

Case Study No. 2, written by Molly Chattopadhyay, 2007

Women Workers in Mica-Manufacturing Industry of Giridih, Jharkhand

Overview

A survey of the mica-manufacturing industries of Giridih, in the north-eastern state of Jharkhand, shows that the combined effect of the declining status of the industry and the erratic sub-contracting system has resulted in a significant reduction in the wages of both male and female mineworkers. The patriarchal nature of both the regional and national mining industry values, however, means that the local labour force is divided along gender lines, with the poorly paid 'unskilled' jobs typically going to women, while men secure the better paid positions offering brighter future prospects .

Introduction

Although India is currently the world's largest producer of mica blocks and mica splitting, the domestic mica industry has been shrinking rapidly over the last 20 years. This case study investigates the affects of the industries decline on one India's most important and productive mica manufacturing regions, the Giridih District of the north-eastern state of Jharkhand.

Along with the industry's terminal decline, the erratic sub-contracting system that predominates the industry and the patriarchal nature of the industry has impacted the local community dramatically, particularly the most vulnerable groups, like lower caste women workers. Looking at the division of Zambia's labour force along gender lines, Bardouille explains "... the service-type occupations in which women are concentrated are mainly at the subordinate level, and their opportunities for upward mobility are therefore limited. For this reason, women are confined to certain sectors of the economy, as long as they do not claim too much power in those sectors" (Bardouille, 1981).

What are Micas?

Micas are a group of chemically complex rock-forming minerals recognisable by a perfect cleavage (i.e. they are naturally flaky). Sheet mica is used predominantly in electrical insulation and ground mica has a very wide variety of uses including filler, dusting agent, absorbent, fire insulator, strength enhancer in plastics and decorative material.

The annual demand for mica totals 400 million tonnes and is worth almost US\$150 million a year.

Summary of Issues

- For the last 20 years, the mica mining and production industry of Jharkhand, and across India, has been shrinking rapidly due to various causes.
- This has resulted in massive retrenchment of mica workers, and local communities have suffered greatly, particularly women workers.
- A deep-seated patriarchal system pervades Indian society, particularly the mica manufacturing industry, and women are consistently discriminated against in the workplace, by mine and factory owners, trade unionists, other male workers and the wider community.

The Study Area

Since about 270 BC, the region has been divided agro-ecologically into the flat fertile north, known as Bihar, and the hilly forested south, known as Jharkhand (meaning 'forest territory') where about 91.7% of the large tribal population lives (Devalle, 1992). The Jharkhand area of south Bihar, together with adjacent tribal areas of West Bengal, Orissa and Madhya Pradesh form Greater Jharkhand or Chhotanagpur, which has been articulating demands for separate status since 1928, but most fervently since 1972 by the political party Jharkhand Mukti Morcha¹.

For centuries the local indigenous people have been alienated from their own land, and the opposition between dikku (outsider) and adivasi (tribal) has been well established since the colonial period. But the legal and administrative changes introduced by the British colonial power, which strengthened the outsiders at the expense of the tribal population, lay the foundations for the vocal anti-colonial and ethno-nationalist peasant movements for which Chhotanagpur is renowned.

Jharkhand contains very rich mineral resources - coal, iron ore, copper, manganese, bauxite and mica. This natural abundance of resources has triggered rapid regional industrialisation and nationalisation, and attracted many out-of-state migrants seeking employment. Desperate for work, these immigrant workers often accept jobs at lower wages than the local population, pushing the local workers out of work. The local community struggles to make a living as very little of the regional economy trickles down, with most of the profit earned from mineral and timber exports being pocketed by mine operators, contractors and government departments.

To make matters worse, the government has designated the surrounding forest as protected land and adivasi access has been restricted - consequently, adivasis can no longer make a living from traditional forest-related activities. Also, electricity generated locally goes to the northern plains, and little famine relief has been offered when droughts occur - a serious matter since there is very little irrigation in south Bihar.

But the local community hasn't taken these

injustices without a fight, and with the added affront of the nationalisation of the coal mines in the early seventies, the closing down of hundreds of mines and the retrenchment of miners, and the acquisition of land for mining with little or no compensation to the local community, the local community became galvanised, holding protests across the region.

From the early days of its creation, the Jharkhand movement has been active in both cities and in the country, but it's only since the early seventies that the Jharkhand movement, and its peasant-led protest actions, have had the greatest and most widespread impact. One of the movement's particularly effective strategies was to encourage the dispossessed Santal peasants to forcibly harvest crops from land previously seized from them by greedy landlords and moneylenders. These anti-establishment peasant actions were a regular seasonal occurrence in the Giridih area even before the Jharkhand Mukti Morcha was founded in 1972; and they were common through to the eighties (Chattopadhyay & Ghosh, 2003). Finally, separation of Jharkhand state from Bihar took place on November 15, 2000 as the 28th state of India.

Jharkhand's mica manufacturing industry is concentrated in the Giridih District². According to Census India 2001, the district has a population of 1,901,564, with a literacy rate of 63.01% for men and 27.05% for women, averaging 45.16%. Overall, women only make up 14.51% of the entire regional labour force, although Table 1 shows that far more women (43.9%) work in agriculture-related jobs than men (26.9%). On the other hand, the female work participation rate is only 21.9% and only 6.6% of women workers are engaged in the non-agricultural sector, which is significantly lower than the figures for male workers (45.9% and 29.9% respectively).

This story is similar across the state of Jharkhand - Female literacy rates remain very low at 46.6%, while literacy rates for men are much higher, at 71.4%. Again, work participation rates among females in the agricultural sector, at 26.4%, are much lower than for men, at 48.4%, and in the non-agricultural sector female participation rate is even lower, at 11.8%, compared to a figure of 37.9% for men.



