



# Women in the Jewelry Supply Chain

A Landscape Review of Barriers to Women's Economic Empowerment

## About This White Paper

This paper explores the role of women in jewelry supply chains and the challenges they face to their wellbeing and advancement. This white paper has been prepared for a convening in April 2018 that will bring together key stakeholders in the jewelry value chain, from mining companies and manufacturers to retailers and brands, to explore how the jewelry industry can be a positive driver of women's empowerment and gender equality.

This study is exploratory in nature and draws upon publicly available literature and more than 50 semi-structured interviews with representatives from large jewelry manufacturers and retailers, mining companies, individual jewelers and entrepreneurs, industry associations, and civil society actors. It is not an exhaustive review of all of the ways in which the jewelry industry impacts women and does not offer recommendations, but rather provides emerging perspectives, analysis, and observations designed to stimulate dialogue and inform ongoing debate.

Any errors that remain are those of the authors. Please direct comments or questions to Ouida Chichester at [ochichester@bsr.org](mailto:ochichester@bsr.org).

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## About BSR

BSR is a global nonprofit organization that works with its network of more than 250 member companies and other partners to build a just and sustainable world. From its offices in Asia, Europe, and North America, BSR develops sustainable business strategies and solutions through consulting, research, and cross-sector collaboration. Visit [www.bsr.org](http://www.bsr.org) for more information about BSR's 25 years of leadership in sustainability.

## About Ministry of Foreign Affairs of the Netherlands

The Netherlands' Ministry of Foreign Affairs promotes the interests of the Kingdom abroad. The Ministry coordinates and carries out Dutch foreign policy at its headquarters in The Hague and through its missions abroad. It is likewise the channel through which the Dutch Government communicates with foreign governments and international organisations. As a country that looks beyond its borders, the Netherlands is committed to building a safe, stable and prosperous world. In The Hague, and at more than 150 embassies and consulates worldwide, staff are actively involved in addressing issues such as poverty reduction, climate change, respect for human rights and the rule of law and eliminating conflict. The Ministry of Foreign Affairs also works closely with the other ministries to help shape the Europe of the future and ensure that the Netherlands speaks with one voice in the European Union.

## About SWAROVSKI

Founded in 1895 in Austria, Swarovski designs, manufactures and markets high-quality crystals, genuine gemstones and created stones as well as finished products such as jewelry, accessories and lighting. A responsible relationship with people and the planet has always been an integral part of Swarovski's heritage, and is embedded today in the company's well-established global Sustainability agenda. Advancing gender equality is critical to achieving Swarovski's Sustainability objectives and we strive to empower women across the value chain, from those who craft Swarovski products to those who wear them.

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# Introduction

Women drive demand for more than 90 percent of the world's jewelry, according to most estimates. Their tastes and preferences shape the jewelry market and influence decisions at every step in the jewelry supply chain. Many of these women are part of a rapidly growing ethical consumer movement, driven in part by millennial customers who not only want to know where their products are from, but also want proof that their purchase decisions are benefiting people in the supply chain.<sup>1</sup> Jewelers that embrace ethical sourcing are growing in number year on year and gaining market share in the process.

The jewelry industry is undergoing major changes thanks in part to changing consumer behavior and preferences, the global rise of smaller local and national brands, and new technology transforming industrial processes and products. Global sales are expected to grow by 5 to 6 percent a year through 2020 to reach more than US\$308 billion, up from US\$182 billion in 2014, according to McKinsey.<sup>2</sup>

It is estimated that over 100 million people in resource-rich countries in Africa, Asia, and Latin America work in or rely on mining.<sup>3</sup> The industry is also an important source of jobs in the manufacturing sector in many countries. In India alone, there are an estimated 2.5 million people directly employed in the industry, largely in diamond processing, gold jewelry fabrication, and jewelry retail accounting.<sup>4</sup>

To date, the jewelry industry has largely been seen as a “man’s world.” Women make up a large portion of the downstream retail sector, where there is considerable knowledge and data about women’s engagement with the industry, but this is almost entirely absent in the upstream supply chain, from manufacturing to cutting and polishing to mining. Women’s roles in the jewelry supply chain are conditioned by gender inequalities (gender norms, practices, and institutions) that serve as barriers to entering and advancing within the industry. When women are present, they are typically found in informal and precarious activities or engaged in lower value and lower skilled activities, where they are not fully recognized or rewarded and are at greater risk of exploitation. In the midstream and upstream areas of the sector in particular, they also often bear the greatest burden of some of the negative impacts of the industry on land, water, communities, and human health.

There are, however, some signs that the industry is beginning to change.

More women are breaking into traditionally male roles, from miner to gemstone cutter and CEO. Female entrepreneurs are driving the growth of a boutique ethical jewelry sector, targeting female customers who care about the origins and impacts of their jewelry, and are marketing jewelry as a statement of women’s empowerment.

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<sup>1</sup> Morgan Stanley Voice. 2016.

<sup>2</sup> Dauriz et al. 2014.

<sup>3</sup> World Bank. 2013. “Artisanal and Small-Scale Mining.”

<sup>4</sup> Federation of Indian Chambers of Commerce and Industry. 2013.

More companies in the jewelry industry, both upstream and downstream in the supply chain, acknowledge that the industry can and should do more to support gender equality and advance women's empowerment. Large companies like DeBeers, Swarovski, and Rio Tinto have made commitments to play a more active role in achieving Sustainable Development Goal 5 on gender equality, respecting human rights, and helping women achieve their full potential.

However, the focus of public commitments from companies to date has largely been related to women in retail-facing operations, including increasing the number of women in executive-level positions across major jewelry brands. Much less attention is being devoted to addressing the challenges facing women in the supply chain, particularly lower-income women in more vulnerable and precarious work. For progress to encompass women across the entire value chain, it is critical for gender considerations to be integrated into supply chain due diligence, given that women and girls who are present in the upstream operations experience business-related human rights abuses in unique ways and are often affected disproportionately. Indeed, the inclusion of gender considerations into human rights supply chain due diligence practices is currently being considered as part of revision of the UN Guiding Principles.<sup>5</sup>

In this paper, BSR aims to shed light on how women are currently involved in the supply chain and inform discussions on how to support economic empowerment for women engaged in or affected by the jewelry industry.

This paper takes a **holistic approach to understanding women's economic empowerment** based on the definition from the International Center for Research on Women (see box).<sup>9</sup> It supports the view that advancing women's empowerment and gender equality requires more than investing in women or giving women a job. It also requires addressing the underlying dynamics and systemic factors, including economic, social, cultural, and political barriers that make it difficult for women to succeed at work and in other aspects of life. To identify the key challenges facing women in the jewelry supply chain, BSR used the building blocks framework developed by ICRW, Dalberg Global Development Advisors, and the Oak Foundation, and applied by BSR in its work on women's empowerment. This paper does not present a comprehensive review of all of the building blocks but rather prioritizes the most relevant in each phase of the supply chain.

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#### How We Define Women's Economic Empowerment

We use the International Center for Research on Women's (ICRW) definition of women's economic empowerment: A woman is economically empowered when she has both the ability to succeed and advance economically, and the power to make and act on economic decisions.<sup>6</sup>

We understand that to succeed and advance economically, women need the skills and resources to compete in markets, as well as fair and equal access to economic institutions. To have the power and agency to benefit from economic activities, women need to have the ability to make and act on decisions and control resources and profits.<sup>7</sup>

Women's economic empowerment is part of and contributes to women's empowerment more broadly, which is expansion in the ability to make strategic choices by those who have been denied this ability.<sup>8</sup>

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<sup>5</sup> United Nations Human Rights Office of the High Commissioner. 2018.

<sup>6</sup> Golla et al. 2011.

<sup>7</sup> Golla et al. 2011.

<sup>8</sup> Kabeer. 2005.

<sup>9</sup> For the purposes of this paper, we use "women's empowerment" instead of women's economic empowerment because it looks beyond women's role as workers in the supply chain. Women's empowerment may be advancing opportunities for women beyond the economic sphere.

## Building Blocks of Women's Economic Empowerment



## Why Focus on Women's Economic Empowerment?

Ensuring women's rights are protected is a basic **human rights expectation** of companies. There is also a powerful **economic rationale** for companies to support gender equality: If women participated in the economy equally to men, it would add as much as US\$28 trillion to the annual global GDP, according to the McKinsey Global Institute.<sup>10</sup> More research also confirms that companies that are committed to gender equality outperform peers.<sup>11</sup>

The jewelry industry has a particularly strong case for supporting women's empowerment from a **market growth** perspective. The industry is heavily affected by changing consumer preferences, particularly among women, who make up the vast majority of jewelry end-customers and a growing number of direct jewelry purchasers. Customers, especially millennial women, are increasingly concerned about where their products come from and the impact they have on people in the supply chain, particularly for products like jewelry that can stay in families for generations. These customers also see jewelry as a way to express their values and beliefs.<sup>12</sup>

Integrating gender considerations into decisions in the supply chain is a natural progression of the jewelry industry's efforts to **address environmental and social risks** and be a positive driver of sustainable economic growth. The industry has been grappling with a range of issues over the past decade, from the role of metals and gemstones in fueling conflict in countries like Democratic Republic of the Congo, Angola, and Sierra Leone to corruption and water contamination. Regulation, including Dodd-Frank,<sup>13</sup> and stakeholder pressure from actors like the Enough Project and Human Rights Watch,

<sup>10</sup> Woetzel et al. 2015.

<sup>11</sup> Wechsler. 2015.

<sup>12</sup> González. 2017.

<sup>13</sup> Dodd—Frank Wall Street Reform and Consumer Protection Act.

as well as the rise in corporate sustainability programs, have helped make supply chain transparency and sustainability a strategic priority.

As demonstrated by other industries, such as apparel, addressing challenges facing women in supply chains is an effective way to **drive overall improvements in supply chains**. Women are often found in the most vulnerable work and bear the brunt of negative effects of supply chains, which is also true of the jewelry sector. There is evidence that improving the health and wellbeing of female workers in light manufacturing strengthens productivity and reduces absenteeism.<sup>14</sup> Action to advance women not only strengthens supply chains but can lift entire communities and economies, not least because of the critical role women play in families and communities.

## The Jewelry Supply Chain

The jewelry supply chain is made up of many supply chains, each with varying levels of complexity, transparency, and traceability. Precious metals, including gold, silver, and platinum, along with diamonds and colored gemstones, are used to make the majority of jewelry sold in major markets. These precious metals and stones are mined in hundreds of countries around the world, often in the least developed countries; traded, exported, and processed; and then eventually brought together when manufactured into final jewelry products in other countries.

