

Study on Child Labor in the Scrap Mica Supply Chain in India

Report

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This report examines the current state of child labor in the supply chain of scrap mica in India. The study specifically focuses on the state of Jharkhand, where previous reports have documented the use of child labor in the mica industry. The report also traces the supply chain of scrap mica within India and to importing countries. ICF Macro, Inc., prepared this report according to the terms specified in its contract with the U.S. Department of Labor. The research team would like to express sincere thanks to all the parties involved for their support and valuable contributions.

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This study was prepared by ICF. Primary data collection in India was conducted in collaboration with an in-country research partner.

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Abbreviations

ASM	artisanal and small-scale mining
CSO	civil society organization
GDP	gross domestic product
ILO	International Labour Organization
INR	Indian rupees
KII	key informant interview
LSM	large-scale mining
RMI	Responsible Mica Initiative
SC	Scheduled Caste
ST	Scheduled Tribe

Executive Summary

In this study, ICF and its India-based research partner examined the current state of child labor and the connected supply chain for scrap mica in India. The study focused specifically on the state of Jharkhand based on existing evidence of child labor in artisanal mining in that state.

The research was guided by two key objectives: (1) identify and characterize child labor in the mica industry in Jharkhand; and (2) map the supply chain of mica in India and further downstream countries, tracing goods produced with child labor along the supply chain. The research used a mixed-methods approach, including a quantitative workers' survey, interviews with current and former workers, and interviews with civil society organizations and industry representatives. A non-probability-based sampling method was employed for both qualitative and quantitative components. Consequently, the findings of this study can provide readers with a broad understanding of the likely state of child labor in mica production in Jharkhand. However, findings cannot be generalized to the wider population outside the study's sample with any statistical certainty. The research design was guided by ICF's global research standards, child labor definitions developed by the International Labour Organization, and the legal and social context of Jharkhand regarding child labor and the mica industry.

Context

Mica is part of a group of silicate minerals with a layered structure found in granite and other rocks or crystals. It is light and flexible, possesses a glittery sheen, and is a good electric insulator and thermal conductor, making it an important input product in a variety of downstream products, including cosmetics, electronics, and paint (RMI, 2023; Minerals Education Coalition, 2023). Mica is mined as either sheet mica or scrap mica. Sheet mica is mined using deep-shaft mining methods, primarily through large-scale mining (LSM). Scrap mica is either a byproduct of sheet mica or is mined separately, using open-pit mining methods through artisanal and small-scale mining (ASM).

India is one of the largest producers and exporters of mica in the world. Mica mining is legal in some Indian states, but it is illegal in Bihar and Jharkhand. These two states are located in India's "mica belt" (RMI, n.d.), and together they account for 60% of the world's production of mica (Denis & Remy, 2020). The Forest Conservation Act of 1980 banned mica mining in Bihar, and later in Jharkhand (which was formed out of Bihar in 2000), to protect the forests in the state. Since then, all LSM operations for mica in Jharkhand have closed. Families living in Jharkhand visit the dumping yards of these closed LSM sites as well as active open-pit ASM sites to pick, mine, and sort scrap mica. Since mica mining became illegal in Jharkhand, the mica mining families in the state function outside the purview of national labor regulatory standards, which has increased the risk of labor exploitation, including the risk of child labor.

The mica picked or mined in Jharkhand is believed to be exclusively scrap mica, which is processed into mica powder, mica flakes, and mica paper and is used in a variety of products (Schipper & Cowan, 2018). This report focuses on the supply chain of scrap mica from Jharkhand and labor conditions of working children in that supply chain.

Key Findings

Mica mining remains common in Giridih and Koderma Districts of Jharkhand but likely constitutes a less significant source of income for mica miners and their households than it previously did. Despite being illegal, study findings suggest that entire villages are still engaged in mica mining and picking to supplement their income. Survey respondents indicated that, on average, 8 or more families out of 10

were engaged in mica mining in their village. At the same time, for almost three-fourths of respondents, mica was not their largest source of income. Qualitative interviews suggest that the families in these villages depend on mica for cash income to complement their other sources of income, particularly income from farming.

Mica miners in Jharkhand tend to work in informal and familial arrangements, with low pay and no workplace standards. Entire families travel to the ASM sites to pick and sort mica. They are often self-employed (70% of survey respondents), and there is no employer to take responsibility for working or safety standards. Study findings suggest that families set their own production targets and working hours, based on their economic needs. A worker can collect approximately 15–25 kilograms of mica per day and sell the mica to a buyer at the rate of 5–15 Indian rupees per kilogram. This equates to \$0.06–\$0.18 USD per kilogram and a daily wage of \$0.90–\$4.50 USD.¹ At this rate, most workers cannot make the national or state minimum wage, even if they work full-time.

There is a continued presence of working children in the mica dump sites and ASM mica sites of Jharkhand. Forty-one percent of the workers' survey respondents reported that half or more of the children in their village were engaged in mica production, and 75% reported seeing children picking or mining mica in the past year.

However, qualitative respondents reported this to be less than what has traditionally been common in the region. Respondents attributed this reduction to the increasingly stringent government enforcement of the ban on mica mining over the past three to five years. Many respondents perceived this to be in response to increasing media attention on the use of child labor in the industry. Some respondents also credited local civil society organizations that have been raising awareness on child labor and children's education, as well as improved access to schools in the area. Other respondents attributed it to the fact that mining has become less lucrative due to the low quality of mica available in the open-pit mines.

Children are almost exclusively engaged in the picking and sorting of mica. Some adolescents work separately and sell the mica they collect to the traders themselves, but it appears more common for children to work alongside their families, and the mica they collect is sold to contribute to the family income. Some parents might give the children a small portion of the money earned, but this was not common according to qualitative accounts.

The study identified children working in the mica dump sites and ASM sites of Jharkhand who meet child labor definitions. Respondents were asked to identify a specific "focal child"² engaged in mica production and answer questions about the labor conditions that child has experienced. Responses about these focal children were then used to determine the presence and nature of child labor in the industry. A total of 146 respondents identified 1 focal child each. Of the 146 focal children, 61% were male and 39% were female, and 119 (82%) were involved in mica production activities in the past year, indicating the current presence of working children in the industry. Of those 119 focal children, 72% had been exposed to work-related hazards, and 37% had experienced one or more work-related injuries.

Due to the informal nature of mica production, it was not possible for respondents to calculate the exact working hours of focal children. Therefore, calculating the number of focal children who met the definition of child labor proved to be a challenge. To address this limitation, and following International

¹ Assumes an eight-hour workday. The study used prevailing market conversion rate of \$0.012 USD:1 Indian rupee on November 15, 2023.

² A child under age 18 working at the site of the adult respondent and whose work activities were well known by the adult respondent

Labour Organization guidelines, researchers calculated all focal children in the age group of 4 to 11 years who engaged in mica-related work in the past year and all children 12 years and above who were exposed to hazardous work when performing mica-related activities in the past year as meeting the definition of child labor. Based on this calculation, 80% of the focal children who engaged in mica-related activities in the past year met the definition of child labor.

This study cannot estimate the prevalence of child labor in Jharkhand's scrap mica supply chain, but it does confirm its presence. Consequently, **scrap mica coming out of Jharkhand, whether in its original form or processed into flake or powdered mica, is at risk of being produced with child labor.**

Illegal mica from Jharkhand enters the legal mica supply chain of India by comingling with mica produced in states where it is legal. Scrap mica from Jharkhand is processed into flake and powdered mica. Since no new trading licenses have been issued in Jharkhand after the Forest Conservation Act of 1980, only a handful of factory agents who are tied to old factories (in operation from before 1980) are able to operate legally. With the help of these agents, as well as other agents who either operate illegally or use clandestine methods to hide and transport mica, the illegally mined mica from Jharkhand is comingled with legally mined mica from other parts of India. Comingling occurs either in Jharkhand, in states where mica production is legal such as Rajasthan, or at the port of Kolkata. Mica from Jharkhand generally travels within India by road and is exported by sea from Kolkata. Given the comingling of flake and powdered mica from Jharkhand and other states in India, all flake and powdered mica that is exported from India is at risk of being produced with child labor.

Domestic trade data on mica from Jharkhand are limited, but existing data show significant domestic processing and consumption of downstream goods. Data suggest that India's domestic processing industry of minimally processed mica products is insufficient to meet domestic demand; therefore, domestic demand is met through both imports (predominantly from China, Switzerland, and Japan for fabricated mica and mica paper, which account for 88.5% of the mica imported by India) and domestic production. Open-source research indicates a sizeable pigment industry in India, which sources mica domestically and then supplies it for end-use products such as paint, ink, food coloration, and plastics. Given the comingling of powder and flake mica from Jharkhand with other domestically produced mica, it is reasonable to assume that some quantity of mica from Jharkhand is used domestically in the production of downstream goods.

Indian exports of flake and powdered mica have reduced but continue to be used in international downstream products. Major importers of Indian flake and powdered mica include Japan (20.6%), the United States (13.4%), Germany (9.9%), the United Arab Emirates (8.2%), and Kuwait (7.4%) (UNCOMTRADE, 2021). As noted previously, the mica being exported to these countries is at risk of being produced with child labor.

Conclusion and Recommendations

The study findings indicate that all flake and powdered mica from India is at risk of containing mica from Jharkhand, and all products that use flake and powdered mica from India are at risk of being produced with child labor. Recommendations to address these risks are listed as follows.

Government of India:

- Bring mica mining under the purview of national labor laws and regularize mica production in Jharkhand. This would bring mica miners and their families under the protection of national

labor laws; help the Indian government understand the extent of children’s engagement in mica mining; remove and rehabilitate child laborers identified; and make sure that workers’ wages are aligned with national and state-level minimum wage laws, thus addressing the economic necessity for families to engage their children in mica production.

- Complement the regularization of mica production in Jharkhand with strong enforcement mechanisms for labor standards in the mica ASM sites of the state. The enforcement mechanisms should incorporate adequate funding and human resource allocations for regular inspections of mica ASM sites. This will ensure that children under age 18 do not engage in mining activities, as stipulated in the Mines (Amendment) Act 1983.
- Undertake more regular assessments of child labor incidence in the country and publish these findings in the public domain. Having reliable government data on child labor will also help the government plan and budget for enforcement programs that target child labor and child rights violations.
- Address the poor economic conditions of families that resort to child labor. This would involve expanding on and ensuring adequate implementation of existing social assistance programs, creating alternative livelihood-generation opportunities in the region, and improving farm-based income through agricultural programs.
- Support civil society efforts, led by the Responsible Mica Initiative, to implement a cooperative model of mica workers in Jharkhand. This model would help workers negotiate better wages and working standards for themselves.

U.S. Government:

- Enforce due diligence laws such as the California Transparency in Supply Chains Act.
- Engage with U.S. companies that use flake and powdered mica in their products on effective due diligence practices.
- Undertake diplomatic dialogue with the Government of India to encourage the mica mining regularization process that is being deliberated in Jharkhand.

Private Sector:

- For companies that source scrap mica and its processed and downstream goods, enforce risk-based due diligence within their supply chain and publish these findings.
- If child labor is identified within the supply chain, companies should try to understand the root causes behind it and use their funds for corporate social responsibility to address these issues. Companies should engage local communities and stakeholders to identify remediation efforts and alternatives for families engaging in child labor.
- Engage in collective action that includes sharing of data and joint implementation of supply chain tracing tools between companies that function along the mica supply chain. Collectively, companies should consider setting industry-level standards and benchmarks for due diligence within the supply chains.

1. Purpose and Context

This mixed-methods study aimed to examine the current state of child labor in the scrap mica supply chain in Jharkhand, and to map the domestic supply chain and exports of scrap mica (as well as flake and powdered mica processed from scrap mica) and identify their use in downstream products.

Mica is a silicate mineral mined across more than 35 countries, with India and Madagascar considered to be the two largest sources (RMI, n.d.). Due to its glittery sheen, its flexibility, and its insulating properties, mica has become an important component in a variety of products, from pigments added to paints and cosmetics, to conductors and insulators in electronics, and to fillers in plastics, shampoos, and plasterboards. The global mica industry is expected to grow from \$576.1 million in 2020 to \$789 million in 2031 (Transparency Market Research, 2022).

Mica mining is legal in some Indian states, but it is illegal in Bihar and in Jharkhand (which was previously part of Bihar). These states are located in India's "mica belt" (RMI, n.d.), and together they account for around 60% of the world's mica production (Denis & Remy, 2020). Because mica mining is illegal in Jharkhand, all activities around mica production, trade, and processing take place outside the purview of labor regulations. This makes the industry prone to child labor and other labor abuses. In addition, mica mining in Jharkhand is mainly done using artisanal and small-scale mining (ASM) methods, which are listed by the Organisation for Economic Cooperation and Development as risk factors for child labor in mineral supply chains (OECD, 2018). This study focused on the scrap mica mined using ASM methods in Jharkhand and its downstream products processed and consumed within and outside India.

ICF and its India-based research partner conducted this study. Research included a workers' survey and qualitative interviews with workers from Giridih and Koderma, two districts in the mica-belt of Jharkhand, as well as key informant interviews with civil society and industry stakeholders.

This report is divided into five sections. Section 1 introduces the report and its scope. Section 2 provides a review of literature regarding child labor in India and mica supply chains and the product's downstream uses. Section 3 describes the research objectives, methodology, and limitations. Section 4 describes the research findings based on quantitative, qualitative and secondary data. Section 5 describes the various policy efforts in India and Jharkhand that have impacted mica production in the state. It also provides a case study of Madagascar (another major mica exporting country) and describes ways in which Madagascar can potentially learn from the policy initiatives in India. Finally, Section 6 provides the conclusion from this research and gives key recommendations to address child labor issues in the scrap mica supply chain of India.

2. Literature Review

2.1 Evidence of Child Labor

The End of Childhood Index 2021 estimates that 11.8% of children in India (aged 5 to 17 years, 2015–2020) have engaged in child labor (Save the Children, 2021). There are no recent government data regarding child labor. The last official census data available from 2011 estimate that around 10.1 million children are "economically active"—that is, they are either engaged in labor or seeking work (Kaur & Byard, 2021). This number is only for children aged 5 to 14 years and does not include children aged 15 to 17 years who are engaged in work, including hazardous work.

There are also no government data for children engaged in the mica industry of India. Due to the clandestine nature of mica mining in Bihar and Jharkhand, the two states suspected of having children engaged in mica production (RMI, n.d.), there are no reliable data on workers and labor conditions in these states. Civil society groups have attempted to estimate or measure the prevalence of child labor in mica mining. Kailash Satyarthi Children’s Foundation estimates approximately 30,000 children engaged in child labor across Bihar and Jharkhand (Malathy, 2018), and Terre des Homes estimates around 22,000 children engaged in mica production across the two states (Schipper & Cowan, 2018). These estimates are based on studies conducted in 2017 and 2016, respectively. Although these numbers likely do not reflect the full scale of children’s engagement in the sector, the Terre des Homes study also indicated that “no company [that imported mica from India and was studied by Terre des Homes] could certify that child labor was not involved in the mica used in their end products” (Schipper & Cowan, 2018).

In response to the findings of the Terre des Homes study, the National Commission for Protection of Child Rights conducted a survey in 2018 across Giridih and Koderma Districts in Jharkhand (the districts covered by this study) and Newada District in Bihar. This survey found 4,545 children not attending schools from the 2 districts of Jharkhand, due to several reasons, including their engagement in paid or household work, and it found children aged 6 to 14 years engaged in mica scrap collection from across 40 habitations in Giridih and 45 habitations in Koderma (NCPCR, 2018).

None of these studies covers the entire mica belt of India, so these estimates are not comprehensive and shed light on only a small portion of the total engagement of children in mica mines. But they all confirm the engagement of working children in mica production in Bihar and Jharkhand.

2.2 Economic Overview of Country

India is a lower middle-income country with a gross domestic product (GDP) of \$3.18 trillion USD and a GDP per capita of \$2,256.6 USD in 2021 (World Bank, 2023a; 2023b; 2023c). The economy of India is primarily driven by services, which accounted for approximately 55% of the GDP in 2021, in addition to the agriculture (17%), manufacturing (15%), and mining (2%) sectors (World Trade Organization, 2020).

Although mining represents only 2% of India’s GDP, the country possesses significant mineral resources, and it ranks among the top 10 global producers of mica, barites, coal and lignite, iron ore, chromite, bauxite, and manganese (India Mining & Mineral Processing Equipment). According to the report by the Indian Ministry of Mines in 2021–2022, 1,319 mines in India reported mineral production (excluding minor minerals, fuel minerals, and atomic minerals). Of these, 545 mines were involved in the extraction of metallic minerals, and the remaining 774 were involved in the extraction of non-metallic minerals (Ministry of Mines, n.d.) In addition to registered mines, informal unregistered ASM sites are an important source of materials in the mining sector.

2.2.1 Mica Mining in India

India has long been one of the world’s largest suppliers of mica in terms of production and export. According to the National Mineral Inventory database, as of April 1, 2015, the total mica reserves and resources were estimated at 635,302 tons, with 114,433 tons categorized as reserves (resources that can be economically extracted under the present conditions and capabilities) and 520,869 tons categorized as remaining resources (resources that have been identified but cannot be used due to economic constraints, technological limitations, or market conditions) (Indian Bureau of Mines, 2021).

India contributes significantly to worldwide mica demand, as evidenced by the annual export of 150,000 tons of mica per year through the port of Kolkata (Debring, 2022). However, since mica mining is illegal in some states—Bihar and Jharkhand—and legal in others—Andhra Pradesh and Rajasthan—government statistics on production do not reflect the actual production of mica that is introduced into global supply chains. Consequently, discrepancies exist between government production and export data.

2.2.2 Mica Mining in Jharkhand

In November 2000, Jharkhand was carved out of the southern part of Bihar. Historically, the mica-rich regions that are now part of Jharkhand were a major mica mining area, with more than 700 legal mines. The Forest Conservation Act of 1980 banned mining in Bihar and then Jharkhand for environmental concerns, and the state governments stopped providing new leases to mining companies. This led to the closure of mica mines across the region and decimated the local economy in mica-dependent communities, primarily in the Giridih and Koderma Districts of Jharkhand (Jharkhand Sustainable Mica Policy Framework and Vision, 2020). Although large-scale mining (LSM) companies ceased operations, illegal mica picking increased (Singh, 2019).

