

A Study on the Status of Mining and Mine Workers in Rajasthan



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Budget Analysis Rajasthan Centre

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- Manjari Sansthan, Bundi
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Abbreviations

AE	Actual Estimate
AME	Assistant Mining Engineer
APL	Above Poverty Line
BE	Budget Estimate
BPL	Below Poverty Line
CITU	Centre of Indian Trade Unions
DGMS	Directorate General of Mines Safety
DMFT	District Mineral Foundation Trust
DMG	Department of Mines and Geology
EMF	Environment Management Fund
FGD	Focused Group Discussion
FICCI	Federation of Indian Chambers of Commerce and Industry
GDP	Gross Domestic Product
Gol	Government of India
GoR	Government of Rajasthan
HoD	Head of Department
ID	Identity Document
JCB	Joseph Cyrill Bamford
ME	Mining Engineer
MLPC	Mine Labour Protection Campaign
MMDR	Mines and Minerals Development and Regulation
NIMH	National Institute of Mental Health
OBC	Other Backward Classes
PAN	Permanent Account Number
PRI	Panchayati Raj Institution
RE	Revised Estimate
REHAB	Rajasthan Environment and Health Administrative Board
RMSCL	Rajasthan Medical Services Corporation Limited
RSMML	Rajasthan State Mines and Minerals Limited
SC	Scheduled Caste
ST	Scheduled Tribes
TB	Tuberculosis

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Foreword

Mining is one of the most important economic activities, providing employment to tens of thousands of the people in the state of Rajasthan. Mining contributes more than 4% to state gross domestic product and generates revenue of about Rs. 3,500 crores every year in the state. There are more than 2.8 lakh people employed in the mining work according to the official estimates, which is based on the reporting by the mine owners and is highly underreported. All of this points to the importance of the mining sector in the state. This sector, however, almost totally comes under the unorganized sector in the state, where most of the mining and labour related regulations are violated on daily basis. The mine owners and lessees do not file the mandatory returns to the Directorate General of Mines Safety, do not keep any attendance registers for the workers, do not provide any identification cards to the miners, do not provide any safety equipments to the workers and hardly give any compensation in cases of accidents and occupational hazards to the workers. And in result the men, women and children engaged in mining face numerous problems.

There is a lack of coordination between the state and central governments and their various agencies. The mining leases are given by the Department of Mines and Geology of the State Government whereas the mining laws and labour laws are to be enforced by the office of the Chief Labour Commissioner (CLC) and the Directorate General of Mines Safety (DGMS) which come under the Ministry of Labour and Employment of the Union Government. The lack of coordination as well as lack of adequate staff in these agencies makes it difficult for them to monitor the implementation of crucial laws in the mines.

This study conducted by the Budget Analysis Rajasthan Centre (BARC), a unit of Astha Udaipur, focuses on the status of mining and mine workers in Rajasthan. There are very few ground level studies available on the situation of mining and status of mine workers in the state. The study discusses the importance of mining for the state and also presents a brief survey of the mining regulations and the mineral policy of the state. We hope this study contributes to the existing knowledge base of status of mining and mine workers in Rajasthan.

Though the study has its own limitations, we hope that it will be useful for the NGOs, campaigns and trade unions working for the betterment of the status and upholding the rights of mine workers in the state. BARC would be happy to receive any comments and suggestion on this report.

Nesar Ahmad
Coordinator, BARC

I. Introduction

Mining is a very significant economic activity. Just about every article one comes across in their day to day lives is either mined or contains mined raw materials. Although the materials extracted from mining are essential, yet it cannot be denied that mining can be hazardous to the environment and to those involved in it and living near the mines. The degrees of impacts of mining are also affected by the way the Government policies are implemented and Government funds are used. Due to the negligence of the Government and the prevalent erratic nature of mining, the mine workers in India and many other developing countries are facing worst life conditions. It can be observed easily that the damage to mine workers affected by erratic mining often exceeds the benefits that they receive from it. However, due to crop failure and lack of job opportunities in other sectors, a large number of labourers are drawn towards mining sector. The present study demonstrates the impact of being employed in this sector on the socio-economic status of the mine workers.

Rajasthan is well-known all over the world for its sandstone, marble, lignite, granite and other such minerals that are used extensively for constructing beautiful architecture. Unfortunately, the miners who toil hard to provide these stones and minerals face agony, misery and pain. More than 2.8 lakh workers are employed in mining and almost 95% of mining activity in Rajasthan is under unorganized sector (Dutt, 2005). Due to the erratic nature of operation in these mines, the mine workers are bound to live a life that can be best described as dejected.

Misery of the mine workers is worsened as even the basic labour laws are not implemented like attendance registers are missing which causes lack of documentation that could reveal the real number of workers engaged in mining sector. This allows the mine owners to evade the provisions made mandatory under mining laws like enforcing adequate health measures and mine safety arrangements along with the social security schemes like provident fund, gratuity, insurance etc. Due to lack of available data it is hard to say anything about the actual number of the victims of various hazards caused by erratic mining practices and whether those killed, disabled or injured ever receives any adequate compensation.

Beside this there are also issues of women and children working in the mines. The incidences of gender discrimination at workplace, sexual harassment cases and inequality in terms of wages in the mines occur frequently in the mines. Issue of the children working in mines are also mostly invisible as they are employed in the activities related to mining like cobbing, cutting of mined stones into required pieces, etc. and not directly in the mines.

There seems to be very few micro level studies available that document problems related to the mine workers in Rajasthan. BARC has conducted this study as a small effort to fill this gap. This study has tried to capture the socio-economic status of the labourers engaged in this challenging sector as well as the workplace situation in the mines.

1.1 Objectives

With the above background, BARC conducted the present study on the status of mining and mine workers in Rajasthan with the following objectives:

- To understand the status of mining and its economic, social and environmental impacts in Rajasthan.
- To map out the policies for mining and mine workers in Rajasthan.
- To identify the Government institutions and regulatory setups related to mining.
- To study the State budget to see the revenue coming from mining and expenditure being made on welfare of mine workers and environment protection.
- To determine the socio economic status of mine workers in Rajasthan.
- To assess the impact of mining on the health of the mine workers.

1.2 Methodology

To achieve the objectives of this study, both primary and secondary data were used.

Tools: The Primary Data has been collected through random sampling method in the selected mining areas with the help of the following tools:

1. Questionnaires:

A questionnaire was prepared for mine workers with both closed and open ended questions for collecting data on their professional, social, economic, gender and health profile.

2. Interviews:

a. Interview with mine workers having long term mining experience:

A set of questions were prepared for interviewing mine workers who have been working in mining sector for fairly long time (10 years or more) to know the condition of mine workers and facilities provided in the mines at present and in the past as well.

b. Interview with administrative/managerial staff:

A set of questions was prepared for interviewing a member of administrative/managerial staff of the mine like an accountant or a manager or the contractor or the mine owner himself. This set of questions includes questions about the operation and management of the mine.

3. Focus Group Discussions (FGDs):

Focus group discussions were conducted in each of the selected districts for a better understanding of the issues related to mining and mine labourers. Participation of women miners was ensured during FGDs and the participants were encouraged to keep their views and problems without hesitation.

Primary data collection was done with the help of local NGOs. Partner organizations in each district were

identified and contacted. One day training for the partners was conducted at BARC's office on the tools and other aspects of data collection relevant for achieving the aforementioned objectives. Visits were made to various mines in each of the selected district and the photographs along with direct observation were also used as tools for collecting the primary data. In order to understand the regulatory set-up, State departments for mining, health and environment were visited and relevant officers including Mining Engineers (MEs) were interviewed.

The secondary information has been collected from various reports and documents of Government, publications of organizations working on mine labourers' issues, articles from various journals, magazines, newspapers, and websites and budget books of the Government of Rajasthan.

BOX1: Categories OF Minerals

All minerals have been broadly classified into two categories (DMG, 2014) namely:

Major Minerals: Cadmium, Copper Ore, iron Ore, Lead, Zinc, Silver, Manganese, Asbestos, Ball Clay Barytes, Calcite, China Clay, Dolomite, Emerald, Fluorite, Mica, Felspar, Quartz, Rock Phosphate, Soapstone, Wollastonite, etc.,

Minor Minerals: Bentonite, Brick Earth, Chips, Granite, Kankar-Bajri, Limestone, Marble, Masonry Stones, Sandstone, Serpentine and other Decorative Stone, etc.

Area of study:

No. of selected minerals: 7

No. of selected districts: 7

First of all, seven minerals with the highest number of employment were identified from Mineral Statistics Report of 2013-14 of the Department of Mines and Geology, Government of Rajasthan (Table 1). It was decided to take into consideration mining of only the Minor Minerals in Rajasthan as

BOX 2: Administrative Zones of Rajasthan

Ajmer Division: Ajmer, Bhilwara, Nagaur, Tonk

Bharatpur Division: Bharatpur, Dholpur, Karauli, Sawai Madhopur

Bikaner Division: Bikaner, Churu, Sri Ganganagar, Hanumangarh

Jaipur Division: Jaipur, Alwar, Jhunjhunu, Sikar, Dausa

Jodhpur Division: Barmer, Jaisalmer, Jalore, Jodhpur, Pali, Sirohi

Kota Division: Baran, Bundi, Jhalawar, Kota

Udaipur Division: Udaipur, Banswara, Chittorgarh, Pratapgarh, Dungarpur, Rajsamand

Source: (Nova Mining, 2014)

the mining of Minor minerals is governed by the State Government and almost 87.5% of the total of the people employed in mining in Rajasthan are employed in the mining of Minor Minerals (DMG, 2014).

Table 1: Selected Minerals

S. No.	Mineral	Leases	Employment
		(No.)	(No.)
1	Brick Earth	20	16,948
2	Granite	923	6,867
3	Kankar-Bajri	126	37,011
4	Limestone	1,079	10,315
5	Marble	1,910	31,773
6	Masonry Stone	5,632	62,234
7	Sandstone	1 276	71,242
	TOTAL of Selected Minerals	10,834	2,36,390 (83.42%)
	Total of all Minerals	33,583	2,81,927 (100%)

Source: Mineral Statistics 2013-14, DMG, 2014

After identifying the minerals, the districts from each administrative zone of Rajasthan where mines for the selected mineral are distributed were noted. Then the district with the highest number of employees for selected minerals was identified from each administrative zone (Table 2).

Table 2: Selected Districts

S. No.	District	No. of Leases (All Minerals)	Employment (All Minerals)	No. of Leases (Seven Minerals)	Employment (Seven Minerals)
1	Jaipur	1,165	19,579	1,051	18,249
2	Rajsamand	2,092	22,681	1,239	15,358
3	Ajmer	991	25,310	397	20,092
4	Jodhpur	517	39,050	313	36,559
5	Sri Ganganagar	15	4 254	-	4 104
6	Bundi	992	12,663	986	11,937
7	Karauli	289	23,015	234	20,980
	TOTAL of Seven D istricts	6,061	1,46,552	3,808	1,33,910
	Total for the State	33,583	2,81,927	33,583	2,81,927

Source: Mineral Statistics 2013-14, DMG, 2014

The Table 3 shows the selected districts and minerals for data collection. Ten mines of the mineral selected for each district were visited for the survey.

