, will not only help to promote the environmental, economic, and social resilience of women; it will also ensure higher success rates of programs and stronger links to local economic activities and supply chains. Creating links with women and their nontimber forest product harvesting, processing, and selling, as well as use of fuel can promote a more *landscape-level approach* to forest governance—that is, an approach that considers the various types of interdependent uses of land and its effect on local economies. Many countries have made gender commitments in their forest planning—for example, Burkina Faso, Côte d'Ivoire, Democratic Republic of Congo (DRC), and Ghana, under the Forest Investment Program of the Climate Investment Funds, in their investments under the Forest Carbon Partnership Fund, and in the BioCarbon Fund, which promotes private sector investment in women-owned and operated forest-based enterprises.⁵⁷

Gender equality in the Paris Agreement

In 2015, countries agreed to submit Intended Nationally Determined Contributions, or "INDCs," to publicly declare their intended actions for the twenty-first UNFCCC Conference of Parties (COP21) international climate agreement. By May 2016, 161 countries had submitted INDCs, and United Nations Development Programme (UNDP) analyzed them. This analysis found that while 40 percent of the INDCs submitted to-date made at least one reference to gender equality or women's empowerment, more than 50 percent of the countries surveyed intended to include gender equality in their revised plans. Of the countries that included mentions of gender or gender equality, the highest number (35 countries) referred to the role of women in climate adaptation, indicating that the roles

⁵⁶ *Making Mining Forest-Smart: Executive Summary Report*. 2019. World Bank Group. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/369711560319906622/making-mining-forest-smart-executive-summary-report>

⁵⁷ *Equitable Futures: Gender and Climate at the World Bank Group FY18-23*. 2017. World Bank Group. <http://documents1.worldbank.org/curated/en/820851467992505410/pdf/102114-REVISED-PUBLIC-WBG-Gender-Strategy.pdf>



and vulnerabilities of women with regard to climate adaptation are more recognized and well understood than their roles in mitigation activities.⁵⁸ In a mining investment climate that is fraught with uncertainty and high perceptions of risk regarding host country governance structures and relations, demonstrating a strong commitment to gender equality and women's empowerment in a company's CSM strategy can open doors for increased trust and collaboration—and ultimately, less risky investment opportunities. By being gender-responsive in their operations and community engagement, mining companies can demonstrate an overarching alignment and cohesion with the host country government's gender and climate priorities indicated in their INDCs.

Forest-smart mining

“Forest-smart” and REDD+ strategies

The relationship between mining and forests is increasingly included in discussions on traditional forest governance mechanisms and dialogues among investors and consumers. *Forest-smart*, as defined by the World Bank Program on Forests (PROFOR),

is “a development approach that recognizes forests' significance for sustaining growth across many sectors, including agriculture, energy, infrastructure, and water. It is sustainable and inclusive in nature, emphasizing that forests are part of a broader landscape and that changes in forest cover affect other land uses as well as the people living in that landscape. It transforms how sectors operate by identifying opportunities for mutual benefit and creating practical solutions that can be implemented at scale.” It recognizes that deforestation not only comes from the construction of a mine operation itself, but also the surrounding infrastructure (such as roads) and economic activity (such as in-migration) that grow to support the mine, or to capitalize on economic opportunities generated by mining activity.⁵⁹

In addition to the role forest-smart approaches can play in climate change mitigation due to the value of forests as effective carbon sinks, they are also critical to climate change adaptation and community resilience near mine operations in forest areas. Mining takes place in a variety of landscapes and ecosystems across the globe, but about 1,500 large-scale mines are currently in tropical forests, and there are another 1,800 that are either nonoperational or under development. More than half of the large-scale mines in forested areas are

⁵⁸ *Gender Equality in National Climate Action: Planning for Gender-Responsive Nationally Determined Contributions*. 2017. United Nations Development Programme. <https://www.undp.org/content/undp/en/home/librarypage/womens-empowerment/gender-equality-in-national-climate-action--planning-for-gender.html>

⁵⁹ *Making Mining Forest-Smart: Executive Summary Report*. 2019. World Bank Group. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/369711560319906622/making-mining-forest-smart-executive-summary-report>



in low or lower-middle-income countries, where the surrounding communities may be reliant on forests for their livelihoods. The highest incidence of mining that exists in forested areas is for iron ore, copper, and gold, while the minerals most reliant on forest mines are bauxite, nickel, and titanium.⁶⁰