Child mica labourer working in a Jharkhand mine

Jharkhand's natural abundance of rich mineral resources has attracted many out-of-state migrants seeking employment, pushing the local community out of work which already struggles to make a living...

¹ Jharkhand Mukti Morcha is an Indian political party. At the 2005 Jharkhand State Assembly elections, the JMM took second place and received 17 of the 81 seats.

² Giridih means 'land of hills and hillocks' in Hindi.

Table 1 Distribution of Population in Jharkhand and Giridih (Source: Census India 2001)

	Jharkhand			Giridih		
	Male	Female	Total	Male	Female	Total
Population	13,861,277	13,048,151	26,909,428	958,904	942,660	1,901,564
Sex Ratio	941			983		
Literacy rate	67.9%	39.4%	54.1%	71.4%	46.6%	54.1%
Gender Gap in Literacy Rate	28.5%			24.8%		
Agricultural Labourers to total Workers	22.3%	39.8%	28.3%	26.9%	43.9%	32.3%
Work Participation Rate	48.2%	26.4%	37.6%	45.9%	21.9%	37.6%
Workers in Non-agricultural sector	37.9%	11.8%		29.9%	6.6%	

Explanation of the Problem

This case study is one of the first to investigate the role women workers play in Jharkhand's mica mining industry, with a particular focus on the informal labour market, where almost all women are employed. Also, since women are typically employed only as production workers, this case study highlights the harsh reality of their lives. For these women, taking on backbreaking and tedious jobs for minimal wages is not a choice but a necessary strategy for their survival and that of their children. Jharkhand's natural abundance of rich mineral resources has attracted many out-of-state migrants seeking employment, pushing the local community out of work which already struggles to make a living...

Location & Ecology

Giridih, which became an independent district in 1972, is located in the central part of the newly created North Chhotanagpur Division, and is bound on the north by Munger district, on the east by the Dhanbad and Santhal Pargana districts, on the south by Purulia district in West Bengal and on the west by Hazaribagh district. The climate is sub-humid with dry winters and low rainfall, which varies between 1100-1200 mm per annum (Banik et al., 2006).

Soils vary from the heavier deeper soils of the garha fields to the lighter reddish upland tanr soils. The district is known for its famous ruby mica, which is the highest grade of Muscovite Mica. The area also contains several large coalfields, which comprise the highest quality metallurgical coal in India. Giridih is the centre of India's mica manufacturing industry, and the income earned from mining the extensive mica deposits contribute significantly both to the state and national economy.



Map of India indicating the location of the 28th state of Jharkhand.

Background

India is one of the largest producers of block mica in the world, producing between 70% and 80% of the total block mica global output, and about 60% of India's total yield is produced in Jharkhand. To date, commercial scale mica manufacturing in India has defied almost all attempts at mechanisation, and most of the 'splitting' of mica is done by hand, with India leading the world in the mica 'splitting' trade (Singh et al., 2001).

As domestic consumption is limited, Jharkhand's mica industry depends largely on the global export market. Most of the mica used for electrical applications is produced by India, Canada, Zimbabwe, Australia, South Africa, the United States, Madagascar, Argentina, Brazil, Norway, Korea and Guatemala. But as far as muscovite mica is concerned, India produces almost 80 per cent of the world's total output.

In India, mica is found mainly in the states of Jharkhand, Rajasthan and Andhra Pradesh. The main mica belt, however, is located in Jharkhand, in India's north-east. The Koderma Mica Belt is the biggest mica track in the country and occupies an area of about 145.74 squared kilometres, lying north of Koderma Railway Station.

Jharkhand's other sizable mica deposits are found around the towns of Dharokhola, Manodih, Dhab, Gawan, and Tisri.

Significant mica deposits are also located along the coastal plains of the Nellore district in the south-eastern state of Andhra Pradesh, which extends for 500 square miles through the towns of Gudur, Podalakur, and Kareli. Centres for cutting, sorting and splitting mica are concentrated in the Jharkhand districts of Koderma, Jhumri-Tilaiya, Domchanchi and Giridih.

Statistics on Jharkhand's mica industry are notoriously hard to track down, but based on conversations with industry experts and former employees, mica-related activity employs about 250,000 labourers state-wide. Although the official factory inspectorate register shows large-scale factories never employ more than twenty workers, these figures aren't reliable. Even since 2001 when the mica industry was in terminal decline, my own factory visits told a very different story, and I saw that factories typically employed many more workers.

With the advent of built-up mica or micanite³, Jharkhand confirmed its position as the national and global leader in the manufacturing and export of mica. Its commanding position has been reinforced further with the growing global demand for thin splitting of moderate sized mica, which Jharkhand can produce in large quantities due to its abundance of suitable mica.

“India is one of the largest producers of block mica in the world, producing between 70% and 80% of the total block mica global output, and about 60% of India's total yield is produced in Jharkhand.”

³ Micanites are laminated insulating material manufactured by manual or mechanical pasting of mica with glyptal, silicone, gluing varnish and other materials.

Properties of Jharkhand Mica

Thermal properties: mica is highly infusible, only melting at a very high temperature, and as such can be used for many common purposes. Muscovite mica is extremely heat resistant, withstanding very high temperatures, and even at red heat temperatures doesn't undergo any typical or chemical changes.

Dielectric property: with a high power factor, mica experiences extremely low power loss making it a perfect dielectric for condenser manufacturing. Condensers store electrostatic energy, momentarily, in a dielectric field (for about one-millionth of a second) and then redeliver it with the minimum possible energy loss. Better quality mica exhibits more efficient power factors, and sells at a significantly higher price (Rajgarhia, 1951).

One type of mica displaying a consistently uniform power factor is “Bengal ruby” mica, which has abundant deposits in Jharkhand.

The Decline of India's Mica-Manufacturing Industry

The golden era for mica exports was from 1960 to 1970, but the export market began to slump during the late 70s. Although India is the global leader in mica exports, production rates in crude mica have dropped dramatically over the last 20 years. Figure 1 shows that between 1951 and 2001 production rates decreased by 4.71% per year.