Most of the illegal mica production in India occurs in the two states of Bihar and Jharkhand, which are also among India's most impoverished. Despite having 40% of the national mineral resources (Abraham, 2022), Jharkhand has one of the highest poverty rates in the country, with more than 42% of the population characterized as multidimensionally poor³ (TOI, 2021).

The lack of livelihood alternatives forces artisanal mica miners in Jharkhand to work in unsafe conditions, at times with their children, to increase household income (Jharkhand Sustainable Mica Policy Framework and Vision, 2020), and the informal nature of the work can lead to economic and social exploitation of the mica-miners and their families, including children. In recent years, there have been some state-level efforts in Jharkhand to legalize mica mining and thereby address the working and economic conditions of mica-dependent families in the state (see Section 5).

2.3 Mica Description

Mica is part of a group of silicate minerals with a layered structure found within granite and other rocks or crystals. It is light and flexible, possesses a glittery sheen, and is a good electric insulator and thermal conductor, making it an important input product in a variety of downstream products, including cosmetics, electronics, and paint (RMI, 2023; Minerals Education Coalition, 2023).

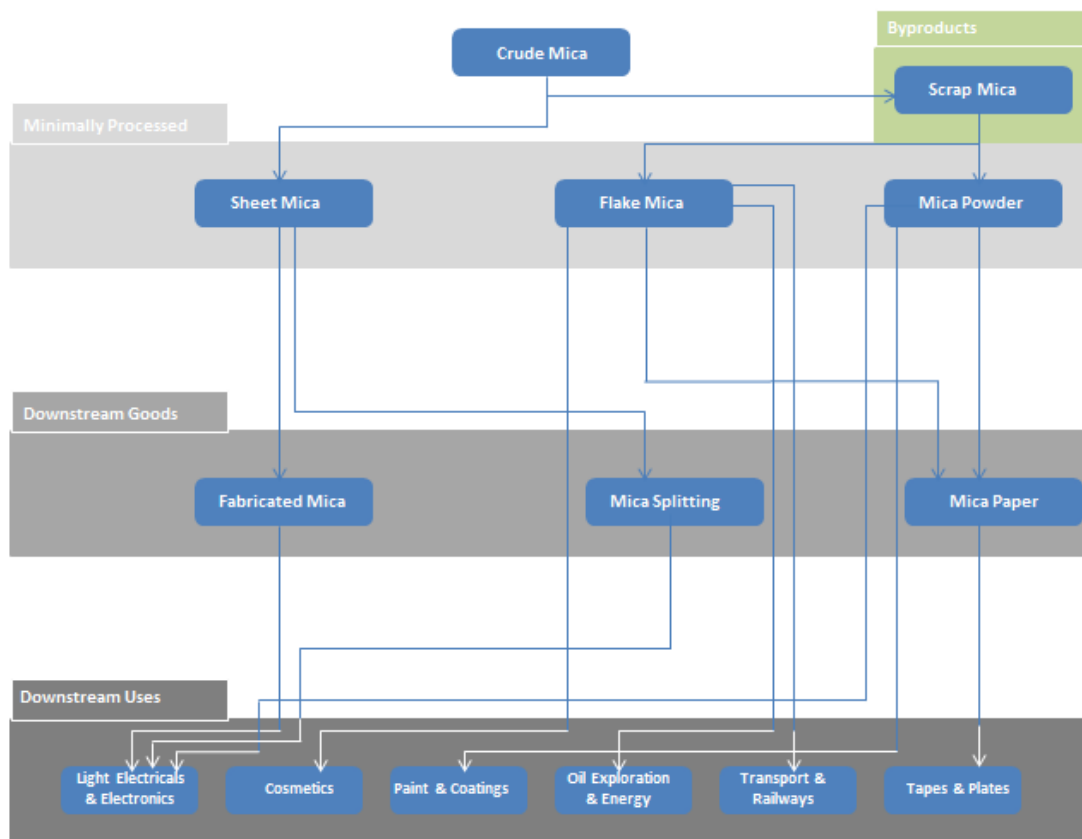
Geologists, industry stakeholders, trade experts, and market analysts use different terms to describe mica in its various forms. This section outlines the key mica product terms used in the study. The mica industry can be divided into two distinct yet interdependent mining methods yielding different types of mica. In one method, large blocks of crude mica found deep within the earth can be peeled and cut into sheet mica. This generally requires deep-shaft mining operations, indicative of LSM. In the other method, small pieces of lower quality mica that exist near the earth's surface can be extracted using shallow, open-pit mining. This is generally done informally in ASM operations (Schipper & Cowan, 2018). This mica is known as scrap mica. Scrap mica also refers to small pieces of mica that are produced as a

³ In India, the multidimensional poverty index is calculated by measuring the percentage of households who are deprived along three dimensions – health, education and standard of living (NITI Aayog, 2023).

byproduct of cutting mica sheets. Sheet mica and scrap mica have distinct and separate downstream uses.

When LSM sites were still in operation in Jharkhand, they discarded scrap mica in large dump piles. This study focuses on the scrap mica obtained from both picking through dump piles of closed LSM sites and current open-pit mining in Jharkhand. The supply chain tracing section of this report focuses on the production and downstream processing of scrap mica into flake and powdered mica. Figure 1 provides an outline of the processed, byproduct, and downstream products for all mica and is followed by a more detailed definition of each product.

Figure 1. Overview of mica processing steps and resulting byproducts, downstream goods, and end uses



Sources: RMI, 2020; RME, n.d.; Axim Mica, n.d.; Asheville Mica, n.d.; Craig Wire Products, n.d.; BLCD Mica, n.d.

2.4 Mica Minimally Processed Goods, Byproducts, Downstream Products, and End Uses

This section outlines the processing of mica, from crude mica, also known as raw mica, into minimally processed mica sheets, and the ensuing byproduct—scrap mica—and its minimally processed forms into flake mica or mica powder; outlines downstream goods of fabricated mica, mica splittings, and mica paper; and concludes with a brief overview of downstream uses.

Byproduct

Scrap mica: Scrap mica is a byproduct of the mining, trimming, and fabricating of sheet mica from crude mica. It can also be sourced through open-pit mining by artisanal miners. Scrap mica is processed into mica flakes and powder, to varying degrees of coarseness, depending on the anticipated industrial use.

Minimally Processed Good

Sheet mica: Sheet mica is made from crude mica that has been peeled and processed, through cutting, drilling, or punching, to achieve a desired thickness and shape (DataMica, 2023).

Flake mica: Flake mica is a downstream product of scrap mica that is processed into particle size mica by crushing with rotary hammer. The coarseness of flakes is measured in sieve size, or “mesh,” ranging from 2 to 30.

Mica powder: Mica powder is a shimmery powder created through the grinding of mica flakes. The coarseness of the powder is determined by the grinding method and measured in microns: dry ground (APS 1.2 mm to 150 μm), wet ground (APS 90 to 45 μm), or micronized (APS <53 μm).

Downstream Goods

Fabricated mica: These are pieces of sheet mica that are cut to commercial specifications.

Mica splittings: Mica splittings are sheets split from mica blocks, with a thickness less than 0.30 mm. They are primarily used in the manufacture of built-up mica products.

Built-up mica: This is a laminate product made from mica blocks or splittings, layered with other products and combined with bonding agents, such as shellac, epoxy, or silicone. It is also called laminated mica or micanite products and is primarily used in electronic and electrical industries.

Mica paper: Mica paper is a downstream product of flake or powdered mica sourced from scrap mica, which is processed into pulp and mixed with water and binders before being pressed through a mesh mold to form thin, even sheets. Mica paper is used in mica plates and tapes.

End Uses

Electronics: Sheet and fabricated mica and built-up mica are used in insulation in electronics.

Cosmetics: Mica is used in cosmetics to add shimmer and sparkle to makeup, nail polish, and skin care products.

Paint/pigments: Mica brightens pigments, creates a pearlescent coating, and enhances the longevity of paint. It is frequently used in the automotive industry.

Plastics: Mica is used as a filler or lubrication for rubber molds.

3. Methodology and Study Implementation

3.1 Study Objective and Research Questions

The study was guided by the following objectives and research questions.

Objective 1: Identification and characteristics of child labor in the mica industry.

- What is the current state of child labor occurring in the collection, mining, and processing of mica in Jharkhand state?
 - a. In what phases of the supply chain of mica does child labor occur?
 - b. What are the demographics of those experiencing child labor, particularly in regard to ethnicity and caste?
 - c. What are the job characteristics of those experiencing child labor?
 - d. How effective have efforts to address child labor within mica sector in India been and what might other mica-producing nations learn from this process?

Objective 2: Mapping the supply chain of mica in India and further downstream countries. Tracing goods produced with child labor along the supply chain.

- What is the domestic supply chain for mica, and what are the processing and supply chain connections that enable its export? What stakeholders are involved in the sale and processing of mica obtained through child labor?
 - a. What domestic processing of mica occurs in India, and is there any evidence of child labor in these processes?
 - b. What byproducts or downstream goods are produced in India and to what extent are they consumed domestically or exported? Are a significant number re-imported to India for domestic use?
 - c. What are the downstream products containing mica from India once mica is exported? Who are the major importers of processed flake mica and what are their countries of origin?
 - d. What are the major international markets for downstream products?
- How does the extent of child labor and its related supply chain in Jharkhand fit within the full mica supply chain in India, and globally?

3.2 Research Methodology

The research used a mixed-methods approach to respond to the study questions. The research design and methodology were shaped by ICF's experience with similar studies and by a scoping exercise that ICF conducted in March 2023. ICF developed global research instruments that were, in turn, used to inform the development of the research instruments for this study, and the scoping exercise was used to collect contacts of civil society and industry groups familiar with child labor in the Indian mica industry. The research partner then adapted ICF's research instruments to contextualize them to the Jharkhand mica context.

3.2.1. Defining Child Labor

Child labor definitions were based on those used by the International Labour Organization (ILO) Convention 138 on Minimum Age for Admission to Employment and Convention 182 on the Worst

Forms of Child Labor. India has ratified both of these conventions. Per these conventions, child labor “includes employment below the minimum age as established in national legislation, hazardous unpaid household services, and the worst forms of child labor: all forms of slavery or practices similar to slavery, such as the sale or trafficking of children, debt bondage and serfdom, or forced or compulsory labor; the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic purposes; the use, procuring or offering of a child for illicit activities; and work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children” (USDOL, n.d.).

This definition does not apply to work specifically authorized by national laws, if such work is carried out in accordance with international standards under conditions prescribed by the competent authority and does not prejudice children’s attendance in school or their capacity to benefit from the instruction received (ILO, 1999b).

In India, the regulation of child labor is governed by the Child Labor (Prohibition and Regulation) Amendment Act, 2016, which prohibits the engagement of children in all occupations and prohibits the engagement of adolescents in hazardous occupations and processes. The 2016 Amendment Act also specifies that this prohibition does not apply to children helping their families or family enterprises, if the work does not affect the children’s school participation and if the work does not fall under the hazardous occupations or processes defined under the Act. According to the Act, a child is defined as a person who is under age 14, and an adolescent is defined as a person who is either equal to or over age 14 but under age 18 (Ministry of Law and Justice, 2016). More information on the application of the definition of child labor in the Indian context can be found in Appendix 5.

3.2.2 Secondary Literature Review

A thorough review of relevant secondary data was undertaken, which included government, civil society, and media reports on child labor and the mica supply chain in India. To focus on the current state of child labor in the industry, care was taken to refer to documents published within the past five years. For government data, however, researchers relied on the most recent data available, which were not always within this time period. This analysis informed the tool development process and was used to triangulate the primary data collected.

The literature review included international trade and shipping data on the export of Indian mica, which were gathered from numerous sources, including UNCOMTRADE, Panjiva, and government and industry databases. Using these data, the study sought to provide an accurate depiction of what happens to mica after it is exported from India.

3.2.3 Workers’ Survey

The workers’ survey was divided into four sections. Section 1 assessed the respondents’ demographic background and their engagement with mica collection. Section 2 assessed the working conditions and income from mica collection, and Section 3 asked questions on the respondents’ perceptions and experience with children working in mica collection. In Section 4, respondents were asked to identify a specific “focal child” working in mica collection with whom they were personally acquainted. For the purposes of this research, a focal child was defined in the survey as a child under age 18 working at the site of the adult respondent and whose work activities were well known by the adult respondent. Respondents were then asked specific questions on the focal child’s involvement in mica production. The responses to the final section were used to determine the presence and nature of child labor in the industry.

Data were collected from two districts, Giridih and Koderma, both located in the mica belt of Jharkhand. Convenience sampling was used to select workers from the two districts. Respondents were required to be adults who had actively engaged in the mica industry within the last year.

3.2.4 Workers' Interviews

The interviews with workers were intended to gather more insights on the topics covered in the survey and included questions on tracing the domestic and international supply chain of mica. Researchers originally planned to select a subset of the survey respondents for the interviews, but this proved to be difficult. As a result, interview respondents included both recent and former mica workers (see Section 3.5).

3.2.5 Key Informant Interviews

Key informant interviews (KIIs) were conducted with representatives from civil society organizations (CSOs) and industry and village-level stakeholders. Similar to the workers' interviews, these examined both the current state of child labor conditions in the mica supply chain in Jharkhand and traced the domestic and international supply chain of mica.

Table 1. Sample covered

Data collection type	Total respondents
Workers' surveys	284
Workers' interviews	26
KIIs	15

3.3 Training and Preparation

Data enumerators were selected through a resume review and then a group interview process, with the aim of identifying those with geographical and subject-matter familiarity, and with fluency in the local dialect.

The selected enumerators participated in a four-day training and pilot in Dhanbad, Jharkhand. Training was conducted in person by the India-based research partner. ICF researchers provided technical oversight of the training and conducted some training modules remotely. The pilot was conducted on the third day. The fourth day was used to address any issues encountered during pilot, clarify any ambiguities, and provide feedback from the field.

3.4 Data Collection

The research instruments underwent a review by ICF's Institutional Review Board. They were revised based on this review and feedback from the pilot. Researchers were trained on and required to strictly adhere to ethical guidelines, including informed consent, confidentiality, and data security. The research was performed in compliance with 45 Code of Federal Regulations Part 46 on the Protection of Human Subjects.

All research instruments were translated into Hindi before use. The survey was administered using a computer-assisted personal interviewing program (SurveyCTO). Interviewers entered survey data using hand-held tablets. At the beginning of each survey, the enumerator read the consent statement to the participant in Hindi, and survey participants provided verbal consent, which the enumerator marked on the tablet. The tablets were programed to end the interview if consent was not given. Verbal informed

consent was also obtained before each qualitative interview. Due to the sensitivity of the subject matter discussed and respondents' fear of legal repercussions for engagement in illegal mining, interviews were not audio recorded. All personal identifying information of respondents was redacted from the data before analysis.

Table 2. Data collection (target vs. achieved)

Location	Date	Planned sample size	Actual sample achieved
Giridih	July 20 to July 27	175	189
Koderma	July 28 to July 31	75	95
Total	July 20 to July 31	250	284

3.5 Limitations and Lessons Learned

3.5.1 Difficulty Accessing Respondents

Due to the clandestine nature of mica mining operations in Jharkhand and the increasing government crackdown on illegal mining in the region, researchers had difficulty accessing respondents for the study and initiating open conversations. This limitation was anticipated, and the study design considered measures to mitigate it.

For the workers' survey, the study added a buffer of 50 respondents to account for respondents dropping out of the survey mid-interview or not engaging with the enumerators. In addition, the research partner engaged with CSOs operating in the surveyed communities to support respondent identification and outreach. This helped build trust and confidence among respondents. Daily debrief calls with the team of data enumerators were conducted to promptly address issues and ensure smooth data collection.

For the workers' interviews, researchers originally planned to select a subset of survey respondents from the quantitative survey, but this was not always possible. Some respondents were unwilling to participate in both quantitative and qualitative interviews due to the time-consuming nature of the interviews, which took them away from their daily wage jobs. To address this, interview targets were expanded to include a wider range of respondents, including those who did not participate in the workers' survey. This meant interviewing both current and former mica workers. As a result, interview transcripts were divided into three categories for analysis. Those who had engaged in mica production within the past one year were considered "current" workers, and those who had engaged in it within the past five years but not within the past one year were considered "former" workers. Those who had not engaged in mica production for more than five years were considered "local residents," because they lived in the mica belt and had generational familiarity with mica mining.

3.5.2 Respondent Identification and Selection

The study did not use probability sampling to select survey respondents. Instead, efforts were made to select a diverse range of respondents, based on demographic background as well as the degree and type of engagement with mica mining. As such, the results from this study are not representative of the mica industry of Jharkhand or of child laborers in the wider scrap mica supply chain.

In addition, because children were not surveyed or interviewed for the study, the findings only provide the perspectives of adults on child labor in the sector, who may not have been able to fully represent the experiences, perspectives, and vulnerabilities of child laborers.

3.5.3 Potential Response Bias

With the increasing government crackdown and civil society attention on child labor and illegal mining in Jharkhand, respondents may have provided socially acceptable responses and may not have been fully transparent across all questions. In addition, the engagement of children in mica production has changed over time, while respondents' familiarity with the sector often spanned decades. Consequently, some responses may reflect past conditions instead of the present context. To address these limitations, the enumerators were trained on building trust with respondents, assuring confidentiality, and encouraging respondents to respond to the current context of the industry. These limitations were considered when analyzing responses, and, where possible, findings were triangulated from multiple sources.

3.5.4 Calculating Child Labor Data

Due to the informal nature of the mica production, respondents could not determine the exact number of hours per week that focal children engage in mica production. This affected the researchers' ability to make an accurate calculation of the number and percentage of focal children that meet the definition of child labor. Per ILO standards, children under age 12 are considered to experience child labor if they engage in any type of work for any period of time. Children ages 12 to 14 experience child labor if they engage in any hazardous work or engage in non-hazardous work for 14 hours or more per week. Children ages 15 to 17 experience child labor if they engage in any hazardous work or engage in non-hazardous work for 43 hours or more per week. To address this limitation the study considers all focal children under age 12 who engaged in any work and all children in age groups 12–14 and 15–17 that engage in hazardous work as experiencing child labor.⁴ This provides a conservative estimate of the focal children who experienced child labor.