Of the 47 countries⁶¹ participating in Reducing Emissions from Deforestation and Forest Degradation (REDD+) with the Readiness Fund, 57 percent—and more than 72 percent of African participating countries—view mining as a direct or indirect driver of deforestation. As institutional investors, host countries, and consumers increasingly prioritize sustainability in their decision making and risk analysis, mining companies stand to see reputational gains and increased investor confidence by engaging in integrated and transparent sustainability practices that include forest-smart mining.

Forest-smart mining also presents an opportunity for mining operations to engage in public-private partnerships beyond the mine site, since REDD+ is most effectively implemented on a jurisdictional

level. Furthermore, beyond REDD+, reforestation and afforestation efforts in and around mine sites can have significant positive impacts as a joint mitigation and adaptation activity.

Women and forest management

Women are typically the main users and household providers of nontimber forest products. The role of women in community forest management is increasingly recognized, as is the importance of including them in strategies for REDD+, to minimize adverse impacts and maximize opportunities for women. Changes in land use due to mining operations need to be monitored and assessed for gender-specific impacts to ensure that women's land usage, tenure, and/or livelihoods are not being negatively impacted. Including women in consultations about land-use planning is crucial in order to not perpetuate existing gender inequalities, especially when it comes to major changes such as land acquisition, resettlement, and compensation, which experience has shown can exacerbate the vulnerabilities of women to a much greater extent than men. In conducting such consultations, attention should be given to illegal logging activities, which often form an important, but undocumented contribution to local livelihoods. Attention should also be given whenever possible to the use of wood fuel for cooking, and to possibilities for introducing alternative fuel sources and more efficient cooking technologies, to reduce deforestation as well as indoor air pollution. In many mining communities and countries in which mining operates, women may not have legal rights to land or hold land titles, and they can be left out of consultations and compensation mechanisms by mining companies that only involve legal land title holders, without considering all users and beneficiaries of the land and its resources. Women's familial and societal roles and social networks are often more closely tied to place, while men often work outside the home, receive cash income, and are more mobile. Thus, women may be less resilient when they are relocated, especially if they are not involved in decision making about the relocation process.⁶²

⁶⁰ *Forest-Smart Mining: Identifying Factors Associated with the Impacts of Large-Scale Mining on Forests (English)*. 2019. World Bank Group. <http://documents.worldbank.org/curated/en/104271560321150518/Forest-Smart-Mining-Identifying-Factors-Associated-with-the-Impacts-of-Large-Scale-Mining-on-Forests>

⁶¹ A REDD+ Country Participant is a developing country located in a subtropical or tropical area that has signed a Participation Agreement to participate in the Readiness Fund. Forty-seven developing countries have been selected to join the Forest Carbon Partnership Facility (FCPF): 18 in Africa, 18 in Latin America, and 11 in the Asia-Pacific region. List: <https://www.forestcarbonpartnership.org/countries>

⁶² *Unlocking Opportunities for Women and Business: A Toolkit of Actions and Strategies for Oil, Gas, and Mining Companies*. 2018. IFC. <https://www.commdev.org/publications/unlocking-opportunities-for-women-and-business-a-toolkit-of-actions-and-strategies-for-oil-gas-and-mining-companies>

PILLAR 3. REDUCING MATERIAL IMPACTS

Women can be effective allies for a greener future, because they can play key roles in the circular economy as well as in recycling. Women are more socialized to be oriented toward social responsibility, and they display stronger environmental attitudes and behaviors than men.⁶³ Recent academic and practitioner attention has shown that waste production and management is not gender-neutral, and that current waste management practices can harden existing inequalities.⁶⁴ Strengthening women's participation in these areas can bolster reductions in material impacts while also enhancing women's empowerment.