Table 3: Mines of the Minerals Visited in Each District

S. No.	District	Mineral	No. of Leases	Employment
1	Ajmer	Kankar Bajri and granite	27	10 440
2	Bundi	Sandstone	855	10,573
3	Jaipur	Masonry Stone	998	9 700
4	Jodhpur	Limestone	103	760
5	Karauli	Sandstone	140	20,000
6	Rajsamand	Marble	1 098	10 913
7	Sri Ganganagar	Brick Earth	-	4 104
		TOTAL	3 221	66 490

Source: Mineral Statistics 2013-14, DMG, 2014

Sampling:

Sample size: 490 mine workers

For conducting the present study, 490 mine workers participated in the survey. The sample size was chosen according to the resources and time available for data collection. In each of the seven districts, 70 mine workers were selected randomly from the mines visited and were interviewed with the help of questionnaires.

1.3 Limitations

While conducting the study some challenges were faced due to lack of adequate Government data on the status of mine workers in Rajasthan. Some difficulty was faced in order to interact with the mine workers inside the mines as they were hesitant to answer the questions in the presence of the contractor or the supervisor and because they were busy working in the mine for long hours, it was difficult to arrange for a meeting outside.

While interacting with the Mining Engineers and officers in the Mining Department, Environment Department, Health Department and Labour Department, sufficient information could not be

gathered due to lack of information on their part regarding health benefits for mine workers, REHAB, Environment Protection Fund and Pneumoconiosis Board.

The present study has not covered the problem of child labour in Rajasthan as children are not employed in the stone mines directly but they are largely involved in the mining related activities. This study however, focuses mainly on the workers working in the mines and quarries.

1.4 Chapter Plan

The entire research work will run into nine chapters. The first one on introduction brings out the importance of the study and States its objectives. It also includes methodology and limitations. Chapter II will contain the importance of mining along with its social and environmental implications where an overview of mining with respect to India and Rajasthan is presented along with its various impacts. Chapter III enumerates the legislation applicable for mining and for welfare of mine workers in Rajasthan and their enforcement mechanism. Chapter IV discusses the initiatives of the Government for the benefit of the mine workers. Chapter V discusses the findings related to the mines visited for data collection and the basic profile of the sample. Chapter VI gives the employment condition and information about wages and economic security provided to the mine workers. Chapter VII tells about the prevalence of various occupational diseases and safety measures at mines. Chapter VIII enumerates health and environment risks to the people residing around the mines demonstrated through the present study. The final Chapter provides the conclusions of the study along with recommendations which is followed by references and annexure.

II. Mining: Its Importance and Implications

2.1 Mining in India

India is blessed with more than 20,000 mineral deposits and most of the mining activities are concentrated in the States of Rajasthan, Gujarat, Jharkhand, Madhya Pradesh, Andhra Pradesh, Karnataka, Odisha, Tamil Nadu, Maharashtra, Chhattisgarh and West Bengal (CSE, 2012). The share of the mining and quarrying sector as a percentage of gross domestic product (GDP) has declined from 2.8 per cent in 2010-11 to 2.1 per cent in 2013-14 (GoI, 2015, p. 100). Mining is one of the core sectors that influence growth in the Indian economy. Not only does it significantly contribute to the GDP, it also acts as a catalyst for industries like manufacturing, power generation, steel, cement etc. which, in turn, are very important for the overall development of the economy.

Production: In 2012, India produced 813 million metric tonnes of minerals and was ranked as 5th amongst the twenty largest mineral producer countries on the basis of volume of production after China, United States, Russia and Australia and in terms of value of mineral production, India ranked 9th as it produced minerals of worth US \$ 0.15 million (excluding diamonds) after China, Russia, United States, Saudi Arabia, Australia, Canada, Iran and Brazil (Reichl, Schatz, & Zsak, 2014). However, mining sector in India has witnessed negative production growth for two consecutive years in a row i.e. year 2011 and 2012. Table 4 illustrates the trend of mineral production in terms of volume in India.

Table 4: Mineral Production in India (in Million Metric Tonnes)

Year	Volume
2008	779.8
2009	832.1
2010	833
2011	820
2012	813.5

Source: World Mining Data Report by International Organization Committee for the World Mining Congress (Reichl, Schatz, & Zsak, 2014)

The table above shows that the volume of mineral produced in India in 2009 was almost 52.3 million metric tonnes more than that produced in the year 2008 and it also increased slightly in the year 2010. However, it decreased from 833 million metric tonnes in 2010 to 820 million metric tonnes in 2011 which further decreased to 813.5 million metric tonnes in 2012.

Employment: According to the Census of India, 2001, out of the 40.2 crore people working in various sectors in India, 20.9 lakh people are working in mining and quarrying sector (GoI, 2001). This represents 0.52% of the total workforce of India; 0.6% of total male workforce is mine worker and 0.25% of total female workforce is mine worker. The following table gives information about number of male and female workers involved in mining and also about the people in mining from rural and urban areas.

Table 5: Employment in Mining and Quarrying Sector in India in 2001 (in lakhs)

Employment	Persons	Males	Females
Rural	13.34	10.76	2.57
Urban	7.63	6.93	0.69
Total for Mining and Quarrying	20.97	17.70	3.27
Total workforce in India	4,022.34	2,750.14	1,272.2

Source: Economic Activity, Archives, Census of India, 2001 (GoI, 2001)

As seen in the Table 4, out of the total population involved in mining and quarrying, 84.3% are males and 15.6% are females. Also, 63.6% of the mine labourers in India are from rural areas and 36.3% are from urban areas.

According to FICCI Mines and Metals Division's report (FICCI, 2013), even with the de- growth and contraction, mining contributes about 2% to India's GDP and the Ministry of Mines, Government of India has targeted to increase share of mining and quarrying to 5% of GDP over next 20 years which requires mining to grow at 10-12% per annum. The report further says that within two decades of liberalized economy, the mining sector has come to be associated with scams, conflicts, exploitation and ecological degradation. Therefore, focus on socio-economic development is essential for mineral development in India.

2.2 Mining in Rajasthan

Rajasthan has maximum leases both in terms of numbers and area (CSE, 2012) and is the sole producer of garnet, jasper, zinc concentrate and wollastonite in India (DMG, n.d.). According to the Economic Review 2014-15, mining contributes more than 4% in the state Gross Domestic Product (Government of Rajasthan, 2015). State has 79 varieties of minerals out of which 57 minerals are produced in the State (Government of Rajasthan, 2015) contributing annual revenue of more than 3,500 crores (Government of Rajasthan, 2015). Mining activities are spread all along the Aravalli range as most mineral deposits are concentrated there. Department of Mines & Geology (DMG) and Department of Petroleum are the main agencies for mineral exploration and mineral administration. According to the Economic Review, 2014-15 there are as many as 3,403 mining leases of major minerals, 11,861 mining leases of minor minerals and 18,249 quarry licenses in force in the State (Government of Rajasthan, 2015). State Mines and Minerals Limited (RSMML), Hindustan Zinc Limited and Hindustan Copper Limited are the key players in mining industry in Rajasthan.

Production and Revenue: The Mineralwise Statistics Reports, in 2012-13 Rajasthan produced approximately Rs. 6,298.34 crore worth of major minerals which increased to 6,339.15 crore in 2013-14 and Rs. 7,557.19 crore worth of minor minerals which increased to 25,766.95 crore in 2013-14 (DMG, 2014).

Table 6 illustrates the revenue earned by the non-ferrous mining and metallurgical industries in Rajasthan as mentioned in the budget books.

Table 6: Revenue and Receipts of Non- Ferrous Mining and Metallurgical Industries in Rajasthan, 2014-15 (in crores)

Non-ferrous Mining and Metallurgical Industries (Revenue Head- 0853)		Mineral Concession Fees, Rents and Royalties	Other Receipts	Total
2011-12	AE	2,299.47	66.84	2,366.31
2012 13	BE	2,500		2,500
	RE	2,600	310	2,910
	AE	2,776.70	61.85	2,838.55
2013-14	BE	2,900	310	3,210
	RE	3,150	210	3,360
	AE	2,909	179.42	3,089
2014-15	BE	3,650	210	3,860
	RE	3,400	166	3,566
2015-16	BE	3,933	202	4,135

Source: Budget Book Vol. 2 A, Finance Department, Government of Rajasthan, 2014-15

The table shows that in the year 2012-13, the actual revenue earned from the non ferrous Mining and Metallurgical industries was Rs. 2,838.55 crore which is 472.24 crore more than the actual estimate of the year 2011-12 which was Rs. 2,366.31 crore. The mining and metallurgical industries in Rajasthan are growing constantly in terms of revenue. In the budget estimate (BE) of 2013-14, Rs. 3210 crore was the revenue from mining which is 371.5 crore more the actual estimate of 2012-13. The BE of the year 2014-15 has also increased to Rs. 3860 crore and the BE for 2015-16 is Rs. 4,135. It is important to note here that mining of petroleum is not included in Non Ferrous Mining and Metallurgical Industries.

Directorate for Department of Mines and Geology, Udaipur being the nodal agency for the operation of mines in Rajasthan takes up the activities like regulation of mines, direction & administration, survey & mapping, mineral exploration & development, research & development etc.. While the Secretariat for Department of Mines and Geology, Jaipur receives the lease applications, approves them and collects royalties. The Department of Mines and Geology has allocated Rs. 80 crore from its revenue to Panchyati Raj Institutions for development of the area (Government of Rajasthan, 2014).

Employment: According to DMG, in the year 2013-14, 2.8 lakh people in Rajasthan were employed in mining (DMG, 2014). Out of the total mine workers 87.5% were employed in the mining of Minor Minerals like granite, marble, masonry stone etc., 2.6% were employed in mining of Metallic Minerals like lead, zinc, silver etc. and 9.7% were employed in the mining of other minerals like asbestos, dolomite, calcite etc..

Table 7: Number of Persons Employed in Mining in Rajasthan in 2013-14

Type of Mineral	No. of Persons Employed	%
Metallic Minerals	7,386	2.6
Other Minerals	27,607	9.7
Minor Minerals	2,46,934	87.5
Total	2,81,927	100

Source: Mineral Statistics 2013-14, DMG, 2014

According to the Census of India, 2001, out of the 2.3 crore people working in various sectors in Rajasthan, 2.2 lakh people are working in mining and quarrying sector (Gol, 2001). This represents 0.9% of the total workforce of Rajasthan; 1.3% of total male workforce is mine worker and 0.2% of total female workforce is mine worker. The following table gives information about number of male and female workers involved in mining in Rajasthan and also about the people in mining from rural and urban areas.