3.5.5 Supply Chain Tracing

Due to the illegal nature of mica mining in Jharkhand, supply chain tracing was particularly challenging, with an absence of government data and a reluctance of industry stakeholders to engage with researchers. Researchers contacted domestic industry stakeholders and groups, including representatives from mica processing and export companies, as well as journalists and academics familiar with the industry context. They also undertook repeated follow-up calls and maintained a monitoring dashboard for respondents. However, none of the private sector representatives or journalists agreed to be interviewed for this study. This limited the researchers' understanding of the domestic processing and consumption of mica. The study tried to address this limitation through additional literature review and open-source research as well as an examination of civil society and media reports and investigations.

⁴ To define hazardous work, this study began with a list of generic, hazardous work activities established by the ILO. Activities that were not relevant to mica production in Jharkhand were removed, and the remaining activities were tailored to the local context and domestic law where appropriate. These activities were included in the study questionnaire, and respondents identified those activities in which focal children were engaged.

4. Findings

4.1 Child Labor

Study findings show that children under age 18 are engaged in producing mica in Jharkhand, although potentially to a lesser extent than what was traditionally common in the state. Children are commonly engaged in picking and sorting mica from open-pit mines.⁵ Most of them work with their families to supplement family income, and in some cases, they do so in addition to their schooling. Children engaged in mica work continue to experience significant exposure to hazards, such as the use of sharp tools, carrying of heavy loads, and exposure to extreme weather conditions, as well as risk of injury. Some of these children meet the definition of child labor as per India’s Child Labor Act and ILO standards.

Engagement in mica production is likely common in Giridih and Koderma Districts. More than 80% of survey respondents reported that 8 or more families out of 10 were engaged in mica production in their village. This was corroborated by qualitative findings. One CSO respondent reported that approximately 60 panchayat units across the region, mostly in Giridih and Koderma, are mica dependent, and another CSO respondent estimated approximately 800 villages across Giridih and Koderma in Jharkhand and across Nawada in Bihar to be mica dependent. Current and former mica workers pointed out that mica production has traditionally been part of the cultural and economic fabric of the targeted communities. Children grow up watching their parents engage in mica production and learn to help at an early age.

4.1.1 Characteristics of Respondents

Respondents were selected using purposive sampling and do not represent the population in the targeted areas. The demographic characteristics of respondents were, however, found to be aligned with the demographic profile of artisanal mica miners as reported by other organizations, such as the Responsible Mica Initiative (RMI). For example, 57% of respondents belonged to the Scheduled Caste (SC) (36%) and Scheduled Tribe (ST) (21%) communities. These are officially designated groups in the Constitution of India that comprise the most disadvantaged populations in India. The SC communities are composed of groups in the Hindu caste system that were traditionally considered as “untouchables;” and the ST communities are composed of indigenous or tribal groups in India, as listed in the Constitution. Even though SC and ST communities make up only 23% of the population in Giridih and 14% of the population in Koderma (Census 2011), secondary literature suggests that they are overrepresented among the mica picking and mining population (RMI, 2020). Most respondents reported during the qualitative interviews that all caste groups in the region engage in mica production, but multiple residents and former workers also expressed local perceptions that the ST population was better suited for mica mining.

“We are tribals, and people say that we are best suited for intensive hard work due to our adaptation to the local environment for generations.”

—Former mica miner and local resident

Almost half of survey respondents (47%) reported having no formal schooling, and only 2% had completed secondary education. This aligns with the educational trend in Jharkhand, particularly for the SC, ST, and the Other Backward Caste population. Jharkhand’s literacy rate is 66%, much lower than the

⁵ Open-pit mines are used to extract mica that is found near the surface of the earth. In this method, a shallow pit is excavated. Miners climb into the pit and use hand tools to extract and pick out scrap mica, separating it from the soil and rocks in the pit.

national average of 73% (Census 2011). There was also a slightly higher representation of women (56%) than men (44%) among the survey respondents. Most respondents (83%) were parents of children aged 5 to 17 years.

Table 3. Respondent background characteristics (N=284)

Factor	%	n
Age (years)		
18–24	10%	28
25–39	37%	105
40–54	29%	82
55+	24%	69
Gender		
Man	44%	124
Woman	56%	160
Parent of child aged 5–17		
Yes	83%	235
No	17%	49
Education		
No formal schooling	47%	134
Non-formal schooling	9%	25
Some primary	4%	10
Completed primary	20%	56
Some secondary	18%	51
Completed secondary or higher	2%	7
Ethnicity/caste		
Scheduled Caste	36%	103
Scheduled Tribe	21%	59
Other Backward Caste	31%	87
General	12%	35
Self-employed		
Yes	70%	198
No	30%	85
Mica is the largest source of income		
Yes	27%	78
No	73%	206

Working Conditions

Respondents pick mica under informal working conditions. They are primarily self-employed (70% of survey respondents), and qualitative interview respondents confirmed that almost all mica miners work independently. For survey respondents who reported working for an employer, the employment relationship was most likely not related to mica mining. Of the 85 respondents who reported working for an employer, 69 indicated that largest source of income was not related to mica. In addition, qualitative interviews with current and former workers indicated that most of the workers and their families also depend on agriculture as a source of income.

With deep-shaft mining no longer in operation in Jharkhand, villagers in the region visit the dumping yards of the now closed LSM sites and the open-pit mica ASM sites to pick and sort scrap mica. Local residents and former workers mentioned that these sites are located in government-owned land or forests, so the waste mounds are not owned by any individual or private entity. Respondents generally

engaged in two kinds of work—extracting the mica and then cleaning and sorting it. The cleaned and sorted mica was then sold to a local buyer. Respondents often referred to this local buyer as “thekedaar” or contractor.

Due to the informal nature of the work, there are no regulations regarding worker health and safety. The workers set their own time and targets for the mica that they or their families pick each day or week. They may work the entire day or part of the day, every day of the week, or only a few days of the week.

Workers generally arrive at the mica picking area in groups, bringing multiple family members. One respondent said that it was like a “village gathering.”

Qualitative interviews revealed no instances of families migrating from other states or regions to mine mica in Jharkhand. The quality of mica available in the open-pit mines is very poor, so it is not considered lucrative for those from far away regions to make the journey. Generally, workers from nearby villages (within walking distance) come to the dumping yard or the ASM sites, and if word arrives of a nearby area with better mica reserves, the workers might move there.

“All workers were local since the mica’s low quality and scarce quantity demanded intensive labor...a single location could not be continuously worked; new pits had to be dug for mica extraction.”

—Local resident

“We never witnessed outsiders there due to the poor quality of mica, which barely earned enough for daily wages.”

—Former mica miner

With the LSM sites no longer in operation in Jharkhand, the quality of mica that families can access and the price they receive from selling it is often not enough to meet their basic needs. As result, mica production is no longer the primary source of income for most families. For 73% of the sample, mica is not the largest source of income. Consequently, the state also experiences significant out-migration due to limited income-generation opportunities.

“...a substantial 50-60% of villagers ultimately resort to migration due to the lack of viable alternative opportunities for earning a living.”

—CSO lead

Although families continue to depend on mica to supplement their other sources of income, qualitative respondents noted that increasing numbers of families were either moving away from mica mining completely or only doing it sporadically for extra cash. Along with reduced income from mica, respondents also pointed toward increased government enforcement of the Forest Conservation Act and the Child Labor Act as reasons behind this shift.

“Ever since the (government) crackdown, it has become like a side business for most people to sort and pick mica.”

—CSO lead

The exact timeframe of the perceived decrease in mica mining activities in the area is unclear, with respondents noting different time periods. Some respondents reported that mines were closed around 2018, some mentioned that mining operations had ceased just before the pandemic, and others

mentioned that mica mining had stopped or reduced within one to two years before this study. Even though mica mining in Jharkhand has been illegal since the state’s formation in 2000, almost all respondents indicated a timeframe over the past five years. Although the government may have tolerated illegal mica mining in Jharkhand in the past, these findings indicate a more stringent clamping down on it over the past few years. Respondents also mentioned increasing media and international attention on child labor and illegal mining in the mica belt as the reason behind this recent clampdown.

“About two years ago, mica mining stopped, and now only a few people from this village are still engaged in it. In the past, mica mining was the main source of income for all families here.”

—Local resident

Wage, Debt, and Payment

Artisanal mica miners tend to sell mica to small-scale buyers in their village. Some sell it to larger buyers outside the village who have access to a truck to buy and transport mica in bulk. Payment is based on the weight of mica collected, so mica miners do not receive a fixed wage. Study findings also show that production quotas are not common for artisanal mica miners or widely used as a form of coercion—only three survey respondents produced mica according to a production quota. Mica miners tend to work independently, and they set their own targets (for themselves or for their families) based on their economic needs.

Based on the rates quoted by qualitative respondents, the daily earnings of artisanal mica miners are generally less than minimum wage. A worker can collect approximately 15–25 kilograms of mica per day and sell the mica to a buyer at the rate of 5–15 Indian rupees (INR) per kilogram. The equates to \$0.06–\$0.18 USD per kilogram and a daily wage of \$0.90–\$4.50 USD.⁶ This could mean daily earnings of less than the state-level minimum wage of 274.81 INR (\$3.30 USD) (for unskilled workers in Jharkhand) or even the national minimum wage of 178 INR (\$2.14 USD). The rate is generally set by the buyer and does not differ based on age, gender, or caste. Seventy-five respondents (26% of the sample) indicated that income from mica picking was not enough for them to meet their basic needs. Of those respondents, 59% reported working additional hours or days to cope with the low earnings. Other common coping strategies included working additional jobs (43%) or engaging adult family members to do additional work (53%).

Table 4. Respondent earnings and debt

	%	n	N
Typical earnings not enough to meet family’s basic needs	26%	75	284
Means of managing to meet basic needs			
Respondent working additional days/hours	59%	44	75
Adult family members begin working/do extra work	53%	40	75
Respondent working additional job	43%	32	75
Child family members begin working/do extra work	13%	10	75
In debt to employer/buyer^a	25%	21	85 ⁷
Changes made to repay debt	38%	8	21

⁶ Assumes an eight-hour workday. The study used prevailing market conversion rate of \$0.012 USD:1 INR on November 15, 2023.

⁷ A total of 85 respondents reported being employed, so this question was only answered by 85 respondents.

	%	n	N
Employer imposes production quota^b	4%	3	85

^a Questions regarding debt to employer and an employer-imposed production quota were only asked of respondents who indicated that they are not self-employed (n=85). The local population refers to the local buyer as “thekedaar” or contractor, so the survey also used the same terminology.

^b Mica picking and mining families work independently, so there is no quota imposed on the workers. Instead, workers might set targets for themselves or their families to make a certain minimum income. Respondents who answered “yes” to this question mistook these self-imposed targets as quotas.

The 85 respondents who indicated that they were employees were asked whether they have some form of debt to their employer or buyer.⁸ Of this subset of respondents, 21 (25%) reported being in some form of debt to their employer or buyer. The data show no substantial difference between caste groups in terms of their likelihood to be in debt. Qualitative interview responses suggest that workers often borrow money from local buyers for sudden expenses or to tide over low-income periods. The money borrowed is often in small amounts, around 500–1,000 INR. Although small, this amount could be equal to three to five days’ worth of mica picking work.⁹ One of the KII respondents also quoted a much higher loan figure between mica miners and the buyer, in the range of 10,000–20,000 INR, to cover bigger expenses such as a wedding or medical emergency.

“There is an understanding between the contractor (or buyer) and the miner, because they need each other. The miner can pay back in smaller amounts on a weekly or monthly basis.”

—CSO lead

Both the quantitative and qualitative findings indicate that mica buyers generally do not charge any interest on these loan amounts, with 86% of respondents who reported borrowing money indicating that they were not being charged any interest on the loan amount. Two KII respondents (a CSO lead and a village head) also mentioned the practice of advance payments between some of the local mica buyers and the mica miners. Similar to the loans, it does not appear that interest is commonly charged on these advance payments.

The majority of respondents who were in debt to their employer or mica buyer (62%) did not have to make any changes to repay the debt. Those who did make changes to repay the debt did so by engaging in several activities, such as working additional days or hours, having other adult family members perform extra work, or having children perform extra work.¹⁰

4.1.2 Child Work in Mica Production

Findings from both the workers’ survey and qualitative interviews suggest that child work in mica production is common in both Giridih and Koderma Districts. In the workers’ survey, 41% of respondents reported that half or more of the children in their village are engaged in mica production, and another 27% reported that some of the children are engaged in mica production. Overall, 75% of respondents reported seeing children picking or mining mica in their community in the past year.

⁸ Note that since the local population refers to the local buyer as a “contractor,” the questionnaire also asked respondents about debt to the “thekedaar” or contractor.

⁹ This is estimated based on the rate of 5–15 INR per kilogram, and around 15–25 kilograms of mica collection per day, as mentioned by the qualitative respondents.

¹⁰ The number of respondents who stated that they made changes in their work to repay debt is very small. Consequently, the activities they identified should be interpreted with caution.

Table 5. How many children in your village pick or mine mica?

	Giridih (N=209)		Koderma (N=75)		Total (N=284)	
	N	%	N	%	N	%
All	34	16%	8	10%	42	15%
Most	29	14%	5	6%	34	12%
About half	31	15%	10	13%	41	14%
Some	51	25%	26	35%	77	27%
None	38	18%	16	21%	54	19%
Other	6	3%	5	6%	11	4%
Refused	18	9%	7	9%	25	9%

Qualitative interview findings indicate that children typically accompany their parents to the dumping yards and the ASM sites to pick and sort mica. Not all children who accompany their parents engage in work, however. Some are too small to be left behind at home, some of the older children look after the younger children or infants, and some bring food or water for their parents. Findings suggest that it is very common for children in the region to be exposed to mica production, and many help their parents engage in mica production at some point in their lives. The age at which children begin mica work varies, but they generally begin as soon as they are old enough to understand basic instructions. Local residents reported age 8–10 years as the most common age group when mica work begins.

“Almost all children above the age of 7 or 8 were considered suitable for picking work.”
—Local resident and former mica miner

Quantitative and qualitative findings indicate that children continue to engage in mica production, although most qualitative respondents reported a perceived reduction in children working in and around mines, driven by a combination of increased law enforcement, civil society interventions, and the inability to make adequate income from mica.

Improved access to schools and Anganwadis (rural government-run childcare system), as well as concerted efforts by CSOs in the region, have resulted in a greater awareness of the need for children to attend school. Qualitative respondents indicated that, as a result, many children only come to the mines after school or during holidays. In addition, the increasingly stringent government enforcement of the ban on mica mining over the past three to five years has also appeared to have kept families from going to the mines and bringing their children to help with mica production.

The study also sought to determine the drivers for children’s engagement in mica production. According to respondents, the most common reasons why children work in mica production is due to poverty or hunger (reported by 80% of respondents) and the need to meet expenses (reported by 70% of respondents) (Table 6). These findings were largely echoed in qualitative interviews, in which respondents often noted high levels of poverty, limited economic opportunities, and a general inability for many families to meet basic needs without employing child labor.

“Children enter the mica mining industry majorly because of poverty and to help their parents meet household or medical expenses.”
—CSO lead

Table 6. Respondent’s opinion regarding why children work in mica production^a

N=194	%	n
Poverty/hunger	80%	155
To meet expenses	70%	138
To pay school fees	35%	69
Parents unable to earn	29%	58
Children can't be left alone/lack of childcare	26%	51
Child labor needed to meet quota ^b	18%	36
School isn't accessible/available	10%	19
To learn skills	3%	5
Other	7%	13

^a Multiple responses possible

^b Mica picking and mining families work independently, so there is no quota imposed on the workers. Instead, workers might set targets for themselves or their families to make a certain minimum income. Respondents who answered “yes” to this question mistook this self-imposed target as quotas.

Treatment of Working Children

Mica miners in Jharkhand work independently, so there are no employers responsible for ensuring any minimum working conditions. Children working in mica generally work with their parents, who take responsibility for their safety, the number of hours they work, and their treatment. In some cases, adolescents or older children might come to the mines or dumping yards alone or in groups, separate from their family, and in these cases, they take responsibility for their own work, hours, and conditions.

Children are generally free to leave the worksite or to decline to work. Any coercion would be exercised by the parent and driven by the need to meet minimum expenses. Only 11% of survey respondents reported a parent doing something to make the child work harder or faster, with threats or violence being the most commonly cited form of coercion.

Qualitative respondents indicated that most children do not receive any monetary compensation for the work they do. The mica that is collected and cleaned by the children is sold by the parents, and the children’s contribution is pooled with the rest of the family income. Several interview respondents mentioned that some of the children receive pocket money or a small cash amount from their parents to spend on their own needs.

Table 7. Worker treatment and ability to leave

	%	n	N
Employer/parent does something to make child work harder or faster ^a	11%	31	284
Threats or violence against child or child’s family by employer/recruiter/parent	68%	21	31
Forcing children to work long hours and not allowing them to leave	32%	10	31
Fine or deduction from wages	3%	1	31
Denial of rights or privileges	3%	1	31

^a Multiple responses possible

Note: There are no employers in this context. Any act of violence or threat reported by respondents was exerted by a parent and not an employer.

4.1.3 Characteristics of Focal Children and Their Work

Respondents were asked about a specific focal child engaged in mica production—their own child or another child in the locality with whom they were familiar. A total of 146 respondents identified a focal child and responded to questions about their characteristics and work conditions.

Approximately half of respondents (52%) identified a focal child under age 14 (the legal working age in India). The remainder identified focal children who were ages 14 to 17 (38%) or were unsure of the child’s exact age (10%). There was a greater representation of boys (61%) than girls (39%) among the focal children.

Of the respondents who identified a focal child, 87% reported that the focal child had attended school at some point in the past, and only 47% said that the child had attended school in the past year. Almost all qualitative respondents pointed out that children only engage in mica sorting work after school or during school vacations, and that an increasing number of parents and children are becoming aware of the importance of school education. It could be inferred that although mica work continues to interrupt children’s education, this effect may be more subdued than in previous years.

Table 8. Focal child characteristics

	%	n	N
Total focal child responses			146
Age (years)			
5–11	27%	40	146
12–13	25%	37	146
14–17	38%	55	146
Could not specify age but confirmed under 18	10%	14	146
Gender			146
Boys	61%	89	146
Girls	39%	57	146
Education			146
Work only	8%	12	146
Combines work and school	47%	69	146
Uncertain	5%	7	146
Common work activities^a			146
Going to the pits to collect mica	84%	123	146
Sorting mica by quality and size	48%	70	146
Transporting mica from the pits to outside	13%	19	146
Retailing/selling mica to large buyers	11%	16	146
Washing mica	7%	10	146
Transporting mica	5%	7	146
Packaging mica	2%	3	146

^a Multiple responses possible

The most common type of work that the focal children engaged in was “going to the pits to collect mica,” reported by 84% of respondents who answered focal child questions. The other common task performed was “sorting mica by quality and size,” reported by 48% of respondents. This aligns with findings from the qualitative interviews, which suggest that children in the mica belt of Jharkhand were commonly engaged in cleaning and sorting mica. Other less common work activities of focal children include “transporting mica from the pits to outside,” reported by 13% of respondents, and “retailing/selling mica to large buyers,” reported by 11% of respondents.