Adoption of a circular economy

The value of a circular economy

One prominent idea for reducing the material impacts of mining and production is the “circular economy” –an industrial system that is nonlinear and restorative by intention and design. It replaces the “take-make-dispose” model and its end-of-life concept with restoration, shifts toward the use of renewable energy, aims for the elimination of waste through the superior design of materials and products, and innovative business models. While this isn't an entirely new concept, since previous generations mended and repaired things to extend their lifecycle, in recent years the concept has been enriched, and has experienced a resurgence. In India, a circular economy path could bring annual benefits of \$624 billion by 2050 compared with the current development path, a benefit equivalent to 30 percent of the country's current GDP. It also spells significant positive environmental externalities, with greenhouse gas (GHG) emissions being 23 percent lower in 2030, and 44 percent lower in 2050 compared with the current development scenario.⁶⁵ And it can also boost economic growth

and jobs: the World Economic Forum and the Ellen MacArthur Foundation estimate that a shift to a circular economy, with more reusing, remanufacturing, and recycling of products, could create more than half a million jobs in the recycling industry across Europe.⁶⁶

A gender-responsive approach to the circular economy

The agenda of a circular economy, and related actions such as mineral recycling and reuse will be critical to achieving the UN Sustainable Development Goals (SDGs) on climate action and sustainable resource management (SDGs 12 and 13). While the existing studies on the environmental and business aspects of circularity are important, a key aspect that needs further inspection and consideration is its social implications—how can the circular economy be inclusive of marginalized and vulnerable groups such as women, youth, and the rural and urban poor? The circular economy relies on technology and digital connectedness to increase the effectiveness of material and energy use, and promotes products-as-a-service, rather than ownership. This could lead to widening gender inequities along a digital divide, since we know that women have less access to technology than men. Globally, 300 million fewer women than men access the internet.⁶⁷ Adopting a gender-neutral, business-as-usual approach in the expansion of a circular economy poses the risk of further exacerbating inequities in women's access to goods, services, and employment. Targeting women with awareness campaigns about sustainable consumption, the application of a keen gender perspective in the development of local and national circular economy strategies, and private-sector sustainability initiatives can help promote gender inclusion in the circular economy. Gender-responsive approaches can increase the user base, bringing benefits to both companies and women.⁶⁸

⁶³ L. Zelezny, et al. 2000. *Elaborating on Gender Differences in Environmentalism*. <https://spssi.onlinelibrary.wiley.com/doi/epdf/10.1111/0022-4537.00177>

⁶⁴ United Nations Environment Programme. 2019. *Gender and Waste Nexus, Experiences from Bhutan, Mongolia, and Nepal*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/29822/GaWNPB.pdf>

⁶⁵ *Circular Economy in India: Rethinking Growth for Long-Term Prosperity*. 2016. Ellen MacArthur Foundation. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Circular-economy-in-India_5-Dec_2016.pdf

⁶⁶ *Towards the Circular Economy: Accelerating the Scale-Up Across Global Supply Chains*. 2014. Ellen MacArthur Foundation and McKinsey & Company. http://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf

⁶⁷ *The Mobile Gender Gap Report*. 2020. Global System of Mobile Communications (GSMA). <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf>

⁶⁸ *Top 10 Things Everyone Should Know about Women Consumers*. 2015. Forbes. <https://www.forbes.com/sites/bridgetbrennan/2015/01/21/top-10-things-everyone-should-know-about-women-consumers/#1b0112196a8b>

Recycling

The value of the recycling sector

Recycling of metals and minerals can save energy, money, and natural resources, and reduce landfill use. For instance, as the demand for aluminum continues to rise, recycling aluminum saves more than 90 percent of the energy required to mine the metal from virgin ores.⁶⁹ There are design and technical barriers as well as cost implications that impede recycling rates, but addressing these challenges and facilitating higher rates of recycling and reuse is essential in order to enable a transition to a low-carbon economy. Thus, while mining will surely continue for the foreseeable future, recycling and reuse has a significant role to play in meeting future mineral demand.

Immense opportunities lie with e-waste recycling. It is estimated that in 2014, the world produced 42 million metric tons of e-waste in the form of discarded electrical and electronic equipment and parts, with North America and Europe accounting for 8 and 12 million metric tons respectively. Materials such as iron, copper, gold, silver, and aluminum can be reused and recycled from e-waste, after careful removal of toxic materials such as lead, mercury, cadmium, and arsenic, which are also found in these products. The value of this market is estimated to be about \$52 billion.⁷⁰ Similarly, repurposing or reusing electric vehicle (EV) batteries is highly valuable—EV batteries repurposed to power providers could lower the costs of the EV charging infrastructure by 90 percent by 2030.⁷¹ It is also argued that repurposed batteries could “become the storage hubs for community-scale grids in the developing world.”⁷²

Women’s roles in recycling and waste management

Due to social norms in many cultures, women are often in charge of household waste management.