While there are some large-scale actors at certain parts of the supply chain, there are also a host of small-scale actors, from artisanal miners and home-based gemstone cutting shops to boutique jewelers. The sheer number of people and transactions involved in producing a piece of jewelry can make it difficult to know the deepest origins.<sup>15</sup> At the same time, some small boutique jewelers have strong chain-of-custody mechanisms in place because of the importance of a stone's origins and quality production processes to their final customers. In fact, stakeholders engaged in this research emphasized that while there is a huge part of the supply chain that is opaque, there is another (albeit small) part that is highly traceable because of the value placed on personal relationships and quality craftsmanship in the value chain for some jewelry products.<sup>16</sup>

Contradictions and inconsistencies like these can be found in many parts of the supply chain. What one stakeholder casts as informal or illegal, another stakeholder praises as artisanal, boutique, or familial. The jewelry industry is deeply rooted in family relationships and traditions, with many jewelers and cutting and polishing businesses still bearing the name of the original family founders. While parts of the industry are introducing sophisticated CAD/design tools and automation, other parts of the supply chain still use traditional, manual tools and techniques that have been in use for centuries. Small players still dominate parts of the industry, but vertical integration is increasingly common, with more jewelry manufacturers investing in gemstone cutting and retail and mining companies investing in downstream processing and manufacturing.

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*“As boutique jewelers, we have always worked from an artisanal perspective, and we value the historical aspect this brings. Most suppliers are artisanal, which allows us to order custom pieces. Informality has risks, but the advantage is that you can talk to the people you are working with.”*

— *Boutique Jeweler*

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<sup>14</sup>Yeager. 2011.

<sup>15</sup> Human Rights Watch. 2018.

<sup>16</sup> Stakeholder Interview. February 1, 2018, #2.



## Research Approach

With this backdrop, BSR, with support from the Ministry of Foreign Affairs of the Netherlands and Swarovski, launched an exploratory study to understand how women are currently engaged in the jewelry supply chain and the key challenges they face to their health, wellbeing, and economic advancement. It is intended as an initial survey of the existing literature and knowledge to inform discussions at an April 2018 convening with industry stakeholders on practical actions the industry can take to advance women's empowerment.

The research approach included a review of existing literature and semi-structured interviews with over 50 experts and practitioners across the jewelry supply chain.

## SCOPE

This study focuses on precious metals (primarily gold), diamonds, and colored gemstones (with special attention on precious stones such as rubies, sapphires, and emeralds). The scope of this study includes three key phases of the supply chains: mineral and gemstone extraction, diamond and colored gemstone cutting and polishing, and jewelry manufacturing.

Within this scope, there remains great diversity in the supply chains. This makes it difficult to generalize across all raw materials and manufacturing processes. Women's involvement and the challenges they face differ across contexts and depend on a range of factors such as the **geographic location** of the activities, **the quality and value** of the stones and **complexity of craftsmanship**, and the **scale** of the operations. For example, laws and social norms in countries heavily influence what jobs women are able to do. This includes the International Labor Organization's (ILO) Convention on Underground Work and national laws in countries from Argentina to Uganda that forbid women from engaging in underground mining.<sup>17</sup> Women's lower status and education levels in some countries means that they are often relegated to working with smaller, lower-value stones that may also have higher or different health and safety risks and less oversight. Where possible, the paper tries to highlight differences based on these factors, but due to availability of information, some aspects may be covered more than others.

## RESEARCH LIMITATIONS

This paper is preliminary and non-exhaustive, and it builds on BSR's experience and expertise on women's empowerment in value chains. To date, there has been very little research on gender dynamics and women in jewelry supply chains, with the exception of some research on women and girls in mining. This paper benefits from previous research conducted by BSR on women's economic empowerment in the mining sector in sub-Saharan Africa (SSA), funded by the William and Flora Hewlett Foundation.<sup>18</sup>

This study focuses on gold, diamonds, and colored gemstones, as they are often the most visible and emblematic elements of jewelry. However, it should be noted that this is far from a comprehensive look at the materials that are used in jewelry, which varies significantly depending on types and quality. Some important exclusions are pearls, heat treatments of precious stones, manufactured or synthetic gemstones, and crystals, to name a few. It is also important to note that information in the paper may weigh more heavily towards certain materials (e.g. gold and diamonds) or activities including mining simply because of the greater availability of information. Additionally, the supply chains of jewelry are complex, with a number of different phases, many of which are not included in this landscape review (trading, refining, retail, etc.).

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<sup>17</sup> International Labor Organization. "Ratifications of C045—Underground Work (Women) Convention, 1935 (No. 45)."

<sup>18</sup> In the course of that research, BSR published a report "Mining Industry Brief: Women's Economic Empowerment in Sub-Saharan Africa" as part of a larger series of reports on women's economic empowerment. This research included a literature review, key informant interviews, and primary research conducted in the field. While the research looked at SSA as a whole, the primary research focused on three key countries: Ghana, Kenya, and Tanzania.

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In general, credible data and information is limited with regard to jewelry supply chains' impacts on workers, especially women, beyond mining. Studies covering even basic supply chain information, such as size, location, and number of factories, are particularly lacking for colored gemstones. Given the lack of robust data and literature on women in jewelry supply chains, this paper drew heavily on insights and anecdotal evidence shared by interviewees. The paper concludes with some suggestions on how to strengthen the evidence base for action.

The authors were also cautious about passing judgment on the challenges facing women. Without field work involving interviews or focus groups with women in or impacted by the supply chains, it is very difficult to assess a job that some may view as a dead end and others may see as an economic opportunity. Moreover, some of the issues highlighted are not exclusive to women, but women are often disproportionately affected by them due to gender inequities.

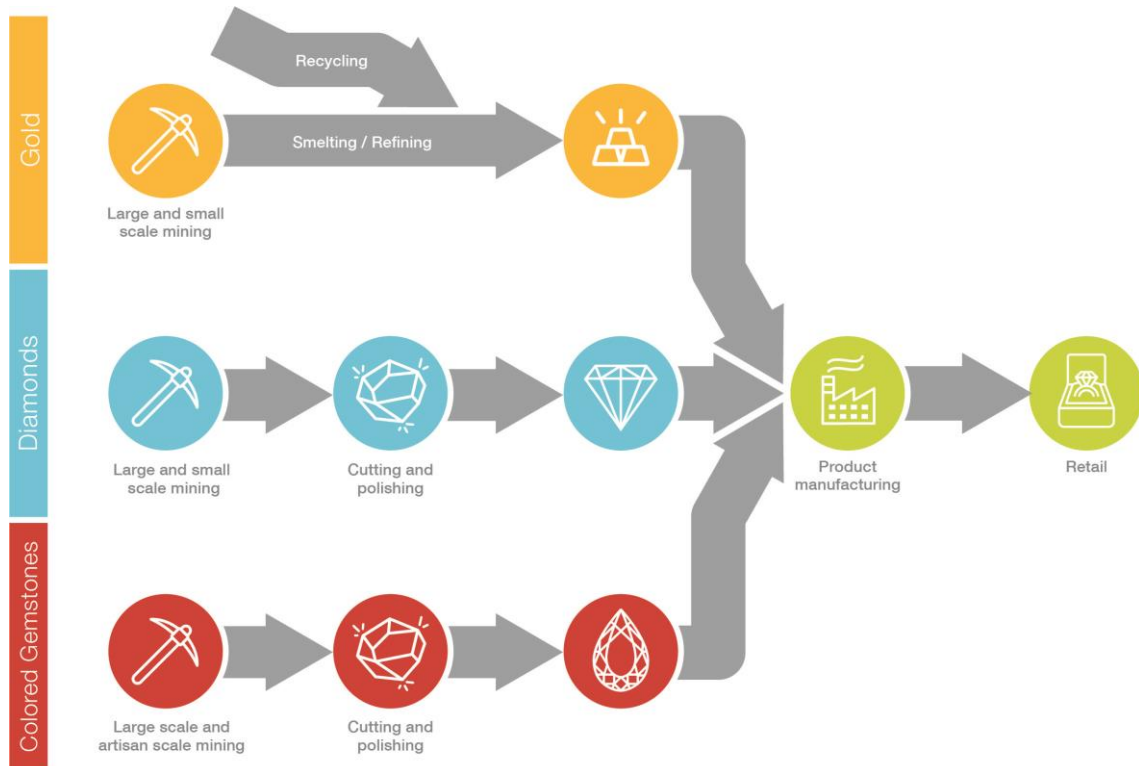
## Jewelry Supply Chain: Raw Materials Sourcing and Production





## The Jewelry Supply Chain<sup>19</sup>

Jewelry may be made of a vast number and diversity of materials, depending on the quality and piece. The supply chains vary in level of complexity and number and scale of operations.



### GOLD

Gold is mined in around 80 countries, with approximately 3,200 tons produced every year.<sup>20</sup> Most gold comes from large, industrial mines located in China, Australia, Russia, and the U.S.,<sup>21</sup> though 15 to 20 percent of the world's gold comes from small-scale or artisanal mines, primarily in Africa, Asia, and Latin America.<sup>22</sup> Gold from industrial mines may be exported directly to refiners, while artisanal gold may pass from one trader to another before being exported for refining.

Once gold is mined and initially refined, it is sold to traders or banks, manufacturers, jewelry and watch companies, electronics companies, or other businesses. Jewelry companies may source their gold directly from refiners or from manufacturers, banks, or international gold traders. Gold can be melted down and turned into a different product over and over again, which can make it difficult to determine the provenance of any single piece of jewelry.<sup>23</sup>

<sup>19</sup> Note that there are a number of in-between steps, depending on the mineral or gemstone, that are not within the scope of this paper. This includes sorting, grading, and trading, among others.

<sup>20</sup> World Gold Council. Accessed February 14, 2018; USGS estimates are 3,100 tons produced in 2015, which is 2.6 percent higher than in 2014.

<sup>21</sup> World Gold Council. Accessed February 14, 2018.

<sup>22</sup> World Bank. 2013.

<sup>23</sup> The Guardian. 2013.

## DIAMONDS

Approximately 130 million carats of rough diamonds are mined every year, 70 percent (90 million carats) of which are gem quality, with the remaining industrial diamond.<sup>24</sup> The largest rough diamond producers include Russia, Botswana, Democratic Republic of the Congo, Australia, and Canada.<sup>25</sup> Large-scale mining (LSM) accounts for approximately 85 percent of diamond production, with the remaining from artisanal small-scale mines (ASM). Sixty-five percent of diamond production comes from five companies: De Beers, ALROSA, Rio Tinto Diamonds, Debswana Diamond Company, and Dominion Diamond Mines.<sup>26</sup> ASM accounts for approximately 20 percent of all diamonds across 18 countries.

After rough diamonds are mined, they typically are exported to diamond trading hubs (or exchanges), where they are sorted according to shape, color, size, and carat. The six largest diamond trading hubs are in Antwerp (the largest), Hong Kong, Mumbai, New York, Tel Aviv, and Dubai.<sup>27</sup>

Diamonds may be traded multiple times before they are sent to cutters and polishers. They may also travel in rough and polished form across several jurisdictions before being made into jewelry and watches; often this involves mixing of shipments. At least 70 percent of diamonds are cut and polished in India, while approximately 20 percent are cut and polished in China.<sup>28</sup> Once diamonds are cut and polished, they are sent to jewelry designers and manufacturers, and on to retailers.

## COLORED GEMSTONES

Colored gemstones are found in about 50 countries around the world.<sup>29</sup> In contrast to diamonds, it is estimated that about 80 percent of colored gemstone extraction is done at an artisanal or small-scale level. Most colored gemstones are mined using basic tools and lower tech equipment than diamonds and minerals. Unlike the diamond industry, the colored gemstone industry is highly fragmented at all levels of the supply chain—from exploration and mining to processing and retail—with many small producers connected through a network of traders and dealers. There are no dominant trading companies in gemstones, and research suggests that no single operating entity controls more than two percent of the market, measured either in volume or value of shipments.<sup>30</sup>

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### Types of Mining

#### Large-scale mining (LSM)

is comprised of medium and large companies and is characterized by the use of heavy machinery, more professionalized and modern technical methods, and usually a formal labor force. They typically choose deposits to mine with well-studied geology and proven reserves.