This saw a corresponding drop in employment rates at 1.67% a year (see Figure 2), and a reduction in the number of factories at a rate 2.31% a year (see Figure 3). The downward exponential curves in Figures 1, 2 and 3 reveal a steady trend in Jharkhand's mica industry over the last two decades of declining rates of crude mica production, number of workers and number of factories.

Although there has been a gradual decline in the production of crude mica, the mica export market is still a significant earner, attracting considerable foreign income. Table 2 shows that between 2001 and 2002 the 58,299 tonnes⁴ of mica exports earned India Rs.780 million (AUD 21 million) in foreign exchange. Indian exports about 50% of its mica to the USA, Japan and Belgium, with most of the remainder going to the EU.

As already mentioned, mica exports have been steadily decreasing over the past few decades, but in spite of this, some statistics boast that exports have actually been increasing.

This is misleading, and as Table 3 reveals, this increase is due to the massive stocks of stored mica and old Indian mica being re-imported back into India for processing. During the Second World War, the United States and the allied forces purchased enormous amounts of mica to be used in military electrical applications, and when the war ended there were still massive stockpiles remaining.

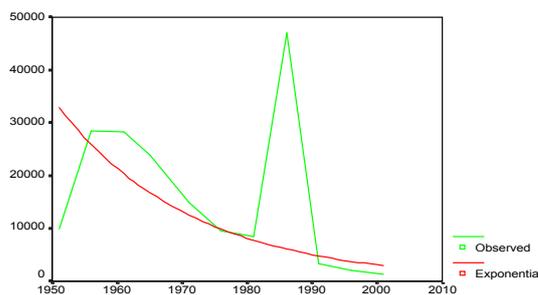


Figure 1. Declining Rate of Production of Crude Mica from 1951 to 2002

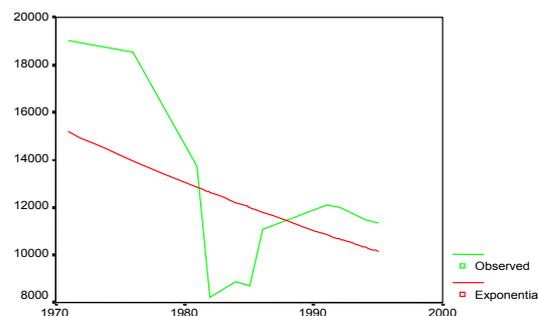


Figure 2. Decline in Number of Mica Workers from 1970 to 1999

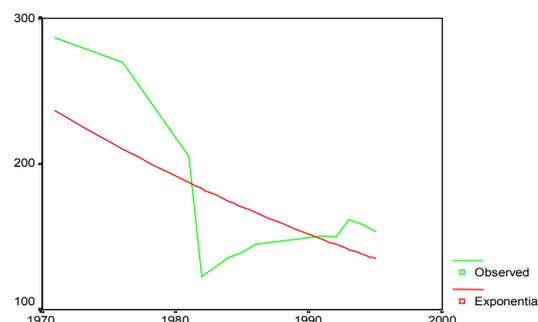


Figure 3. Decline in Number of Mica Factories from 1970 to 1999

“Although India is the global leader in mica exports, production rates in crude mica have dropped dramatically over the last 20 years. Figure 1 shows that between 1951 and 2001 production rates decreased by 4.71% per year. “

⁴ This exported mica consisted of 34,360 tonnes of worked mica and 23,939 tonnes of raw product.

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To this day, the US still sends this surplus mica back to India for processing as labour is much cheaper and the processing infrastructure is well established. Even though the mica export market has been squeezed, the unit value of production rose from Rs. 7.0 in 1991, to Rs. 25.2 by 2001 (Chattopadhyay & Ghosh, 2003).

Official production and export statistics don't always tally, as paradoxically, export figures usually exceed production figures.

This wide discrepancy between production and export figures may be caused by the following factors:

- 1) Exported stolen mica isn't included in the production figures;
- 2) Exported mica reclaimed from dumps isn't included in the production figures; and,
- 3) Crude mica sold directly to dealers is rarely included in the production figures.

Since most products are exported, export figures may be taken as a more reliable index of the total mica output.

Some of the possible explanations for the downturn in India's mica trade at the beginning of the '80s are:

- a) The negative impacts associated with the introduction of India's Mica Trading Corporation (MITCO);
- b) The collapse of the Soviet Union, a bulk buyer of silvered mica;
- c) The discovery in the US of a comparatively cheap synthetic alternative to mica, lessening the demand for the more pricey Indian mica; and,
- d) Mine closure giving rise to illegal mica mining that involved contractors, dealers and local politicians.

The next section will look at four possible reasons why India's, and more specifically Jharkhand's, mica export market has contracted so much over the last few decades.

Some of the possible explanations for the downturn in India's mica trade are linked to national as well as global events.



Jharkhand state and districts including neighbouring states

Table 2 Export of Mica - Both Worked and Unprocessed from 1999 - 2002
(Quantity in Tonnes, Value in Rs. '000)

Mineral	Year					
	1999-2000		2000-2001		2001-2002	
	Quantity	Value	Quantity	Value	Quantity	Value
Mica (total)	46,558	635,438	64,624	881,270	58,299	782,445
Un-Manufactured	7,109	169,260	7,944	206,734	23,939	209,934
Blocks	1,229	44,877	2,121	76,095	1,611	51,605
Splittings	881	31,663	1,113	37,080	19,911	126,873
Condenser Films	0	0	50	2,491	58	1,138
Waste & Scrap	4,999	92,720	4,660	91'068	2'359	30,318
Worked	39,449	466,178	56,680	674,536	34,360	572,511
Conf. Films. Plates Cuts NES	4	1,183	6	1,143	2	296
Washers & Discs	8	2,787	6	1,774	2	762
Sheets & Strips	21	5,790	38	12,808	28	9,418
Micanite & other Built-up Mica	148	50,190	94	38'801	94	42,387
Powder	38,927	7,253,954	55,304	429,866	33,745	349,593
Bricks	15	1,434	6	1,111	Negligible	16
Others	325	150,840	1,226	189,033	489	170,039