In developing countries such as India, Indonesia, the Philippines and Vietnam, women form a high percentage of the waste management sector. However, it is highly informal in nature, and presents many health risks and inequalities, such as women being in low-status jobs and equipment being designed for men; this calls for changes in policy and intervention. Women’s presence is sparse in the ownership and senior management roles of recycling companies and landfill operators, where profit margins and income earning capacity is the highest.⁷³ Junk shops in these countries tend to be co-owned by spouses, with women performing administrative tasks such as buying, selling, and recordkeeping as well as some sorting. “Waste banks,” a concept that is popular in Indonesia and many other developing countries, buy and sell household recyclables—they are often owned and operated by women, partly owing to the clientele being housewives and other women.⁷⁴ However, the modernization of waste management is making it more capital and technology-intensive, thus reducing low-skill job opportunities.⁷⁵

Engaging women in the circular economy and in recycling is critical, and could take many forms. For example, women tend to be more likely to sort recyclables and biowaste as part of their normal household waste disposal practices, compared to men.⁷⁶ They are also the key decision makers when it comes to 70–80 percent of household purchases; thus, they could become key drivers of environmentally sustainable behaviors and consumption patterns. In many countries where waste handling represents a considerable source of income, concerted efforts are needed to increase women’s representation in leadership roles, in tackling the risks of waste picking and the manual recycling of products, and in training and skills development to create mobility from low-security, low-paying jobs to more high-paying green jobs in the circular economy.

⁶⁹ The Aluminium Association. 2017. <http://www.aluminium.org/industries/production/recycling#sthash.DNCYWb7e.dpuf>

⁷⁰ “Companies Are Working with Consumers to Reduce Waste.” 2016. *Harvard Business Review*.

⁷¹ *Reuse and Recycling: Environmental Sustainability of Lithium-Ion Battery Energy Storage Systems*. 2020. World Bank.

⁷² Hanjiro Ambrose, et al. *Driving Rural Energy Access: A Second-Life Application for Electric-Vehicle Batteries*. 2014.

⁷³ *The Role of Gender in Waste Management: Gender Perspectives on Waste in India, Indonesia, the Philippines and Vietnam*. 2019. Ocean Conservancy. <https://oceanconservancy.org/trash-free-seas/take-deep-dive/role-gender-waste-management>

⁷⁴ Ibid.

⁷⁵ “Towards Sustainable Waste Management Through Technological Innovations, Effective Policy, Supply Chain Integration and Participation.” 2016. *Procedia Environmental Sciences*. <https://www.sciencedirect.com/science/article/pii/S1878029616301505?via%3Dihub>

⁷⁶ D. Nainggolan, et al. 2019. *Consumers in a Circular Economy: Economic Analysis of Household Waste Sorting Behaviour*.

PILLAR 4. CREATING MARKET OPPORTUNITIES

Along with the urgency for the minerals that are needed for the clean-energy transition, and to minimize mining's contributions to climate change, climate-smart mining is also well positioned to create market opportunities for mining companies and investors, especially in mineral-rich developing countries. Engaging in CSM practices can help to de-risk investments in strategic minerals in these countries, create greater confidence in institutional and private investors as well as in host countries, and enable participation in emissions trading schemes.

De-risking investments in strategic minerals

Investment in the minerals needed for the clean energy transition comes with some reservations and uncertainties. While some private sector actors are hesitant to fully invest in niche materials until there is more certainty about their demand, others are concerned about the political risks of investing in host countries with weak governance and regulatory frameworks.