#### Artisanal small-scale mining (ASM)

includes formal or informal mining activities carried out using manual methods or minimal machinery, often by small groups of people, family units, or small-size companies or cooperatives. ASM ranges from the unregulated and unlicensed (illegal) to legal, licensed operations.

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<sup>24</sup> United States Geological Society. 2013.

<sup>25</sup> United States Geological Society. 2013.

<sup>26</sup> Lombe et al. 2015.

<sup>27</sup> Lombe et al. 2015.

<sup>28</sup> Jones. 2016.

<sup>29</sup> USGS. 2014. Major producing countries include: rubies in Afghanistan, Brazil, Burma, and Sri Lanka; sapphires in Australia, Kenya, Tanzania, Madagascar, and Sri Lanka; and emeralds in Colombia and Afghanistan, among others.

<sup>30</sup> Cross et al. 2010.

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Following extraction, colored gemstones undergo sorting, cutting/polishing, and eventually manufacturing into jewelry product. A substantial portion of the value addition occurs downstream, in the jewelry manufacturing and retailing stages.<sup>31</sup>

Traceability can be difficult because of the number of traders at different stages of the supply chain, ranging from petty traders to gemstone dealers, who buy stones and work with cutting and polishing operations that range in size from two- to three-person shops to 500-1,000-person factories.<sup>32</sup> Additionally, some of the middle men in the gemstone trade have a disincentive to increase traceability, as increased transparency could reduce profit margins and threaten their role in the supply chain. There are also indications of considerable illicit trading of colored gemstones, making it difficult to gather accurate data on total volume and value of gemstone flows.<sup>33</sup>

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<sup>31</sup> Cross et al. 2010.

<sup>32</sup> Cross et al. 2010.

<sup>33</sup> Cross et al. 2010.

## Identified Barriers to Women's Economic Empowerment

The below table summarizes those barriers to women's economic empowerment in each stage of the jewelry supply chain that we examined: mining, cutting and polishing, and jewelry manufacturing. (It is a non-exhaustive list but captures the key obstacles identified as part of this work.)

Building Blocks to Women's Economic Empowerment	Barriers to Women's Economic Empowerment	Mining	Cutting and Polishing	Jewelry Manufacturing
Access to Safe and Equitable Employment Opportunities	Lack of Formal Employment Opportunities	×	×	
	Lack of Women in Leadership and Female Role Models	×	×	×
	Low Wages and Poor Working Conditions	×	×	×
	Exposure to Health and Safety Hazards	×	×	×
Access to and Control Over Economic Resources and Opportunities	Limited Access to Finance and Business Contracts to Grow their Enterprises	×		×
Access to Education and Training	Low Education and Technical Skill Levels	×	×	×
Social Protection and Childcare	Lack of Quality Childcare and Family-Friendly Workplaces	×		×
	Risk of Child Labor	×	×	
Freedom from the Risk of Violence	Risk of Sexual Harassment and Gender-Based Violence	×		
Voice in Society and Policy Influence	Exclusion from Community Consultation	×		





## Precious Metal and Gemstone Mining

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Mining occurs in more than 100 countries around the world, a large percentage of which are in developing countries, where almost two thirds of the world's poor live.<sup>34</sup> Although the mining industry has been an important driver of economic growth and exports in many resource-rich countries, the benefits have not always reached women.<sup>35</sup>

Mining for minerals and gemstones is divided between industrial large-scale mining (LSM) and artisanal and small-scale mining (ASM). The percentage of the market dominated by one or the other depends greatly on the commodity and location. As highlighted earlier, ASM makes up a large portion of colored gemstone extraction and a smaller percentage in diamonds and gold.

Many more people depend on ASM for their livelihoods than industrial mining. According to recent estimates, there are approximately 7 million workers globally in LSM, compared to an estimated 100 million or more people who work in or rely on ASM.<sup>36</sup> The majority of ASM communities are found in sparsely populated, rural, and often remote regions.<sup>37</sup>

Within ASM there are a range of mining operations, from the unregulated and unlicensed (illegal) to legal, licensed operations. For example, in Sri Lanka, the ASM sector for sapphire and other colored gemstone extraction is highly regulated and monitored, whereas in Peru and Colombia, large numbers of unregulated and illegal gold mines have been associated with human trafficking, polluting the Amazon and Choco rainforests, and fueling conflict in the region.<sup>38</sup>

The technical sophistication of ASM also varies across operations from some using manual tools and equipment to others using more mechanization and technology.<sup>39</sup> A small group of ASM mines have gone chemical-free, like the XAMODX mine in Mongolia, a producer of "Ecological Gold" that is produced without the use of mercury or cyanide and certified by Fairmined.<sup>40</sup>

With the right governance framework and leadership in place, both LSM and ASM can have a large multiplier effect in terms of the amount of indirect employment generated, which often exceeds direct employment. As an example, for every job created by the LSM Yanacocha gold mine in Peru, 14 other jobs indirectly arose.<sup>41</sup> It is also common for entire communities to develop around ASM operations, providing a variety of support services from catering and cleaning to delivery and trading. According to studies of ASM in Ghana, for every person employed directly in mining activities, another five or six jobs are created downstream.<sup>42</sup>

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<sup>34</sup> World Bank. 2002.

<sup>35</sup> Chichester et al. 2017.

<sup>36</sup> The World Bank. 2013.

<sup>37</sup> The World Bank. 2013.

<sup>38</sup> Wyss. 2018.

<sup>39</sup> Buss et al. 2017.

<sup>40</sup> Fairmined. "Ecological Gold from Mongolia."

<sup>41</sup> Fraser Institute. 2012.

<sup>42</sup> McQuilken and Hilson. 2016.

While both LSM and ASM can have significant impacts on communities, these impacts are not always positive. Despite the critical role the jewelry-relevant mining industry plays in many economies, the benefits are not often translated into local development. The gains in poverty alleviation have seldom matched mining's contributions to economic growth. In some cases, poor management of extractive resources has contributed to environmental degradation, displacement, inequality, corruption, and increased conflict, among other negative impacts in both ASM and LSM contexts.

Many LSM companies are acutely aware of their role in and responsibility for the communities where they operate. A growing number of LSM companies have human rights policies and due diligence procedures in place, employ participatory methods to engage and consult affected communities, and build community-development strategies with the intention to advance the health and wellbeing of mining communities. Still, there are a number of specific action points that LSM and ASM producers can address to improve the gender performance of jewelry supply chains in gold and gemstones.

## Barriers to Women's Economic Empowerment

The following sections outline key challenges to women in mining, which has historically been a male-dominated industry, in both technical trade roles and corporate leadership. Women face a range of social, cultural, and institutional barriers that have prevented them from entering, advancing, and benefiting from the mining industry.

### ACCESS TO SAFE AND EQUITABLE EMPLOYMENT OPPORTUNITIES

#### Lack of Formal Employment Opportunities

The majority of formal mining jobs, across all scales and types of mining, are held by men. Although there have been some improvements, it is estimated that only five to 10 percent of workers employed in industrial mining are female—the lowest of any major industry, according to recent data.<sup>43</sup> This is consistent on a country level in most mining regions.

Horizontal occupational gender segregation is found in much of the mining sector. Many women find it difficult to break into LSM, which can cause other women to self-select out because they perceive the industry as unwelcoming. The low participation of women in mining overall is attributed to many factors, including the generally lower technical skills/education levels among women, perception that physical nature of the work would prevent women's involvement, and even laws that prohibit women from mining underground.<sup>44</sup>

In addition, gender norms, social taboos, and superstitions have held women back, including the fallacy that women bring bad luck and make minerals disappear. In many countries, there is a strongly held societal view that mining is not an appropriate career for women. This historical legacy takes time to change and can lead to unconscious gender bias when hiring workers.

Women play a much larger role in ASM, with some estimates stating that globally women make up to 30 to 40 percent of artisanal miners.<sup>45</sup> Women work as laborers engaging in such activities as panning, ore carrying, or mineral processing activities from “crushing, grinding, sieving, washing and panning, to amalgamation and amalgam decomposition in the case of gold mining.”<sup>46</sup> Most commonly, women

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<sup>43</sup> PwC. 2014.

<sup>44</sup> UN Women. 2016.

<sup>45</sup> Hinton et al. 2003. “In Asia, generally less than 10 percent of miners are women, whereas in Latin America, the proportion tends to be higher, approximately 10-20 percent. The percentage of female artisanal miners is the highest in Africa, ranging between 40 and 50 percent. In some regions, the artisanal mining workforce is comprised of 60 to 100 percent women.”

<sup>46</sup> Hinton et al. 2003.

participate in mining activities on a part-time or seasonal basis, which makes it difficult to estimate the exact number of women involved in ASM. According to experts, however, it is likely that most of these jobs are informal and thus not based on a formal contract or salary agreement.

Women are drawn to ASM for numerous reasons, but according to the World Bank, “what is consistent throughout most countries is that women are driven to mining by poverty.”<sup>49</sup> As a result, some governments, such as Rwanda’s, have set targets to increase women’s participation in artisanal mining as part of its poverty alleviation strategy.<sup>50</sup>

When other employment options, such as farming, fail to provide an adequate income, women turn to mining for full-time or more likely part-time work to supplement their incomes.<sup>51</sup> Women generally turn to mining out of necessity rather than as an opportunity because, at a basic level, it can be done with limited knowledge and technical skills, as well as inexpensive equipment.

Women also play a role in the informal sector as service providers for both industrial and artisanal mining as cooks, water fetchers, shopkeepers, or sex trade workers.<sup>52</sup> While indirect and informal mining activities are more accessible to women, in many cases, they are not as lucrative and reinforce the vulnerable position of many women.<sup>53</sup>

### Lack of Women in Leadership and Female Role Models

Vertical occupational gender segregation holds true in mining too. Women are noticeably absent in many senior roles, both in LSM and ASM, and concentrated in lower-level supporting roles.

In LSM, women hold 10 percent of management positions globally (12 percent if you consider only the biggest 40 mining companies<sup>54</sup>), but only one percent of top executive positions.<sup>55</sup> When women do participate in LSM, they often take on low-level positions such as office management and administration. This may perpetuate gender gaps as it can make it difficult for junior-level women to envision a career in the industry and seek professional guidance from those who have been able to rise in mining.

While the underrepresentation of women in leadership in LSM may be the result of explicit discrimination, there are also implicit biases and practical barriers that affect women’s choices. Many women face significant financial, workplace, and family pressures stemming from industry constraints in terms of flexibility, remote site work, and juggling childcare with often unsociable hours and expectations of overtime.<sup>56</sup> Many of the jobs require workers to move from their community or to travel long distances, posing problems for household work such as childcare, which is disproportionately

### Gemstone Trading

Women play a number of supporting roles in colored gemstone ASM. For example, in sapphire mining in Madagascar, women and young girls are often tasked with bringing the gemstones to market to sell to the mostly male traders. Stakeholders report that they are frequently pressured into engaging in sexual favors to get a good price.<sup>47</sup> Their relationship with the male traders is exacerbated by their lack of gemological knowledge and their hand-to-mouth existence, giving them few choices in the market.<sup>48</sup>

<sup>47</sup> Stakeholder interview. January 31, 2018, #5.