Table 3 Import of Mica - Both Worked and Unprocessed from 1999 - 2002
(Quantity in Tonnes Value in Rs. '000)

Mineral	Year					
	1999-2000		2000-2001		2001-2002	
	Quantity	Value	Quantity	Value	Quantity	Value
Mica (total)	477	43,094	422	50,398	1,033	56,481
Un-Manufactured	338	9,369	313	13,993	959	29,014
Blocks	271	7,120	194	9,284	220	14,313
Splittings	67	2,249	66	3,480	719	14,119
Condenser Films	0	0	0	0	0	0
Waste & Scrap	0	0	53	1,229	20	582
Worked	139	33,725	109	36,945	74	27,467
Conf. Films. Plates Cuts NES	8	3,010	6	4,026	10	8,296
Washers & Discs	1	637	1	192	0	0
Sheets & Strips	2	791	Negligible	263	0	0
Micanite & other Built-up Mica	3	598	1	287	4	131
Powder	71	1,551	27	1,872	9	1,013
Bricks	0	0	0	0	18	1,668
Others	54	27,138	74	30,305	33	16,359

Possible Reasons for the Decline of India's Mica Export Market

MITCO's Impact on the Mica Industry

Formed in 1972 to oversee the management of India's mica industry, MITCO established a set of guiding principles and policies to ensure the regulation of the mica export market. One of the core conditions was that mica exporters had to send MITCO a product sample before export was approved to ensure quality standards. Also, sixty percent of the export had to be sold through MITCO channels, while 40% could be directly sold to an outside buyer.

Over time, corrupt practices began to spread. It wasn't uncommon for MITCO representatives to accept and approve substandard material in return for bribes. Those, however, unwilling to payoff corrupt officials routinely had their samples rejected, even though they met the highest standards. Also, MITCO never adjusted for price fluctuation, which meant individual businessmen used to supply according to the specifications of the purchaser and used to adjust the price level.

In 1992, MITCO merged with the India government's regulatory body, the Mica Manufacturing and Trading Corporation (MMTC). With nationalisation, MITCO is much more transparent, and most of the corruption has been wiped out. Mica owners are now allowed to sell to buyers directly, and the floor price has been abolished.

Collapse of the Soviet Union

During the Soviet era, Russia imported vast quantities of silvered mica from India. With the Soviet Union's collapse, sales to Russia stopped completely, and India lost one of its most lucrative customers.

The US Discovers Mica Alternative

The United States started stockpiling Indian mica during the 1940s, which it used for military electrical applications to further their war effort. To this day, the US still holds vast quantities of surplus Indian mica in storage, and is now sending this raw mica to India for processing, instead of buying fresh stocks.

An even greater impact on India's mica industry was the US discovery of a synthetic alternative to mica that was cheaper and had excellent insulating properties. This discovery and the commercial availability of this alternative material hit India's mica industry hard, and the export market contracted significantly.

Closure of Mica Mines

Over recent years, mica mines have been shutting down across the Koderma region, and only four mines remain operational. Some of the mines shutdown due to fears of reprisal attacks by the Maoist Communist Centre and its ally the Maoist Coordination Centre (MCC), extremist organisations with the goal of eradicating social inequality⁵.

For decades, the region has seen widespread and intensive mica mining operations, and now the shallow deposits are largely depleted. With a shrinking mica export market, profits have plummeted, and mine operators are reluctant to mine for the deeper deposits, as this process involves considerable investment. Some industry experts predict that if the global demand for mica doesn't pick up within three years, the industry might collapse entirely.

In spite of this, illegal mining continues unabated, as mine operators search for quick profits and labourers struggle to earn a living. Since illegal mining is unregulated, illegal mine operators often adopt shoddy and environmentally negligent mining practices. Instead of using standard mica mining procedures, pillars are blasted and mica is extracted causing the mines to subside⁶.

All of these factors have led to large-scale retrenchment of mica workers, especially female workers who make up the majority of the labour force.

⁵ The stated objective of the Maoist Communist Center (MCC) was to establish a 'people's government' through 'people's war'. The group based its ideology and tactics on Mao Tse Tung's principle of organised peasant insurrection. In September 2004, the MCC merged with the People's War Group (another left-wing extremist group) to form the Communist Party of India-Maoist (CPI-Maoist). Sourced from MIPT Terrorism Knowledge Base website at <http://www.tkb.org/Group.jsp?groupID=3628>

⁶ Unlike coal, which appears in thick seams, mica appears in small deposits or "books", and a mica mine or quarry resembles a huge rabbit warren, where the traditional method of mining sees miners burrowing from "book" to "book" through extremely narrow passages. Material is often passed from miner to miner by hand. Sourced from "The New York Times", Published November 7, 1920.

Structure of Mica Industry and Overview of Production Process

There are ten different ways people are engaged in the mica industry:

- 1) Miners who mine crude mica and sell it to local buyers after semi-processing;
- 2) Local buyers who sell to dealers after further processing;
- 3) Manufacturing exporters representing small-scale factories;
- 4) Manufacturing exporters representing large-scale factories;
- 5) Merchant exporters sub-contracted by unregistered workshops for processing and export of finished products;
- 6) Dealers and local suppliers who purchase illegally mined crude mica and sell it in local markets after semi-processing;
- 7) Unregistered workshops producing semi-processed and fully-processed mica;
- 8) Home-based labourers contracted to split mica;
- 9) Agents; and
- 10) Retailers.