Table 8: Employment in Mining and Quarrying Sector in Rajasthan in 2001 (in lakhs)

Employment	Persons	Males	Females
Rural	1,80,580	1,60,670	19,910
Urban	41,880	37,620	4,260
Total in Mining and Quarrying	2,22,460	1,98,290	24,170
Total Workforce in Rajasthan	2,37,66,655	1,46,95,802	90,70,853

Source: Economic Activity, Archives, Census of India, 2001 (Gol, 2001)

As seen in the Table 8, out of the total population involved in mining and quarrying, 89.1% are males and 10.8% are females. Also, 81.1% of the mine labourers in Rajasthan are from rural areas and 18.8% are from urban areas.

2.3 Environmental and Social Impacts of Mining

Mining is important for economic development of a country but its erratic operation can cause various adverse impacts. Mining affects all the components of environment. These impacts can vary in magnitude and can be permanent or temporary. Mining activities result in extraction of minerals from nature and often create imbalances in the environment (Mehta, 2002). The key impacts of mining are on the social and environmental scenario of the place. Mining activities like digging and blasting disturb the terrestrial configuration and generate huge volumes of overburden removal (layers of topsoil and underlying rocks), fine dust particles and dangerous gases. Some of the hazards associated with mining are discussed below.

Environmental Impacts: Mining is mainly excavation of mineral ore. This creates a lot of pressure on the environment of the area under mining. A large proportion of the total land in the State is under mining which affects the bio-diversity, geology and hydrology of the area adversely (Sharma, 2013). Topography changes due to digging and dumping of overburden and the land may even become infertile forever. The water quality of the mining region is mostly polluted with toxic residue of heavy metals, acid water, etc. and large usage of water for dust suppression, machine cooling etc. also disturbs the hydrological regime of the area. Extensive use of diesel and petrol equipments like crushers, conveyors etc. cause increase in levels of dust particles and harmful gases like CO, CO₂, NO, SO₂ etc.

The noise levels in mining operations such as drilling, crushing, blasting etc. get much higher than the recommended levels for noise for human ear. Surveys conducted at various institutions have shown that noise exposure levels in most mining operations are higher than the recommended limit of 90dB. A survey conducted in 2011 by NIMH on 682 workers in opencast mines showed that 20-25% had evidence of noise induced hearing loss (Elgstrand & Vingard, 2013, p. 13).

Social Impacts:

Mining activities have long term impact on the sociological, cultural and economic situations of the area. Mining projects can bring economic benefits to some extent but may also cause displacement and loss of livelihood. Most of the mineral deposits are found in the areas with tribal population that is vulnerable to poverty, climate change impact and has lack of opportunities. Mining areas suffer from various social problems including alcoholism, violence, suicides and credit burden. Apart from this, mine workers due to reduction in quality of life because of poor access to food, natural resources and livelihood. There are numerous health hazards caused by mining to the people in and around mining areas. Such health hazards include hearing loss, musculoskeletal disorders due to vibrations, respiratory

diseases like asthma, silicosis, lung cancer, bagassosis, asbestosis and tuberculosis etc. due to exposure to hazardous substances, fatigue, mental disorders and skin diseases due to erratic mining conditions etc.. These can lead to severe disabilities and even death (Dutt, 2005). Mental disorders can also arise due to factors like exposure to long working hours, being away from family for prolonged stretches, severe injury or death of a colleague etc.. Long exposure to noise and dust pollution affects women the most during pregnancy and can cause long term impact on their reproductive health.

Women and Children also form an important part of the workforce in mining sector. Issues related to women and children working in the mining sector need attention as their contribution is considered insignificant and mostly goes unnoticed. The women miners mostly work in mines to increase the overall monthly household income (Gravis, 2010). The incidences of gender discrimination at workplace, sexual harassment cases and inequality in terms of wages in the mines occur frequently in the mines. Data related to violence against women in mines is not available as mostly they are not registered mine workers and also because discrimination and crimes against women are rarely reported.

Child Labour in Mining in Rajasthan: Child labour is a stigma associated with mining in Rajasthan. It is, however, difficult to get an accurate figure of exactly how many children are working in the mining sector because of the illegality of child labour in mines, remoteness of the quarries and mines and the informal character of the sector. Also, the children working in the mines seem to be mostly employed in allied activities and not in the mines. The organizations working in Rajasthan estimate that more than 3,75,000 children work in Mines and quarries across the State (India Committee of the Netherlands, 2010). This is extremely high estimate compared to the total number of mine workers reported above. Obviously these are estimated numbers as there is no credible data available for children working in mines. According to UNICEF around 20% of mineworkers in India are children (Szekely, 2010). They are, however, mostly employed in the activities related to mining like cobbing, cutting of mined stones into required pieces, etc. and not directly in the mines. Szekely asserts that it is because of lack of education and low family income that children take up mining related jobs.

This study does include some women workers as respondents and participants of the FGDs. It is, however, not possible to do justice to the children involved in mining in this study, which focuses mostly on the workers working in the mines and the quarries and not in the allied activities. The issue of child labour requires a separate study with special focus on the mining related works in which most children are involved.

III. Regulations and Policies Related to Mining for Welfare of Mine Workers

3.1 Regulations

The first Mines Act was enacted in 1901 which was replaced by Indian Mines Act, 1923, which was again replaced by Mines Act, 1952. The Mines Act, 1952 applies to mines of all minerals within the country except the State of Sikkim, including the offshore mines within the limits of territorial water. In India, health, safety, and welfare of workers employed in mines are the concern of the Central Government (Elgstrand & Vingard, 2013, p. 33) and majority of activities of the State Government are grant of lease, cancellation of lease, collection of royalty, ensuring safe and eco-friendly mining.

The Mines Act, 1952 and the Mines and Minerals Development and Regulation Act (MMDR), 1957, together with rules and regulations framed under them, constitute the basic laws governing the mining sector in India. The relevant rules in force under the MMDR Act are the Mineral Concession Rules, 1960 and Mineral Conservation and Development Rules, 1988 but they are not applicable to coal, atomic minerals and minor minerals. Minor minerals are separately notified and come under the purview of the State Governments. The State Government of Rajasthan has for this purpose formulated the Rajasthan Minor Minerals Concessions Rules. In Minor Minerals, the leases for Marble and Granite are governed in accordance with the Marble Policy, 2002 and Granite Policy 2002 respectively.

Some of the other legislations responsible for mining operations in India are Coal Mines Regulations, 1957; Metalliferous Mines Regulations, 1961; Oil Mines Regulations, 1984; Mines Vocational Training Rules, 1966; Mines Rescue Rules, 1985; Mines Crèche Rules, 1966; Coal Mines Pit Head Bath Rules, 1959; The Indian Electricity Act, 2003; The Indian Electricity Rules, 1956; Factories Act, 1948 : Chapter III & IV; Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989; Environmental Protection Act, 1986; Land Acquisition (Mines) Act, 1885; The Coal Mines (Conservation & Development) Act, 1974. In Rajasthan a new Act for mining operations has been passed this year called as “The Mines and Mineral (Development and Regulation) Act, 1957 & Amendment Act, 2015”.

Some mandatory provisions for welfare of mine workers as per the Mines Act, 1952 and the Mines Rules 1955 which are administered by Directorate General of Mines Safety (DGMS), set up under the Union Ministry of Labour and Employment are as follows:

Facilities: There must be suitable arrangements made for sufficient clean drinking water easily accessible to all persons employed in a mine; mines must provide for sufficient number of separate latrines and urinals for males and females which should be adequately lighted, ventilated and clean; maintaining well-equipped first-aid boxes is compulsory; every mine must have arrangements for conveyance facility to hospitals; and mines should have the arrangements for serving food, drink and other items to the persons employed.

Diseases, injuries and compensation: In case of accident causing loss of life or body injuries, then mines have to give notice of such occurrences to the authorities immediately; in case of occupational

diseases, the owner/manager shall send notice to the Chief Inspector; each mine must provide for medical examination of persons employed; there should be a safety committee in mines where more than 100 persons are employed; proper allowance and compensation must be given to the victims of occupational diseases and accidents.

Working, wages and compensation: The mine workers must not work in a mine for more than six days in any one week and for not more than 9 hours per day. There must be at least half hour of rest in between and the employer must pay extra wages for overtime and must give the employees one day paid weekly off.

Others: No intoxicating drugs and drinks shall be consumed at the workplace; every mine a register must be maintained for all the persons employed in the mine; women can be employed only in the surface mines between 7 am and 6pm; no person below 18 years of age shall be allowed to work in any mine.

3.2 Enforcement Mechanism of Regulations for Mine Workers

Enforcement of labour laws and safety measures in mines is the subject of the Centre as it comes under the Union list of the Constitution of India. The Ministry of Labour, Government of India is the main agency responsible for the labour and safety related regulations. There are two main enforcement agencies of the Union government for the enforcement of laws related to mine workers and safety at workplace. They are:

1. **Chief Labour Commissioner (CLC):** The Chief Labour Commissioner is an enforcement agency of the Ministry of Labour and Employment of the union government. In Rajasthan it is located in Ajmer. The CLC is responsible for ensuring the implementation of all the labour laws in the mines and quarries (Chief Labour Commissioner, 2009).
2. **Director General of Mines Safety (DGMS):** DGMS is again an agency under the Ministry of Labour and Employment of the union government. The regulations mandated under the Mines Act, 1952 and the Rules and Regulations framed there under this Act like provision of adequate safety equipments, basic facilities for the welfare of mine workers like drinking water, bathrooms, proper lighting etc. are enforced by the DGMS through inspecting officers. The mines owners/contractors are required to submit quarterly returns to the DGMS indicating name of the firm, registration number, address, number of persons employed, nature of work, type of deployment of workers, type of medical coverage (DGMS, 2013). The DGMS returns are important because this way the DGMS knows which are the mines and quarries and where are they located. However, a large number of Mine owners do not file such quarterly returns and this way they can evade the very monitoring and inspection by the DGMS. Since the leases of mines are given by the state government, the DGMS, a central government agency does not know about all the mines and quarries and their locations.

Besides, the **Department of Labour, Government of Rajasthan** also plays important role. The main responsibility of Labour Department is to protect and safeguard the interests of workers in general with regard to creating healthy work environment. It deals with the disputes occurring in under the subjects dealt by CLC and finalizes the compensations in the disputes under Rajasthan Workmen's Compensation (Occupational Disease) Rules, 1965.

3.3 Rajasthan Mineral Policy, 2015: A Brief Review

The new Rajasthan Mineral Policy, 2015 aims at developing economically stable mining industries (Government of Rajasthan, 2015). This policy mainly focuses on the private sector. The Rajasthan Mineral Policy, 2011 gave certain limitations, particularly in case of minor minerals where provisions of granting mining lease in Government land (including forest land) after delineation, proved to be a big hindrance for new grants and for mineral development. The new policy provides for easier process of granting new leases. It aims at increasing the “land under mining” from the current 0.54% to 1.5% and increases the number of minerals used under mining from 57 to 79. Obviously, the focus is on the ease of doing mining in the state and increasing the level of mining activities. The accompanying social and environmental impacts of the increased level of mining however, does not seem to be a concern for the State. The Mineral Policy 2015 also says that since digging or extraction of Brick Earth/ordinary sand used for making bricks, pottery etc. does not cause any adverse impact on environment so a separate provision will be made not to treat such digging or extraction as a mining operation.