<sup>48</sup> Stakeholder interview. January 31, 2018, #5.

<sup>49</sup> Hinton et al. 2003.

<sup>50</sup> Buss et al. 2017.

<sup>51</sup> Buss et al. 2017.

<sup>52</sup> Hinton et al. 2003.

<sup>53</sup> Buss et al. 2017.

<sup>54</sup> Rapaport. diamonds.net.

<sup>55</sup> PwC. 2014.

<sup>56</sup> Chichester et al. 2017.

carried out by women.<sup>57</sup> Assessments conducted in mining areas in Mozambique, Tanzania, and Uganda found that women, on average, work five to eight hours more per day than men, mainly due to household work.<sup>58</sup>

While women tend to have higher participation rates in ASM than in LSM operations, they are often subjected to a strict gendered division of labor and are generally “concentrated in lower-level supporting roles rather than in managerial or ownership roles.”<sup>61</sup> They tend to be involved in the mining of lower-value gemstones and/or are relegated to materials with lower yields that require more intensive extractive processes and greater safety risks—often without the benefit of technology, mechanization, equipment, safety education, or appropriate personal protective equipment (PPE).<sup>62</sup> This has implications on the income women earn in ASM. Women generally make far less from their ASM activities than men involved in the same industry, given their roles.

### Women’s Training Program

Goldcorp launched the “Creating Choices” initiative in 2011 to address the lack of gender diversity in the workplace. It was the first training and mentorship program of its kind for women in LSM gold mining.<sup>59</sup> Goldcorp has found that investing in women has helped create a more knowledgeable and engaged workforce, with benefits for the company’s bottom line.<sup>60</sup>

### Exposure to Health and Safety Hazards

Mining poses occupational health and safety risks including exposure to mercury; respiratory, vision, and hearing ailments as a result of dust and noise pollution; and life-threatening injuries and accidents.<sup>63</sup> Women face unique health and safety risks because many facilities, equipment, and personal protective equipment are not made with women in mind. Moreover, accommodations are not always available for women during pregnancy.<sup>64</sup>

There are serious safety risks in ASM, some of which is due to the unregulated nature of the industry. According to one study, “non-fatal accidents in artisanal mining are still six to seven times greater than in formal, large-scale operations.”<sup>65</sup> Women are disproportionately affected, as they are often relegated to secondary labor-intensive processing activities that exacerbate health and safety risks.<sup>66</sup>

Since women’s participation is higher in ASM when mechanization is low, they are more likely to be afflicted with diseases such as silicosis, an incurable lung disease, from inhalation of fine dust (containing crystalline silica) through crushing and grinding rock.<sup>67</sup> The ILO found advanced stages of silicosis in women and children as young as 14 in Ghana in one study, after their participation in breaking and crushing rock.<sup>68</sup>

<sup>57</sup> IFC. 2009.

<sup>58</sup> Hinton. 2012.

<sup>59</sup> Goldcorp. 2015.

<sup>60</sup> Stakeholder interview. February 8, 2018

<sup>61</sup> World Bank. 2015.

<sup>62</sup> World Bank. 2015.

<sup>63</sup> Hinton, et al. 2003.

<sup>64</sup> IFC. 2009.

<sup>65</sup> Hinton et al. 2003.

<sup>66</sup> Chichester et al. 2017.

<sup>67</sup> ILO data cited in Hinton et al. 2003.

<sup>68</sup> Hinton et al. 2003.

From Myanmar to Colombia, and in many other countries around the world, women commonly work as hand pickers digging in waste dumps or tailings left from large mining operations; this exposes them to toxic material.<sup>69</sup>

Women are also more likely to be involved in amalgamation and amalgam decomposition, a key process required in gold mining, which directly exposes them to dangerous substances, such as mercury and cyanide. Studies have found that women ASM miners are often unaware of the negative consequences of these dangerous chemicals, and even when they are aware often lack viable alternatives.<sup>70</sup> Certain impacts, such as mercury contamination in water, can be particularly dangerous to pregnant women and breastfeeding mothers.

## ACCESS TO AND CONTROL OVER ECONOMIC RESOURCES AND OPPORTUNITIES

### Limited Access to Finance and Business Contracts

For women to be fully productive participants in the economy, they need control over and access to economic resources, such as bank accounts, mobile phones, property, and land. Women business owners are often at a disadvantage in accessing mining supplier contracts because they lack access to credit and skills to grow their businesses. They may also not be aware of the opportunities, not meet the qualifications/requirements of the contracts, or have limited control over assets, such as land.<sup>71</sup>

Limited credit history, combined with high interest rates and loan requirements, puts traditional loans beyond the reach of most women small business owners. Access to financing is often conditioned upon land ownership, but women own a much smaller share of the world's land than men do.<sup>73</sup> Land ownership in many resource-rich countries, particularly in Africa, is concentrated in the hands of men, leaving women unable to access financing. For example, in Uganda, the share of men who own land is 21 percentage points higher than that for women.<sup>74</sup>

Even when women have legal rights, male family members may still control or make decisions regarding land.<sup>75</sup> For example, in Rwanda it is not uncommon that a married woman must have permission of her husband before becoming a business owner or subcontractor.<sup>76</sup> Additionally, certain laws or institutions also perpetuate gendered biases by requiring a husband's signature if a woman wants to sell her land to raise capital.<sup>77</sup>

Many LSM companies have developed local content programs to help smaller companies meet company procurement standards, but rarely do these specify women. South Africa's Codes of Good Practice set specific procurement targets (for 2015 to 2019) to give preference to suppliers that are

### Access to Credit and Savings

IMPACT launched the Artisanal Mining Women's Empowerment Credit and Savings project (AFECCOR) in the Democratic Republic of Congo to provide access to credit and savings to women and men ASM miners while also challenging gender stereotypes and norms.<sup>72</sup>

<sup>69</sup> Earth Rights. 2016.

<sup>70</sup> Hinton et al. 2003.

<sup>71</sup> Publish What You Pay; UN Women. 2014.

<sup>72</sup> IMPACT. 2018.

<sup>73</sup> Villa. 2017.

<sup>74</sup> Green. 2014.

<sup>75</sup> Hinton et al. 2003.

<sup>76</sup> Earth Rights. 2016.

<sup>77</sup> Earth Rights. 2016.

more than 30 percent owned by black women, and to give preference to micro, small, and medium enterprises.<sup>67</sup>

The lack of control over economic opportunities is often exacerbated by mining operations, as women's other paid and unpaid activities may be disrupted. Women are often responsible for fetching water and firewood, as well as making food. When mining activities affect the quality and availability of water, land, and biodiversity, it can have significant impacts on women's lives, livelihoods, and businesses.

## ACCESS TO EDUCATION AND TRAINING

### Low Education and Technical Skill Levels

Given the concentration of mining activities in poor and developing countries, women's and girl's educational opportunities are often limited. For example, in sub-Saharan Africa, gender gaps in education hold many women back and are greatest in secondary and tertiary education. While 28 percent of boys complete upper secondary school, only 21 percent of girls do.<sup>78</sup> Women's lower education levels are a barrier to entering the industry and taking on more technical roles that may offer better pay and professional advancement opportunities. For the women who do reach higher education, some may not pursue geology or gemology academic professions because of societal or family pressure without additional support or incentives.

Although many aspects of ASM require lower technical skills, women's lower education levels can still keep them from taking part in higher value-add activities and leave them vulnerable to insecurity (wages fluctuate significantly in the mining industry) and exploitation. Due to limited literacy and education, women also face certain disadvantages in the minerals trade. Research in Tanzania revealed that many women who work in small-scale tanzanite mining operations do not know the actual value of tanzanite, putting them in a weak negotiating position.<sup>80</sup>

### Gemstone Identification

To help address the lack of women ASM gem miners' knowledge of the quality and value of the gemstones, PACT and the Gemological Institute of America (GIA) partnered to provide women miners in Tanzania with an illustrated guide and training on gemstone identification.<sup>79</sup>

In many developing countries, there is often an unspoken bias against educating women. This is partly due to cultural expectations that a woman will leave school or her job to get married and care for children. When girls hit puberty, they tend to be more involved in household chores than boys, which often keeps them from attending school. Several other factors contribute to lower enrollment and higher dropout rates for girls at the secondary level, including school costs, early marriage, and adolescent pregnancy.

## SOCIAL PROTECTION AND CHILDCARE

### Lack of Quality Childcare and Family-Friendly Workplaces

Women in mining face challenges in accessing quality childcare and the lack of family friendly workplaces. Globally, women are disproportionately burdened with household and childcare responsibilities. These responsibilities affect their ability to engage in mining activities, both at the industrial and ASM level.

<sup>78</sup> UNICEF. 2016.

<sup>79</sup> Pact World. 2017.

<sup>80</sup> UN Women. 2015.

Industrial mine sites are generally remote, and they can require workers and contractors to work overtime at sometimes unsociable hours.<sup>81</sup> Combined with the lack of available childcare facilities, it is challenging for women, who are often the primary caregiver, to take on direct mining jobs. Research conducted by Rio Tinto found women in the U.S. did not pursue mining careers due to traditional work scheduling practices, as well as a lack of family-friendly work policies.<sup>82</sup> Women in mining are generally younger than men (34 years old for women compared to 45 years old for men), which is an indication that fewer women keep their jobs once they have children.<sup>83</sup>

It is not uncommon at ASM sites around the world to see mothers working with small children by their sides or tied to their backs. In many cases alternative childcare or school options are not available. The family orientation of ASM operations not only prevents women from being able to focus on mining as a full-time job, but it can put children in danger, including danger of child labor (see below). Additionally, particularly for gold, ASM activities often take place in the home (e.g., in the kitchen, where gold mixed with mercury is burned off), exposing the whole family, including children, to extreme health risks.

### Risk of Child Labor

Older children may accompany their mothers to help supplement the family income, or may work independently, which may expose them to child labor, including extreme health and safety risks. According to the ILO, one million children work in ASM, and the number is increasing.<sup>84</sup> Children are found working in underground tunnels, hauling heavy loads, sitting in the sun for long hours pounding rocks, and using mercury with their bare hands, among other dangerous activities that threaten their health and lives.<sup>85</sup>

While boys are statistically more likely to be involved in hazardous child labor of all kinds, girls are also involved in ASM child labor.<sup>86</sup> Increasingly, girls are involved in the hazardous tasks related to extraction, transportation and processing, in addition to other mining-related jobs, such as selling food and supplies to the miners.<sup>87</sup> The ILO has found that “girls are performing just as hazardous tasks as boys, working longer hours, with a greater workload and often have a lesser chance of schooling, withdrawal, or rehabilitation.”<sup>88</sup>

## FREEDOM FROM THE RISK OF VIOLENCE

### Risk of Sexual Harassment and Gender-Based Violence

Sexual harassment and gender-based violence (GBV) are widespread in many mining regions, triggered by the influx of migrant workers, social disruptions, increasing disposable incomes and associated alcoholism, and higher rates of female employment in prostitution.