In addition to social license to operate consistently being named as one of the top risks to the mining and metals sector, EY stated that “the sector is facing greater scrutiny from end consumers, demanding a transparent ethical supply chain as well as a lower carbon footprint. Shareholder activists are also driving many miners, particularly those with coal assets, to reshape their portfolios by either reconfiguring existing operations or executing divestments.”⁷⁷ Reduction of mining companies' carbon footprint ranked fourth on EY's 2019 list of top risks to mining and metals—the first time this measure has made it onto the list. More and more, mining companies are being assessed for their social and environmental impacts on both local and global levels, by increasingly discerning investors, consumers, governments, and communities.

As gender inclusivity has been gaining more traction in the mining sector in recent years, companies have

begun to view a focus on gender equality issues as not just a risk mitigation approach but also a business opportunity. Experience has shown the sector the value to be gained in integrating a gender lens across a company's operations. Not only does proactively hiring, procuring, and engaging local women ensure that benefits are shared with the community, but it also helps facilitate community trust and a strong social license to operate. Companies realize that a social license without women's approval is not a true social license. Moreover, women are becoming increasingly vocal when they disapprove of a mining project in their communities; they have been known to protest, block roads, and even organize themselves into international coalitions against mining. Box D offers a case study.

BOX D

Women are Key to Social License

After several years of voicing their concerns about environmental contamination from TungKam Limited Corporation's open-pit gold mine in Thailand's Loei province, and even publicly protesting to demand meaningful consultation, in 2016 members of the Khon Rak Ban Kerd Group, a group of women from six affected villages, marched to the Khoa Lunag Administrative Council Office and staged a sit-in in front of the council meeting room to demand community participation in the decision-making processes regarding the granting of forest land to the company. The lack of clarity and opportunity for participation in decision making led the group to ultimately oppose the mining project altogether.⁷⁸ They have been celebrated publicly, and even won the National Human Rights Commission of Thailand's “Women's Human Rights Defenders Honorary Certificate” in 2016 for their work.⁷⁹

⁷⁷ *Top 10 Business Risks and Opportunities*. 2019. EY. https://www.ey.com/en_gl/mining-metals/10-business-risks-facing-mining-and-metals

⁷⁸ *Thailand: Ongoing Judicial Harassment Against Members of the Khon Rak Ban Kerd Group (KRBKG)*. 2017. Human Rights in ASEAN. <https://humanrightsinasean.info/news/thailand-ongoing-judicial-harassment-against-members-of-the-khon-rak-ban-kerd-group-krbkg>

⁷⁹ *Thailand: Women Rights Defenders Honoured by the National Human Rights Commission*. 2016. Protection International. <https://protectionline.org/2016/03/10/thailand-women-rights-defenders-honoured-national-human-rights-commission>



4. How to Begin

Women, in all their diversity, are disproportionately and uniquely affected by mining, environmental degradation, and climate change. Governments, companies, and civil society should each work individually—as well as in partnership—to ensure that women are part of the equation to design and implement climate-smart mining practices.

Current leadership among stakeholder groups is often male-dominated; thus, men have an important role to play in facilitating gender-responsiveness. The road toward gender equality needs to be paved by men and women working together; it should not be regarded as “women’s work.” The actions and decisions discussed in this section should not be decided for women, but also by women. Ensuring that women are included in decision-making and planning teams will have a ripple effect within institutions, helping to achieve truly gender-responsive climate-smart mining. It is of critical importance to establish systematic methods of monitoring and evaluating progress toward gender goals, including the gathering of gender-disaggregated data and the setting of gender indicators and targets.



GOVERNMENT

Government policies can integrate gender equality by doing the following:

Climate Mitigation

- **Include gender equality measures in line with global best practice in legislation** for mining, labor, climate change, and environment, and include them in environmental and social impact assessment requirements.
- **Facilitate cross-ministerial collaboration between departments** that are working on gender, climate change, and mining, and other relevant ministries, such as those focusing on education and social development.
- **Ensure that women are meaningfully engaged and that they are included in the national and local-level discourse** on the role and impact of climate-smart mining.
- **Include actions and strategies that demonstrate a strong commitment to gender responsiveness in national climate policies and programs** such as the Nationally Determined Contributions (NDCs) under the Paris Agreement and REDD+ activities under UNFCCC.
- **Host consultative roundtables on climate-smart mining and gender equality with mining sector stakeholders** from the private sector, civil society, local women’s organizations and movements, trade unions, media, government inspectorate officials, and local officials to better

understand the scope of the challenges and potential responses.