These divisions, however, are not mutually exclusive. For example, a manufacturing exporter can also be a dealer as well. Also, enterprises may have more than one production unit, for example, comprising of a large-scale factory, small-scale factory and unregistered workshops.

Most mica processing is done by hand, and to date has defied any attempt at full mechanisation. The production process is organised in the following way:

- a) Semi-processed mica is first purchased from the mica mines and the local market. Semi-processing means cutting or 'splitting' mined crude mica into six-inch sized chunks, using hammers, knives, sickles, shears, and fingers, and separating the stained and unstained pieces. Before this the rough mica crystals are 'cobbed' to remove adhering dirt, rock and defective mica (McKetta, 1989). These jobs are done almost exclusively by women, and although poorly paid, they require considerable skill and dexterity.
- b) After the mica is semi-processed, women workers trim the mica with a knife to a bevelled edge, removing broken and ragged edges, loose scales, and other major imperfections. Next, under the supervision of male foremen, women classify the trimmed mica according to grade (size) and quality in a process called 'picking'.
- c) With the exception of 'cobbing', 'picking' and 'splitting', men occupy all of the other higher skilled positions, like checking, passing, metering, binding, fabricating, and preparing the condenser.

In Jharkhand, the silvering process has almost stopped completely, apart from in one local factory where one female worker is engaged in silvering, while in another local factory women employees are allowed to do both capacitor testing and silvering. Although men and women working in powder factories do screening, usually this position is occupied by women.

In mica processing plants, where many operations are often mechanised, employees work on a contract basis, and are assigned specific roles. For instance, the owner gives one contracted worker the responsibility of preparing the mica powder and mica flakes. This worker is shown the technique of pouring mica into the crushing machine to grind it into powder⁷.

Mica flakes are easier to prepare, as the pieces are of a larger size, and can be broken down using equipment like the rotary hammer crushing machine, but flake and scrap mica is generally of a size and quality that isn't suitable for commercial use (McKetta, 1989).

Typically, the mica manufacturer sub-contracts a contractor to round-up a group of male and female labourers. Women are contracted as day labourers to pick up unspotted mica, and then both men and women workers are engaged in the screening process. After screening, male labourers place the mica into the grinder. Finally, male labourers pack the mica powder and mica flakes, although I've witnessed women workers engaged in packing during visits to mica processing plants.

In spite of the odd case where women are employed in areas other than 'cobbing', 'picking' and 'splitting', and less commonly in packing, traditionally the mica industry, and indeed most mining-related industries in India, is divided along gender lines. Women are assigned the less skilled jobs that offer the least prospects, where promotion, wage increases and up-skilling are simply unheard-of.

Apart from these four jobs, all other positions in India's mica manufacturing industry are almost exclusively the domain of men. Women make up between one to three percent of the 'skilled' labour force, while similarly, men occupy from one to three percent of the 'unskilled' labour force.



One of the education centres set up for child mica workers by AID-India in the Tsiri Block, Giridih, Jhar

⁷ Mica powder in various forms is obtained by grinding/breaking mica scrap, which is a slow, costly and extremely complicated process, because of the scrap being tough and having a plate like structure.

Mica Processing Plant Owners Routinely Disregard Workers' Rights

Although all mica workers are contracted daily wage labourers, the nature of wage payment differs considerably from job to job. Of all the positions, only management staff, drivers and security guards bring in a monthly salary, while all other labourers receive weekly payments for their six days of weekly work based on a daily wage rate. The range in the pay-scale between different jobs and various processing plants is also striking. Table 4 shows the glaring differences between the official minimum wage rate and the wages actually paid, particularly in the unskilled and lower skilled positions.

In fact, apart from the three largest mica factories, Table 5 reveals that the minimum wage rate is never met by the employers, and real wages are much lower. Typically, employers assign the unskilled and less skilled positions to women, justifying this by saying that women have smaller, more 'nimble fingers', making them perfect for jobs like 'splitting'. Men, explain employers, are more suitable for the more skilled jobs like cutting and machining, which are physically and mentally too demanding for women. Ironically, 'splitting' is an extremely difficult job, and should be given far more credit, both in financial and cultural terms, but the uneducated and voiceless women rarely complain, humbly accepting their fate.

Discouragingly, as female workers are largely employed as day-labourers, their jobs are unregulated, and they receive no benefit or insurance packages. There's one factory where five women are employed as permanent staff with benefits and job security, but tellingly, these women are administrative staff and don't work in manual mica processing⁸.

Women labourers are paid for every kilogram of split mica they produce, at a rate of 4 rupees and 50 paise⁹ (AUD 0.12) per kilo. On average, a worker can split about five kg of mica every day, which earns them about 22 rupees and 50 paise (AUD 0.61) for

a day of backbreaking work.

Male day-labourers engaged in unloading, drying, and packing typically earn about 40 rupees (AUD 1.07) for a day's work, at a rate of 5 rupees (AUD 0.13) a kilo. Unregulated and unregistered workshops produce mica washers measuring 15 millimetres and 29 millimetres, paying about 30 rupees for every kg of fifteen mm mica washer produced, and 8 kg for twenty-nine mm of mica washer produced. heating element per dozen is Rs. three (in a day ten dozen is possible).

Mica retailers can sell mica washers to exporters at prices ranging from 120 rupees (AUD 3.22) per kg of 15 mm washers to 200 rupees (AUD 5.38) per kg of 29 mm washers. Exporters can then sell 15 mm washers to domestic and global buyers for up to 500 rupees (AUD 13.44) per kg.

For home-based contracted women workers, the wage rate for mica splitting is significantly lower than for factory employed women, with contractors paying a paltry sum of 3 rupees (AUD 0.08) per kg of split mica. With inferior tools and poor working conditions, these home-based labourers can usually produce one and a half kilos in a day, bringing in only about 4 rupees and 50 paise (AUD 0.12) for a whole day's work, which is well below all accepted definitions of the 'poverty line'. This compares to factory-employed women who can be paid anywhere from 20 to 61 rupees (AUD 0.54 - AUD 1.60) a day.