Women face disproportionate risks to personal safety in their engagements with both industrial and ASM mining operations and with the communities that surround them. This includes harassment, GBV, exposure to HIV, and extreme levels of violence in resource-based conflicts. According to a World Bank Study, GBV is rampant in the mining regions of the Democratic Republic of the Congo (DRC), where it

<sup>81</sup> Chichester et al. 2017.

<sup>82</sup> Rio Tinto. 2009.

<sup>83</sup> Lahiri-Dutt. 2015.

<sup>84</sup> International Labor Organization. “Mining and quarrying.”

<sup>85</sup> International Labor Organization. “Mining and quarrying.”

<sup>86</sup> International Labor Organization. 2007

<sup>87</sup> International Labor Organization. 2007

<sup>88</sup> International Labor Organization. 2007



is seen as normal and is often justified by both men and women.<sup>89</sup> In the DRC, 64 percent of women after the age of 15 experience GBV.<sup>90</sup>

ASM regions are characterized by “hastily-created ‘rush’ communities” with an influx of migrant workers. They often lack a government presence or strong familial ties, which exacerbates many societal risks, including sexual harassment and GBV, in addition to prostitution, drug and alcohol abuse, gambling, etc.<sup>91</sup>

Women and girls often suffer the brunt of violence, including rape, during conflicts and times of unrest. The presence of lucrative minerals and gemstones can increase conflict and unrest in mineral and gemstone communities. Additionally, the mineral, diamond, and colored gemstone trade continues to fund violence and armed conflict, affecting whole regions of resource-rich countries, with devastating impacts on women and girls.

## VOICE IN SOCIETY AND POLICY INFLUENCE

### Exclusion from Community Consultation

Consultation on issues that affect women and their communities are often exclusionary—if not by design, then by default due to traditional norms, education levels, or household burdens that prohibit women from participating in discussions.<sup>92</sup> The World Bank highlights that the presence of women on a committee does not necessarily fulfill obligations to gender sensitivity. Women may not always actively participate, and they may be hesitant to contradict men or to break with traditional gender roles for participation.<sup>93</sup>

These dynamics are important for LSM, as their consultation practices with affected communities may unintentionally exclude women. Additionally, regulating bodies such as mining ministries also mostly consist of men, which makes it harder for women to voice their concerns openly, either in relation to ASM or LSM.

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<sup>89</sup> Arend. 2011.

<sup>90</sup> Hinton et al. 2003.

<sup>91</sup> World Bank. 2002.

<sup>92</sup> Chichester et al. 2017.

<sup>93</sup> Eftimie, Heller, and Strongman. 2009.





## Gemstone Cutting and Polishing

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Cutting and polishing is an important value-added step before stones are made into jewelry.<sup>94</sup> It is a highly decentralized activity, especially in colored gemstones, with operations ranging in size from a single freelancer to a large-scale factory in around 50 countries in the world. Cultural norms, family traditions, and access to technical skills heavily influence women's level and type of participation in cutting and polishing, dramatically so in diamonds. Based on available information, women are rarely found in formal cutting and polishing functions but may be more active in informal operations, in subcontracting, and in supporting roles.

There are important differences between diamonds and colored gemstones with regard to skill levels, scale of operations, and location at the cutting and polishing stage. In both, there are many layers of formal and informal, large and small-scale, and direct and subcontracting operations; however, cutting and polishing of diamonds is *much* more organized and advanced than colored gemstones.

**Diamond** cutting and polishing is fairly centralized, with an estimated 70 to 80 percent of diamond cutting and polishing by volume performed in India, largely in Surat, Gujarat but increasingly in Mumbai, Jaipur, and Thrissur.<sup>95,96</sup> The gems and jewelry sector is one of the most important sectors of the Indian economy, contributing about six to seven percent of GDP.<sup>97</sup> The sector is highly export-oriented, labor-intensive, and a major contributor to employment, GDP, and foreign exchange earnings. The Indian gems and jewelry sector is dominated by local players constituting about 80 percent of the overall market, the large majority of which are family-owned business that have been in the sector for generations.<sup>98</sup> All diamond units should be registered with the government; according to government records, there are only 532 registered units, employing 127,000 workers, but most research estimates the number of units to be more than 8,000, employing more than 2.5 million people.<sup>99</sup> The larger, higher-value stones are processed in highly controlled factories in India, whereas the smaller, lower-value stones are processed in smaller factories with fewer controls in place, many of which are home-based workshops with less than 20 people.

Other countries besides India also have diamond cutting and polishing operations. China has a burgeoning gemstone-cutting sector that is increasingly integrated with large-scale jewelry manufacturing operations. A small number of high-value diamonds are cut and polished in New York, Tel Aviv, or Johannesburg. Increasingly, mining countries are also involved in some aspects of cutting and polishing. For example, Tiffany & Co. has diamond-polishing workshops for larger stones in Botswana and Mauritius.<sup>100</sup>

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<sup>94</sup> Gemstone cutting and polishing is estimated to add one and a half times the value of the rough gemstone, though the percentage of value added varies significantly based on the gemstone in question, with generally greater margins for higher-value stones. Shortell. 2017.

<sup>95</sup> Federation of Indian Chambers of Commerce and Industry. 2013.

<sup>96</sup> Bain and Company. 2016.

<sup>97</sup> Federation of Indian Chambers of Commerce and Industry. 2013.

<sup>98</sup> Agarwal et al. 2018.

<sup>99</sup> UNDP. 2009. Note that the 2.5 million figure is likely to include some jewelry manufacturing.

<sup>100</sup> Cumenal. 2017.

The diamond sector is far more regulated than colored gemstones in part due to the diamond-specific standards established by De Beers, Rio Tinto, Tiffany, Walmart, and Signet in the early 2000s. Stakeholders report that the requirements put in place by these diamond industry giants has led to substantial improvements for workers in the diamond industry, though more needs to be done.<sup>103</sup>

The same level of regulation does not exist in colored gemstones, though the Responsible Jewellery Council announced that it will review its certification scope to include colored gemstones,<sup>104</sup> informed by the work conducted by the Coloured Gemstones Working Group (CGWG), which is also developing a new standard but is committed to achieving harmonization and channeling collective resources.<sup>105</sup>

**Colored gemstone** cutting and polishing is more geographically dispersed than diamonds, with hubs in Thailand for rubies, India and Colombia for emeralds, and Thailand and Sri Lanka for sapphires, among others.<sup>106</sup> India is a major destination for colored gemstones from Kenya, South Africa, and Zambia, while Madagascar's exports are largely destined for Thailand and Hong Kong.<sup>107</sup> There is also considerable trade of rough stones between non-producing countries, with India importing large volumes of rough stones from Thailand and Hong Kong.<sup>108</sup>

Gemstone cutting and polishing typically takes place in smaller and less organized operations than what is found in diamonds. One industry expert explained that some operations are "good and modern, but it is nothing like what is seen in diamonds."<sup>109</sup> He added that very few cutting and polishing factories are larger than 50 people, and many are smaller, with family relatives representing the majority of workers.<sup>110</sup>

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### Jewelry Supply Chain Standards

The most widely used standards in the jewelry sector include the OECD Due Diligence Guidance, the Kimberley Process, and the Responsible Jewellery Council's Code of Practice, Chain-of-Custody, and Audit Process.<sup>101</sup> While these have shown to be helpful in building industry consensus to address supply chain issues and have created more transparency, they have also been criticized, most recently by Human Rights Watch, for lacking strong monitoring and enforcement mechanisms and are undermined by poor and opaque audits.<sup>102</sup> Stakeholders noted that standards and certifications play an important role and should continue to be improved and adopted widely within the industry. Additionally, gender should be integrated into due diligence activities within supply chains.

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<sup>101</sup> HRW. 2018.

<sup>102</sup> HRW. 2018.

<sup>103</sup> Many of the larger diamond cutting and polishing centers are also certified by the Kimberley Process and the Responsible Jewellery Council.

<sup>104</sup> RJC. 2016.

<sup>105</sup> The Dragonfly Initiative. 2018.

<sup>106</sup> Shortell. 2017.

<sup>107</sup> Cross et al. 2010.

<sup>108</sup> Cross et al. 2010.

<sup>109</sup> Stakeholder interview. January 30, 2018.

<sup>110</sup> Stakeholder interview. January 30, 2018.

According to research, subcontracting is common in both diamonds and colored gemstones. This can range from highly skilled individuals to small home-based workshops. In general, interviews indicated that lower-valued stone cutting and polishing is more likely to be subcontracted out.

## Barriers to Women's Economic Empowerment

There is very little information available on how much and in what way women are involved in cutting and polishing. Stakeholders indicated that they rarely saw women in cutting and polishing operations, especially in India. This was largely attributed to cultural and social barriers linked to the country's long history of gendered roles in the sector. Women are more commonly found in formal cutting and polishing operations, even to some degree in management positions, in China and Thailand.

Around the world, women are more commonly found in informal, vulnerable work, and stakeholders indicated that this is likely the case in this sector as well. Informality can be a breeding ground for exploitation, especially for women and girls, and health and safety incidents as operations tend not to be monitored closely. Informality also limits workers' access to social services and protection. Some stakeholders noted that informal subcontracting can be lucrative for individuals with unique skill sets. It is unclear, however, how much of the benefits are felt by women.

*"Colored gemstones are the murkiest part of the supply chain. There isn't a model or set of standards. It is such a broad and diverse group of materials."*

— *Boutique Jeweler*

Many of the issues highlighted below affect men but may carry additional burdens for women, who tend to have less access to finance, healthcare, education, etc. Additional research is needed to understand the full extent of the challenges facing women.

## ACCESS TO SAFE AND EQUITABLE EMPLOYMENT OPPORTUNITIES

### Lack of Formal Employment Opportunities and Lack of Women in Leadership and Female Role Models

Diamond cutting and polishing is dominated by men, according to research and stakeholders consulted. According to estimates, in India women constitute less than five percent of total workers in diamond cutting and polishing.<sup>111</sup> When women are present, they are more commonly found in diamond polishing, which is lower-skilled work relative to cutting.<sup>112</sup>

According to stakeholders, prevailing cultural and social norms and family traditions in Gujarat, the main diamond cutting region of India, are the primary reasons women face difficulties accessing formal job opportunities. Stakeholders explained that these norms promote clear gender-segregated roles, with women as homemakers and men as income earners. Particularly in India, women may self-select out of the diamond cutting and polishing industry when they are faced with the prospect of an entirely male-dominated workplace, which they may perceive as unwelcoming (and may in fact be unwelcoming).

There are, however, some notable exceptions to the male domination of the diamond cutting industry. In Botswana, a hub for De Beers, one stakeholder estimated that 70 to 80 percent of the country's 3,000

<sup>111</sup> UNDP. 2009. "Losing the Sparkle: Impact of the Global Crisis on the Diamond Cutting and Polishing Industry in India."

<sup>112</sup> Institute of Applied Manpower Research. 2013. "Low Female Employment in a Period of High Growth: Insights from a Primary Survey in Uttar Pradesh & Gujarat". ILO data cited in Hinton et al. 2003.

or so diamond cutters are women.<sup>113</sup> Despite the high numbers of women, these women also likely face a number of still-unresearched challenges in the workplace.