The responses to the focal child section of the questionnaire suggest that a significant percentage of children engaged in mica production are exposed to hazardous work (Table 9) and experience injuries from their work (Table 10). In total, 119 respondents answered questions about focal children’s exposure to hazardous work. Of those respondents, 72% identified a focal child who was exposed to at least one hazardous work condition. Children exposed to hazardous work meet the definition of child labor, as defined by the ILO and by India’s Child Labor Act.

Some of the common hazards reported were as follows: using sharp tools (57% of focal male children and 47% of focal female children), working in contact with animals (43% of focal male children and 33% of focal female children), and carrying or pushing/pulling heavy loads (40% of focal male children and 33% of focal female children). These top three hazards were more common among male focal children than female focal children; less common hazards appeared to occur at about the same frequency across genders.

Table 9. Exposure to hazards by gender

	Male (68)		Female (51)		Total respondents (119) ¹¹	
	%	n	%	n	%	N
Exposed to hazard	75%	51	69%	35	72%	86
Types of hazard^a						
Using sharp tools	57%	39	47%	24	53%	63
Working in contact with large domestic/wild animals or around animal manure	43%	29	33%	17	39%	46
Carrying or pushing/pulling heavy loads	40%	27	33%	17	37%	44
Working in a place that is very cold, or in rainy/wet weather	34%	23	41%	21	37%	44
Working indoors or outdoors with dust, sand, smoke, or fumes	37%	25	33%	17	35%	42
Working long hours in the hot sun without a break	32%	22	33%	17	33%	39
Working where child had to go inside the pit and there were chances of cave ins	25%	17	20%	10	23%	27
Working below the ground in mining wells or tunnels	21%	14	24%	12	22%	26
Working during night-time or very early in the morning	21%	14	16%	8	18%	22
Working in a very noisy place	10%	7	6%	3	8%	10

^a Multiple responses possible

As shown in Table 10, 119 respondents answered questions about focal children’s exposure to injury and illness. Of these respondents, 37% reported that the respective focal child had been injured or suffered an illness due to their work in mica production. The most common types of injuries or illness were injury to or swelling in hands (61%), cuts or wounds (41%), and injury to feet (39%). Injuries were primarily caused by falling rock (80%), followed by tool accidents (52%).

¹¹There was a significant dropout of respondents in this section. As a result, the N (119) here is less than the total N (146) for the focal child section.

Table 10. Injuries and illnesses

N=119	%	N
Ever hurt or sick because of work	37%	44
Types of injury/sickness		
Injury to or swelling in hands	61%	27
Cuts or wounds	41%	18
Injury to feet	39%	17
Head injury	18%	8
Injury to knees or legs	18%	8
Twisted ankle	9%	4
Injury due to cave-ins	7%	3
Heat stroke	5%	2
Back strain or pain in back	2%	1
Eye Injury	2%	1
Cause of injury/sickness (N=44)		
Falling rock	80%	35
Tool accident	52%	23
Insufficient ventilation	7%	3

Of the 146 respondents who identified a focal child, 119 (82%) reported the involvement of these children in mica production over the past year. In accordance with ILO standards, the researchers calculated all focal children in the 4–11 age group who engaged in mica production in the past year, and all children age 12 and above who were exposed to hazardous work when engaging in mica production as meeting the definition of child labor. Per this calculation, 95 focal children (out of 119) or 80% of children who engaged in mica production in the past year met the definition of child labor. This figure should not be interpreted as a prevalence estimate because the research specifically asked respondents to identify a child engaged in mica production. However, it does indicate that there continue to be children engaged in scrap mica production in Giridih and Koderma who experience instances of child labor.

Table 11. Child labor status by age and gender (N=119)

	Male		Female		Total	
	%	n	%	n	%	n
Child labor	79%	54	80%	41	80%	95
Age group 4–11 ^a	100%	19	100%	18	100%	37
Age group 12–13 ^b	73%	11	75%	12	74%	23
Age group 14–17 ^c	77%	23	67%	8	74%	31
Age uncertain (under 18) ^d	25%	1	60%	3	44%	4

^aAll children in the age group of 4–11 years who engaged in mica-related work in the past year

^bAll children in the age group of 12–17 years who engaged in hazardous mica-related work in the past year

^cAll children in the age group of 4–11 years who engaged in mica-related work in the past year

^dAll children in the age group of 12–17 years who engaged in hazardous mica-related work in the past year

4.2 The Supply Chain

4.2.1 Child Labor in Production

As described in Section 4.1, reports of child labor are primarily limited to the extraction of mica, the first stage of the domestic supply chain. This includes the collection and sorting of mica by quality and size. Many of the focal children in the sample, including those who met the definition of child labor, performed activities related to this stage. These findings were corroborated by the qualitative interviews. Some of the interview respondents also differentiated between the task of digging and the task of sorting and cleaning, specifying children’s engagement in sorting only.

“The process began with adults digging, and later children helped sort the mica from other materials.”

—Former mica miner and local resident

The act of sorting is referred to as “chunai” in the local dialect and includes separating mica flakes from a mixture of soil and stones. A handful of the focal children (8% of male focal children and 5% of female focal children) were also reportedly involved in transporting mica from the pits. Based on the KII responses, sometimes mica is transported from the pits to a dumping yard prior to the sorting stage; it is possible that these children are engaged in this pre-sorting transportation process.

4.2.2 Mica Production, Processing, and Consumption in India

Mica reserves in India are concentrated in four states: Andhra Pradesh (Guntur District), Rajasthan (Ajmer and Bhilwara Districts), Jharkhand (Giridih and Koderma Districts), and Bihar (Nawada District). The Government of India has not published national mica statistics since 2015. Multiple studies highlight discrepancies between production statistics published by the Ministry of Mines and the volume of mica exports published by the Indian Department of Commerce (Debring, 2022; RMI, 2022).¹² These discrepancies are attributed to significant illegal mica mining in Jharkhand and Bihar. Although the data for these states were not officially reported, they were included with data for formalized commercial trade routes.

In February 2015, per the Government of India Notification S.O. 423(E), mica was declared as a “minor mineral.” As a result, mica production data are now directly submitted to respective state governments rather than to the India Bureau of Mines (IBM, 2021; Debring, 2022). The India Bureau of Mines then collects the data from each individual state. Since 2017, only two states—Andhra Pradesh and Rajasthan—have reported information on domestic mica production (Debring, 2022; RMI, 2022). Thus, the most recent data published by the India Bureau of Mines lack mica production data from Jharkhand.

Other estimates on the production of mica in Jharkhand are available. The Indian Comptroller and Auditor General report on Mining Receipts 2018 estimated that 26,587 metric tons of mica from Jharkhand had been exported without adequate documentation. This exceeds the national annual domestic production amount reported for that year (CAG, 2018).

¹² Production data from India’s Ministry of Mines show that the country produced 19,000 tons of mica in 2013/14, but export data for the same year show 128,000 tons of mica being exported. The same trend holds true for 2014/15. The data indicate that 12,488 tons of mica were produced, but 140,960 tons of mica were exported (Jharkhand Sustainable Mica Policy Framework and Vision, 2020).

The U.S. Geological Survey estimated Indian scrap mica production to be 16,000 metric tons in 2021, with “large” reserves (Mineral Commodity Summaries, 2023). Official trade statistics in 2021 report 20,222 metric tons of scrap mica exports valued at \$9,053,372 for India as a whole (UNCOMTRADE, through Panjiva; Appendix 3 and 4).

4.2.3 Domestic Processing

Although there is a lack of production data on the amount or type of mica mined in Jharkhand, findings from both the secondary literature review and primary data collection suggest that mica mined in Jharkhand is exclusively scrap mica, which subsequently undergoes minimal processing to take the form of flake mica or mica powder. Thus, this study focused on the collection and processing of scrap mica into flake mica and mica powder and the associated downstream domestically produced products.

Scrap mica undergoes several stages of domestic processing to transform it into products suitable for various industries. In Jharkhand, miners clean and sort scrap mica based on size and quality. Interview responses show that the process of cleaning and sorting may take place near the closed mines or in dumping yards in or near the workers’ village. Some of the workers may also bring the mica to their homes to sort and clean.

LSM operations cannot operate legally in Jharkhand, so the sourcing of flake and powder mica is exclusively from scrap mica, which is extracted through ASM operations. The scrap mica then makes its way to processing and export factories in Jharkhand through multiple small and mid-level buyers. At each level, the buyer makes a commission and sells the mica to a bigger buyer. The final buyer is generally an agent associated with the processing factory. No new mica trading licenses have been issued in Jharkhand since the 1980s, and only a small number of factory agents are able to legally operate in the region. These agents are tied to old factories that have been in operation since before the Forest Conservation Act of 1980.

After scrap mica reaches the processing factory, it is pounded into small flakes or powder, which range in size, depending on the specific order requirements. The flake mica is then graded and sorted by quality, based on coloration, before being packaged and prepared for either further processing or sale.

“After digging, it comes to factory—we dry it and then make it in powder form, and then pack it. We exclusively make mica powder and did grading based on color and other factors.”
—Former factory supervisor from Tisri, Jharkhand

According to KII respondents, ruby mica is the highest quality mica, but one respondent pointed out that because the mica mined in Jharkhand is primarily scrap mica, ruby mica, which is around six inches or more in size, is no longer mined in the state. The color of ruby mica can range from almost white to brown, with shades of pink and ruby in between (Axim Mica, n.d.). Green mica and black mica are two other kinds of mica (inferior to ruby mica) mentioned by one of the KII respondents.

An industry expert interviewed for this study explained this entire process as follows:

“After extraction, each contractor [or buyer] would deal with 20–30 households, and then they would transport the mica to a bigger contractor. The primary responsibility of the bigger contractor was to transport the mica from one village to another, and they would require a license. Those without a license risked facing the police and forest officials. The big contractors collect mica (100–200 kg) and hand it over to aggregators. These aggregators would gather mica from around 50 such contractors. The aggregators would then process the mica,

conducting basic elimination of waste such as stones, dust, iron, etc. After this processing, the mica would be sent to the factories that had placed orders. At the factory, flex making and grinding would be done to create a powder form.”

—Industry expert

KIIs suggest that the illegally sourced mica from Jharkhand enters the legal global supply chain after being comingled with legally sourced mica from other states. This mixing may occur in Kolkata, from where mica is exported, or mica may be mixed before reaching Kolkata in states like Rajasthan, where mica mining is legal. In both cases, mica from Jharkhand is transported by road within India and makes its way to the seaport in Kolkata for export.

“From there [Jharkhand], it is transported to Rajasthan, where it maintains (sic) its legal status before being exported. It is transported by both truck and train from Rajasthan, with the necessary legal paperwork for export.”

—CSO respondent

One respondent pointed out that this mixing takes place after the scrap mica is turned into mica powder.

“Mica is turned into powder in Jharkhand. After it is powdered, it is mixed with powdered mica from Rajasthan....it gets legal papers under the pretext of it being mined in Rajasthan and then it is sent to the Kolkata port.”

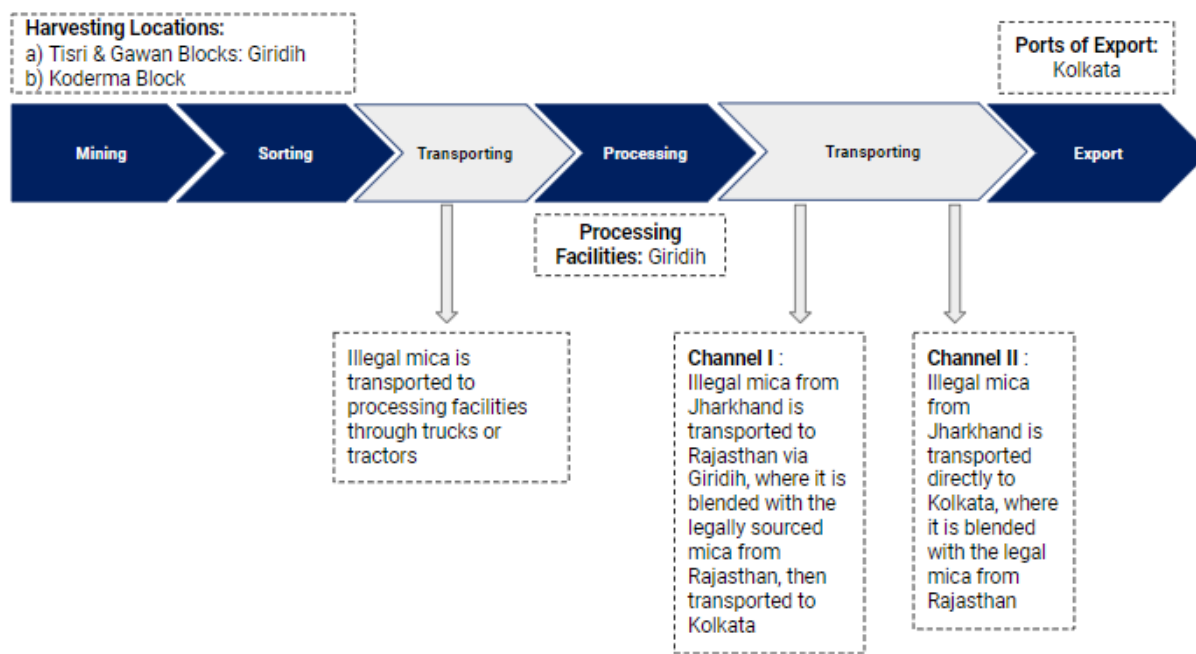
—Supply chain trader

Although not all KII respondents were aware of how and where the mica from Jharkhand is mixed with mica from other parts of the country, almost all of them were aware that this mixing does take place. One of the CSO respondents also reported that sometimes the mica is falsely marketed as imported from China, to conceal its origins. This was not mentioned by any other respondent. The same CSO respondent also noted the illegal ways in which mica is transported out of Jharkhand.

“The transportation of mica from Jharkhand to other parts of the country involves illegal methods, where mica is hidden inside trucks, camouflaged with other materials such as cotton or bottles. Unfortunately, the police are involved in corruption and overlook these illegal practices.”

—CSO respondent

Figure 2. Mica harvesting, processing, and export locations



4.2.4 Domestic Consumption

The mica industry is predominantly export focused; however, exports of fabricated and paper mica point to domestic processing of downstream goods (Appendix 4). The exact quantity of domestic mica consumption is unknown, but trade statistics reveal that domestic demand is being met through both imports as well as domestic production. In 2021, India imported limited quantities of mica powder (\$998,177 USD) and mica sheets (\$1,041,491 USD); however, 88.5% of mica imports by value were in the form of minimally processed fabricated mica (\$10,077,294 USD) and mica paper (\$5,545,731 USD) (UNCOMTRADE, through Panjiva; Appendix 3). This suggests that India’s domestic processing industry of minimally processed mica products is insufficient to meet domestic demand. China was the dominant supplier of fabricated mica and mica paper (40%), followed by Switzerland (14%) and Japan (13%).

Open-source research indicates a sizeable pigment industry in India, which sources mica domestically and then supplies it for end-use products such as paint, ink, food coloration, and plastics (Sudardhan, n.d.; Koel Colors, n.d.; SP Colors; n.d.). A supply chain trader interviewed for this study also mentioned its use in the colors used in the Indian festival of Holi and in glow-in-the-dark printing.

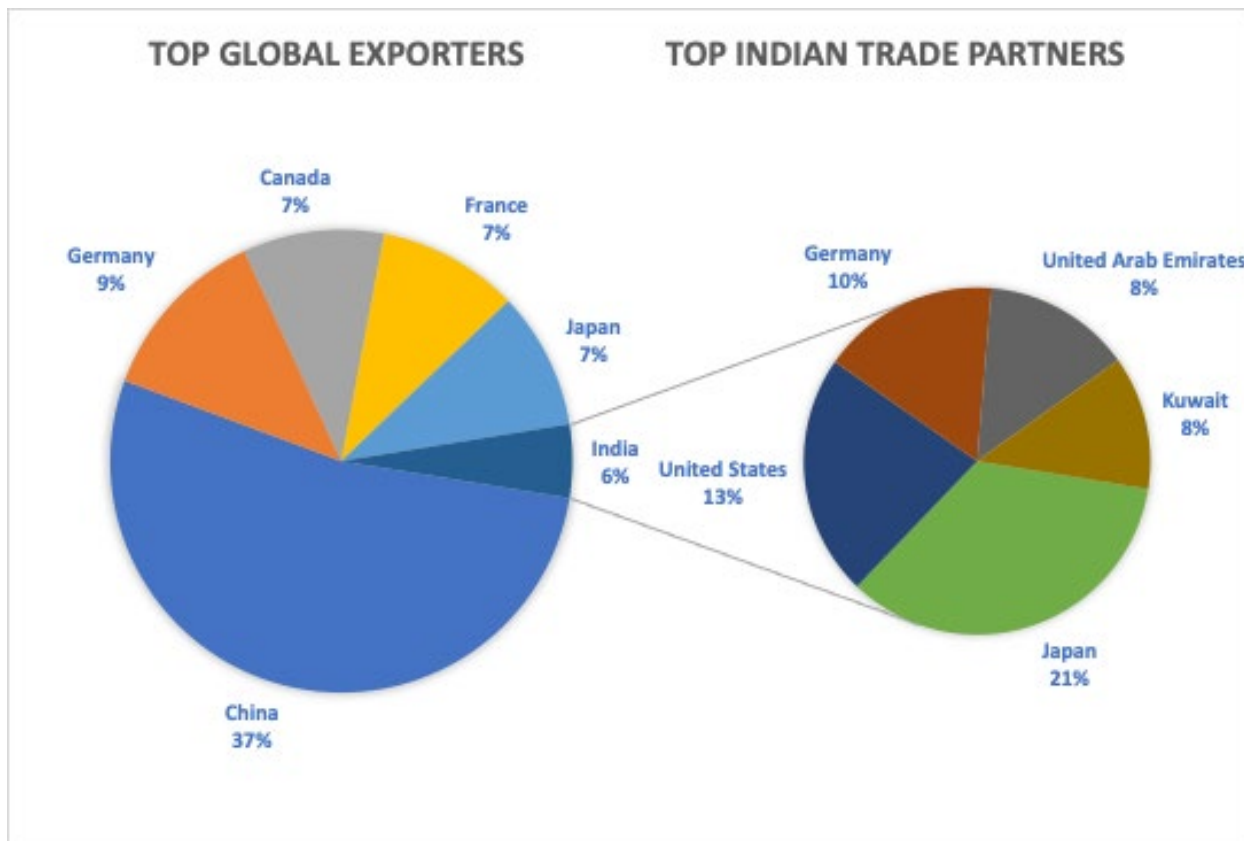
According to a 2018 report, the majority of mica from Jharkhand is domestically used by pigment manufacturing industries, and the remainder of the mica is exported through Indian ports, primarily through Kolkata, to various countries such as China, Japan, the United Kingdom, and Russia (Centre for Responsible Business, 2018). Per this report, the mica exported from India is then likely to be imported in the form of pigments that are primarily manufactured in China. Internet research also revealed the use of mica by Indian government companies such as Indian Railways and Bharat Heavy Electricals Limited (HT, 2023; Ruby Mica, n.d.), but it is unclear whether this mica originated in Jharkhand.