The policy mainly talks about the fiscal, legal, regulatory and technological provisions that are favorable investment in mining areas. Apart from this, the policy Statement says that under this policy the threshold parameters for health and welfare of people employed in mining will be adhered to. For this, skill development and training programs will be conducted; efforts will be made to enforce health and safety regulations in the mines and to strengthen water supply and sewage system in the highly concentrated mining areas. It also says that “wet drilling” will be promoted to control pneumoconiosis and silicosis and more emphasis will be given on regular checkups of mining labour. The policy says that a 'District Mineral Foundation (DMF)', a trust, will be established in every district to work for the interest of the persons and areas affected by mining operations.

DMFT, 2015: The Department of Mines and Geology has drafted rules for District Mineral Foundation Trust, 2015 for the interest and benefit of persons and areas affected by mining related operations and for utilizing the funds accumulated in the District Mineral Foundation. The draft of rules for DMFT has provided for more space for local level intervention. This trust has the District Collector, Mining Engineer, two representatives of lessees/licensees, Mining Technical Person, NGO working in mining field, Accountant and one more member nominated by the Government.

IV. Government's Initiatives for Mine Workers in Rajasthan

The primary function of the Department of Mines and Geology, Udaipur is to grant/cancel lease, collecting royalties and developing mine but apart from this the department also runs some schemes for the welfare of the mine labourers. It runs scheme for conducting health tests for and providing group insurance to the mine workers. According to the Annual Report 2013-14 of the department, health test has been conducted for 2.4 lakh mine labourers and almost 1.9 lakh mine labourers have been provided with the group insurance. The report also claims to provide for reservation in allotment of mining leases for people with disabilities and widows of the mine workers(DMG, 2014).

Along with this, DMG also collects Environment Management Fund (EMF) for protecting the environment in the mining area and also runs Rajasthan Environment and Health Administrative Board (REHAB) for dealing with issues related to occupational health and environment conservation. The Department of Labour of Rajasthan Government also runs Pneumoconiosis Board for dealing with the incidences of occupational diseases like silicosis. The GoR has also made wet drilling and registration of mine workers compulsory. These initiatives are briefly discussed in the below:

Environment Management Fund (EMF): The Department of Mines and Geology has been collecting Environment Management Fund (EMF) from the lease owners since 2012 with an amendment in the Rajasthan Minor Mineral Concession Rules. The fund thus collected does not become a part of Government Treasury and so is not considered as Government revenue. It is kept separately in the account of the concernment ME/AME and is allotted by District Level Environment Committee for implementation of the Environment Management Plan prepared by a recognized person who can be a geologist or concerned ME/AME and approved by the committee (Government of Rajasthan, 2012). The District Level Environment Committee is chaired by the District Collector and regional officer of the Rajasthan State Pollution Control Board, Deputy Conservator of forest, ME/AME and one other officer nominated by the Government as members.

Even though the Department of Mines and Geology, Udaipur has claimed to be taking adequate actions for protecting the environment in and around the mining areas, nevertheless, it has been reported that the fund remained unused with the revenue department since the starting (correspondent, 2014). The Department of Mines and Geology has, however, denied the complete non-deployment of the fund. It says that the panchayats in and around mining areas are provided with funds for the development of the area and conservation of the environment apart from running REHAB, ensuring the environment- friendly operation of mines and closure plans.

Rajasthan Environment and Health Administrative Board (REHAB): Rajasthan Environment and Health Administrative Board (REHAB) was constituted in Rajasthan in 2008 for effectively managing the cess called as Rajasthan Environment and Health Administrative Cess collected by the DMG for implementation of environmental and health projects in mining areas in various parts of the State. The collected fund forms the part of the Government's treasury under the Budget Head 0853 and is

allocated for expenditure under the Budget Head 2853. Till now Rs.58.6 crore has been collected through cess for REHAB. However, out of this, only Rs. 44.64 crore were sanctioned for the activities of the board for the year 2013-14 and only Rs. 10.69 crore were utilized(DMG, 2014).

There are 4-7 members in the Board including three people from Environment Department, Health Department and Mines Department and remaining members are professionals with background in mining related health management, environmental engineering etc.. The Board meets at least once in six months. Till now nine meetings have taken place. Some of the decisions taken by the board include sanctioning of Rs. 1 crore for Macrana Drainage System, Rs. 11 crore for the development of mining areas, Rs. 2.7 crore for Kaulana Water Project, Rs. 24 crore for sewage treatment in mining areas, Rs. 100 crores for the development of the mining areas in Jodhpur, Doongarpur, Udaipur, Naguar and Bhilwara, Rs. 5.5 crore for biomedical waste management, Rs. 3 crore and 45 lakh for providing medical equipments like X-Ray machines, CT Scan machines, mobile vans etc. to the Government hospitals, Rs. 5 crore for tree guards and Rs. 5 crore for environment and health research projects etc..

Pneumoconiosis Board: Pneumoconiosis Board was formed to deal with respiratory disorders primarily silicosis among mine workers. Silicosis is an irreversible lung disease caused by inhaling silica dust. It was formed under Rajasthan Workmen Compensation (Occupational Diseases) (Amendment) Rules, 2013, Department of Labour, GoR. The Board is situated in all Divisional Headquarters where Government medical colleges are situated except for Bharatpur. The Board is consisting of three members including a Head of Department, Chest; a Head of Department, Forensic Medicines; and a Head of Department, Radio diagnosis. The most senior member becomes the Chairperson of the Board and in case a member retires or leaves the position then the person appointed as HoD will become the member by default. The functions of the Board include examining the mine workers, submitting the medical report and granting the medical certificates. There are no separate funds collected for running the board.

An officer from the Department of Labour, GoR told that silicosis cripples many mine workers but due to no record of employment it is very difficult to establish employer-employee relationship and also as there is no mechanism present to track their job. He further told that even though the Government is willing to pay the compensation but due to inadequate manpower it is difficult to examine the large number of mine workers efficiently because of which still a lot of mine workers who might be suffering from silicosis are yet to be examined. After the Board examines a mine worker and gives a certificate for being a victim of silicosis, the worker can claim compensation from the collector's office.

Wet Drilling and Registration of Mine Workers: The Finance (Tax) Department of Government of Rajasthan issued an order on February, 3rd, 2015 in which adoption of wet drilling and use of masks has been made compulsory for all mines. It has also made registration of mine workers and filling of form no. 1 (notice of opening) as per Section 16 of Mines Act, 1952 mandatory.

Other initiative: The Department of Mines and Geology, GoR undertakes the following activities for the welfare of mine workers apart from collecting cess for Environment Management and REHAB:

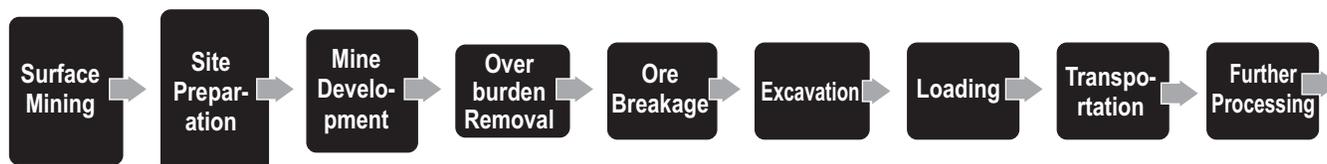
- Setting up industries for excavation and value addition to the minerals in order to generate employment.
- Allocating 3% of Department's revenue specifically for the development of the panchayats in the mining area through Zila Parishads.
- Reservation in the mine lease for the differently abled and the widows of the mine workers.
- Allocated Rs. 108.96 lakh to Makrana Nagar Palika for connecting the mining areas with sewerage system.
- A health check-up and group insurance scheme was started in 2006-07 and till now 24.2 lakh mine workers have received health check-ups and almost 2 lakh have got group insurance.

The Medical and Health Department of the Government of Rajasthan had undertaken the following activities for mining workers in the year 2013:

- Allocated Rs. 30 lakh in 2013 for spreading awareness about silicosis, its treatment and prevention.
- Organized free check-up camps for silicosis from time to time for mining workers in 33 blocks of 19 districts of Rajasthan
- Rs. 570 lakh was allocated to RMSCL for providing Medical Mobile Unit (Rs. 30 lakh per unit) in 19 districts.
- Allocated Rs. 1,402.50 lakh for purchasing 38 digital X-ray Machines, 1 CT Scan Machine, 37 Spiro meters, 35 nebulizers, and other logistics.
- Allocated Rs. 187 lakh for medicines and treatment of silicosis victims.
- A provision of Rs. 22 lakh was made to the medical officer and staff for their training in treatment of silicosis.
- Silicosis victims and their families were provided free health check- up and treatment and were considered as BPL patients.

V. Status of Mine Labour: Analysis of Information Collected

The study, as mentioned earlier, was done in seven districts in which 490 mine workers and 70 mine owners/supervisors were interviewed from 70 mines in total i.e. 10 mines in each district. The mines visited for data collection for this project were mines of only Minor Minerals. Since all the mines were stone mines, they were being operated as surface mines. The methods of surface mining used in those mines were quarrying, opencast mining, solution mining and borehole mining. The basic process of surface mining in the mines visited for this project is as follows:



The key findings on mines and mine workers in Rajasthan, as demonstrated by the survey conducted by BARC with the help of local partners in each district has been shared in the present section in two parts. The first part gives information about the mines that were visited for data collection and the second part gives the information collected about the mines workers working in those mines.

5.1 Mines Visited for Data Collection: A Glance

During the survey, 70 mines were visited in the study areas for data collection i.e. 10 mines from each district. Each of the mines visited was surface/open cast mine and mining operation was undertaken using machines and human resource. Out of the 70 mines visited for collecting primary data, 32 mines were using JCB machines and rest 38 were using human resource for mining. A person from administrative department of each mine who may be the owner or a supervisor or an accountant or a contractor etc. was interviewed to gather basic information about the mine from which the sample has been collected. For the survey, mine owners of 15 mines, 14 supervisors, 22 accountants and 19 contractors were interviewed from different mines in the districts of Ajmer, Bundi, Jaipur, Jodhpur, Karauli, Rajsamand, and Sri Ganganagar. The Table 9 gives the type of the mineral for which the mines were visited in each district.

Table 9: Type and Amount of Mineral Produced in the Mines Visited for Data Collection

District	Type of mineral	Size of production (per day)
Ajmer	Kankar-Bajri	8-10 tractor trolleys
Ajmer	Granite	20-40 tonnes
Bundi	Sandstone	260 tonnes
Jaipur	Masonry Stone	6-7 tractor trolleys
Jodhpur	Limestone	7-10 trucks full
Karauli	Sandstone	300 tonnes
Rajsamand	Marble	40 tonnes
Sri Ganganagar	Brick Earth	Brick Earth for producing almost 26,000 bricks per day

Source: BARC survey, 2014

Brick kiln has to get “Brick Earth Permit” from the Department of Mines and Geology for excavation and removal of the mud from a specific area for brick making. Excavation and removal of mud is

usually done with the help of JCB machines operated by one or two people. However, as seen in Sri Ganganagar, the workers working outside the kiln i.e. involved in the process of molding and printing of bricks are also involved in excavation of mud. They usually do the molding and printing of the bricks in the same field which they use for excavation.