Research and stakeholders suggest that more women are involved in colored gemstone cutting and polishing than in diamonds, but that this is highly dependent on the country. This can be seen in recent audit data shared by one company, which showed that in ruby operations in Thailand, at least 50 percent of workers are female, and in emerald operations in India, a little less than 30 percent are female.<sup>115</sup> In China, stakeholders indicated that gemstone cutting and polishing workforces tend to be fairly gender balanced.<sup>116</sup>

While women may be highly present in Thai colored gemstone cutting and polishing factories, stakeholders noted that they are not necessarily engaging in the same activities as men.<sup>117</sup> Women are more often found in stone grading, quality control, and sorting. Thai men dominate the finer faceting of stones. However, one stakeholder told us that many women own their own businesses dealing with colored gemstones and that there is wide acceptance of this in society.<sup>118</sup>

### Low Wages and Poor Working Conditions

Even in formal factories, there are some indications that conditions could be improved, especially for colored gemstone cutting and polishing factories. Although some brands, companies, and jewelry manufacturers may be encouraging the adoption of international labor standards among buyers and suppliers, this is likely only reaching a very small percentage of the colored gemstone cutting and polishing sector.

The quality of cutting and polishing jobs varies significantly across factories and geographic regions, according to research. While concern about wages and working conditions affects both male and female workers, stakeholders indicated that women are more likely found in informal factories or home-based operations (especially in supporting roles) dealing with lower-quality stones. Stakeholders indicated that the conditions are often poorer in subcontracted operations or smaller shops that are not registered with the government nor monitored or audited by governments, the Responsible Jewellery Council, or company buyers and suppliers.<sup>119</sup>

Workers in colored gemstone cutting and polishing are unlikely to have formal contracts, paid overtime, and other social protections, and therefore are particularly vulnerable during economic downturns.<sup>120</sup>

In our research, we discovered conflicting reports on the payment systems and quality of income for diamond and colored gemstone cutters and polishers. On one hand, we heard that it is common for workers to be paid using a piece rate system, which means that income depends on the value or volume

### Women-Only Diamond Factory in India

KP Sanghvi, a family-run diamond and jewelry company, started a women-only diamond factory in Gujarat, India in the early 2000s as a social experiment to test out women's aptitude for diamond cutting and polishing. The women workers were very successful, with powerful stories of personal enrichment, and the factory grew. Over the past few years, the woman-only factory been integrated into a co-ed factory of 5,000 employees, ending its women-only status. However, the new factory has maintained a high number of women (at almost 40 percent).<sup>114</sup>

<sup>113</sup> Stakeholder interview. November 1, 2017, #3.

<sup>114</sup> Stakeholder interview. January 17, 2018, and KP Sangvi. 2013.

<sup>115</sup> Stakeholder interview. January 30, 2018.

<sup>116</sup> Stakeholder interview. November 1, 2017, #1.

<sup>117</sup> Stakeholder interview. January 31, 2018, #5.

<sup>118</sup> Stakeholder interview. January 31, 2018, #4.

<sup>119</sup> Stakeholder interview. January 24, #2.

<sup>120</sup> Cross et al. 2010.

of stones processed. The piece rate system can create insecurity, especially when demand changes. On the other hand, we heard from stakeholders that diamond cutters and polishers receive a set especially in the larger factories, and that these workers are “earning a good wage.” Some stakeholders indicated that salaries (not piece rate payment) in colored gemstone cutting and polishing factories are better than what is commonly found in garment factories, but still not enough for workers to meet their needs. Research indicates that many workers in colored gemstones supplement their incomes with other activities, such as farming, while others cut in workshops during the day and do other gemstone processing at home in the evenings. Overall, interviews in the diamond cutting and polishing sector tended to indicate more stable and better wages than what is found in colored gemstones, but there are many geographic differences.

Discussions with global union representatives indicate that many unions are also not aware of or equipped to address gender issues or advocate for female worker concerns, and gemstone cutting and polishing factories often lack worker representation, and informal and subcontracted workers are not represented.

### Exposure to Health and Safety Hazards

Both diamond and colored gemstone cutting and polishing exposes workers to equipment and materials that can be hazardous if the appropriate precautions are not taken.

In the cutting and polishing of diamonds and some gemstones, silicosis and other lung illnesses are a concern. Silicosis, the so-called “dust-lung disease,” is an incurable occupational ailment that afflicts workers through the inhalation of airborne crystalline silica dust, a workplace toxin that progressively debilitates lung capacity.<sup>121</sup> Silicosis can be prevented with the use of personal respirators, dry air filtering, and a wet cutting process that reduces exposure to silica dust.<sup>122</sup> One study found that “an estimated 30 percent of all gemstone grinders will die of silicosis.”<sup>123</sup> For some colored gemstones there are also concerns with exposure to beryllium, which can lead to serious health issues similar to silicosis.

Diamond cutting and polishing is a fairly simple process involving laser cutting and mild chemicals used to remove dust at key points in the process. One stakeholder noted that the only real hazard in most factories that have sophisticated air filter systems in place to manage dust is in the boiling process, a method used to clean diamonds.<sup>124</sup>

In contrast, the work with colored gemstone exposes workers to more hazards, as it often involves the use of equipment and materials that can be hazardous to health including laser drilling; injecting plastic or glass into gems to hide cracks or fractures and improve gem appearance; impregnating gems with oils, wax, or resins; and heating, irradiation, dyeing, and bleaching to change the color of the gemstones.<sup>126</sup> In general, stakeholders also noted that colored gemstone cutting and polishing is far behind the diamond industry in terms of health and safety precautions in the factories.

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*“Diamond polishing has to be done very carefully with concentration. We often feel headache and pain in the eyes. The wage that is received is not equivalent to the work done.”*

— *Diamond polisher as quoted in an ILO report*<sup>125</sup>

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<sup>121</sup> Cross et al. 2010.

<sup>122</sup> Neal. 2013.

<sup>123</sup> Kernaghan. 2010.

<sup>124</sup> Stakeholder interview. November 1, 2017, #3.

<sup>125</sup> Institute of Applied Manpower Research. 2013. “Low Female Employment in a Period of High Growth: Insights from a Primary Survey in Uttar Pradesh & Gujarat.” ILO data cited in Hinton et al. 2003.

<sup>126</sup> Cross et al. 2010.



One stakeholder said that there is very little monitoring of small colored gemstone operations. She has been to factories where workers are not wearing masks. The employer may provide them, but no one is enforcing policies requiring workers to wear them.<sup>127</sup> Additionally, workers in cutting and polishing, of both diamonds and colored gemstones, experience problems with their eyesight.

## ACCESS TO EDUCATION AND TRAINING

### Low Education and Technical Skill Levels

Lower levels of formal and informal education also serve as barriers to women's entrance and advancement in the gemstone cutting and polishing industry. However, skill levels needed to enter and advance in the industry vary significantly, from highly skilled workers to low-skilled workers.

Stakeholders noted that volume manufacturers are less concerned with the quality of the stone than those making a custom or high-end piece of jewelry, where the cutter typically is qualified or certified in gemology.<sup>128</sup> Studies show that a large proportion of employment is provided to low-skilled employees. According to estimates, in India around 70 to 75 percent of employees in diamond processing and 40 to 45 percent of employees in jewelry fabrication have education levels below 10th standard.<sup>129</sup>

Traditionally in places like India (especially for diamonds) and Sri Lanka (for sapphires), men in the industry learned by watching their fathers and uncles. They may not have any formal education but have served as apprentices for many years.<sup>130</sup> Of the 2.5 million people employed by the diamond cutting industry in India, less than 5 percent are trained through diploma or vocational courses according to government statistics.<sup>131</sup> Only in rare cases has the informal training been passed on to women and girls.

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*“Gemstone cutting and polishing requires more skill than in other industries, like garment. You have to be able to make decisions on your own when working with a rough stone.”*

— Gemologist

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According to stakeholders, Thailand has made investments in education. Four universities are focused on gemology, with large numbers of women participating in the programs, in order to expand the country's share of the market in the jewelry sector.<sup>132</sup>

While there is a desire to protect some of the traditional, artisanal methods in cutting and polishing among some stakeholders, many others expect that technology will be increasingly important, requiring new skills. In India, industry representatives have expressed concerns about skill shortages in areas such as operating laser machines for cutting and polishing of diamonds.<sup>133</sup> The need for skilled workers is often cited as one of the major reasons for the inability of the players in this industry to scale up their operations.<sup>134</sup>

<sup>127</sup> Stakeholder interview. January 31, 2018, #4.

<sup>128</sup> Stakeholder interview. January 30, 2018.

<sup>129</sup> Federation of Indian Chambers of Commerce and Industry. 2013; original source is Human Resource and Skill Requirements in the Gems and Jewellery Sector. NSDC.

<sup>130</sup> Stakeholder interview. January 30, 2018.

<sup>131</sup> FICCI. 2013.

<sup>132</sup> Stakeholder interview. January 31, 2018, #4, and January 31, 2018, #5.

<sup>133</sup> FICCI. 2013.

<sup>134</sup> Agarwal et al. 2018.

## SOCIAL PROTECTION AND CHILDCARE

### Risk of Child Labor

Although it is difficult to find accurate statistics on the number of children involved in cutting and polishing, stakeholders and research suggests that it is a problem, particularly in informal operations.

One study focused on Jaipur, India, estimates that of the approximately 200,000 people employed in the industry, 20,000 are children.<sup>135</sup> Of the 586 children (mean age of about 11 years) in the study, 70 percent were working four to seven hours per day and 55 percent were earning under US\$0.08 a day.<sup>136</sup> Many experienced injuries to fingers, eyestrains, and headaches.<sup>137</sup> This study, along with other research, suggests that many of the child laborers are young girls (53 percent in the above study).<sup>138</sup> This not only has an immediate impact on a girl's health and wellbeing, but also deprives children of the chance to develop and go to school, increasing risks of violence and other forms of exploitation. It can also reinforce intergenerational cycles of poverty.

While poverty is one of the primary root causes of child labor in many industries and is likely the case in cutting and polishing as well, there is also a strong desire to pass on the cutting and polishing trade to one's children. The study above revealed that parents, in most instances, compel their child to take up the job due to cultural influence and their desire to keep up the family tradition.<sup>139</sup>

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<sup>135</sup> Saha. 2014.

<sup>136</sup> Saha. 2014.

<sup>137</sup> Saha. 2014.

<sup>138</sup> Saha. 2014

<sup>139</sup> Saha. 2014.



## Jewelry Manufacturing

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In contrast to some other parts of the supply chains, women are heavily involved in jewelry manufacturing, from mass-produced jewelry in factories in China, India, and Thailand to high-end boutique jewelry designed and fabricated by women jewelers in the U.S. and Europe. However, women are less likely to be found in management positions and face some unique challenges to their health and safety.