4.2.5 Exports

4.2.5.1 The Global Market for Mica

In 2021, China was a dominant global exporter, contributing 37.1% of global exports of flake mica and mica powder, the type of mica likely to be sourced from the Jharkhand area. Other major exporters include Germany (8.7%), Canada (6.9%), France (6.9%), and Japan (6.7%). India ranked as the sixth largest global exporter of flake mica and mica powder in 2021, accounting for 6.0% of global exports (UNCOMTRADE, accessed through Panjiva).¹³

Figure 3. Export markets by percentage for flake mica and mica powder in 2021



4.2.5.2 India's Role in Exports of Mica

Qualitative findings from KIIs revealed that mica collected from Jharkhand goes to processing units located in Giridih or Koderma, from where it makes its way to Kolkata (either directly or through other mica-producing states). On arrival in Kolkata, a Goods and Services Tax invoice is generated, and all the requisite export formalities are completed. From Kolkata, the mica is then exported to its respective destination.

¹³ India plays a more dominant role as a global mica exporter when considering all mica, including sheet mica and splittings mined from areas outside Jharkhand. India exported 17.2% of global mica exports in 2021, second only to China, which accounted for 25.6% of global mica exports. Other major global exporters of all mica include Germany (6.5%), Switzerland (5.7%), and Austria (5.1%). The main importers of Indian mica in 2021 were China (63%), Japan (9%), Germany (7%), and the United States (5%) (Appendix 5).

Given unreliable domestic production data, it is not possible to definitively state the percentage of flake and powdered mica exported. Secondary data show that Indian exports of flake and powdered mica have decreased by 8% since 2011 (UNCOMTRADE, 2021). KIIs were unable to identify the reason for this decline, although growing global awareness of child labor in mica production may be a factor. Major importers of Indian flake and powdered mica include Japan (20.6%), the United States (13.4%), Germany (9.9%), the United Arab Emirates (8.2%), and Kuwait (7.4%) (UNCOMTRADE, 2021).¹⁴

4.2.6 International Downstream Supply Chain Tracing

Scrap mica mined in Jharkhand is minimally processed into flake or powdered mica and likely exported for use in pigments and in electrical, chemical, construction, and oil industries. As noted in the previous section, the primary destination markets for flake and powdered mica are Japan, the United States, Germany, the United Arab Emirates, and Kuwait. Available shipping data are not proportionally representative of these export patterns, so it is not possible to categorically describe the end use of exported mica. However, available shipping data do provide additional documentation on the type of enterprises that are trading and using flake and powdered mica. Shipping data suggest that flake and powdered mica are exported through a relatively decentralized process with a multitude of exporters, including manufacturers, wholesalers, and trading companies. Available shipping records for 2021 identified 175 different Indian exporting entities, many of which are based in Jharkhand (Giridih or Koderma) or Kolkata (Panjiva).

Shipping data are not exhaustive, so it is not possible to quantify any given exporter's market share. Several exporters with significant shipping records include mica trading companies from Jharkhand. Although it is not possible to trace the production of mica with child labor directly to exporting companies, the physical proximity of mica processing and exporting firms suggests a possible supply chain route for mica mined in Jharkhand. For example, M.P. Mica Enterprises, with offices in Kolkata and Giridih, mines, processes, and exports mica, quartz, and feldspar to chemical and cosmetic industries. Jai Mica Supply Company specializes in the processing and export of mica and is based in Giridih.

The downstream end use of these mica exports varies. Research indicates that flake and powdered mica are imported by wholesale distributors and manufacturing companies producing pigments, paints, electrical materials, chemicals, cement, and oil refinery products. In some cases, distributors importing mica specialize in supplying a particular industry, such as Kobo, a manufacturer in the United States that sources materials for the cosmetic industry and serves a variety of clients, including L'Oréal (Panjiva, 2023). L'Oréal, and other companies in the cosmetic industry, use mica to add opacity or a pearly shimmer in products such as foundation, lipstick, and nail polish.

In other cases, an Indian exporter may operate as a wholesale distributor. For example, an Indian company, Oil Field Supplies, exports a mica-based sealant used in oil drilling to a trading company in Kuwait that serves oil companies in the Middle East (Panjiva, 2023). Mica is also imported directly by manufacturers, as exemplified by Pamica Electrical Material Co.(Hubei) Ltd. (Pamica Electric), which sources some of its mica from India, including from the Jai Mica Supply Company. According to its corporate website, Pamica Electric manufactures mica products and thermal insulating materials, such as mica tape, mica paper, and customized mica mechanical parts, for domestic consumption and export. These industrial inputs are valued in insulation, given mica's heat resistant properties, and have a wide

¹⁴ Taking all Indian mica exports into account, including sheet mica and splittings, China is the top destination market. In 2021, top importers included China (62.3%), Japan (8.5%), Germany (6.6%), the United States (4.6%), and Saudi Arabia (2.8%) (Appendix 5).

range of end uses, including insulated electrical wiring and batteries in electric vehicles or other modes of transportation, such as ships and trains. Shipping data indicate that Pamica Electric serves a variety of clients, including sales of mica washers to Tesla (Panjiva, 2023). Although there are limitations in available shipping data, existing records clearly confirm that flake and powdered mica from India that are at risk of being produced with child labor are finding their way into a full range of downstream industries worldwide.

5. Examining the Impact of Policy and Other Factors Affecting Mica Production in India

Labor dynamics in the mica industry of Jharkhand, particularly those regarding child labor, are influenced by a combination of labor, mining, schooling, and child protection policies. India has taken important steps in addressing child labor, reducing school dropout rates, and protecting the rights of children and adolescents. In addition, the state government and civil society groups in Jharkhand have made a concerted effort to legalize mica mining. These actors believe that formalizing the industry and bringing it within the purview of national labor standards and regulations could reduce the engagement of children in the industry and improve working conditions and wages for adults.

More recently, significant efforts have been made to crack down on illegal mining and engagement of children in mica mining in Jharkhand. Almost all qualitative respondents—workers, local residents, and key informants—pointed out the reduction of child labor in the region due to these efforts. Respondents had differing perceptions of the exact timeline for these enforcement efforts, with some saying it began a year or two ago, and others pointing toward 2018–2019 and the international attention toward child labor in mica mines of Jharkhand as triggering these crackdowns. But almost all believed that these efforts led to a significant reduction in children’s engagement in mica mining.

“About five years ago, mica mining became illegal due to a government ban.”

—Local resident and former village-level mica buyer/trader

“In 2018, before COVID pandemic, the government authorities forcefully closed the mines.”

—Former mica miner and local resident

“The government recently enforced the closure of the mica industry around a year ago, as mobile phones, videography, and social media exposed the longstanding covert mica mining activities.”

—Former mica miner and local resident

Some interview respondents also mentioned efforts by civil society groups such as Kailash Satyarthi Children’s Foundation and improved access to schooling as reasons behind the perceived reduction in child labor. Although survey data show that children continue to be engaged in mica production, qualitative data suggest that it is less than what has traditionally been common in the region.

5.1 Policies Regulating Children’s Work in Mica Mines

The Child Labor (Prohibition and Regulation) Act is the key policy governing child labor regulation in India. The Act prohibits employment of children under age 14 and regulates employment of adolescents aged 14–17 years, including defining the working hours and types of work (Ministry of Law and Justice, 2016). The Act also prohibits the employment of adolescents in hazardous occupations and processes, and it lists occupations connected with “mines” as hazardous. In 2016, the Act was amended, and as part of the amendment, the Act now allows for labor of children when done to help one’s family or in a

family enterprise. This was done to allow for the cultural and economic realities in India, but it also potentially opens the possibility of children engaging in exploitative labor practices under the guise of family businesses or supporting their family's livelihood. In addition, the Mines (Amendment) Act 1983 also prohibits employment of children under age 18 in mines (Ministry of Labor and Employment, 1986). Due to the clandestine and illegal nature of mica mining in Jharkhand, the enforcement of these regulations is difficult. Consequently, civil society groups in the region have taken on the responsibility of educating parents about child labor and encouraging families to not bring their children to the mines. Interview respondents mentioned a combination of services provided by local CSOs, such as childcare services for the children of mica miners, health care services for mica miners and their families, and awareness raising regarding child labor and the importance of education.

“Later, this [children engaging in mica mining/picking] reduced to almost zero due to two reasons. First, due to the official crackdown on mica mining, people shifted their focus to various other work/business opportunities, and some even migrated. Second, local NGOs raised awareness about children's involvement in this industry, leading people to consider it unethical.”
—Local resident and former mica miner

In addition to child labor-specific policies, India has also enacted strong education and school retention programs, which have played an important role in keeping children in schools and away from labor. Most notably, the Right of Children to Free and Compulsory Education Act stipulates compulsory education for children up to age 14. Schooling initiatives specifically target ST communities, such as the Eklavya Model Residential Schools, which provide residential middle and high-level education to ST students in remote parts of India (Ministry of Tribal Affairs, 2010).

5.2 Policies Regulating Mining

Mica mining in India is governed by a combination of federal and state-level laws, making it a complex regulatory landscape. The Mines and Minerals (Development and Regulation) Act, 1957 is the primary federal law governing mining activities. The implementation and enforcement of mining regulations varies across states, contributing to legal ambiguities.

The Forest Conservation Act of 1980 has important implications on mica mining in Jharkhand. This legislation aims to conserve forests and safeguard wildlife, and it restricts the diversion of forest land for activities such as mining. Due to this restriction, mica mining is prohibited in Bihar and Jharkhand.

In recent years, RMI has facilitated state-level efforts in Jharkhand to legalize mica mining. Since 2018, RMI has led a series of multi-stakeholder consultations, which led to the submission of the “Sustainable Mica Policy Framework and Vision” to the state government of Jharkhand in 2020. In February 2022, the first of these recommendations was adopted by the state government, and the Jharkhand State Mineral Development Corporation was assigned as the focal point for all mica-related decisions in the state (Business Wire, 2022). Despite these advancements, the process for legalizing mica mining in Jharkhand continues to face challenges, including competing interests and priorities within the state.

“One of the challenges for the government which we also need to be practical about is, that the state government is dealing with 73 minerals including coal, bauxite, copper and the revenue is coming from other minerals is much higher, however the revenue coming from mica is almost zero.”

—Industry expert

5.3 Madagascar Case Study

The recent policy efforts taken in India to address child labor can be a source of learning for other countries facing similar issues. Madagascar is a particularly relevant case. Like in India, the use of child labor has been reported in ASM mica operations in southern Madagascar (Wal, 2019; Cavazuti, Romo, McFadden, & Shapiro, 2019). In 2019, the country was listed on the U.S. Department of Labor List of Goods Produced by Child Labor or Forced Labor.

5.3.1 Madagascar's Mica Industry

Madagascar has large deposits of mica-bearing rock, with mica mines generally located in the country's impoverished southern regions of Anôsy, Androy, and Ihorombe (USGS, 2023; USDOL, 2021). These reserves have allowed Madagascar to emerge as a leading global producer of natural mica, specifically in the form of scrap and flake mica. In 2021, Madagascar more than doubled its production of scrap and flake mica and became the second largest producer behind China (Table 13) (USGS, 2023).

Table 13. Domestic production of scrap and flake mica in Madagascar, 2020–2021

Year	Production (metric tons)
2020	33,000
2021	70,000

Source: U.S. Geological Survey, 2022 and 2023

Madagascar is also fast emerging as one of the leading global exporters of mica, ranking as the tenth largest exporter of all types of mica, accounting for 3.6% of global exports in 2021 (UNCOMTRADE, through Panjiva).¹⁵ Port Eholala is considered the most significant port for the export of mica out of Madagascar, with a majority of Malagasy mica flowing to China, where it ends up in various electrical component parts used by American products (Cavazuti, Romo, McFadden, & Shapiro, 2019). Exports of sheet mica have been particularly significant, increasing by 1,495% since 2011, with 93% of sheet mica exports flowing to China (UNCOMTRADE, 2021).

5.3.2 Child Labor in Madagascar's Mica Industry

Reports of child labor in Madagascar's mica industry reached international attention in 2019, following an NBC investigation that uncovered the widespread use of child labor in the extraction of mica and the dangerous activities children undertake (Cavazuti, Romo, McFadden, & Shapiro, 2019). As in Jharkhand, children are mainly involved in the sorting and cleaning of mica collected in Madagascar (Cavazuti, Romo, McFadden, & Shapiro, 2019).

The push factors forcing families in southern Madagascar to resort to child labor are similar to the ones observed in the mica belt of Bihar and Jharkhand (RMI, n.d.), such as low agricultural yields and the low price paid for mica, which worsen the economic vulnerability of mica-dependent families; the lack of access to education and increasing illiteracy, which continue the cycle of generational poverty and dependence on mica mining; and the informality of the mica collection process, along with the lack of clarity on the legal framework regarding mica mining, which make workers vulnerable to poor and unregulated working conditions.

¹⁵ Data on global exports of mica include mica in both its crude, sheet, powder, and waste forms, as well as agglomerated and worked mica (HS Codes: 2525.10, 2525.20, 2525.30, 6814.10, 6814.90).

5.3.3 Policy and Enforcement Gaps in Madagascar: Potential Learning from the India Context

The context of Madagascar is quite different from that of India, especially in terms of government resources and capacities. The GDP of Jharkhand alone (around \$43.6 billion USD in 2022) is almost three times that of Madagascar (\$15.9 billion USD in 2022) (IMF, n.d.; PRS India, n.d.). The policy and regulatory initiatives taken in India, however, can provide important insights to replicate within the Madagascar context.

Improve enforcement of child labor policies. Even though mica mining is not illegal in Madagascar, research conducted in the mica mining region of southern Madagascar found many of the mines operating without a license (Wal, 2019). In addition, the government lacks the resources to implement regulatory policies in the mining industry (Wal, 2019), and, as a result, the employment of children, even though it is prohibited in the country, it is not adequately addressed in the mica supply chain.

Findings from India show that illegal and clandestine mining is one of the biggest risk factors for child labor. Including the ASM sites in Madagascar within the protection of national labor standards could help address child labor. This should be complemented by strong enforcement policies, with proper budget allocation for enforcement.

As discussed previously in the study findings, the perceived reduction of children's engagement in the mica mines in Jharkhand could be a result of the increasing government crackdown on illegal mining in the state. This suggests the important role that political commitment and enforcement mechanisms can play in reducing child labor.

Develop a separate policy for the mica industry. Madagascar can also look toward the multi-stakeholder efforts in Jharkhand to regularize the mica industry. RMI, which is leading this process in Jharkhand, is replicating similar initiatives in Madagascar. The initiatives in Jharkhand can provide important insights on finding common ground between the demands of the industry, the priorities of the government, and the needs of mica workers. Further, the development of a separate policy for mica in Madagascar, such as the one being deliberated on in Jharkhand, can bring a more concerted focus on labor rights issues in the mica supply chain, as well as create a separate enforcement budget for the mica supply chain.

Improve enforcement of compulsory education policies. Both India and Madagascar have laws on compulsory education, but the countries differ in the enforcement mechanisms of these laws. In India, compulsory education for children is accompanied by tuition-free access to public schools, with free books, school uniforms, and school lunches. In Madagascar, although the government has announced that entrance fees for all schools would be abolished, parents are still required to pay fees to meet the cost of teachers' salaries (Gruijters et al., 2023). One of the teachers interviewed in a 2019 study mentioned the role that free lunches can play in making the public schools of Madagascar more attractive for students (Wal, 2019).

Qualitative findings from this research demonstrate the role of improved access to schools and the role that CSOs have played in raising awareness of the importance of children's education on the reduction of child labor in the mica belt of Jharkhand. Madagascar should therefore complement improved enforcement of child labor policies with a stronger commitment to free public education up to the minimum working age to address both the pull and push factors of child labor in the country.

6. Conclusion and Recommendations

This study attempted to examine the current state of child labor in the scrap mica supply chain originating in Jharkhand and trace the downstream goods produced with child labor in the supply chain. The study findings presented in the previous sections offer the following two conclusions. First, illegally mined flake and powdered mica from Jharkhand is comingled with legally mined flake and powdered mica from the rest of India. Therefore, all flake and powdered mica from India is at risk of containing illegally mined mica from Jharkhand. Second, children in Jharkhand are engaged in the mica extraction process, with many meeting the definition of child labor. Although the research methodology does not allow the quantification of the prevalence of child labor in mica production in Jharkhand, findings suggest that it is still common, although less so than in previous years. Therefore, all flake and powdered mica that is exported from India is still at risk of being produced with child labor.

To address these issues, the study provides the following recommendations.