- **Unlock opportunities for women’s participation in the workforce and in leadership roles of the renewable energy sector by incentivizing renewables companies.** This can be done through tax incentives, potential subsidies, and/or cost sharing to support women and working parents with child care, for example. Adopt gender-responsive policies, tailor training skills and development to women, and provide them with access to outside training and university programs, childcare, and flexible work options.

Climate Adaptation

- **Include actions and strategies that demonstrate a strong commitment to gender-responsive climate adaptation and women’s empowerment** in the Nationally Determined Contributions (NDCs) under the Paris Agreement.
- **Apply a gender-responsive approach to national strategies and policies** for climate adaptation, climate-smart agriculture, forest governance, and disaster preparedness.
- **Create opportunities to equitably improve family incomes**, train and employ women, and facilitate and promote the inclusion of women-

owned and operated businesses within the company supply chain.

- **Consider the risks and impacts to surrounding communities, ecosystems, and supply chains** as part of climate adaptation and resilience policies and practices.
- **Make gender equality commitments in national forest planning**, and promote private sector investment in women-owned and operated forest-based enterprises.

Reducing Material Impacts

- **Apply a gender perspective when developing local and national circular economy strategies** and private-sector sustainability initiatives.
- **Promote and facilitate safer and more equitable participation of women in the waste management sector**, for example by providing worker protections, safety measures, and equipment designed for both women and men.
- **Deliberately target women with awareness campaigns** on sustainable consumption and the circular economy.
- **Work to formalize the waste management sector in ways that are gender-sensitive** and that don't disproportionately affect the most vulnerable.
- **Work with the private sector and civil society to increase women's representation** in leadership roles; in tackling the risks of waste picking and the manual recycling of products; and in training and skills development to create mobility from low-security, low-paying jobs to higher-paying "green" jobs in the circular economy.

Creating Market Opportunities

- **Establish incentives for companies to address gender equality**, such as tax incentives or subsidies.
- **Develop and integrate gender-sensitive and gender equality-specific indicators into the government census** (for example, keep track of the number of households without male heads, women's income contribution, women's access to jobs and assets, etc.)
- **Gender-disaggregate the data of procurement bidders/awardees, and implement mechanisms to help small local firms and women-owned businesses compete.** Strategies can include unbundling contracts to allow smaller firms to compete for bids, offering trainings and business development services to build capacity and knowledge of local businesses, and revisiting whether certain requirements (for example, certifications and financial guarantees) are presenting unnecessary barriers for smaller firms.
- **Increase women's access to information regarding the rights and duties of those who hold legal titles** for mining exploitation in an area.
- **Deliver social and educational programs for men and women, boys and girls.** Focus on improving the *quality* of education and literacy levels for girls, not simply on educational infrastructure.
- Facilitate public and participatory planning processes that meaningfully engage women from the beginning.



COMPANIES

Companies can address gender equality issues in the following ways:

Climate Mitigation

- **Provide surplus renewable energy solutions to local communities** to improve rural electrification and reduce the negative health impacts from using wood fuel for cooking.
- **Consult with women when planning reforestation and afforestation actions**, and support women-led enterprises to supply saplings
- **Deliberately engage women in the sale, repair, and maintenance of off-grid renewable energy solutions** such as solar lighting,

cookstoves, and heating, as part of company community investment programs.

- **Provide training and engage women in carbon accounting assessments, and report generation** for mining operations.

Climate Adaptation

- **Consider and minimize the risks to and impacts of climate change on surrounding communities, ecosystems, and supply chains**, in addition to the risks related to mining operations.

- **Consider mechanisms to improve the climate resilience of host communities as part of the company's social investment strategy**, and involve women and women's organizations in the process.
- **Provide employment and technical training opportunities to promote women's career development.**
- **Provide entrepreneurship training**, skills development, awareness raising, and access to finance for current and prospective women entrepreneurs.
- **Adhere to the transparent publication of policies (including sexual harassment policies) and plans relating to gender equality**, including in relevant local languages, to allow for accountability and oversight.
- **Contribute to women's individual capacity building, and to the strengthening of women's organizations.**
- **Tap into existing social networks, such as savings and loans associations.**
- **Create links with women and their nontimber forest product harvesting, processing, and selling**, as well as their use of fuel, and supply from women-owned and operated forest-based enterprises when possible.
- **Meaningfully engage women in consultations (and in monitoring and evaluation) concerning land-use and water management planning** in order to not perpetuate existing gender inequalities or negatively impact women, especially when it comes to major changes such as land acquisition, resettlement, and compensation.