Jewelry manufacturing<sup>140</sup> is the process whereby metals, stones, beads, and other components are put together to form a ready-to-wear item—from rings and bracelets to earrings and necklaces. The process can be as simple as stringing beads to more complex processes involving gold or other metal plating, inlaying of stones, or stamping metal. Depending on the input materials and the quality of the craftsmanship, the final product can be high-end fine, faux/costume, or “statement” jewelry.<sup>141,142</sup>

Jewelry manufacturers include everything from high-end brands to large retailers to small- and medium-scale companies to independent artisans. Factories can range from almost 10,000-person facilities to small boutique jewelry workshops producing custom, high-end pieces. Many of the smaller jewelry manufacturers are family-run businesses that have been passed down from generations.

Many boutique jewelers carry out all or much of the design, molding, and finishing work themselves and may work with local individuals or small workshops with unique skills in areas such as casting to fill gaps in their capabilities.

The geographic footprint of jewelry manufacturing is varied: Hong Kong has become well-known for producing jewelry with precious stones, while most of the high-end jewelry is made in the U.S., Italy, and other European countries.<sup>143</sup> In the U.S. and Europe, there is a growing number of boutique jewelers, especially women, who target young, conscious consumers. Most mass-produced jewelry comes from lower cost hubs such as India, Thailand, China, and, to a lesser extent, Vietnam. In these countries, as with cutting and polishing, there are many small household jewelry workshops. For example, in Thailand, there are 2,200 officially registered jewelry manufacturers, whereas thousands more are household businesses. The country has been among the world’s top two silver jewelry exporters for a decade.<sup>144</sup>

Many jewelry manufacturers are also jewelry retailers. Many of the large jewelry brands like Pandora, Swarovski, and Tiffany & Co., have their own jewelry manufacturing operations, as well as sourcing from third-party suppliers that may produce for more than one brand. These brands also tend to have in-house design, marketing, and retail teams.

There is a trend towards more vertically integrated factories for mass-produced jewelry, where gemstone cutting and polishing and jewelry manufacturing take place under one roof. One stakeholder indicated that the advantage of this is that it gives companies more control over the jewelry components (especially precious stones and diamonds) and improves efficiency.<sup>145</sup>

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<sup>140</sup> This section does not cover jewelry retail; however, there is overlap between jewelry manufacturing and some retail brands.

<sup>141</sup> Gomelsky. 2009.

<sup>142</sup> Sherman. 2008.

<sup>143</sup> Agarwal et al. 2018.

<sup>144</sup> Gem and Jewelry Institute of Thailand. 2018.

<sup>145</sup> Stakeholder interview. November 1, 2017, #3.

## Key Barriers to Women's Economic Empowerment

Women make up a significant portion of the workforce in jewelry manufacturing and an increasingly significant portion of boutique jewelers and artisans. The section below focuses on the challenges faced by women working in jewelry manufacturing factories, especially in the manufacturing hubs of China, India, and Thailand.

Despite the high numbers of women in jewelry manufacturing, there is very little gender-disaggregated data or research available, making it difficult to draw conclusions about the specific barriers facing these women. Some companies also include other parts of the value chain—for example, retail or cutting and polishing—making it difficult to determine unique challenges or issues in manufacturing. The limited information on women in jewelry manufacturing calls for additional research, particularly insights directly from women working in the mass production of jewelry.

### ACCESS TO SAFE AND EQUITABLE EMPLOYMENT OPPORTUNITIES

#### Lack of Women in Leadership and Female Role Models

While there appears to be some variation across regions, functions, and types of manufacturing facilities, stakeholders indicated that men still dominate the leadership in jewelry manufacturing.

Companies interviewed for this research said that women make up somewhere between 40 to 90 percent of workers in the large jewelry factories in their value chains.<sup>146</sup> In India, where men dominate much of the upstream supply chain for diamonds, there is a more even split between men and women in the jewelry manufacturing workforce, with women making up about 40 to 60 percent of workers.<sup>147</sup> In Italy, the jewelry manufacturing workforce is about 40 to 50 percent women, according to stakeholders.<sup>148</sup>

According to stakeholder interviews, women are commonly employed in lower-skilled, lower-paid positions, especially in larger factories. In large-scale operations, women often work in the final stages of finishing. This includes precision work like engraving decorations, stone-setting jewelry, assembling finished goods, packaging, and performing quality control. Many stakeholders commented that there is an impression that women are better at these precision roles and are more “trustworthy.”<sup>149</sup>

Furthermore, stakeholders assert that working in jewelry manufacturing, even in the lowest positions in countries like China, India, and Thailand, is viewed as an economic opportunity for women, especially those from rural villages and poor households. One stakeholder explained, “There isn’t a large apparel sector in Thailand, so jewelry manufacturing is an attractive job where women can get a good salary.”<sup>150</sup>

<sup>146</sup> Stakeholder interview. January 22, 2018, #1, February 1, 2018, #1.

<sup>147</sup> Stakeholder interview. January 24, 2018, #1.

<sup>148</sup> Stakeholder interview. January 24, 2018, #1, February 6, 2018, #2.

<sup>149</sup> Stakeholder interviews.

<sup>150</sup> Stakeholder interview. February 1, 2018, #1.

Many of the small or family-run jewelry companies in the U.S. and Europe have traditionally been run by men who passed the business along to male relatives. While this is starting to change, the women working in positions of leadership within these companies report struggling with the male dominance of the industry, the lack of other women in similar positions, and the biased perceptions of customers (for example, asking for the manager and being surprised when it is a woman).<sup>151</sup>

*“In the manufacturing sector, there is huge bias when it comes to gender. Most of the time it is only about the attitude of the men and not the work profile or activities, except where the work involves carrying heavy equipment, which women may not be comfortable with.”*

As many other industries have begun doing, several large jewelry brands have started to publish data on gender makeup at senior levels and made commitments to increase the number of women on boards and in management positions. For example, while women make up around 70 percent of the global workforce, less than half of senior management positions are held by women; however, some of the large companies have committed to strengthen gender balance in senior roles.<sup>152,153</sup>

— Indian woman jewelry manufacturer

Stakeholders cited a number of factors contributing to holding women back from senior positions within the jewelry sector. Many of these, such as adverse social norms, caregiving responsibilities, lack of confidence, and lack of female role models,<sup>154</sup> mirror challenges faced in other industries. Persistent social norms—the shared beliefs about what is typical and appropriate behavior in a group of people—can shape expectations of a woman’s role in society and the types of jobs that are appropriate<sup>155</sup> and are prevalent in many of the communities where jewelry manufacturing takes place. For example, stakeholders often cited challenges with respect to occupation-related gender norms in India as a contributing factor to the limited number of women in leadership roles, and others commented on the effects of the gender role perspectives of traditional Orthodox Jewish men, who have a large influence in the diamond and jewelry industry.<sup>156</sup>

### Low Wages and Poor Working Conditions

Stakeholders indicated that high female employee turnover is a challenge in some manufacturing operations. For example, audit data shared with BSR revealed turnover rates of over 20 percent in one manufacturing facility in Thailand where women make up nearly 90 percent of the workforce.<sup>157</sup> Wages are a major factor for employee turnover in Thailand, and it was mentioned that many workers there jump from job to job when offered even a small increase in salary, indicating that an increase of US\$10 or US\$15 a month would be sufficient to entice a worker to change jobs.<sup>158</sup> In another jewelry manufacturing factory in India, the turnover rate for women employees was 24 percent, compared to 17 percent for men in the same factory.<sup>159</sup>

Another challenge stakeholders highlighted is excessive overtime. Although jewelry does not have the same pressures as the fast-fashion garment industry, there is a seasonal nature that can lead to peak times, especially affecting the workers in the mass-produced factories with fast turnaround times. One stakeholder said that it is very likely that workers in China exceed the nine hours of overtime legally

<sup>151</sup> Stakeholder interview. January 24, 2018, #1, and December 5, 2017.

<sup>152</sup> Tiffany and Co. 2018.

<sup>153</sup> Swarovski. “Sustainability Report 2017.”

<sup>154</sup> Stakeholder interview. February 1, 2018, #1.

<sup>155</sup> UN Secretary-General’s High-Level Panel on Women’s Economic Empowerment. 2016.

<sup>156</sup> Stakeholder interview. January 24, 2018, #1, November 1, 2017, #1, and January 22, 2018, #2.

<sup>157</sup> Data provided anonymously by company.

<sup>158</sup> Stakeholder interview. January 31, 2018, #5.

<sup>159</sup> Email from consulted stakeholder.

permitted per week (total of 49 hours).<sup>160</sup> Pandora provides some transparency into worker hours and reported that in 2017, weekly working hours periodically, and to a minor extent, surpassed 60 hours per week, exceeding the 48 hour legal limit.<sup>161</sup> To reduce these instances of excessive working hours, Pandora has since opened another facility to help meet buyer demands and reduce overtime.

Multiple stakeholders commented that there is a growing awareness among Thai factory owners about the need to improve working conditions as a way to reduce turnover and meet labor standards of buyers/clients.<sup>162</sup> In Thailand companies like Pandora and Pranda Group offer various employee benefits such as affordable meals, parental classes, employee outings, and free transportation. Interviews also indicate that factories in India are increasingly under greater pressure from buyers and, in response, are moving to put in place better policies and practices to ameliorate working conditions.<sup>163</sup> While there are indications that conditions are improving in factories, stakeholders signaled that there is still much work to be done, especially in regard to interventions targeting the specific challenges facing women.

### Exposure to Health and Safety Hazards

Jewelry manufacturing can involve toxic chemicals and gases, dust, loud noises, eye strain and damage, and the potential of injury from improper use of machinery. Audit data shared by jewelry manufacturers and public reports indicate that the most common violations are in the area of health and safety. According to audits, the most common violations are missing fire extinguishers, a poorly stocked first aid kit, and low usage of PPE.<sup>164</sup> For example, Pandora's most recent audit results reveal that health and safety represents 57 percent of non-compliances, followed by working hours (12 percent) and compensation and benefits (10 percent).<sup>165</sup>

In China, according to informal reports from Labour Action China, many factories fail to provide workers with occupational health and safety training and do not proactively inform workers about the occupational hazards, with low level of worker awareness of risks.<sup>166</sup> However, the extent to which preventative measures like effective PPE (beyond disposable masks that are insufficient to protect workers from dust hazards), ear protection, adequate ventilation, and regular monitoring and enforcement are put in place seems to vary by factory. Some stakeholders said that many manufacturing operations have poor working conditions, though there are also "exquisite workshops" in China and Thailand.<sup>167</sup>

Exposure to toxic chemicals, dust, and gases is part of many jewelry manufacturing processes, some of which are particularly dangerous for pregnant women.<sup>168</sup>

As with cutting and polishing, problems with eyesight are common, especially in the quality control departments that tend to have high numbers of women workers. In China, many female workers in quality control find their eyesight diminishing after working for several years.<sup>169</sup> Stakeholders reported

<sup>160</sup> Stakeholder interview. February 6, 2018, #6.

<sup>161</sup> Pandora. 2017/18.

<sup>162</sup> Stakeholder Interview. January 31, 2018, #4, and January 31, 2018, #5.

<sup>163</sup> Stakeholder interview. November 1, 2018, #3.

<sup>164</sup> Stakeholder interview. February 1, 2018, #1.

<sup>165</sup> Pandora. 2017/18.

<sup>166</sup> Informal report on The Occupational Safety and Health risk assessment for workers in Jewelry Industry provided by Labour Action China.