It's very common for all the female members of the family to help the home-based contracted labourers with mica splitting, even though they're not paid directly for their work. In this way, however, they can produce more split mica, and usually the total household can earn about 10 rupees (AUD 0.27) a day. Taking this even further, many households are actually set-up as unregulated workshops where the male household head supervises, and profits from, the unpaid female family members who engage in mica-splitting.



Women and children mica workers at an AID-India organised rally to raise public awareness of their plight, April 2007, Giridih, Jharkhand

“Typically employers assign the unskilled and less skilled positions to women justifying this by saying that women have smaller more ‘nimble fingers’ making them perfect for jobs like ‘splitting’... Ironically, ‘splitting’ is an extremely difficult job, and should be given far more credit, both in financial and cultural terms, but the uneducated and voiceless women rarely complain, humbly accepting their fate. .”

⁸ This contravenes Acts 39 and 43 of the Minimum Wages Act, 1948, (see 'The Minimum Wages Act 1948').

⁹ A paise is a monetary unit equivalent to one-hundredth of a rupee.

¹⁰ The Indian government defines the 'poverty line' as earning 10 rupees or less (AUD 0.27) a day. The World Bank, however, gives a rough definition of 'below the poverty line' as earning less than US\$ 1/day, but this doesn't take into account the country's purchasing power parity. Sourced from *World Bank website - South Asia: Development Topics* at <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,menuPK:158858-pagePK:146732-piPK:146814-theSitePK:223547,00.html>

Table 4 Daily Wage Rate of Workers in Each Category by Sex as of March 2001 (Source: Labour Officer, Giridih, 2001)

Category of work	Minimum Wage		Actual Wage	
	Male	Female	Male	Female
Unskilled	62	62	30-35	25-30
Semi-Skilled	64	64	50-55	35-40
Highly Skilled	79	-	45-50	-
Skilled	68	68	50-55	50-55
Accountant	1,980	1,980	2,500	No female
Manager	2304	No female	6,000-7,000	No female
Clerks	1,400-1,500	1,400-1,500	1,800-2,000	No female
Driver	1,743	NA	1,743	NA
Darwan (Gatekeeper)	1,535	NA	1,535	NA
Mica powder (contract system)				
Unskilled	-	30-40 *	-	25
Skilled	54-60 **	-	30	-

Note: Minimum Wage Rate is not revised after 1995, only voluntary dearness allowance is revised. This rate is as per Notification No. 7/MW - 1055/1999/sramoni/2250, dt. 8.6.2000. V.D.A. @ Rs.18.94/- is to be paid to all sorts of labourers. Managers V.D.A. per month is Rs.744.16/-.

*Rs. 10/- per 40 kg. ** Rs.5/ per 50 kg.

Table 5 Distribution of Male and Female Workers according to Skilled and Unskilled Jobs

Types	Men	Women
Skilled	Cutting, checking, passing, metering, binding, fabricating, condenser preparing, silvering, di-punching, moulding, sorting, pressing, thickness measuring, cobbling, assembling, capacitor testing quality control	Silvering, assembling, capacitor testing
Unskilled	Screening, packing, grinding	Picking, screening, splitting, drying, head loading, packing

Employers Fail To Provide Non-Wage Benefits to Workers

Mica processing plants not only differ in the rate of pay, but also in benefit packages like money advances, loans for expensive wedding ceremonies, contingency advances for close relatives, death insurance, festival advances, clothing allowances and the ex-gratia payments or yearly bonuses. Local factories do provide pensions like the Employees' Provident Fund (EPF) and Employees' State Insurance (ESI) benefits¹¹, but only to permanent management staff.

Unlike workers from the informal labour market, all factory workers are legally eligible for benefits like the ESI. But despite this, only three or factories actually offer these packages to their non-management staff. India's main retirement plan, EPF, is by law, supposed to be granted to all workers in the formal labour force after 180 days of continuous service, but of all the mica processing plants surveyed, only 3 or 4 gave their employees coverage, and within these factories only 12% gained coverage.

Even more discouragingly, the employees who gained EPF coverage had to wait up to ten years to become eligible, rather than the 180 days of continuous service decreed by the government. To avoid having to provide their workers benefits like EPF and ESI, employers often adopt underhanded tactics like terminating their employees after 180 days of continuous service, and then rehiring them, often under a different name.

Although factory owners maintain that they comply with the laws, providing all their employees with ESI benefits, my own interviews with ESI doctors proved otherwise. In fact, the doctors I spoke to explained that only two or three factories actually covered their workers.

Meanwhile factories continue to neglect government laws set to protect workers' rights and ensure a safe and equitable workplace, and good working conditions. For instance, while legal provisions state that factories employing more than twenty female workers must provide crèche facilities, to date all local factories have failed to comply. Following in the same vein, mica processing plants have consistently failed to provide their workers with many of the most basic services including canteens, access to medical facilities, restrooms, clean toilets, and others.

State and national legislation, like the Labour Welfare Fund Laws (Amendment Act) 1987 and its subsequent act, the Mica Mines Labour Welfare Fund Act, 1946, state that workers in mica-related enterprises are entitled to a certain amount of leave every year. According to the legislation, day-labourers or casuals are eligible for twelve days of leave, while permanent workers are entitled to one day off every twenty working days. If sick, management staff can take up to fifteen days off for medical leave, while labourers can take off up to twelve days.

Despite this legislation, mine and factory operators rarely, if ever, give their workers time-off, even when the employee is seriously sick. In fact, of all Giridih's mica-processing factories, there are no records of any woman worker ever being given paid maternity leave. Interestingly, before recruiting women labourers, mica sardars¹², or the boss, ask around to see if they're pregnant, and if so, they're rarely hired. Even if the woman becomes pregnant after being hired, her contract is almost always terminated as soon as management finds out.