Reducing Material Impacts

- **Apply a gender perspective in the development of circular economy strategies and private sector sustainability initiatives**, and deliberately target women with awareness campaigns on sustainable consumption and the circular economy.
- **Recycle metals, minerals, electric vehicle (EV) batteries, and e-waste to the greatest extent possible**, to save energy, money, and natural resources, and to reduce landfill use; involve community-based organizations, particularly those led by women and youth.
- **Promote opportunities for women's ownership and senior management roles** in recycling companies and landfill operators.

- **Work with government and civil society to increase women's representation in leadership roles**; in tackling the risks of waste picking and the manual recycling of products; and in training and skills development to create mobility for women to move from low-security, low-paying jobs to more high-paying "green" jobs of the circular economy.

Creating Market Opportunities

- **Incorporate gender equity and gender equality into company culture and values**, from the board, to top leadership, and all the way through the workforce; and demonstrate the company's gender-equality commitments and activities to investors. Create a gender desk, facilitate mentorship/sponsorship programs for women, and promote gender role models.
- **Ensure that corporate policies and codes of conduct are gender-responsive**, that they are aligned both within the workforce and in community relations, and that they apply to all staff as well as contractors.
- **Reduce social risks and ensure a strong social license to operate by integrating a gender lens** into community consultations, engagement approaches, and social investment strategies.
- **Ensure that women are included in participation and consultation**, for example by holding gender-segregated meetings and/or planning meetings that take into account women's logistical needs.
- **Partner with communities, including women's groups and associations, as well as government, in the closing down of operations**, for example when transferring public services and facilities to the state.
- **Focus on helping to develop women's and men's abilities and capacities**, as opposed to having a "handout" mentality, or an attitude about "relationships of dependency."
- **Partner with civil society and government in their development of social programs**, and encourage them to provide equal benefits for women.
- **Initiate respect for culture by respecting local practices and customs** and coordinating and consulting with local community organizations.
- **Intercede on behalf of and in collaboration with local communities** to ensure that government is providing the needed public services to the community.



CIVIL SOCIETY

Community-based and nongovernmental organizations can address gender equality issues in the following ways:

Climate Mitigation

- **Engage with government and companies to develop community investment programs—and facilitate women's access and participation—** related to the sale, repair, and maintenance of off-grid renewable energy solutions such as solar lighting, cookstoves, and heating.
- **Support education and training on emissions from land use, land use change, and forestry** in order to enable women's effective participation in national and local planning.

Climate Adaptation

- **Promote and enable women's involvement** in government, or company-facilitated training and skills development, awareness raising, access to finance, and tapping into existing social networks such as savings and loans associations.
- **Strengthen family incomes by supporting an enabling environment for women who are interested in entrepreneurship**, for example by providing opportunities for training and income generation, supporting women in developing the skills to access markets for their products, and creating community-based banks for the benefit of women.
- **Encourage women's leadership by supporting women's groups and ensuring that women have equal access** to leadership training programs.
- **Mobilize citizen participation and community involvement in project design**, including the meaningful engagement and participation of women.
- **Share with other sectors any knowledge about best practices for integrating gender equality** in proposal design, implementation, and evaluation.
- **Facilitate partnerships between community and women's organizations and companies to engage in climate adaptation strategies** designed to minimize risks and impacts to surrounding communities, ecosystems, and supply chains.
- **Facilitate links between companies and women who participate in nontimber forest product**

harvesting, processing, and selling, as well as the use of wood for fuel, and promote companies' inclusion of women-owned and operated forest-based enterprises in company supply chains.

- **Support communities, government, and mining companies in carrying out initiatives that support women** by providing training and monitoring of their efforts.