Government of India:

- Prioritize regularizing mica mining in Jharkhand and bring the mica miners within the protection of the national labor laws. This should be followed by strong enforcement of labor standards within the industry, to ensure that children under age 18 do not engage in mining activities as stipulated in the Mines (Amendment) Act 1983. By bringing mica mining within the purview of the national labor laws, the Government of India can ensure that proper inspections and enforcement mechanisms are in place in the mica ASM sites of Jharkhand. This would help the Indian government understand the extent of children's engagement in mica mining; remove and rehabilitate child laborers identified; and make sure that workers' wages are aligned with national and state-level minimum wage laws, thus addressing the economic necessity for families to engage their children in mica production.
- Undertake more regular assessments of child labor incidence in the country and publish these findings in the public domain. Having reliable government data on child labor will also help the government plan and budget for enforcement programs that target child labor and child rights violations.
- Address the poor economic conditions of families that resort to child labor. This would involve expanding on and ensuring adequate implementation of existing social assistance programs, creating alternative livelihood-generation opportunities in the region, and improving farm-based income through agricultural programs.
- Support civil society efforts, led by RMI, to implement a cooperative model of mica workers in Jharkhand. This model would help workers negotiate better wages and working standards for themselves.

U.S. Government:

- Enforce due diligence laws such as the California Transparency in Supply Chains Act.
- Engage with U.S. companies that use flake and powdered mica in their products on effective due diligence practices.
- Undertake diplomatic dialogue with the Government of India to encourage the mica mining regularization process that is being deliberated in Jharkhand.

Private Sector:

- For companies that source scrap mica and its processed and downstream goods, enforce risk-based due diligence within their supply chain and publish these findings.
- If child labor is identified within the supply chain, companies should try to understand the root causes behind it and use their funds for corporate social responsibility to address these issues. Companies should engage local communities and stakeholders to identify remediation efforts and alternatives for families engaging in child labor.
- Engage in collective action that includes sharing of data and joint implementation of supply chain tracing tools between companies that function along the mica supply chain. Collectively, companies should consider setting industry-level standards and benchmarks for due diligence within the supply chains.

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Appendix 2: HS Codes

Mica and Mica Products HS Glossary

Product	HS Code	HS Definition
Minimally Processed Goods		
Crude mica, sheet mica, mica splittings	2525.10	Crude mica and mica rifted into sheets or splittings
Mica powder	2525.20	Mica powder
Byproducts		
Scrap/flake mica	2525.30	Mica waste
Downstream Goods		
Fabricated mica	6814.10	Plates, sheets and strips of agglomerated or reconstituted mica, whether or not on a support
Mica paper, Built up mica	6814.90	Worked mica and articles of mica, including agglomerated or reconstituted mica, whether or not on a support of paper, paperboard or other materials: Other

Appendix 3: India Flake and Scrap/Powder Export Values

Top 5 Importers of Flake Mica and Mica Scrap/Powder from India, 2021

Destination country	Trade value (USD)	Percent of total flake mica and mica scrap/powder export value from India
1. Japan	\$ 1,878,958.42	20.6%
2. United States	\$ 1,221,333.00	13.4%
3. Germany	\$ 906,787.90	9.9%
4. United Arab Emirates	\$ 751,339.78	8.2%
5. Kuwait	\$ 673,290.00	7.4%

Source: UNCOMTRADE, 2021. HS Codes: 2525.20, 2525.30

Top Global Exporters of Flake Mica and Mica Scrap/Powder, 2021

Country	Trade value (USD)	Percent of total global exports
1. China	\$ 55,801,090	37.1%
2. Germany	\$ 13,146,351	8.7%
3. Canada	\$ 10,438,368	6.9%
4. France	\$ 10,317,408	6.9%
5. Japan	\$ 10,045,801	6.7%
6. India	\$ 9,035,373	6.0%
7. United States	\$ 7,562,343	5.0%
8. Belgium	\$ 6,703,821	4.5%
9. United Kingdom	\$ 5,931,663	4.0%
10. Spain	\$ 3,129,897	2.1%

Source: UNCOMTRADE sourced through Panjiva, 2021. HS Codes: 2525.20, 2525.30

Appendix 4: India All Mica Export Values

Top 5 Importers of Mica from India, 2021

Destination country	Trade value (USD)	Percent of total mica export value from India
1. China	\$ 58,779,728	62.3%
2. Japan	\$ 8,013,627	8.5%
3. Germany	\$ 6,205,349	6.6%
4. United States	\$ 4,293,826	4.6%
5. Saudi Arabia	\$ 2,670,102	2.8%

Source: UNCOMTRADE, 2021. HS Codes: 2525.10, 2525.20, 2525.30, 6814.10, 6814.90

Top Global Exporters of Mica, 2021

Country	Trade value (USD)	Percent of total global export of mica
1. China	\$ 140,290,738	25.6%
2. India	\$ 94,043,656	17.1%
3. Germany	\$ 35,689,958	6.5%
4. Switzerland	\$ 31,332,552	5.7%
5. Austria	\$ 27,988,027	5.1%
6. Japan	\$ 23,784,173	4.3%
7. United States	\$ 23,068,748	4.2%
8. United Kingdom	\$ 21,403,335	3.9%
9. Belgium	\$ 20,492,809	3.7%
10. Madagascar	\$ 19,742,312	3.6%

Source: UNCOMTRADE sourced through Panjiva, 2021. HS Codes: 2525.10, 2525.20, 2525.30, 6814.10, 6814.90

Indian Mica Exports by HS Code, 2017–2021

Good	HS Code	Export value					Top destination market for 2021 (%)
		2017	2018	2019	2020	2021	
Crude mica, sheets, splittings	2525.10	\$58,745,221	\$72,307,638	\$55,534,867	\$50,649,244	\$69,499,808	2021: China (80.8%)
Mica powder	2525.20	\$7,619,574	\$8,117,388	\$8,894,455	\$6,594,272	\$8,419,513	2021: Japan (21.4%)
Mica waste	2525.30	\$888,712	\$627,148	\$569,822	\$620,797	\$714,693	2021: USA (69.2%)
Fabricated mica	6814.10	\$11,781,184	\$9,991,867	\$11,383,876	\$8,855,895	\$8,353,918	2021: United Arab Emirates (21.4%)
Mica paper	6814.90	\$6,114,952	\$6,013,158	\$5,956,821	\$5,532,738	\$7,307,476	2021: China (24.4%)

Source: UNCOMTRADE, 2021. HS Codes: 2525.10, 2525.20, 2525.30, 6814.10, 6814.90

Indian Destination Markets' Top 5 Sources of Imported Flake Mica and Mica Scrap, 2021

Destination market for Indian flake mica and mica scrap	Destination markets' source of flake mica and mica scrap imports	Trade value (USD)	Percent of total flake mica and mica scrap import value by destination market
Japan	China	\$29,048,150	85.2%
	Canada	\$1,978,727	5.8%
	India	\$1,878,958	5.5%
	Malaysia	\$380,395	1.1%
	USA	\$371,703	1.1%
USA	Canada	\$4,687,538	28.8%
	China	\$3,853,528	23.7%
	Japan	\$3,405,182	20.9%
	India	\$1,221,333	7.5%
	Finland	\$1,157,476	7.1%
Germany	France	\$4,958,985	26.9%
	China	\$4,939,971	26.8%
	United Kingdom	\$1,863,577	10.1%
	USA	\$1,523,846	8.3%
	Austria	\$1,221,305	6.6%
United Arab Emirates	India	\$751,340	56.9%
	China	\$297,780	22.5%
	Norway	\$110,087	8.3%
	Canada	\$87,683	6.6%
	United Kingdom	\$37,013	2.8%
Kuwait	India	\$673,290	96.7%
	Spain	\$12,422	1.8%
	Norway	\$5,329	0.8%
	Iran	\$3,102	0.4%
	Italy	\$1,494	0.2%

Source: UNCOMTRADE, 2021. HS Codes: 2525.20, 2525.30

Appendix 5: Child Labor Definitions

Child Labor: “Child labor is defined by ILO Conventions 138 on the Minimum Age for Admission to Employment and 182 on the Worst Forms of Child Labor. It includes employment below the minimum age as established in national legislation, hazardous unpaid household services, and the worst forms of child labor: all forms of slavery or practices similar to slavery, such as the sale or trafficking of children, debt bondage and serfdom, or forced or compulsory labor; the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic purposes; the use, procuring or offering of a child for illicit activities; and work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.” (ILO, 1973; United States Department of Labor, n.d.)

Child Labor Conventions: The ILO Convention on Child Labor, 1973 (No. 138) aims to abolish child labor by requiring countries to establish a minimum age for work as well as employment (typically 14-15 years) of age while also allowing for light work for children under that age (ILO, 1973). The convention also requires nations to establish policies to eliminate child labor. In Article 3 the convention defines the “minimum age for admission to any type of employment or work which by its nature or the circumstances in which it is carried out is likely to jeopardize the health, safety or morals of young person” to be 18 years old. The ILO Worst Forms of Child Labour Convention, 1999 (No. 182) (ILO, 1999b) defines the worst forms of child labor as:

- all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;
- the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;
- the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;
- work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children (hazardous child labor)

Hazardous child labor is then further defined in Article 3 of the ILO Worst Forms of Child Labour Recommendations, 1999 (No 190) (ILO, 1999a) as:

- work which exposes children to physical, psychological or sexual abuse;
- work underground, under water, at dangerous heights or in confined spaces;
- work with dangerous machinery, equipment and tools, or which involves the manual handling or transport of heavy loads;
- work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health;
- work under particularly difficult conditions such as working for long hours or during the night or work where the child is unreasonably confined to the premises of the employer.

In India, Child labor is defined and regulated by the Child Labor (Prohibition and Regulation) Act, 1986

- Child Labor Definition: "Child labor" refers to the employment of a child who has not completed 14 years of age.

- Exemptions: There are exceptions where child labor is allowed. Children assisting in family-owned agricultural activities or establishments are exempted, subject to compliance with prescribed working hours and conditions.
- Hazardous Occupations: The Act prohibits the employment of children in certain hazardous occupations and processes that could be detrimental to their health, safety, or moral development.
- Regulation for Older Children: For children between ages 14 and 18, the Act establishes regulations regarding their working conditions, ensuring their well-being, and preserving their right to education.

Appendix 6: Final Research Instruments

a) Quantitative Adult Workers

Q No	Question	Options
	Date	
	Time	
	Duration	
	Deviceid	
	Interviewer Name	
	Respondent Id	
	District	
	Village	
	Consent	1. Yes, Respondent Consents To Interview
	<p>Hello My Name Is _____.</p> <p>Before Beginning The Survey, I Would Like To Read You Some Information So That You Understand What's Involved With The Study. This Study Is Conducted By [REDACTED]And Icf, A Private Research And Consulting Company. This Survey Is Part Of A Study Which Seeks To Better Understand The Labor Experiences Among People Who Work In The Mica Industry In India. The Survey Will Take Around 30-45 Minutes. If You Do Not Have The Time To Complete It Now, We Can Return At A Time That Works Better For You.</p> <p>Everything You Say Is Confidential. None Of Your Coworkers Or Employers Will Know What You Tell Me. Your Name Will Not Be Used In Any Report. Data From This Study May Be Shared With Other Researchers Or Made Available In Public Databases For The Purposes Of Advancing Research On These Topics. Prior To Doing So, All Personally Identifying Information Is Removed.</p> <p>Participation In This Study Is Voluntary, And If You Do Not Participate There Will Be No Consequences. The Risk Of Doing This Survey Is That Some Of Our Questions Are Personal And Might Make You Feel Uncomfortable. You May Skip Any Question, Take A Break, And End The Interview At Any Time. There Are No Direct Benefits From Participating In This Study, But Many People Find It Enjoyable. Your Answers Will Help Inform Future Programming To Help Other Workers.</p> <p>I Will Answer Any Questions That You Have About The Study Before We Begin. Do You Have Any Questions About The Study? If You Have Any Questions In The Future, Or If You Later Change Your Mind And Do Not Want Us To Include The Information You Provided In Our Study, You May Contact [REDACTED]At[REDACTED] . [If Yes, Answer Before Continuing]</p>	2. No, Respondent Declines Interview

	Do You Agree To Participate In This Survey?	
S1q01	(Age)We Want To Know A Little Bit About You First.	
	How Old Are You?	76. Don't Know But Confirms 18+
	[If Needed, Say: Your Best Guess Is Fine]	77. Don't Know --> End Interview
		99. Refused --> End Interview
S1q02	Gender	1. Male
		2. Female
		3. Other
		4. Prefer Not To Say
S1q03	What Is Your Ethnicity/Caste?	1. Sc
		2. St
		3. Obc
		4. General
		5. Other
		6. Don't Know
		7. Prefer Not To Say
S1q04	In Which District Is Your Primary Residence?	1. Giridih
		2. Koderma
		3. Other
		77. Don't Know
		99. Refused
S1q04_other	If Other, Please Specify	
S1q05	Have You Ever Attended School?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S1q05a	What Is The Highest Class You Have Completed?	1. Never Went To School
		2. Non-Formal Anganwadi
		3. Primary School
		4. Secondary Or Higher School
		5 Graduate And Above
		6. No Formal Education
		99. Refused
S1q06	S1q06 Do You Have Any Children Age 5 To 17?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S1q07	Now We'd Like To Learn More About Your Work. Have You Picked Or Mined Mica In The Past Year?	1. Yes
		2. No
		77. Don't Know

		99. Refused
S1q08	Have You Seen Any Children In Your Village Picking Or Mining Mica Within The Last Year?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S1q09	For How Long Have You Been Involved In Mica Picking? [If Needed, Say: Your Best Guess Is Fine]	77. Don't Know
		99. Refused
	Read: For The Following Questions, Please Think About Your Most Recent Work Picking Or Mining Mica.	
S1q10	If Not, What Are The Other Sources Of Income?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S1q10a	If Not, What Are The Other Sources Of Income	1. Agriculture (Own Land Or Tenancy)
		2. Farm Labor
		3. Daily Labor In Construction
		4. Work Opportunities Via Govt. Schemes Like Mgnrega
		Other
S1q11	Do You Work For Someone Else Or For Yourself?	1. Employer
		2. Self
		3. Other
		77. Don't Know
		99. Refused
S1q12	Which Of The Following Types Of Mica Collection Do You Participate In? Interviewer: Read Aloud And Select All That Apply	1. Picking Mica Off The Ground
		2. Shallow Pit Mining
		3. Deep Shaft Mining Using Mechanized Tools
		4. Collecting Mica From Abandoned Mica Mines
		77. Don't Know
		99. Refused
S1q13	Do You Do Any Other Type Of Mica Collection?	1. Yes
		2. No
		77. Don't Know
S1q13a	What Other Type Of Mica Collection Do You Do?	
S1q14	Out Of 10 Families In Your Village, How Many Regularly Pick Mica? [If Needed, Say: Your Best Guess Is Fine]	[Number]
		77. Don't Know
		99. Refused
S1q15	What Form Of Mica Do You Mine? Interviewer: Read Aloud And Select All That Apply	1. Flake Mica
		2. Mica Powder

		3. Sheet Mica
		4. Other
		77. Don't Know
		99. Refused
S1q15a	If You Mine Any Other Type Of Mica, Please Specify	
		1. Yes
		2. No
		77. Don't Know
S1q16	Do You Process The Mica In Any Way Before You Sell It?	99. Refused
		1. Split Mica Into Thin Pieces
		2. Grind Or Pulverize Mica Into Powder
		3. Combine Ground Mica With Water To Make Sheets Of Mica
		4. Other
		77. Don't Know
S1q17	What Processing Activities Do You Do? Interviewer: Select All That Apply	99. Refused
S1q17a	Other	
		1. Mining / Picking Mica
		2. Processing Mica
		3. Collecting/ Buying Mica From Pickers And Selling To Retailers
		4. Packaging
		5. Transporting
		6. Retailing / Selling Mica To Larger Buyers
		7. Other Work Related To Mica Production
		77. Don't Know
S1q18	In Which Of These Activities Do You Engage In Your Current Work? Read Aloud Response Options And Select All That Apply	99. Refused
S1q18a	Specify Other	
		1. Mining / Picking Mica
		2. Processing Mica
		3. Collecting/ Buying Mica From Pickers And Selling To Retailers
		4. Packaging
		5. Transporting
		6. Retailing / Selling Mica To Larger Buyers
		7. Other Work Related To Mica Production
		77. Don't Know
S1q19	On Which Of These Activities Do (Did) You Spend The Most Time?	99. Refused
S2q01	Sometimes Workers Borrow Money Or Goods From The Person They Work For; For Example After Buying Tools Or	1. Yes
		2. No

	To Pay For A Large Family Expense Such As A Medical Emergency, A Wedding, A Funeral, Etc.. While Picking Or Mining Mica Did You Ever Borrow Money From The Person You Worked For In The Last 3 Years?	3. Have Taken Advance Salary 4. Work In Mines Because I Owe Money To The Person I Work For 77. Don't Know 99. Refused
S2q01a	Did You Have To Pay Interest On The Amount Borrowed?	1. Yes 2. No 77. Don't Know 99. Refused
S2q01b	What Was The Interest Rate? [Record As Percentage Per Month]	
S2q02	Did You Feel That The Terms For Repaying The Amount Borrowed Were Reasonable? If The Respondent Has Multiple Debts, Ask About The Most Recent Debt From Someone They Work For.	1. Yes 2. No 77. Don't Know 99. Refused
S2q02a	Have You Made Any Changes To Your Work Or Your Family's Work To Repay The Amount Borrowed? If Respondent Has Multiple Debts, Ask About The Most Recent Debt Someone They Work For.	1. Yes 2. No 77. Don't Know 99. Refused
S2q02b	What Changes Did You Make? Interviewer: Select All That Apply. Ask "Anything Else?" At Least Twice Before Moving On.	1. Working Additional Days/Hours 2. Working Additional Job 3. Adult Family Members Working/ Extra Work 4. Child Family Members Working/ Extra Work 5. Advance Amount Being Deducted/ Adjusted From The Pay 6. Other 77. Don't Know 99. Refused Other.
S2q02c	Specify Other	
S2q03	If You Were To Leave Your Job Before Paying Off The Amount Borrowed, What Might Happen? Interviewer: Select All That Apply. Ask "Anything Else?" At Least Twice Before Moving On.	1. Threats Or Violence Against Respondent Or Respondent's Family By Employer/Recruiter 2. Restriction On Respondent's Movement 3. Withholding Of Wages Or Other Promised Benefits 4. Fine Or Deduction From Wages *Beyond The Value Of The Debt* 5. Withholding Of Valuable Documents (Such As Identity Documents, School Certificates, Or Residence Permits) 6. Exclusion From Future Employment 7. Employer Would Have Caused Other People From My Family To Lose Their Jobs/Land/Assets