¹¹ **ESI Benefits** include coverage for medical, sickness, maternity, disablement, dependents and funeral expenses. Sourced from: Employees' State Insurance Corporation website at <http://esic.nic.in/benefits.htm>.

¹² A **Sardar** is a Punjabi, Persian and Hindi word that has several meanings, including 'head' supervisor.

The Minimum Wages Act 1948

Mica mine and process plant owners often contravene the Minimum Wages Act, 1948 and specifically Act 39 and Act 43 that state respectively "... that the State shall in particular direct its policy towards securing (a) that the citizen men and women equally shall have the right to an adequate livelihood and (b) that there is equal pay for equal work for both men and women" and "...that the State shall endeavour by suitable legislation or economic organisation or in any other way to give all workers agricultural, industrial or otherwise work a living wage conditions of work ensuring a decent standard of life and full enjoyment of leisure and social and cultural opportunities."

Case Study 1: Pano Masumat

Pano Masumat is an illiterate sixty year old widow, of the Muslim faith, and mother of two sons and five daughters. When she got married at the age of 20, her husband worked at the local mica factory. At the age of 25, after the birth of her first child, she started working in the same mica factory.

Within two weeks, she was trained in 'picking' and 'packing'. She worked for about 15 years, but not on a continuous basis. It is a common practice of the mica industry to terminate employees before they've completed 180 days of continuous service, and in this way owners contravene legal provisions, avoiding having to provide their workers with benefits.

So, like all other day-labourers, Pano was terminated every three months, and re-hired under a changed name. She was not aware of the implications of changing names. But Pano never complained about this unfair system, since like so many other lower caste and class labourers, and female workers, gaining employment in a registered workshop was better than working

in unregulated workshops or as home-based contracted labourers, where workers are paid even less.

So with little choice, Pano accepted the harsh terms dealt out by the mica-processing plant owners. But by the 1990s workers had become fed up with the situation, calling strikes that demanded higher wages and better working conditions, which Pano participated in. But the workers demands were not met, and the factory shutdown, paying workers off with small amounts ranging from 50 to 100 rupees.

After losing her job, Pano worked as an agricultural labourer @ 2 kg. paddy and two times meal; b) grazer @ Rs.3 per goat, Rs.7 per cow in a week. Compared to mica-processing, working as in agriculture is far more taxing, but Pano had no other options, as she had to support her family and her young children. These days, she is financially dependent on her three sons, who work as an agricultural labourer, a mason, and a soil cutter.

Case Study 2: Meena Devi

Meena Devi is an illiterate and childless 48 year old widow, SC. Following the rest of her family's female members into the mica processing profession, she started working at a young age. With guidance from her family, she quickly learnt the skills of 'picking' and 'splitting'. After developing these skills her uncle introduced her to the mica sardar at the local CMR Mica Factory where she learnt the job of

Meena worked for about 13 years in various local mica factories, but her employment was never continuous, and she was fired every three to five months, so the owners could avoid

providing her benefits. After being fired, she joined other retrenched female mica workers as they went from factory to factory looking for work, often in desperation. Showing total disregard for the Minimum Wages Act, 1948, factory owners paid her less than the legally binding minimum rates, with her salary only increasing by about 1 to 2 rupees (AUD 0.027-0.053) a year. When she was fired from the last factory, she started working on a contract-basis from home. Now, she is unemployed, and her survival is totally dependent on food handouts from her deceased husband's sister.

Case Study 3: Chandrani Masumat

Chandrani Masumatis an illiterate 70 year old Muslim, and a mother of one son. By the age of 16 she was working as a contracted home-based mica labourer. Her neighbours taught her the processes of screening, cleaning and packing, and after marriage, she started working in a mica factory.

She explained that 45 years ago, back in the 1960s, the average mica factory worker got paid a daily wage of about 20

rupees (AUD 0.52), but as a contract home-based worker, she got a 0.82 rupees, which is essentially nothing. Like all other mica workers, she moved from factory to factory in a never-ending succession of firing and hiring, but after coming down with TB, she had to quit for good. Despite the Factories Act, 1948 from the factory owners; only Rs 200 was paid to her. Her only son is soil cutter; upon him she depends for her daily sustenance.

Case Study 4: Anjani Devi

Anjani Devi is an illiterate, married 35 year old mother of three. She learnt the job of mica splitting and packing from her mother-in-law and father-in-law. After the birth of her three children, her husband, a mica worker at the local factory, helped her secure a job at the same factory. Again, factory owners flouted legal conventions like the Minimum Wages Act, 1948, paying her only from 17 to 20 rupees daily wages, far below the bare minimum. Also, contravening the Factories Act, 1948, they consistently refused to pay her and other mica workers for any overtime, even though mica workers typically work extremely long days¹³.

When Anjani and her fellow workers protested, demanding fairer wages, the factory owners threatened to fire them. With

no alternatives and desperate for some income, however meagre, to support their families, Anjani and the other workers were forced to back down and accept the owner's unlawful and oppressive tactics. Although her husband helped her to find another job in a different factory, the conditions weren't much better. Despite all the problems Anjani and other mica workers constantly face, the local and regional trade unions are of little help.

Like Pano Masumut from Case Study 1, Anjani now works as an agricultural labourer, where she makes 30 rupees a day, and in a brick kiln where she's paid 25 rupees a day for laying one thousand bricks in the oven. She endures long hours toiling away at backbreaking work.