About 42 out of the 70 mines visited were operational for eight hours per day, 16 for 10 hours per day, and 12 for 12 hours per day. Only 20 out of 70 respondents told that they file the DGMS returns out of which 8 were in Ajmer and 12 in Sri Ganganagar. This shows that almost 70% of the mines visited were not following the regulations laid by DGMS. None of the mines visited had a grievance redressal cell or a gender committee for resolving sexual harassment and other issues of the employees. Only 6 out of 70 mines visited i.e. 1 in Ajmer, 1 in Karauli and 4 in Sri Ganganagar had Safety Committees in the mine to look after the safety related issues of the mine workers.

On asking about the way of compensation followed in the event of accidents or sickness, 26 respondents told that the owner of the mine provides compensation, just one said that the victim is immediately taken to the hospital, 10 said that the labour unions decide on such matter and 24 respondents from the administrative departments of the mines visited said that no compensation is provided of any sort to the mine workers and if the mine workers need money for some medical or other purposes then that is done only by providing some advance on their wages.

Basic Provisions

The questions related to basic provisions mandatory under the Mines Act, 1952 like toilets, canteen, resting shed etc. were asked from only 1 respondent from each mine visited i.e. 10 respondents from each district. The following table shows the response of the respondents on the questions related to basic facilities and provisions.

Table 10: Basic Facilities in the Mines

District	Drinking Water	Toilets	Separate Toilets for Women	Canteen	Crèche Facility	First Aid	Resting Shed
Ajmer	0	0	0	1	0	4	3
Bundi	0	0	0	3	0	2	0
Jaipur	1	0	0	9	0	1	8
Jodhpur	1	0	0	1	0	1	5
Karauli	0	0	0	0	0	0	0
Rajsamand	7	2	0	3	0	3	0
Sri Ganganagar	9	11	0	4	2	4	6
Total	18	13	0	21	2	15	27

Source: BARC survey, 2014

Most of the respondents said that they do not get drinking water at their workplace while some said that they do. However, the drinking water which they get in the mines is usually not healthy and clean. They mostly drink from the pit hole created while mining which gets filled with water during rainfalls. Only some of the mines visited had provisions of proper drinking water. Only 13 respondents said that they have clean toilets at their workplace whereas 57 respondents reported otherwise. Not even a single mine visited had separate toilets for women. The female respondents said this is a major

constraint that forces women to refrain from participating in mining activities but due to financial needs they are forced to work in the mines where they do not get even the basic facilities.

Only 21 out of the 70 respondents said that there is a canteen present at their workplace and 49 said there is no canteen and they have to bring their own food every day at work. Only two respondents said that there is a provision of crèche and day care facilities at their mine where female workers can put their kids for care while they work. Only 15 out of 70 respondents said that there is a provision of first aid in their mines. While the rest 55 said that even though the nature of their work include many cuts and scrapes on daily basis, but they do not get any kind of first aid facility at their workplace. Only 27 of the total respondents reported to have been provided with resting sheds at their workplace while the rest 43 said that there are no such resting sheds at their workplace and they have to rest in open in the scorching heat during their breaks.

There are many basic facilities that should be provided by the mine owners to the mine workers as per many laws. However, in reality, mines of Rajasthan lack even very basic requirements and bare minimum arrangements for the welfare of mine workers. The mine owners seem to have completely neglected these provisions. This section provides a glimpse of the State of the provisions that are actually mandated by the Mines Act, 1952 and other such laws through a series of questions that were asked to the mine workers.

Transportation

Out of 490 respondents from seven districts, 28 told that they live inside the mining area whereas 278 said that they live within 2 kilometers of the mine and 184 live far from the mines. Around 90.4% mine workers said that there are no commuting facilities from their place to the workplace and they have to either walk long distances or arrange a private vehicle. Arranging for a private vehicle adds to their financial troubles because of which they prefer to walk but this makes them tired even before the actual work starts. Only 9.5% of them were those who did not need any means of transportation had proper means of transportation from home to work. Still all the mine workers told that no commuting facilities have been provided by the mine owners to the workers.

Table 11: Transportation Facility Provided by the Mine Owner

District	Transport Facility
Ajmer	2
Bundi	9
Jaipur	0
Jodhpur	0
Karauli	0
Rajsamand	6
Sri Ganganagar	0
Total	17 (3.4%)

Source: BARC survey, 2014

On asking about the transport facilities provided by the mine owners, 473 out of the total respondents replied in negative and only 17 of them said that they got some transport facility like pick and drop bus facility.

5.2 Basic Profile of Mine Workers

This section discusses the findings about the respondent mine workers. The following information was collected through questionnaires and FGDs. In each district 70 mine workers were interviewed. The table below presents a snapshot of the profile of mine workers who participated in the study.

Table 12: A Snapshot of the Social and Economic Profile of the Mine Workers

District	Gender		Social Category				Economic Category		Domicile	
	Male	Female	SC	ST	OBC	General	APL	BPL	Migrated	Resident
Ajmer	54	16	25	3	38	4	33	37	18	52
Bundi	60	10	15	27	28	0	42	28	41	29
Jaipur	70	0	25	18	19	8	13	57	63	7
Jodhpur	63	7	37	13	13	7	30	40	11	59
Karauli	70	0	41	9	20	9	18	52	1	69
Rajsamand	68	2	5	44	12	10	27	43	26	44
Sri Ganganagar	58	12	41	0	19	0	27	43	57	13
Total	443 (90.4%)	47 (9.6%)	189 (38.57%)	114 (23.2%)	149 (30.4%)	38 (7.7%)	190 (38.7%)	300 (61.2%)	217 (44.28%)	273 (55.7%)

Source: BARC survey, 2014

The above table shows that only 47 out of 490 mine workers were females i.e. 9.6% of the interviewed mine workers were females and 90.4% were males. The table also shows that 38.57% mine workers belonged to Scheduled Castes, 23.2% belonged to Scheduled Tribes, 30.4% of the mine workers belonged to the OBC category and 7.7% belonged to the general category. Looking at the economic status, it was found that out of the mine workers interviewed, 38.7% were of APL category whereas 61.2% were BPL. The domicile information of the interviewed mine workers shows that 44.28% had migrated and 55.7% of the mine workers were the original residents of the districts under consideration. Out of the total number of respondents, 47.1% of the mine workers are living with their families and 52.8% are not living with their families. About 37.1% of those who live with their families told that few members of their families are also employed in the mining sector.

5.3 Education and Training

Most of the mine workers were illiterate and did not receive any training before starting to work in the mines. Table 13 gives a picture of the level of education among the mine workers.

Table 13: Level of Education

District	Illiterate	Literate	Primary	Secondary	College	Diploma
Ajmer	12	21	31	5	0	1
Bundi	19	27	17	7	0	0
Jaipur	11	23	21	13	0	0
Jodhpur	35	12	21	5	0	0
Karauli	27	16	25	2	0	0
Rajsamand	15	40	10	4	0	0
Sri Ganganagar	47	6	16	0	1	0
Total	166 (33.87%)	145 (29.59%)	141 (28.77%)	36 (7.3%)	1 (0.2%)	1 (0.2%)

Source: BARC survey, 2014

Table 13 shows that 33.87% of mine workers are illiterate and 29.59% of mine workers only know how to read and write. Around 28.77% of mine workers have received primary education and only 36 of them i.e. 7.3% of mine workers have received up to secondary education. However, only one has gone up to college level and one has taken a diploma.

Box 3. Case: Difficulty in Attaining Education

>>Ram Singh, 45, a mine worker in Sandstone mine of Jodhpur told that he has been working in mines since his childhood and never got a chance to go to school. He is the eldest of 4 siblings and started helping his parents since a very young age. According to him, when he was a child, education was not given as much importance as now as they were more worried about feeding the family.

>>Roop Kumari, 27, who works in Brick Earth kiln, Sri Ganganagar told that she wishes to send her both children to school but she has to bring them to the workplace as there are no child care facilities or schools in the neighbourhood and so she has no other choice but to bring them along to work. She told that she and her husband start working in the early morning around 3 am while it is still dark as during the day the temperature gets extremely hot due to which they have to stop the work and as they are paid according to the number of bricks formed, they try to do as much work as possible in a day and so they do not get time to get kids ready for school, take them to the school and bring them back.

Hence we can see that level of education is very low among the mine workers and a large percentage of them cannot even write their names. Lack of education is one of the root causes of the misery they are facing.

Sometimes, the elder sibling is required to look after the younger ones when the parents are working and so they are deprived of education. Many mine workers told that they would like to send their kids to school but as there are no schools within the mining area, they are unable to do so.

During the data collection it was also found that none of the mine workers from the sample had received any kind of training before starting to work in the mining sector. Due to lack of training they are more vulnerable to occupational health problems. All the mine workers told that they learnt about the work while working in the mine and some of them said they understood the process by looking at their parents working in mines while they were children.

5.4 Information About Work

Most mines in Rajasthan operate for eight hours daily but there are some mines that operate for 24 hours in 2-3 shifts. During the survey, 241 respondents told that their mines operate for eight hours per day and 28 of them told that their mines operate for 24 hours per day. On asking about number of hours they are working per day, maximum of the mine workers told that they work for eight hours per day while some told they work for 12 hours. Table 14 enumerates the number of hours mine workers are employed for during a particular day.

14: Number of Hours Mine Workers are Employed for During a Particular Day

District	4 hours	5 hours	8 hours	10 hours	12 hours	24 hours	7 hours
Ajmer	4	0	58	4	1	0	2
Bundi	0	0	30	37	3	0	0
Jaipur	0	0	69	0	1	0	0
Jodhpur	2	0	54	2	0	0	12
Karauli	0	2	46	15	7	0	0
Rajsamand	0	0	68	0	1	2	0
Sri Ganganagar	0	0	58	6	6	0	0
Total	6 (1.2%)	2 (0.4%)	383 (78.16%)	64 (13.06%)	19 (4.08%)	2 (0.4%)	14 (2.85%)

Source: BARC survey, 2014

The table reveals that 78.16% of mine workers are employed for eight hours in a day, 13.06% of them work for 10 hours while 4.08% and 2.85% of mine workers work for 12 and 7 hours per day respectively. About 267 respondents i.e. 54.4% of the total respondents told that they are working directly under the mine owners while 223 i.e. 45.5% of the total respondents said they are employed under contractors who give them work and wages and they have never met the mine owners.

Table 15: Number of Mine Workers as Permanent/ Temporary Employees

District	Permanent	Temporary
Ajmer	9	61
Bundi	2	68
Jaipur	0	70
Jodhpur	7	63
Karauli	0	70
Rajsamand	4	66
Sri Ganganagar	0	70
Total	22 (4.4%)	468 (95.5%)

Source: BARC survey, 2014

Most mine workers are employed as temporary workers in mines (Table 15). They usually work in a particular mine for 6-8 months and after that they either seek employment in farming or animal husbandry and in some cases they start working as construction labour. Again, the next year they return to work in mining sector. As their employment is not fixed, many times they do not return to their former employer and seek employment wherever there is a requirement of labour and many employers do not keep a track/record of the employees which makes it difficult to establish the employer employee relationship in case of any kind of conflict.