		8. I Would Be Arrested Or Prosecuted
		9. Withholding Of Material Goods As Collateral
		Other
		66. Nothing
		77. Don't Know
		99. Refused
S2q03a	Specify Other	
		1. Yes
		2. No
S2q04	Are Your Typical Earnings Enough To Meet Your Family's Basic Needs For Food And Shelter?	77. Don't Know
		99. Refused
		1. Working Additional Days/Hours
		2. Working Additional Job
		3. Adult Family Members Working/
		4. Child Family Members Working/ Extra Work
		5. Other
S2q05	How Do You Manage To Meet The Basic Needs For Food And Shelter?	77. Don't Know
		99. Refused
S2q05a	Specify Other	
	Does The Person You Work For Impose A Production Quota/Target?	1. Yes
		2. No
		77. Don't Know
S2q06		99. Refused
		1. Yes
		2. No
S2q07	Do You Consider The Quota/Target To Be A Reasonable Amount For An Individual Worker Working Alone?	77. Don't Know
		99. Refused
		1. Work Harder
		2. Work Extra Hours
		3. Help From Adult Family Members
		4. Help From Child Family Members
		5. Hire Extra Help - Adult
		6. Hire Extra Help - Child
		7. Other
S2q08	S2q08 How Do You Manage The Quota?	77. Don't Know
		99. Refused
		1. Local Trader
		2. Local Processor
S2q09	After You Pick Or Mine The Mica, Where Does It Go To Next? Interviewer: Select All That Apply	3. A Processor In Kolkota Or In Ranchi
		4. Export Company

		5. Domestic Manufacturing Company
		6. Foreign Company
		7. Village Chief Or Leader
		77. Don't Know
		99. Refused
		Other
S2q09a	Specify Other	
	Thinking About All The Villages In [District Of Respondent], About How Many Of Them Have People Under Age 18 That Pick Or Mine Mica-- Would You Say All, Most, Some, Or None?	1. All
		2. Most
		3. Some
		4. None
		77. Don't Know
S3q01		99. Refused
	In Your Opinion, What Are The Main Reasons That Children Under Age 18 Pick Or Mine Mica?	
	Interviewer: Select All That Apply. Ask "Anything Else?" At Least Twice Before Moving On.	1. Poverty/Hunger
		2. To Pay School Fees
		3. School Isn't Accessible/Available
		4. Children Can't Be Left Alone/Lack Of Childcare
		5. To Learn Skills
		6. Child Labor Needed To Meet Quota
		7. Parents Unable To Earn
		Other
		77. Don't Know
S3q02		99. Refused
S3q02a	Specify Other	
		1. Boys
		2. Girls
		3. Can't Say
S3q03	Based On What You Have Seen, Which Gender Do You Notice Working More In The Mines?	4. No Such Difference Gender-Wise
		1. Often
	I Will Read You A List Of Work Activities. Please Tell Me How Often People Under Age 18 Do These Activities When Picking Or Mining Mica -- Often, Sometimes, Or Never.	2. Sometimes
	Going To The Pits To Collect Mica	3. Never
	If Needed: Would You Say Often, Sometimes, Or Never?	77. Don't Know
S3q04		99. Refused
	Transporting From Pits To Outside	1. Often
S3q04a		2. Sometimes

	If Needed: Would You Say Often, Sometimes, Or Never?	3. Never
		77. Don't Know
		99. Refused
S3q04b	Washing Of Mica If Needed: Would You Say Often, Sometimes, Or Never?	1. Often
		2. Sometimes
		3. Never
		77. Don't Know
		99. Refused
S3q04c	Sorting Mica As Per Size And Quality If Needed: Would You Say Often, Sometimes, Or Never?	1. Often
		2. Sometimes
		3. Never
		77. Don't Know
		99. Refused
S3q04d	Packaging Mica If Needed: Would You Say Often, Sometimes, Or Never?	1. Often
		2. Sometimes
		3. Never
		77. Don't Know
		99. Refused
S3q04e	Transporting Mica To Trading Points If Needed: Would You Say Often, Sometimes, Or Never?	1. Often
		2. Sometimes
		3. Never
		77. Don't Know
		99. Refused
S3q04f	Retailing / Selling Mica To Larger Buyers If Needed: Would You Say Often, Sometimes, Or Never?	1. Often
		2. Sometimes
		3. Never
		77. Don't Know
		99. Refused
S3q05	What Are The Main Activities You Saw People Ages 14 To 17 Perform? Interviewer: Select All That Apply	1. Going To The Pits To Collect Mica
		2. Transporting From Pits To Outside
		3. Washing Of Mica
		4. Sorting Mica As Per Size And Quality
		5. Packaging Mica
		6. Transporting Mica
		7. Retailing / Selling Mica To Larger Buyers
		14. Other Work Related To Mica Picking Or Mining
		77. Don't Know
		99. Refused
S3q05a	Please Specify Other Work Related To Mica Picking/Mining.	

S3q06	What Are The Main Activities You Saw Children Age Below 14 Perform? Interviewer: Select All That Apply	1. Going To The Pits To Collect Mica
		2. Transporting From Pits To Outside
		3. Washing Of Mica
		4. Sorting Mica As Per Size And Quality
		5. Packaging Mica
		6. Transporting Mica
		7. Retailing / Selling Mica To Larger Buyers
		14. Other Work Related To Mica Picking Or Mining
		77. Don't Know
S3q06a	Please Specify Other Work Related To Mica Picking Or Mining.	99. Refused
S3q07	What Are The Main Activities You Saw Children Age 11 Or Under Perform? Interviewer: Select All That Apply	1. Going To The Pits To Collect Mica
		2. Transporting From Pits To Outside
		3. Washing Of Mica
		4. Sorting Mica As Per Size And Quality
		5. Packaging Mica
		6. Transporting Mica
		7. Retailing / Selling Mica To Larger Buyers
		14. Other Work Related To Mica Picking Or Mining
		77. Don't Know
S3q07a	Please Specify Other Work Related To Mica Picking Or Mining.	99. Refused
S3q08	Do You Ever See Employers Or Parents Do Anything To Make Children Work Harder Or Faster?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S3q08a	What Do Employers/Parents Do To Make Children Work Harder Or Faster? Interviewer: Select All That Apply	1. Threats Or Violence Against Child Or Child's Family By Employer/Recruiter
		2. Forcing Children To Work Long Hours And Not Allowing Them To Leave Work restriction On Child's Movement
		3. Withholding Of Wages Or Other Promised Benefits
		4. Fine Or Deduction From Wages
		5. Withholding Of Valuable Documents (Such As Identity Documents, School Certificates, Or Residence Permits)
		6. Exclusion From Future Employment\
		7. Employer Would Have Caused Other People From Child's Family To Lose Their Jobs/Land/Assets
		8. Denial Of Rights Or Privileges

		9. Dismissal Or Threats Of Dismissal
		77. Don't Know
		99. Refused
		Other
S3q08b	Which Rights Or Privileges Would Be Denied?	
S3q08c	Please Specify Other	
		1. Yes
		2. No
		77. Don't Know
S3q09	Have You Seen Children Being Punished For Mistakes At Work?	99. Refused
		1. Verbal Abuse
		2. Physical Violence
		3. Deductions From Wages
		4. Disagreeable Work Assignments
		5. Additional Work Assignments
		6. Additional Work Hours
		7. Sexual Exploitation
		7. Other
		77. Don't Know
		99. Refused
S3q09a	How Are They Punished At Work? Interviewer: Select All That Apply	Other
S3q09b	Please Specify Other	
		1. Yes
		2. No
		77. Don't Know
S3q10	Are Children Allowed Leave The Workplace If They Are Very Ill, Injured, Had A Serious Family Problem Or Wanted To Quit?	99. Refused
		1. Threats Or Violence Against Child Or Child's Family By Employer/Recruiter
		2. Forcing Children To Work Long Hours And Not Allowing Them To Leave Work restriction On Child's Movement
		3. Withholding Of Wages Or Other Promised Benefits
		4. Fine Or Deduction From Wages
		5. Withholding Of Valuable Documents (Such As Identity Documents, School Certificates, Or Residence Permits)
		6. Exclusion From Future Employment
		7. Employer Would Have Caused Other People From Child's Family To Lose Their Jobs/Land/Assets
		8. Denial Of Rights Or Privileges
		9. Dismissal Or Threats Of Dismissal
S3q10a	Why Not? Interviewer: Record Any Coercion By Employer	77. Don't Know

		99. Refused
		55. Other
S3q10b	Please Specify Other	
		1. Yes
		2. No
S4q01	Some Children Help Their Families By Working, And Others Don't Work. How About You -- Do Any Of Your Children Help By Picking Or Mining Mica?	77. Don't Know
		99. Refused
		1. Yes
		2. No --> End Interview
S4q02	If The Respondent Is A Parent We'd Like To Hear More About How They Help. Please Pick One Of Your Children Age 5 To 17 Who Picks Or Mines Mica. If Not Parent Of A Worker But Does Report Children At In Village Picking Or Mining Mica You Mentioned That You've Seen Some Children In Your Village Picking Or Mining Mica. Please Pick One Child Whose Activities You Are Most Familiar With. Can We Ask You Some Questions About His Or Her Work?	77. Don't Know ----> End Interview
S4q03	What Is His Or Her Initial Or Nickname? Interviewer: Record First Name, Initial, Or Nickname Only.	
		1. Male
S4q04	What Is The Gender Of The Child?	2. Female
		3. Prefer Not To Say
		[Age]
S4q05	How Old Is The Child?	77. Don't Know
		99. Refused
		1. Yes
		2. No
S4q06	Has Child Ever Attended School?	77. Don't Know
		99. Refused
		1. Preschool/Nursery School
		2. Some Primary
		3. Completed Primary
		4. Some Secondary
		5. Completed Secondary Or Higher
S4q07a	What Is The Highest Level Of Education That Child Has Completed?	77. Don't Know
		99. Refused
		1. Yes
		2. No
S4q07b	In The Past Year, Has Child Attended School?	77. Don't Know
		99. Refused
S4q08	In Which Of These Activities Has Child Engaged In The Past	1. Going To The Pits To Collect Mica

	Year? Read Aloud Response Options And Select All That Apply	2. Transporting From Pits To Outside 3. Washing Of Mica 4. Sorting Mica As Per Size And Quality 5. Packaging Mica 6. Transporting Mica 7. Retailing / Selling Mica To Larger Buyers 14. Other Work Related To Mica Picking Or Mining 77. Don't Know 99. Refused
S4q08a	Please Specify Other Work Related To Mica Picking/Mining.	
S4q09	On Which Of These Activities Did Child Spend The Most Time?	1. Going To The Pits To Collect Mica 2. Transporting From Pits To Outside 3. Washing Of Mica 4. Sorting Mica As Per Size And Quality 5. Packaging Mica 6. Transporting Mica 7. Retailing / Selling Mica To Larger Buyers 14. Other Work Related To Mica Picking Or Mining 77. Don't Know 99. Refused
S4q09a	Please Specify Other Work Related To Mica Picking/Mining.	
S4q10	On Average, About How Many Hours Per Week Did Child Pick Or Mine Mica In The Past Year? Interviewer: Enter "0" If Temporarily Absent From Job	[Number] 77. Don't Know 99. Refused
S4q10a	In Your Estimation Did Child Work 43 Or More Hours Picking Or Mining Mica In Any Given Week In The Past Year?	1. Yes 2. No 77. Don't Know 99. Refused
S4q10b	In Your Estimation Did Child Work 14 Or More Hours In Any Given Week Picking Or Mining Mica In The Past Year?	1. Yes 2. No 77. Don't Know 99. Refused
S4q10c	In Your Estimation Did Child Work At Least 1 Hour Picking Or Mining Mica In The Past Year?	1. Yes 2. No 77. Don't Know 99. Refused
S4q11	Now I Want You To Think About The Work That Child Has Been Doing Related To Picking Or Mining Mica. Was Child... Carrying Or Pushing Or Pulling Heavy Loads? E.G. Firewood Or Water, Crops, Bricks, Rubbish/Waste,	1. Yes 2. No 77. Don't Know 99. Refused

	Rocks Or Cement, Other Heavy Items	
S4q11a	Working Where Child Had To Go Inside The Pit And There Were Chances Of Cave Ins	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11b	Using Powered Tools (Electric Or Gas)? E.G. Drills, Saws, Chain/Table Saws, Electric Sanders, Jackhammers	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11c	Using Sharp Tools? E.G. Axes, Knives, Machetes	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11d	Using Big Or Heavy Machines, Or Driving Vehicles? E.G. Machines That Are Bigger Than You Such As Assembly Machines, Tractors, Forklifts, Cranes, Trucks, Motorcycles	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11e	Working With Fire, Ovens Or Very Hot Machines Or Tools, Or Unsafe Electric Wires/Cables, Where Child Might Get Burned E.G. Fires Ovens, Irons, Welding Tools, Hot Metal Surfaces, Burners, Electric Wires/Cables, Brick Kilns	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11f	Working In A Very Noisy Place, So That Child Had To Shout To Speak? E.G. Very Loud Noisy Machines, Loud Traffic	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11g	Working Indoors Or Outdoors Where Dust, Sand, Smoke Or Fumes Made It Hard To Breathe Or See Clearly? E.G. Insufficient Ventilation	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11h	Working In A Place That Is Very Cold, Or Working Outdoors In Very Rainy Or Wet Weather? E.G. In Cold Stores/Fridges, Working In Rain/Storms	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11i	Working Long Hours In The Hot Sun Without A Break?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11j	Working Below The Ground In Mining Wells Or Tunnels Or Other Very Small Spaces?	1. Yes
		2. No

	E.G. Going Down Into Mines To Bring Out Rocks/Stones/Coal, Cutting Rocks/Stones/Coal Below The Ground	77. Don't Know
		99. Refused
S4q11k	Working With Liquids Or Powders That Irritate Your Skin, Burn Easily, Give Off Vapours That Smell Bad Or Can Explode? E.G., Cleaning Products, Oil Or Gas, Paints, Glues, Bleach, Disinfectants, Dyes, Solvents, Batteries, Mercury Or Other Chemicals	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11l	Working During The Night-Time Or Very Early In The Morning, When It Is Dark, Including Going To Or From Work When It Is Dark?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11m	Working In Contact With Large Domestic Animals (E.G., Camels, Cattle), Wild Animals (E.G., Snakes, Insects) Or Around Animal Manure (E.G., Manure Pits, Cleaning Stalls)?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q11n	Doing The Same Task Over And Over Again At A Fast Pace For Long Hours? E.G., Weaving, Pounding Rocks	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q12	Does Child Usually Wear Any Protective Gear While Working?	1. Yes
		2. No
		77. Don't Know
		99. Refused
S4q13	What Does Child Wear? Interviewer: Listen And Select All That Apply	1. Protective Goggles
		2. Helmet
		3. Ear-Plugs
		4. Face Shield
		5. Respirator Or Dust Mask
		6. Protective Clothing (Ex: Leather, Asbestos)
		7. Gloves
		8. Shoes
		9. Other
		77. Don't Know
		99. Refused
S4q13a	Please Specify Other	
S4q14	Has Child Ever Gotten Hurt Or Sick Because Of Their Work In This Job?	1. Yes
		2. No
		77. Don't Know
		99. Refused

		1. Head Injury
		2. Injury To Or Deafness In Ears
		3. Eye Injury
		4. Injury To Shoulder
		5. Injury To Or Swelling In Hands
		6. Smoke, Dust, Or Chemical Damage To Lungs
		7. Injury To Abdomen
		8. Back Strain/ Pain In Back
		9. Injury To Knees Or Legs
		10. Twisted Ankle
		11. Injury To Feet
		12. Heat Stroke
		13. Burn From Fire
		14. Chemical Burn
		15. Cuts/Wounds
		16. Injury Due To Cave Ins
		55. Other
		77. Don't Know
S4q14a	What Types Of Injury Or Sickness Has Child Had? Interviewer: Listen And Select All That Apply	99. Refused
S4q14b	Please Specify Other	
		1. Falling Rock
		2. Tool Accident
		3. Machinery Accident
		4. Insufficient Ventilation
		5. Violence By Coworker/Employer
		6. Other
		77. Don't Know
S4q14c	How Did Child Get Hurt Or Sick? Interviewer: Listen And Select All That Apply	99. Refused
S4q14d	Please Specify Other	

b) Qualitative Adult Workers

Could you please tell me about your work?
How long have you been doing it?
Are there any formal work agreements/contracts between you and your employer?

Do you have any children and if so, how old are they?

[ASK IF RESPONDENT HAS CHILDREN, IF NOT SKIP] Do your children work alongside you sometimes? ? Why or why not?
1. If so, what tasks do they perform?
1.1 Are they assisting you or performing other tasks?
2 If so, how often do they accompany you?

**(NOTE FOR INTERVIEWER:
BASED ON INTERVIEWEE RESPONSE TO “QUESTION 1”: CHILD STATUS AND “QUESTION 2”: CHILD WORK STATUS, PLEASE USE THE APPROPRIATE SECTION OF QUESTION.
FOR RESPONDENTS WITH A CHILD WHO IS WORKING IN THE INDUSTRY USE THE “FOR RESPONDENTS WITH CHILDREN IN INDUSTRY” SET.
FOR RESPONDENTS EITHER WITHOUT A CHILD OR WITH A CHILD WHO IS NOT WORKING IN THE INDUSTRY USE THE “FOR RESPONDENTS WITHOUT CHILDREN WORKING IN INDUSTRY” SET)**

For Respondents with children in industry

Do children get paid for their work? [PROBE FOR CASH OR IN KIND]
If so, how much are the children typically paid for work?
Are they paid directly, if not how are they paid? [PROBE IF THE WHOLE FAMILY GETS PAID A SUM][4]
Who pays them?

How many hours a day do the children work?
What hours do they work?
Is this the same each week?
Are there certain times of the year they work more or less/ Does this change in relation to the time of the year/ season?