<sup>167</sup> Stakeholder interview. January 24, 2018, #3.

<sup>168</sup> Informal report on the occupational safety and health risk assessment for workers in jewelry industry provided by Labour Action China. Exposure to such substances as rhodium, for rhodium plating; hydrochloric acid, acetone, potassium permanganate, and cyanide, for gold plating; banana oil for gem inlaying; and pungent gasses generated in the waxing and gold melting process.

<sup>169</sup> Informal report on The Occupational Safety and Health risk assessment for workers in Jewelry Industry provided by Labour Action China.

that many of the smaller factories do not have quality microscopes, which can lead to eye strain and reduced eyesight over time.<sup>170</sup>

More investigation is needed to understand specific challenges to women's health. It is unclear whether accommodations for pregnant women are commonplace in factories. One manufacturing company said that highly dangerous tasks are often done in a separate room, with access restricted to certain personnel, and that pregnant women would never be involved in this work.<sup>171</sup>

## ACCESS TO AND CONTROL OVER ECONOMIC RESOURCES AND OPPORTUNITIES

### Limited Access to Finance and Business Contracts

As highlighted above, there are a growing number of women in the artisanal and boutique jewelry sector, who are “creating jewelry for women by women.”<sup>172</sup> This is true in parts of the U.S. and Europe, where there is a growing market for ethically sourced jewelry, but also in countries in Africa, Latin America, and Asia, where there is a strong traditional crafts sector.<sup>173</sup> Many of these jewelers are involved in design, manufacturing, and retail.

Women often face obstacles when opening and scaling businesses, ranging from discrimination when accessing financing to basic literacy and numeracy, practical know-how, and access to markets. While not jewelry specific, one study in the U.S. found that less than 3 percent of venture capital-funded companies had female CEOs.<sup>174</sup> In many developing countries, women are restricted from joining business associations or cooperatives that could provide better access to training, credit terms, and buyers. A number of organizations, such as Global Goods Partners, are trying to address this by providing technical assistance, product development, operational expertise, and small-capacity building grants to small-scale female artisans in developing countries.<sup>175</sup>

Given the low representation of women in other parts of the jewelry industry, women often do not have the networks to help grow their businesses. Most of the female business owners interviewed indicated that they are often the only women in the room when they meet with other jewelers. The most prominent networking organization in the industry, the Twenty-Four Karat Club of the City of New York did not admit women until 1987. In response, a group of women launched the Women's Jewelry Association in the early 1980s to help women in the jewelry and watch industries advance and develop professionally through networking, education, leadership development, and the provision of member services.<sup>176</sup>

## ACCESS TO EDUCATION AND TRAINING

### Low Education and Technical Skill Levels

There is a wide range of skill level required to manufacture jewelry, and a wide range in wages for those working in the sector.<sup>177</sup> Wages vary by the quality and value of the stone, as well as the final product and the manufacturing process. Interviewees indicated that activities like pave settings require more skill and are more highly paid than making rubber molds or casting, for example. Some manual jobs demand skilled labor with unique skill sets that are often taught through apprenticeships or handed down

<sup>170</sup> Stakeholder interview. January 31, 2018, #5.

<sup>171</sup> Stakeholder interview. February 1, 2018, #1.

<sup>172</sup> Stakeholder interview. February 6, 2018, #4.

<sup>173</sup> Stakeholder interview. January 31, 2018, #3.

<sup>174</sup> Brush. 2014.

<sup>175</sup> MasterCard Center for Inclusive Growth. 2015.

<sup>176</sup> Women's Jewelry Association.

<sup>177</sup> Stakeholder interview. January 31, 2018, #4.



from family members. However, in general stakeholders indicated that the majority of mass-produced jewelry workers were low skilled and relatively low paid.<sup>178</sup>

As highlighted above, in mass-produced jewelry women tend to occupy jobs that require less technical skills in assembly and finishing. The skills required for jewelry manufacturing are changing as more factories automate or introduce advanced design programs. New technologies, such as laser-based techniques for processing, decoration, and fitting and computer-aided design for modeling and prototype development, are creating new skill requirements, which are more likely to be taught through traditional academic channels.<sup>180</sup> This may have implications for women's employment opportunities in the future, as women tend to have less access to technology.<sup>181</sup> As the jewelry sector becomes more technical, women may end up missing out, given the existing gaps and underrepresentation of women in science, technology, engineering, and math (STEM) fields.<sup>182,183</sup>

## SOCIAL PROTECTION AND CHILDCARE

### Lack of Quality Childcare and Family-Friendly Workplaces

Research indicates that childcare and accommodations for nursing mothers are critical determinants of whether women return to work after having a child. From our research and stakeholder interviews, we were not able to determine how challenging access to quality childcare might be for mothers returning to work for this sector. Pranda Group, in Thailand, provides childcare to around 50 children through its Preschool Child Development Center.<sup>184</sup> One stakeholder noted that in Thailand, many of the women who work in the jewelry factories have relatives in nearby provinces and leave their children in the care of family to work in the factory, suggesting a general lack of childcare facilities in the jewelry manufacturing factories.<sup>185</sup>

One factory in India provides daycare as well as scholarships for employees' children, in addition to other benefits like a higher education scholarship, health checkups and medical insurance, and a canteen for workers.

### Benefits of Breastfeeding Facilities

Swarovski found that many women were not returning to work after having children because of a lack of breastfeeding facilities in its factories in Thailand. In response, the company started a breastfeeding program in 2006 that provided women with a safe and quiet space to express and store milk, while also promoting the health advantages of breastfeeding for infants and mothers. Return-to-work rates improved; across all manufacturing and production sites, it now stands at 90 percent of female employees returning to work after maternity leave.<sup>179</sup>

<sup>178</sup> Stakeholder interview. January 30, 2018.

<sup>179</sup> Swarovski. GRI Index 2017.

<sup>180</sup> India Jewelry Review. 2013.

<sup>181</sup> World Economic Forum. 2017.

<sup>182</sup> Haas Institute for a Fair and Inclusive Society. 2016.

<sup>183</sup> World Economic Forum. 2017.

<sup>184</sup> Pranda Group.

<sup>185</sup> Stakeholder interview. January 31, 2018, #4.

## Way Forward

The jewelry sector has an incredible opportunity to improve the lives and economic opportunities for women in many parts of the world, and in turn strengthen the transparency and stability of the jewelry supply chains. While it is clear more research is needed, the barriers presented in this paper are not insurmountable.

Given the size and reach of the global jewelry industry, it is no surprise that this initial and non-exhaustive research has identified barriers to women's economic empowerment that broadly reflect some of the major barriers present in the wider society. At the same time, the jewelry industry's unique character and context makes understanding the scale and severity of the challenges critical—from the mine to the factory floor and beyond. We know that just giving women jobs will not be enough if they are not accepted by male peers, if they fear for their safety on the job, or if they are unable to also care for their families. Additional field research to integrate the voice and realities of women and their perspectives on the challenges is critical to developing effective and sustainable solutions. The limitations of current standards/certifications and potential of existing projects should also be explored to understand what needs to simply be replicated and what needs to be created that does not yet exist.

The complexity and interconnectedness of jewelry supply chains and the societal scale of many of the challenges facing workers at large, and women in particular, mean that no one company will be able to tackle these issues alone. While concrete individual company actions are needed, industrywide collaboration—from mining companies to manufacturers and retailers—is also essential for developing and deploying solutions. Future research should help inform the shape and form of this collective action.

Moreover, while individual and collective action can address issues that are within the direct control of jewelry supply chain actors, shifts in root causes and systemic challenges are often left to be addressed at a societal level. This in turn makes the ability of the jewelry industry to enable and influence other actors—including peers, policymakers, and NGOs—critical to achieving meaningful long-term change. As such, the potential to influence suppliers and governments through the use of incentives, partnerships, and advocacy may be another valuable direction for future research.

An initial discussion on the path forward to create workplaces and supply chains that work for women will take place in an industry convening on women's empowerment in the jewelry supply chain in Paris on April 16, 2018. We hope this is just the beginning of industrywide action that will continue to deepen insights and ultimately lead to a better understanding of challenges facing women and recommendations for how companies can identify, create, and implement opportunities for women in jewelry supply chains.

# Appendix

## Stakeholders Consulted

The authors would like to thank the following individuals for their contributions to our research.

First	Last	Company/Organization
Lita	Asscher	Royal Asscher
Jan-Pieter	Barendse	Ministry of Foreign Affairs, Netherlands
Anna	Bario	Bario-Neal
Elena	Basaglia	Gemfields
Rachel	Bernice Perks	World Bank
Nicky	Black	ICMM
Emma	Blagden	Swarovski
Aimee	Boulanger	Initiative for Responsible Mining and Ethical Metalsmiths
Eric	Braunwart	Columbia Gem House
Brad	Brooks-Rubin	Enough Project
Agatha	Bukasa	De Beers
Andrew	Cheatle	PDAC
Gladys	Chu	Swarovski
Yrene	Coli Rivera	Solidaridad
Deborah	Craig	International Women in Mining
Jack	Cunningham	Gemfields
Terah	DeJong	Tetra Tech
Emily	Dungey	Gemfields
Katie	Fergusson	De Beers
Annie-Marie	Fleury	Responsible Jewellery Council
Carrie	George	Brilliant Earth
Emma	Hague	The Dragonfly Initiative and Equitable Origin
Mark	Hanna	Richline Group
Alexandra	Hart	Alexandra Hart and Ethical Metalsmiths
Hayley	Henning	Greenland Ruby
Jennifer	Horning	Solidaridad
Harsh	Jariwala	KP Sanghvi

Vivien	Johnston	The Dragonfly Initiative
Daniel	Kaelin	Swarovski
Juliane	Kippenberg	Human Rights Watch
Kuntala	Lahiri-Dutt	Australian National University
Lynda	Lawson	Centre for Social Responsibility in Mining and GEM HUB Knowledge Hub on Coloured Gemstones & Sustainability
Ayelet	Lerner	Lerner Diamonds
James	Lesser	Chalkstone Political Risk Management
Jennifer	Luker	Women's Jewelry Association (WJA) and Platinum Guild
Melanie	Martin	Goldcorp
Christina	Miller	Initiative for Responsible Mining
Soledad	Mills	The Dragonfly Initiative
Glen	Mpufane	IndustriALL
Sahila	Perumalpillai	De Beers
Jennifer	Peyser	Resolve
Aur�lie	Picaud	Faberg�
Marcin	Piersiak	Alliance for Responsible Mining
Claire	Piroddi	Kering
Stuart	Pool	Nineteen48
Jeremy	Prepscius	BSR
Victoria	Reichel	IMPACT
Payal	Sampat	Earthworks
Armelle	Seby	IndustriALL
Kady	Seguin	IMPACT
Kinjal	Shah	Responsible Jewellery Council
Purvi	Shah	De Beers
Ankita	Shah	KP Sanghvi
Patricia	Syvud	Joia Consulting
Boukje	Theeuwes	Solidaridad
Ana	Tudela	Goldcorp
Pilar	Velasquez	U.S. Department of Labor
Cristina	Villegas	PACT
Barbara	Wheat	Asian Institute of Gemological Sciences Bangkok

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