It can be seen from the Table 15 that 468 out of 490 mine workers are temporary employees and only 22 are permanent employees. This shows that most mine workers keep moving from one mine to another or even to some other kind of work. However, sometimes due to prior familiarity with the neighbourhood and if there is a requirement of labour, the mine workers return back to the same employer. Around 37.75% of mine workers have been working in the same mine (as they were working in during the time of

survey) since last few months, 36.32% of them have been employed in the same mine for last 2-5 years and almost 26% of them have been working in the same mine for more than five years.

Box 4. Case: Difficulty in Feeding Family

>>Akhlesh Chandu, 65, kankar-Bajri mine, Ajmer told that the mining operation gets halted during monsoon season due to water logging. During this time, he works as construction worker even though it is difficult for him due to old age but still does it in order to keep feeding his family. He told that his wife is very sick and he with his three sons has to provide for a family of 11 members.

>>Raju Ram, 39, Karauli, told that when he is not working in mines, he works as a rickshaw puller in the city to earn money but recently he has been suffering from tuberculosis due to which it has become very difficult for him to work but as he is the only bread earner in the family of four people he is forced to work in the mines as mining is the only option in the area he is living in.

Most mine workers told that they started working in mines due to failure in their previous employment, which, for maximum number of mine workers was farming. Because failure of agriculture (as shown in Table 16) due to erratic monsoon or other reasons of crop failure, they were forced to look for alternative employment and as mining is being done on a large scale in Rajasthan, they found employment in mining. Being employed as temporary labourers, they are always facing economic insecurity due to which they try to get as many members of the family to join in raising money as they can.

Table 16: Occupation of the Mine Workers Before Mining

District	Farming	Animal husbandry	Industrial	at another mine	others
Ajmer	20	0	1	40	9
Bundi	25	5	2	36	2
Jaipur	12	0	8	20	30
Jodhpur	0	0	0	64	6
Karauli	12	6	2	50	0
Rajsamand	36	17	1	16	0
Sri Ganganagar	23	10	5	32	0
Total	128 (26.1%)	38 (7.75%)	19 (3.8%)	258 (52.6%)	47 (9.59%)

Source: BARC survey, 2014

From the above table it can be found that maximum number of mine workers have come from another mine to work in the present mine and almost 26% of mine workers left farming to work in mining sector. About 7.75% of them used to work in animal husbandry, 3.8% of them were industrial labourers before becoming mine labourers, 7.14% of them worked as construction labourers, 1.02% of them used to be house wives and almost 1.4% of them were engaged in some other kind of jobs.

Among the mine workers interviewed, only 64 of them were members of a labour/trade union. All of these mine labourers were from Sri Ganganagar and were associated with Centre of India Trade Unions (CITU). Other 426 mine workers were not associated with any trade/ labour unions. However, some mine workers from Jodhpur and Karauli told that they were associated with Mine Labour Protection Campaign, an organization that has been working on the issues of mine labourers in the State.

VI. Wages and Economic Security

6.1 Breaks and Holidays

A large number of mine workers are unaware of the provision of weekly holidays. They work for the whole week and usually take a holiday after 15 days. Most of them told that they do not get paid for the holiday and so they hesitate to take an off unless it is very necessary. They are not given any paid religious or national holidays by the mine owners. The table below describes about the recess in the middle of the day, weekly off and holidays the mine workers get.

Table 17: Recess and Holidays for Mine Workers

District	Recess	Paid Weekly Off	Paid National/Religious Holidays
Ajmer	70	0	0
Bundi	70	12	38
Jaipur	70	0	0
Jodhpur	70	0	70
Karauli	70	0	60
Rajsamand	70	59	62
Sri Ganganagar	70	70	70
Total	490 (100%)	141 (28.7%)	300 (61.2%)

Source: BARC survey, 2014

The above table shows that all the mine workers get a break during the work every day in which they can have their lunch and rest. Recess usually stretches up to 60-90 minutes. Only 28.7% of mine workers said that they get a paid weekly off every week whereas 71.2% of mine workers do not get any paid weekly off. The data report that mine workers in Sri Ganganagar and Rajsamand get paid weekly off where as mine workers in Ajmer, Jaipur, Jodhpur and Karauli do not get paid weekly off. As far as national and religious holidays are concerned, in Ajmer and Jaipur, mine workers do not get any paid national/religious holidays. However, in Bundi, Jodhpur, Karauli, Rajsamand and Sri Ganganagar, mine workers get paid national and religious holidays. Brijesh, 34, Kankar-Bajri mine, Ajmer, told that for celebrating a festival he takes holiday for which he is not paid as he gets paid only for the amount of work he does.

6.2 Registers and Identification Cards

Maintaining registers of attendance of mine workers and providing Identity Cards to them is mandatory as per the Mines Act, 1952. This helps in determining the employer-employee relationship which plays an important role during an event of conflict or claiming compensation. However, only 46.3% mine workers told that an attendance register is being maintained at their workplace and 53.67% claim to have never seen any attendance register. The following table provides information on daily attendance and Identity Cards provided to the mine workers.

Table 18: Attendance Registers Maintained and ID Cards Provided

District	Attendance Registers Maintained	Attendance Marked Daily	Have ID Card for Work
Ajmer	56	55	24
Bundi	6	5	0
Jaipur	10	19	0
Jodhpur	22	22	0
Karauli	1	1	0
Rajsamand	62	22	7
Sri Ganganagar	70	62	14
Total	227 (46.3%)	186 (37.5%)	45 (9.5%)

Source: BARC survey, 2014

The table shows that only 37.95% mine workers mark their daily attendance whereas 62.04% do not mark their attendance. Raju, 33, Bundi, told that he has never seen any attendance register and has never marked attendance. He further told that the contractor visits the work site daily and at the end of the day notes down the amount of work done by him in a notebook and pays accordingly twice a month i.e. on the full moon day (Poornima) and no moon day (Amavasya).

The mine workers usually do not carry any kind of ID proof with them inside or outside the mining site. Only 45 out of 490 mine workers i.e. only 9.18% mine workers told that they have been provided an Identity Card as the proof of employment by the mine owner whereas 445 mine workers i.e. 90.18% of them have never received any such ID Cards.

6.3 Wages

Wages received

According to a website (paycheck.in), the minimum wages for mine workers are determined in the Central Sphere. It says that the total minimum wage for workers engaged in stone mines for stone breaking and stone crushing for excavation & removal of overburden in soft soil is Rs. 219.2 per day; in soft soil with rock, it is Rs. 331.5 per day; and in rock it is Rs. 439.8 per day. It was found during the survey that only 16 respondents i.e. 3.26% of total respondents are aware of the minimum wages for the work they are engaged in. This lack of knowledge about minimum wages makes them more vulnerable as in most cases the mine owners are paying less than the minimum wages which has been established by the table 19.

Box 5. Case: Insufficient Wages

Kamli Bai, 50, Karauli, told that her husband and her elder son are suffering from TB because of which the everyday expenses of the family is higher but she gets only Rs. 70 per day for carrying the excavated sandstone to the trolley and her younger son who is also working in the same mine gets Rs. 150 per day for operating the crushing machine and so even the combined income is not enough to take care of the family where two members are seriously ill.

Table 19: Wages Received Per Day

District	Wages Received (in Rs. per day)				
	<100	100-150	151-200	200-250	250-300
Ajmer	0	1	28	13	21
Bundi	2	9	9	6	27
Jaipur	0	0	16	52	2
Jodhpur	0	7	17	16	24
Karauli	9	34	9	13	1
Rajsamand	3	21	33	5	4
Sri Ganganagar	0	0	2	22	37
Total	14 (2.8%)	72 (14.69%)	114 (23.26%)	127 (25.9%)	116 (23.6%)

Source: BARC survey, 2014

The tables above shows that less than 50% of the mine workers are receiving minimum wages while others are getting much less than it. Around 2.8% of them receive even less than Rs. 100 per day, 14.69% of the workers receive between Rs. 100 and Rs. 150 per day and 23.26% of workers receive between Rs. 151-200 per day as wages.

The survey also shows that mine owners/ contractors usually ask the mine workers to stay longer and do more work but do not pay for overtime as shown by Table 19.

The table above shows that out of all the respondents only 32.4% get paid for overtime whereas the rest 67.6% do not get paid for overtime. This gives another evidence of the exploitation of mine workers in Rajasthan.

Table 20: Payment for Overtime

District	Workers Getting Paid for Overtime
Ajmer	3
Bundi	22
Jaipur	0
Jodhpur	3
Karauli	0
Rajsamand	61
Sri Ganganagar	70
Total	159 (32.4%)

Source: BARC survey, 2014

6.4 Gender Inequality in Wages:

It is easy to find gender inequality in terms of wage payment in the mines. Mostly, women and men in mining areas, irrespective of the region do different kind of work. Only men are employed in extricating stone from rocks using a hammer and a chisel for which considerable human strength is required while both men and women are involved in loading broken pieces in truck/trolley and removing the rubble. Women labour in mines mainly to fill in for their dead husbands or to help in putting together livelihood for their family. However, women are considered to be less strong than men and so their capacity to carry load is assumed to be lesser than men because of which they are paid less. Out of the total respondents only 16.73% said that women and men get paid equally for equal work whereas the rest 83.26% denied this and told that men are paid more than women for same work. Jagdish, contractor, Kankar-Bajri mine, Ajmer said, "Women get tired soon and cannot carry as much stone as a man can in one round and that is why we pay Rs. 5 less to them".

6.5 Types of Wages:

Mine workers usually get wages at the Piece Rate which means that they get paid according to per unit

of amount of work done. However, they usually receive their wages at the end of the month or fortnightly or whenever they need. The table below illustrates the nature of the wages received by the mine workers.

As shown by the above table, 45.7% of the respondents told that they are paid wages on piece rate basis, 29.59% are being paid on monthly basis and 24.6% said they get paid on daily basis.

Table 21: Type of Wages

District	Kind of Wages		
	Daily	Monthly	Piece rate
Ajmer	50	11	9
Bundi	6	8	56
Jaipur	0	58	12
Jodhpur	59	2	9
Karauli	1	1	68
Rajsamand	5	65	0
Sri Ganganagar	0	0	70
Total	121 (24.6%)	145 (29.59%)	224 (45.7%)

Source: BARC survey, 2014

Table 22: Respondents Satisfied with the Wages they get

District	Respondents Satisfied with their Current Wages
Ajmer	4
Bundi	31
Jaipur	48
Jodhpur	58
Karauli	18
Rajsamand	14
Sri Ganganagar	60
Total	233 (47.55%)

Source: BARC survey, 2014

When asked whether the respondents are satisfied with the wages they receive or not, 233 respondents i.e. 47.55% of the total respondents said they are satisfied by the wages they receive whereas 52.45% are not satisfied. Ramswaroop, 45, Sandstone mines, Bundi told that although he will be happier if he received more wages but he is fine with whatever he is getting now. He also told that he has already taken advance on his wages from the mine owner.