¹³Section 59 of the Factories Act (1948) states "...Where a worker works in a factory for more than nine hours in any day or for more than forty-eight hours in any week, he shall, in respect of overtime work, be entitled to wages at the rate of twice his ordinary rate of wages". Source: <http://www.vakilno1.com/bareacts/factoriesact/s59.htm>

Currently, there are fifty-one NGOs operational in the Giridih district, but of these only two of them work directly with mica workers. The national level NGO, Alternative for India Development (AID) is active in the Tisri area, especially where the mica mines are located. Founded in 1982, AID is a grassroots organisation committed to "...facilitating total empowerment of the poor and working for an alternative development of the people..." by creating self-governing communities and associated organisations that promote poverty reduction through achieving basic rights, basic education, health security, gender and social equality and livelihood security for the poor (AID Website, 2008).

Among AID's many development projects across India, they've set up an extensive education program for mica working children from the Tisri block of Giridih district of the state of Jharkhand. According to a 1998 survey, 3020 children are engaged in mica-related work in this region. These children, some of whom are very young, rarely see the outside world, being confined to the mines all day long, with no access to education and no time to play with their friends. Many children suffer from asthma, bronchitis and silicosis, as a direct result of working in the mines.

In an effort to break the viscous poverty cycle entrapping most of the uneducated and poorly skilled local community, AID has established a series of education centres across the Tisri region. Currently, at least 675 working children now have access to a school education. With an education, these children will be better equipped to find more highly skilled jobs with brighter prospects, overcoming an inherent caste and class system that has condemned them to a life of poverty and ignorance (AID Website, 2008).

AID also organises a number of workshops to

discuss the best strategies of dealing with the various problems facing mica workers. In April and May 2007, AID convened a workshop on "Livelihood and Food Security" for mica workers in the Tisri Block. By mapping the area pinpointing mica villages, building a databank of local leaders, community members, buyers and developing a better understanding of the mica industry's working structure, and gained an insight into the harsh realities facing mica workers.

Another action coordinated by AID, was the district level rally held on 17th April, 2007, where 450 mica child labourers, and adult male and female mica workers marched through the town of Giridih to Giridih's District Office to raise awareness of their plight. By attracting media and public attention, they hoped to pressure the local administration, the forest department, the mining department and mine owners to introducing a more equitable system of payment and better working conditions. The rally seemed to be partially successful, at least in drawing much needed attention and raising public awareness to the mica workers' problems.

In the past, AID also set up programs to help mica miners who had been exposed to mica dust, and Foundation is another grassroots NGO that seeks to strengthen media and communication resources for promoting people-centred developmental actions. Abhivaykti views people-centred development as a process in which people can fulfil their basic political, social, economic and cultural aspirations, by deciding for themselves the type of society they want to live in, irrespective of their social identity, i.e. caste, class, age or gender (Abhivaykti Website, 2008).

As author of this paper, I cannot state whether these NGOs have been successful in achieving their goals, but I will publish the results of their performance once I have completed an extensive evaluation.

"AID is a grassroots organisation committed to "...facilitating total empowerment of the poor and working for an alternative development of the people..." by creating self-governing communities and associated organisations that promote poverty reduction through achieving basic rights, basic education, health security, gender and social equality and livelihood security for the poor."



Map of the Giridih District, Jharkhand

Conclusion

Even though the Giridih District's mica workers suffered massive retrenchments resulting from the contraction of the mica export market during the 1990s, no local or regional organisations stepped up to help the disillusioned local community. Most of the NGOs active in the region at the time worked in the areas of rural development and self-help.

Some support came from local and national trade unions, but they almost totally ignored the mica industry's women workers. To add insult to injury, union leaders of every political persuasion agreed that women were simply incapable of learning skilled jobs. This is contrary to every piece of historical evidence, that shows beyond a shadow of doubt, that women can perform at the same level or outperform men in every vocation, as is clearly seen throughout the developed world.

A sad reality of Indian society is that patriarchy is deeply entrenched in the nation's collective conscience, irrespective of their politics, religion, class and even caste. While trade union efforts have led to higher wages and better working conditions, unequal labour legislation for men and women has led to a less favourable position for women in the labour market, particularly in the consolidation phase of the industry.

Consequently, there has been no attempt to train or up-skill women so they can move up the career ladder, and get jobs with brighter future prospects, better pay and more respect.

Ironically, the very groups that should protect the worker's rights, the trade unions, are by their very nature some of the most male-dominated and patriarchal organisations in India. Consequently, there is very little discussion on the theme of solidarity between men and women workers. Women workers see unions as exclusive 'men's clubs' and rarely approach them for support if they want to demand better conditions from management, and as uneducated and unskilled workers in small scale units they simply can't do it on their own.

The general view of women workers in the mica industry is that unions only cater to male workers and workers from large production units, who are better organised. While women workers employed by factories are given little or no support from trade unions, contracted home-based women mica workers fall off the radar all together, and basically have no rights at all.

So deep-seated patriarchal values shared by almost all factory owners, trade-union-leaders and male workers leaves little hope for India's women mica workers, condemning them to a life mired in poverty and ignorance.

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Artisanal and Small-Scale Mining (ASM) in Asia-Pacific Portal <http://www.asmasiapacific.org>

ASM Asia-Pacific Case Study Series

This series of case studies documents concrete examples of equitable, effective, and sustainable local-level partnerships including small-scale miners or their communities as a guide to develop better policy and practice in the Asia-Pacific region.

The project has been led by Kuntala Lahiri-Dutt. The case studies have been edited by Joel Katz and designed by Rachel P Lorenzen.

Artisanal and Small-Scale Mining (ASM) in Asia-Pacific Portal

The ASM Asia Pacific Portal is the public interface of a loose network of individuals and institutions working on poverty eradication, development and livelihoods in Artisanal and Small-scale Mining (ASM) in the Asia-Pacific region.

The portal's mandate is to disseminate knowledge about ASM in the Asia-Pacific, to document best practice in community development and environmental management, and to promote fellowship and cooperation among stakeholders interested in poverty eradication and sustainable development.