Reducing Material Impacts

- **Partner with governments and the private sector to encourage the integration of a gender perspective in the development of local and national circular economy strategies and private-sector sustainability initiatives.**
- **Create education and awareness campaigns for both women and men** about sustainable consumption, the circular economy, recycling, and safe household waste disposal practices.
- **Work with government and the private sector to increase women's representation** in leadership roles, in tackling the risks of waste picking and the manual recycling of products, and in training and skills development to create mobility from low-security, low-paying jobs to higher-paying "green" jobs in the circular economy.
- **Support teacher training to improve the quality of education**, and encourage the provision of bilingual education in communities where the dominant national language is not the primary language.

Creating Market Opportunities

- **Facilitate channels of communication for addressing women's issues among community leaders, government, and the private sector.**
- **Encourage the integration of gender equality in every project** developed by companies, the government, or the communities themselves.
- **Provide support and encouragement to women's organizations** to strengthen their ability to seize opportunities, and/or to suggest actions that may resolve their problems.

- **Use oversight to ensure that legal regulations concerning the participation of the entire community in consultation processes are enforced**, with an eye toward the most marginalized groups, such as poorer women.
- **Promote and oversee company activities** so that they not only are environmentally and socially

acceptable, but that they also benefit communities and the surrounding areas, with a particular focus on the effects on women.

- **Disseminate information on the rights and duties of the various actors and stakeholders in the sector**, and objectively share information about the effects of mining operations.

BOX E

Actions to Prevent and Address Gender-Based Violence (GBV)

All institutions need to play a part in preventing—and avoiding the perpetuation of—GBV.

Government

- Host consultative roundtables on GBV with sector stakeholders from the private sector, civil society, local women's organizations and movements, trade unions, media, government inspectorate officials, and local officials to better understand the scope of the challenge and potential responses.
- Provide programs that are intended to reduce GBV through awareness raising, and services for survivors.
- Ensure that all law enforcement and regional, municipal, and local government officials go through comprehensive gender training, and that completion and passing of such training is tied to recruitment and promotion practices. Training should be repeated and professionally designed and facilitated, in line with best practices.
- Promote legislation and institutional mechanisms for encouraging the promotion and protection of women within a context of development dominated by mining, such as policies and procedures governing the relationships of workers and mining companies with communities.

Companies

- Ensure policy alignment with international best practice on gender equality, sexual harassment, parental leave, and any other factors revealed through a gender impact assessment.
- Ensure that corporate policies and codes of conduct are aligned with and promote respectful gender relations both within the workforce and in community relations,

and that they apply to all staff as well as contractors.

- Accompany corporate policies and codes of conduct with mandatory training for staff and contractors in line with international best practice.
- Decrease negative impacts on workers' performance and promote responsible behavior by increasing employee access to training programs on alcohol abuse, sexual health, family relationships, family violence, the role of women, and so on.
- Trainings should be repeated and should be professionally designed and facilitated in line with best practice.
- For trainings that are not mandatory, consider offering incentives such as credits for continuing education and professional development.
- Set up a gender complaints desk and ensure that there is an operational grievance mechanism in line with the UN Guiding Principles on Business and Human Rights, and that it is designed to be accessible to all segments of the community.

Civil Society and Donor Agencies

- Report any type of abuse, and support and counsel victims of abuse with respect to how they can defend themselves and file complaints with the relevant authorities.
- Provide support to legal empowerment initiatives that back legal literacy as well as legal aid, to mining communities, women's rights organizations, and women and men in the mining sector.

Conclusion

As large-scale mining faces growing pressure from governments, investors, and civil society to address the high level of carbon emissions and environmental degradation associated with its operations, climate-smart mining offers a valuable array of solutions. The CSM approach supports the sustainable extraction and processing of minerals and metals to secure supplies for clean energy technologies while minimizing the climate and material footprint throughout the value chain.

Women are still under-represented in mining operations, community relations, and climate change action, despite being critical to the success of climate solutions as well as to the functioning of households, societies, and economies. Ensuring that climate-smart mining is gender-responsive offers companies an opportunity to benefit from the perspectives, skills, and assets of diverse members of society to strengthen the mining sector, while also pursuing a cleaner, more sustainable future.





Climate-Smart Mining

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<https://www.worldbank.org/en/topic/extractiveindustries/brief/climate-smart-mining-minerals-for-climate-action>



Creating Markets, Creating Opportunities