6.6 Social Security

As discussed earlier, most mine workers are temporary workers. A large number of respondents have been working in mines due to agriculture failure, lack of fodder and/ or lack of opportunities in other industries. Most of them are far from the reach of social security schemes. Most mine workers do not even possess a Voter ID Card and/or Aadhar Card and only a very few of them have a PAN Card. Only 45.1% of the respondent mine workers have either Voter ID Card or Aadhar Card or both whereas the rest of the respondents i.e. 54.6% of them do not have any of them and only 9.7% of them have PAN card.

Table 23: Respondents Getting Social Security Benefits and Compensation

District	Provident Fund	Insurance Policy	Insurance Policy from the Mine Owners	Allowances/ Compensation	
				Medical	Death
Ajmer	10	22	3	4	0
Bundi	0	3	1	10	1
Jaipur	0	0	0	0	0
Jodhpur	0	28	0	0	0
Karauli	1	10	0	0	0
Rajsamand	7	10	2	36	4
Sri Ganganagar	0	10	1	0	0
Total	18 (3.6%)	83 (16.9%)	7 (1.4%)	50 (10.2%)	5 (1%)

Source: BARC survey, 2014

As the table above shows, only 3.6% of the total respondents who are mostly from Ajmer and Rajsamand get the contribution to their Provident fund from their employers, only 16.9% of them who are mostly from Jodhpur said they have some insurance policy. Only 1.4% respondents are getting insurance policy sponsored from the mine owners. The table above also shows that only 10.2% respondents have received medical compensation from their owners whereas only 1% said that death compensation is provided by their owners.

6.7 Credit

The respondents in all the seven districts reported to have taken loans from someone including their employers along with advances on their salary. There are many reasons for which they take loans. Among the reasons for loan, health issues are the biggest reasons followed by marriage in the family, house construction, to repay another loan and daily expenses. While the mining sector continues to thrive, the workers seem to be struggling with debts and in most cases this has even turned into dangerous debt traps.

Table 24: Number of Respondents who have Taken Loan in the Past One Year and Reason for Taking Loan

District	Number of Respondents who Took Loan in the Past One Year	No Loan	Reasons						Total
			Health	Marriage in Family	House Construction/Repair	Daily Expenses	To Pay Another Loan	Other	
Ajmer	27	12	21	4	1	0	0	1	27
Bundi	32	10	8	15	1	2	2	4	32
Jaipur	1	4	1	0	0	0	0	0	1
Jodhpur	27	0	12	1	0	0	0	11	24
Karauli	54	1	53	0	0	1	0	0	54
Rajsamand	1	0	0	0	0	0	1	0	1
Sri Ganganagar	62	6	30	27	2	0	3	3	65
Total	204	33	125 (61.27%)	47 (23.03%)	4 (1.9%)	3 (1.4%)	6 (2.9%)	19 (9.3%)	204 (100%)

Source: BARC survey, 2014

As illustrated by the above table, 237 of total respondents talked about loan they have taken in the past one year. The table shows that maximum number of mine workers who took loan in the past one year are from Sri Ganganagar district followed by Karauli district and only one person took loan in Jaipur and Rajsamand districts.

Out of the 204 respondents who took loan 61.27% of the respondents revealed that health problem was the biggest reason for taking loan and 23.03% of them said that they took loan due to a marriage in the family. Around 1.9% of the respondents said they took loan for some construction work at home, 1.4% of the respondents mentioned that they required loan to meet certain daily needs and 2.9% of them said that they needed loan for paying off some previously taken loan. The table also shows that mine workers mostly from Karauli and Sri Ganganagar took loan due to health problems and mine workers from Bundi and Sri Ganganagar took loan due to marriage in the family.

The table below gives the amount of loan taken by the respondents in the past one year.

Table 25: Amount of Loan Taken

District	<Rs.10,000	Rs. 10,000- Rs. 20,000	Rs. 20,000- Rs. 30,000	Rs. 30,000- Rs. 50,000	Rs. 50,000	>Rs. 50000	Total
Ajmer	8	7	0	1	0	1	17
Bundi	2	11	8	8	3	0	32
Jaipur	0	0	0	1	0	0	1
Jodhpur	0	13	5	1	2	4	25
Karauli	2	25	1	10	16	0	54
Rajsamand	0	1	0	0	0	0	1
Sri Ganganagar	0	0	0	2	2	0	4
Total	12 (8.9%)	57 (42.5%)	14 (10.44%)	22 (16.4%)	23 (17.6%)	5 (3.73%)	134 (100%)

Source: BARC survey, 2014

As shown in the table, out of the 204 respondents who took loan, only 134 could reveal the amount of the loan that is burdening them. Maximum number of them i.e. 42.5% of them have taken loan amounting between Rs. 10,000- 20,000 and 17.16% of them have taken Rs. 50,000 as loan whereas only 8.9% of them have taken loan of less than Rs. 10, 000 and only 3.73% of them have taken more than Rs. 50,000.

The mine workers that are bonded due to loan/ advance are given poor rocks to work with because of which they mine only small amount of mineral per day and as they are usually paid on piece rate, they are bound to work for more days than they normally would, had they been given work on better quality rocks. The table below shows the type of creditors, whom the mine workers usually take loan from. Munna Ram, 36, Bundi told that he took loan from his employer in the form of an advance on his wage on zero interest. Many workers like Munna Ram do the same thing which forces them to be a bonded labour till the loan amount is cleared. He also told he and his colleagues who have taken the loan from the employer are also have to face discrimination in terms of the quality of work they a given.

Table 26: Type of Creditors

District	Relatives	Local Lenders	Banks	Mine Owners	Others	Contractors	Total
Ajmer	5	0	3	7	0	2	17
Bundi	4	0	1	22	2	2	31
Jaipur	0	0	1	0	0	0	1
Jodhpur	4	8	9	3	0	0	24
Karauli	19	28	1	4	0	3	55
Rajsamand	0	0	0	1	0	0	1
Sri Ganganagar	0	0	0	3	0	0	3
Total	32 (24.24%)	36 (27.2%)	15 (11.3%)	40 (30.3%)	2 (1.5%)	7 (5.3%)	132 (100%)

Source: BARC survey, 2014

As seen from the table, maximum number of mine workers had taken a loan from their employers/mine owners. A large number of them have also taken loan from their relatives and local money lenders and only some of them take loan from the bank and the contractors. Mostly, the mine

workers are encouraged to take loans in form of huge advance on their wages from the mine owners which can get them into a high level of indebtedness. This proves to be in favour of the mine owners as this ensures them cheap labour.

In order to repay the loan, the mine workers are mostly dependent on their wages but sometimes they even sell something from their home or take more loans or fresh advance from the mine owners to pay the previous loans which in turn bring them into a whirlpool of loans which sometimes even continues for generations and drags them into labour bondage.

Box 6. Case: Advance on Salary is Better than Loans

>>Dhal Ram, 34, Jodhpur, told that the money lenders in their village give loan on high interest rates whereas the mine owner gives loan as an advance on the wages and does not charge any interest most of the time which is why most mine workers take advance on their wages. He also told that due to many formalities and paper work involved, they hesitate from taking loan from banks even if they can get loan on easy terms and conditions and less rate of interest.

6.8 Sickness and Accidents

Mining of stones is most likely to result in accidents and health related problems especially those related to lungs. This section provides a view of health status of mine workers. The table below informs about the number of times the respondents have fallen sick due to working in the mines or otherwise in the last one year.

Table 27: Number of Times the Respondents have Fallen Sick in Last One Year

District	Never	1-2 times	More than 3 times
Ajmer	1	23	46
Bundi	47	22	1
Jaipur	20	50	0
Jodhpur	0	56	14
Karauli	13	51	6
Rajsamand	12	57	1
Sri Ganganagar	38	32	0
Total	131 (26.7%)	291 (59.38%)	68 (13.8%)

Source: BARC survey, 2014

As seen from the table, only 26.7% of mine workers said that they never felt sick during the last one year whereas 59.38% said they were sick at least once during the last year and 13.8% reported to be sick more than three times during the last year. The respondents told that they usually suffer from body pain and fatigue due to hard physical labour and 23 of the respondents were reported to have been diagnosed with silicosis. The table below tells about the type of medical conditions they usually suffer from.

Table 28: Types of Medical Conditions (during last one year)

Condition	Ajmer	Bundi	Jaipur	Karauli	Jodhpur	Rajsamand	Sri Ganganagar	Total
Headache and Body Pain	18	1	0	2	3	0	0	24 (11.8%)
Fever	7	2	2	12	7	2	3	35 (17.24%)
TB	0	1	0	23	6	0	0	30 (14.7%)
Silicosis	0	1	0	1	21	0	0	23 (11.33%)
Kidney Stones	0	0	0	0	0	0	2	2 (0.9%)
Skin Problem	14	1	0	0	0	0	0	15 (7.3%)
Chest Pain	2	5	0	5	5	0	0	17 (8.3%)
Allergy	1	2	0	0	4	0	0	7 (3.4%)
Malaria	1	2	0	1	4	1	0	9 (4.4%)
Anemia	5	1	0	0	0	0	0	6 (2.9%)
Joint Pain	2	1	0	0	2	0	0	5 (2.4%)
Typhoid	2	0	0	0	0	0	0	2 (0.9%)
Respiratory Problems	18	0	0	10	0	0	0	28 (13.7%)
Total	70	17	2	54	52	1	2	203 (100%)

Source: BARC survey, 2014

The table above tells that 13.7% of the respondents who were from Ajmer and Karauli suffered from cough and other respiratory problems and 17.23% of the respondents from all the districts said they suffered from fever in the past one year. Other diseases from which some other respondents suffered were typhoid, joint pain, anemia, allergy, chest pain, skin problems, kidney stones and TB. Rajni Devi, 28, Sri Ganganagar said, “We are forced to go to the city for getting proper treatment as there are no good doctors present in the locality. The high fee of doctors and extra travelling expenditure put a lot of pressure on our income”.

The table below shows the type of hospital/medical services that the respondents go to for getting treated for their medical problems. Most of them complained about lack of Government hospitals and medical stores in their areas. Jodhpur has shown most number of incidents of silicosis and Karauli has shown most number of TB incidents.

Table 29: Place of Receiving Treatment From

District	Private Hospital	Public Hospital	Local Doctors	Others	Total
Ajmer	16	8	4	6	30
Bundi	17	4	2	1	22
Jaipur	0	20	1	0	20
Jodhpur	21	31	2	4	56
Karauli	18	2	1	21	56
Rajsamand	1	0	2	0	1
Sri Ganganagar	1	1	3	0	2
Total	74 (39.5%)	66 (35.29%)	15 (8.02%)	32 (17.1%)	187 (100%)

Source: BARC survey, 2014

As seen from the table, 39.5% of the respondents take help from Private Hospitals to treat their problems and only 35.2% of them get treatment from Public Hospitals. Around 8.02% of them were

reported to have seen local doctors like Ayurvedic Vaidyas for treatment while 17.1% of them said that they resort to other methods of treating their illness like homemade medicines, witchcraft etc..