Have you observed children working in mica production?
If so, what tasks do they perform (PICKING/MINING)?
Do you notice any differences in activities based on the gender of the child?
Have you seen children conducting any other activities in the flake mica supply chain apart from picking or mining? [PROBE FOR ACTIVITIES SUCH AS TRANSPORT OR PROCESSING]

<p>Are there certain tasks that children do that adult workers do not? If so, please explain? What activities are more suited to younger children? What about adolescents? Are families from certain ethnic groups or castes more likely to pick or mine mica? If so, please explain.</p>
<p>Are families from certain ethnic groups or castes more likely to be involved in mica picking or mica mining? If so, please explain.</p>
<p>At what age do children start working in mica production?</p>
<p>Who decided that child/children should work?</p>
<p>What led to this decision?</p>
<p>Do children refuse to work? If so, what happens if they refuse to work? How do their parents respond?</p>
<p>What would happen if a child/children wanted to stop working? Have you ever seen this happen?</p>
<p>What changes would need to happen in your community for children under 18 to not work in flake mica picking/mining?</p>
<p>In your community, do you observe any challenges that children face in accessing schooling? If yes, please provide details. [PROBE: ARE THERE ANY SPECIFIC DIFFICULTIES YOU HAVE NOTICED REGARDING CHILDREN'S ACCESS TO EDUCATION IN YOUR COMMUNITY?]</p>
<p>Do you believe that the involvement of children in flake mica picking/mining has an impact on their ability to attend school? If yes, please elaborate. [PROBE: ARE THERE ANY SPECIFIC FACTORS RELATED TO CHILDREN'S INVOLVEMENT IN FLAKE MICA PICKING/MINING THAT YOU BELIEVE AFFECT THEIR SCHOOLING?]</p>
<p>Do you consider any of the work that children do for mica picking/mining to be dangerous? Why or why not?</p>
<p>Have you seen any child/ children being injured? If so, please explain.</p>
<p>Have you seen any child/children being mistreated? 1. If so, by whom? Please explain. 1. If so, who did it? Please explain. 2. If so, did you feel that you could speak up about what you witnessed? 2.1 If so, please explain.</p>
<p>2.2 If not, what are your main concerns about what would happen if you did?</p>
<p>How do children feel about their participation in the industry? Please explain.</p>
<p>In your opinion, at what age should people start working in mica picking/mining?</p>

[IF PEOPLE BEGIN WORKING EARLIER THAN THE RESPONDENT THINKS THEY SHOULD] Why do you think people begin working sooner? Any other reason?
How do people in your community feel about children picking/mining mica?
For Respondents without children working in industry:
Have you directly witnessed/observed this?
Are they usually accompanied by an adult/parent or are they usually alone?
Are there certain tasks that only children do (instead of adults)? If so, please explain.
At what age do people typically start working in picking/mining mica?
What types of mica mining/picking activities do people under 18 typically do?
What activities are more suited to younger children, which to adolescents?
Girls versus boys?
Which groups of children are more likely to pick/mine mica?
Local or migrant?
Girls or boys?
Children from a certain ethnic group or caste?
Do you feel that children are forced to work – please explain?
Who pays them? How does this differ from adult workers?
Does this relate to children’s participation in mica picking/mining?
Do children who do mica picking/mining tend to also attend school? If yes how does work affect their schooling?
Do you consider it unsafe for children to pick/mine mica?
Why or why not?
Are children performing activities on the worksite treated the same as adults? If not, what is the difference?
(INTERVIEWER: THANK THE RESPONDENT FOR THEIR PARTICIPATION AND INSIGHTS SO FAR. INFORM THEM THAT YOU ARE DONE ASKING ABOUT WORKING CONDITIONS AND HAVE TWO FINAL QUESTIONS FOR THEM. INFORM THEM THAT ONE QUESTION WILL BE ABOUT MICA PRODUCED AT THEIR WORKSITE AND THAT WHILE THEY MIGHT NOT HAVE A COMPLETE ANSWER ANY INSIGHTS THEY HAVE FOR US WILL BE VALUABLE.)
Supply Chain:

After mica leaves the ground, do you know where it goes? Who buys and sells the flake mica?

Conclusion:

Is there anything else you'd like to add?

c) Key Informants

1. Could you please tell me your role and what you focus on?

a) Is there other experience you have in the Indian mica industry?

2. Can you describe your organization's work directly in the Indian mica industry?

a) Probe for what kind of activities in this area do you and your organization undertake?

b) [If the organization is not directly involved ask] If your work is not directly related how are you familiar with issues regarding the Indian mica industry?

[FOR KIIS THAT ARE NOT SUPPLY CHAIN EXPERTS (MEDICAL PROFESSIONALS, EDUCATIONAL PROFESSIONALS, LABOR RIGHTS NGO'S AND CSO'S, ETC.) ASK QUESTIONS 1 AND 2 FROM THE SUPPLY CHAIN THEME GENERAL SECTION TO ASSESS SUPPLY CHAIN KNOWLEDGE. IF THE INDIVIDUAL HAS LIMITED INSIGHTS MOVE TO THE SECTION ENTITLED "CHILD LABOR QUESTIONS GENERAL". IF YOU HAVE TIME REMAINING AT THE END OF THE INTERVIEW YOU MAY RETURN TO THE SUPPLY CHAIN SECTION FOR ORGANIZATIONS WORKING DIRECTLY IN THE SUPPLY CHAIN (TRADERS, PROCESSORS, FARMERS, UNIONS AND COLLECTIVES, ETC. PRIORITIZE THE SUPPLY CHAIN SECTION QUESTIONS AND NOT THE CHILD LABOR QUESTIONS).]

Supply Chain Questions

Theme General:

1. How does the mica industry operate in Jharkhand? [PROBE FOR HOW ILLEGALITY AFFECTS HOW IT FUNCTIONS]

a) Please describe the production process of mica extraction in Jharkhand from the beginning to the end.

b) How is the mica transported or traded? [PROBE FOR HOW THE ILLEGAL STATUS OF THE INDUSTRY HAS AN IMPACT ON THESE PROCESSES]

c) Are you aware of any potential changes to this sector, legal or otherwise? If so, please explain. [PROBE FOR SPECIFIC TIMELINE FOR LEGALIZATION AND THE TYPES OF MICA EXTRACTION THAT WOULD BE PERMITTED AND BY WHOM].

2. Who are the major stakeholders and influencers in the Indian mica industry (ex: local and international NGO's, trade associations, informal business networks, owners, buyers, traders, and foreign investors)?

3. After extraction, what processing occurs within Jharkhand?
a) What type/form of mica is produced in Jharkhand? [PROBE ON WHETHER ONLY FLAKE MICA IS PRODUCED OR IF OTHERS SUCH AS SHEET MICA IS PRODUCED AS WELL. PLEASE INSERT THE TYPE OF MICA NOTED HERE BY THE RESPONDENT (E.G. FLAKE MICA) IN RELEVANT QUESTIONS FOR THE REMAINDER OF THE INTERVIEW. THE TERM, 'FLAKE MICA' IS CURRENTLY USED AS THE DEFAULT.]
b) Are there different grades or quality of flake mica? If so, please describe these grades and if/how this results in their use in different downstream products
c) What other goods, byproducts, or downstream goods are produced in-country? Are these consumed domestically or exported?
d) How does mica from Jharkhand exit the state and find it's way into the legal supply chain? [PROBE FOR MODE OF TRANSPORT, LOCATION OF COMINGLING WITH OTHER MICA AND FACILITATION OF PAPERWORK]
e) From where and how is the mica exported? [PROBE ON THE ROLE OF AGENTS]
5. Is there any list or map of villages in Koderma and Giridih that are heavily dependent on mica?
a) How would someone access the list or map?
6. Is there any list or mapping of processing facilities in Jharkhand?
a) How would someone access the list?
7. What type of products does flake mica from Jharkhand end up in? [PROBE FOR BOTH INTERMEDIARY GOODS AND FINISHED/END GOODS].
8. How have current or former trade policies impacted the mica sector? [PROBE BOTH INDIA AS A WHOLE AND JHARKHAND IN PARTICULAR]
9. Have there been any socio-political events that have impacted individuals in Jharkhand mine/pick mica? [PROBE ON GOVERNMENT MONITORING AND ENFORCEMENT AND GOVERNMENT CASH TRANSFER PROGRAMS LIKE MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT (MGNREGA), BHIMRAO AMBEDKAR AWAS YOJANA, AND MUKHYA MANTRI KRISHI ASHIRWAD YOJANA]
10. What can you tell us about the labor situation for individuals that mine/pick mica in Jharkhand? [PROBE ABOUT PAY, JOB SECURITY, AND EMPLOYER ATTITUDE]]

a) What are the primary concerns about the labor conditions? [PROBE ABOUT WORKER SAFETY, CONDITION OF THE WORKPLACE, WORKING HOURS AND WAGES]]

b) What are the general employment structures in the industry like? [PROBE: ASK ABOUT THE NATURE OF THE INFORMAL CONTRACTS, WHETHER THEY ARE FAMILIAL OR CASTE BASED, AND THE EFFECTS OF THESE ON WORKERS]

11. In what ways, if at all, do the government or other actors provide oversight of the industry to address labor standards? (PROBE FOR GOVERNMENT ENFORCEMENT AND PRIVATE SECTOR CERTIFICATION SCHEMES AND TRACEABILITY INITIATIVES).

a) Do you believe the actions noted above are generally effective? Why or why not? [PROBE SEPARATELY ON EFFECTIVENESS OF GOVERNMENT AND PRIVATE SECTOR INITIATIVES]

Supply Chain labor Exploitation Questions

1. How might one track flake mica extracted in a particular community or area in Jharkhand through the domestic supply chain?

a) Is there a point in the supply chain where you anticipate tracking would no longer be possible? [PROBE FOR SPECIFICS ON WHICH STAKEHOLDER TRACEABILITY ENDS WITH (E.G. INTERMEDIARY BUYER, EXPORTER, ETC.).]

i) When does mica picked/mined from a particular community or area mix with mica from different communities or areas?

ii) How does mixing occur?

2. What is your overall impression of working conditions for mica miners/pickers in Jharkhand?

a) What are the main issues you are aware of? [PROBE FOR CHILD LABOR IF NOT STATED]

b) Why do children get involved in mica mining? Who engages them?

3. Who are the main stakeholders in the flake mica industry of Jharkhand, involved in the sale and processing of flake mica using child labor?

4. At which stages of the mica supply chain in Jharkhand are children likely to be involved? [PROBE FOR ANY CHILD LABOR APART FROM MINING/PICKING (E.G. TRANSPORT, PROCESSING, ETC.).]
a) What are the risk factors that lead children to work within each stage? [PROBE FOR SIMILARITIES AND DIFFERENCES]
5. What types of activities or initiatives have taken place to address the labor conditions of mica pickers/miners?
a) What organizations undertake this work? [PROBE FOR CIVIL SOCIETY ORGANIZATIONS, NGOS, GRASSROOTS ORGANIZATIONS, UNIONS AND ASSOCIATIONS, LOCAL INITIATIVES ETC.]
b) In general, how successful have they been in improving labor conditions? [PROBE SEPARATELY FOR BOTH CHILDREN AND ADULTS].
<u>Supply Chain Outside of India</u>
QUESTIONS FROM THIS SECTION SHOULD ONLY BE ASKED TO STAKEHOLDERS WHO ARE FAMILIAR WITH MICA (AND DOWNSTREAM MICA PRODUCTS) USAGE IN OTHER COUNTRIES. THESE WILL MOST LIKELY BE INDIVIDUALS INTERVIEWED WHO ARE FROM OUTSIDE INDIA.
1. Globally, which industries/companies in other countries import flake mica from India? [PROBE FOR SPECIFIC COUNTRIES AND COMPANIES.]
2. Do any of the major importing countries noted above produce their own mica?
a) If so, how has their domestic production affected demand for imported mica from India?
3. At what stage do flake mica imports (from India) become mixed with domestically produced mica?
4. Does the downstream use of mica imported from India differ from the downstream use of domestically produced mica?
5. Is flake mica or any downstream product that is exported from India typically mixed with the same or similar products from other countries? If so, explain
<u>Labor Conditions Questions (general):</u>
(IF NOT ALREADY ASKED) What is your overall impression of working conditions for mica pickers/miners in Jharkhand? a. What are the main issues you are aware of? [PROBE FOR CHILD LABOR IF NOT STATED] b. What are the wages like? How are they paid? [(Hourly or quantity piece-rate, cash, or another means)]
(IF NOT ALREADY ANSWERED) What are the main risk factors for labor exploitation for mica pickers/miners?
Are there any political/economic/social situations that drive labor exploitation/child labor? If so, what types of situations are they? Are any specific to flake mica production? a. Have public health crises, such as the COVID-19 pandemic, affected whether children become involved in flake mica production? Please explain.
<u>Child Labor Questions</u>
Are you aware of the presence of child labor in the mica supply chain in Jharkhand?

<p>If you are, how common place is the use of child labor in flake mica production? a. Are certain sites, employers, or regions more likely to use child labor? [PROBE FOR SPECIFICS]</p>
<p>Why do you think children enter the mica mining industry? [PROBE: SOME REASONS IN ADDITION TO POVERTY CAN BE LACK OF EDUCATIONAL OPPORTUNITIES, PARENTAL PRESSURE, AMONG OTHERS] What types of activities do children engage in? Are there certain tasks that are seen as more suitable for children to perform? [PROBE FOR SPECIFICS ON WHY (E.G. PHYSICAL SIZE, COST, ETC.)] Do activities vary based on the child's age or gender? If so, please explain. [PROBE FOR ADDITIONAL DEMOGRAPHIC VARIABLES SUCH AS LEGAL STATUS, FAMILY STATUS, ETC.] Is it more common for children to engage in mica picking/mining if they are from a particular caste or social group? If so, please explain.</p>
<p>Do local authorities actively try to prevent child labor in mica production? If so, please explain how? [PROBE FOR FREQUENCY AND THOROUGHNESS OF INSPECTIONS] What happens if children are identified picking or mining mica? [PROBE FOR PENALTIES AND EXISTENCE OF CORRUPTION/BRIBES]</p>
<p>What are the main drivers of child labor in the mica supply chain in Jharkhand?</p>
<p>At what stages of production in the supply chain of flake mica is child labor present?</p>
<p>Are certain stages more likely to use child labor than others? If so, please explain.</p>
<p>What types of activities do children engage in at each stage?</p>
<p>At what point in the supply chain does flake mica produced in Jharkhand become integrated into the wider supply chain?</p>
<p>Are large companies(both international and domestic) aware of the potential risks for / use of child labor within their supply chains? [PROBE WHY OR WHY NOT]. Do large scale companies (international and domestic) purchase mica produced in Jharkhand? If so, who are they? If yes, are you aware of any supply chain tracing policies / safeguards in place at these companies that try to prevent the purchase of mica produced in Jharkhand? Are there any safeguards or policies against buying mica produced with child labor? [PROBE FOR ON-THE-GROUND MONITORING ACTIVITIES]. Do you think these safeguards or policies are effective? Why or why not?</p>
<p><u>Recruitment</u></p>
<p>Could you tell me how children become involved in the mica supply chain in Jharkhand? Are the jobs arranged? If so, by whom? Is a recruiter or contractor involved? [IF SO, PROBE ABOUT FEES] What are the general employment structures in the industry like for children? [PROBE: ASK ABOUT THE NATURE OF THE INFORMAL CONTRACTS, WHETHER THEY ARE FAMILIAL OR CASTE BASED, AND THE EFFECTS OF THESE ON WORKERS]</p>
<p>Have you heard of children being sold or taken by force to work in the mica supply chain in Jharkhand?</p>
<p>Are many child workers and their families in debt? a. If so, to whom and under what terms? b. Can you tell me about the typical source of that debt? c. How does debt influence decisions about work for children?</p>
<p><u>Hours, Schooling, & Wages:</u></p>

<p>When are child workers typically engaged in mining/picking mica in Jharkhand? Number of hours a day/week? Overtime? Number of days a week? Seasonal or year-round? During or after school hours?</p>
<p>What percentage of children engaged in picking/mining mica are able to attend school? If able, how often? If unable, why?</p>
<p>At what age do children stop attending school to work? Are children paid for picking/mining mica? If so, in what form? (Hourly or quantity rate, cash, or another means) Are you aware of any situations of wage deductions for child laborers. If so, please explain. [PROBE FOR FEES FOR: ACCESSING MICA AREA, TOOLS, LATE DELIVERY, ETC.]</p>
<p><u>Working Conditions:</u></p>
<p>Are children working in the mica industry in Jharkhand exposed to any kind of danger or hazards? If so what kinds? [PROBE FOR SHARP TOOLS, CAVE INS, RESPIRATORY ILLNESS, ETC] Are children provided with protective gear? If so, what kind? Are you aware of any reports of children being injured while working? If so, please explain.</p>
<p>How are their employers? Have you heard of children feeling threatened at work? If so, please explain. Have you heard of children picking/mining mica being mistreated in any way? If so, please explain.</p>
<p><u>Community Attitudes & Efforts:</u></p>
<p>What is the general attitude towards the use of child labor in the mica supply chain in Jharkhand?</p>
<p>Are you aware of any efforts by government or non-government entities to prevent or remove children from child labor in the mica supply chain in Jharkhand? If so, please explain (who and what). Are you aware of any rehabilitation or reintegration efforts for former child laborers?</p>
<p>What industry initiatives are you aware of to address/prevent the use of child labor in the (target good) industry? [PROBE FOR SPECIFICS ON MONITORING POLICIES]What are the relevant laws used to safeguard against the use of child labor in mica production (or mining more broadly) in India? [PROBE FOR NATIONAL POLICY AS WELL AS INDUSTRY SPECIFIC] How are these laws enforced? Do local authorities undertake inspections. If so, please explain the process? Who does the inspections? How frequent are they? How are individuals penalized? If fined, what are the fines used for? How effective are inspections in addressing this issue? What are the barriers to effective inspections? [PROBE FOR CORRUPTION/BRIBERY]</p>
<p>In your opinion, how effective are these laws at preventing/addressing child labor?</p>
<p>In your opinion, how aware are mica-picking communities of such legislation?</p>
<p>Are you aware of any additional efforts, not already mentioned, by government entities to address adult or child involvement in mica picking/mining in Jharkhand? If so, please explain.</p>

Are there key gaps in policy and practice from the government and/or industry in terms of workers' rights and working conditions? If so, what are they?

Exiting Child Labor:

Can children refuse to pick/mine flake mica?
If not, who or what prevents them from leaving?

What is the typical life trajectory for children involved in the flake mica supply chain in Jharkhand? Do they tend to remain in the sector for life? For those who stop picking/mining flake mica, how/why are they able to do so?

What livelihood options are available to children who used to pick mica? Are they viable?

Conclusion:

What changes would need to happen to prevent people under age 18 from working in flake mica production activities?

Could you suggest any organizations or individuals that are well-informed about the mica industry/sector supply chain or child labor in the industry that we could interview?

Is there anything else you'd like to add?