For mine workers, medical problems are some of the biggest form of spending apart from buying the basic needs like food and clothes. The following table shows an overview about the cost of treatment which the mine workers had to incur during the last one year.

Table 30: Cost of Treatment

District	<Rs. 500	Rs.500- Rs.1,000	Rs.1,000 Rs.5,000	Rs.5,000- Rs.10,000	> Rs.10,000	free	Total
Ajmer	1	5	18	0	0	2	26
Bundi	0	1	9	6	4	1	21
Jaipur	0	20	0	0	0	0	20
Jodhpur	1	11	19	2	16	7	56
Karauli	0	0	14	11	31	0	56
Rajsamand	0	0	0	1	0	0	1
Sri Ganganagar	0	0	0	1	0	1	2
Total	2 (1.09%)	37 (20.362%)	60 (32.9%)	21 (11.5%)	51 (28.02%)	11 (6.04%)	182 (100%)

Source: BARC survey, 2014

The table above shows that most of the respondents i.e. 32.96% said they spent between Rs. 1,000 and 5,000 during the last one year on medical treatments, 28.2% of them reported to have spent more than Rs. 10,000 on their health related issues during the last one year. Only 11 respondents said that they did not spend anything on getting treatments, 2 said they spent less than Rs. 500 on treatment. Health related expenditure is one of the biggest burdens on them apart from paying back the loans because sometimes they do not receive that much wages as much as they spend on medication and because of it they turn to taking loans which burdens them further.

The table below shows from where the respondents arrange for the required sum of money from receiving treatments.

Table 31: Source of Money for Paying for Treatments

District	Savings	Loans	Mortgage Something	Wages	Advance on Wages	Help from Mine Owner	Total
Ajmer	4	7	0	6	7	0	24
Bundi	1	10	0	3	4	2	20
Jaipur	20	0	0	0	0	0	20
Jodhpur	6	31	5	11	0	0	53
Karauli	2	37	0	15	0	2	56
Rajsamand	0	0	0	0	0	1	1
Sri Ganganagar	0	0	0	0	1	0	1
Total	33 (18.85%)	85 (48.5%)	5 (2.8%)	35 (20%)	12 (6.8%)	5 (2.8%)	175 (100%)

Source: BARC survey, 2014

As seen in the above table, 85 respondents out of 175 respondents reported to have taken loans for getting treatment and only 5 of them said that they got help from the mine owners. Other sources include wages, advance on wages, savings and mortgaging something.

Each year, an average of 200 workers has been dying due to mine accidents and 300 people are getting grievously injured (Bose, na). Most mine workers said that they have not been victims of accidents during the last one year. However, not all of the respondents were fortunate enough to escape accidents at work or outside. The table below shows the number of times the respondents met with accidents.

Table 32: Number of Times the Respondents Met with Accidents During the Last One Year

District	Never	1 Time	1-3 Times	Total
Ajmer	12	10	4	26
Bundi	63	7	0	70
Jaipur	70	0	0	70
Jodhpur	60	10	0	70
Karauli	65	5	0	70
Rajsamand	69	0	0	69
Sri Ganganagar	70	0	0	70
Total	409 (91.9%)	32 (7.19%)	4 (0.8%)	445 (100%)

Source: BARC survey, 2014

The table shows that 409 out of 445 respondents did not suffer from any kind of accidents at workplace or outside during the last one year, 32 mines workers said they met with an accident once and four of them told they fell victims to accidents more than once.

The respondents told that their work involves a high risk of accidents on daily basis due to the nature of their work but like others they are at risk of accidents even outside the mines. The table below shows the place where the respondents became victims of accidents.

Table 33: Place of Accident

District	In The Mine	Outside The Mine	Total
Ajmer	17	0	17
Bundi	6	1	7
Jodhpur	8	2	10
Karauli	2	4	6
Total	33 (82.5%)	7 (17.5%)	40 (100%)

Source: BARC survey, 2014

The table above shows that 33 out of 40 respondents said they met with an accident while working inside the mines and 7 of them reported to have met with an accident outside the mines.

For getting treatment for accidents, the respondents prefer to go to some private hospital due to lack of adequate facilities provided by the Government. The table below shows the place from where the respondents got treatment after accident in the past one year.

Table 34: Place of Treatment

District	Private Hospital	Public Hospital	Others	Total
Ajmer	10	5	0	15
Bundi	6	0	0	6
Jodhpur	3	2	4	9
Karauli	4	1	1	6
Total	23 (63.8%)	8 (22.22%)	5 (13.8%)	36 (100%)

Source: BARC survey, 2014

The table above shows that 23 out of 36 respondents visited private hospitals for getting treatment whereas only 8 went to the public hospitals while 5 of them took some other help for getting treatment.

Even for treatment after accidents, most mine workers were reported to have taken loans and advances on their wages which again put them into troublesome situation financially. The table shows the source of payment for treatment of wounds of the respondent mine workers.

Table 35: Source of Payment of Treatment for Accident

District	Savings	Loan	Mortgage Something	Wages	Advance on Wages	Help From the Mine Owner	Total
Ajmer	0	6	0	0	9	0	15
Bundi	0	4	0	2	1	0	7
Jodhpur	1	1	2	1	4	0	9
Karauli	0	3	0	1	0	0	4
Total	1 (2.8%)	14 (40%)	2 (5.7%)	4 (11.42%)	14 (40%)	0	35 (100%)

Source: BARC survey, 2014

The table above shows that 14 of the total respondents took loans and 14 of them took advance on their wages for paying for the treatment after accident during the last one year. Not even one of them received any help from the mine owners. Other sources include wages, savings and keeping any part of their possession against promise to pay in cash at a future date.

VII. Occupational Disease Awareness and Safety at Workplace

“Occupational disease” is a term completely unheard of by all the respondents and due to lack of medical facilities and absolute neglect by the mine owners most of them are not sure if they are suffering from any of such diseases or not. As observed, most mines follow unregulated mining practices which besides causing grievous injuries also cause shortening of lifespan of lakh of mine workers.

The survey revealed that only 46 of the total mine workers i.e. only 9.3% of the 490 respondents are aware of occupational diseases whereas the rest of them do not know about it. On asking about the kind of diseases that are most likely to take place in their mines, the respondents told about some diseases that they know out of which most of them were respiratory diseases. This can be understood by the fact that almost all of the respondents were involved in the mining of stones and the process of mining mostly involved dry drilling. The table below shows the types of diseases most likely to take place in their mine.

Table 36: Kind of Diseases Most Likely to Occur at the Mine Site

District	No	Don't Know	TB	Silicosis	Lung Infection	Allergy	Cough
Ajmer	0	0	39	6	10	6	9
Bundi	1	0	55	3	8	3	0
Jaipur	0	20	50	0	0	0	0
Jodhpur	0	0	60	10	0	0	0
Karauli	1	0	18	43	3	5	0
Rajsamand	0	0	32	5	24	9	0
Sri Ganganagar	17	43	10	0	0	0	0
Total	19 (4.02%)	63 (13.3%)	264 (56.35%)	67 (14.4%)	45 (9.1%)	23 (4.6%)	9 (1.9%)

Source: BARC survey, 2014

The table shows that 56.35% of the total respondents reported that tuberculosis is most likely to take place in their mines and 14.4% said that the mine workers in their mines are at a high risk of suffering from silicosis. Other diseases reported by the respondents include lung infections, allergies and cough. Only 4.02% of the total respondents said that there is no risk of any such diseases in their mines.

7.1 Health Inspection

When the respondents were asked about periodic inspection of the mines by a health inspector, most of them said they have never seen anybody visiting for inspection in their mines. The table below shows the appalling State of health inspection as reported by the respondents.

Table 37: Number of Times the Inspection of the Mine Site Done by a Health

District	Never	Monthly	Sometimes
Ajmer	69	0	1
Bundi	67	0	3
Jaipur	70	0	0
Jodhpur	43	0	27
Karauli	70	0	0
Rajsamand	63	0	7
Sri Ganganagar	26	5	39
Total	408 (83.26%)	5 (1.02%)	77 (15.7%)

Source: BARC survey, 2014

The table shows that 83.26% of mine workers have never seen any health inspector at their mines whereas 15.7% of the mine workers who are from Ajmer, Bundi, Rajsamand, Jodhpur and Sri Ganganagar told that they have seen a health inspector sometimes and only 1.02% of the respondents who are from Sri Ganganagar said that health inspection is done monthly in their mines.

7.2 Safety Equipments

Most of the mine workers are not provided with any safety equipment such as helmets, shoes, gloves, masks, uniforms etc.. The table below gives information about safety equipments received by the mine workers.

Table 38: Safety Equipments Provided at the Workplace

District	Helmet	Shoes	Gloves	Mask	Goggles	Uniform	Nothing
Ajmer	5	0	0	0	0	5	60
Bundi	2	0	0	0	0	0	68
Jaipur	0	20	17	0	0	0	33
Jodhpur	1	0	1	0	0	8	60
Karauli	1	0	0	1	0	0	68
Rajsamand	6	43	0	0	0	0	21
Sri Ganganagar	0	0	0	0	0	1	69
Total	15 (3.06%)	63 (12.8%)	18 (3.6%)	1 (0.2%)	0	14 (2.8%)	379 (77.3)

Source: BARC survey, 2014

The table shows that 379 out of 490 respondents i.e. 77.3% of total respondents reported that they have never received any safety equipment. Only 3.06% respondents said that they got helmets, 12.8% said they got shoes, 3.6% of them got gloves, 2.8% got uniforms and only one of them got mask. Respondents from Jaipur said that they got only shoes and gloves from the mine owners and 43 respondents from Rajsamand have said they have shoes and a few from Rajsamand have got helmets and no other safety equipments. Not even a single respondent has received goggles for protecting their eyes and from Shri Ganagnagar only one respondent has got a uniform.

7.3 Security Committee and Pneumoconiosis Board

All the respondents said that they do not have any information about security committee. They were surprised to know that there should be such a committee and that even they could become a member of it had such a committee been in existence.

Similarly, almost all the mine workers did not have any information about Pneumoconiosis Board. Only 23 of the total respondents knew about it out of which 14 are from Jodhpur and 9 from Karauli mainly because of the active presence of and initiatives taken up by Mine Labour Protection Campaign (MLPC) in both districts.

The findings in the last two sections (VI and VII) show that the laws regarding wages, workplace safety and occupational diseases are not implemented in most mines. The complaints regarding the hazards at workplace are usually brushed under the carpet with the pretext of being too technical. This is

mainly because there is no coordination between, Department of Mines and Geology, GoR and agencies like DGMS and Chief Labour Commissioner Office of Ministry of Labour, Gol. Filing of annual DGMS returns by the mine owners can be link among them. However, a Mining Engineer told that even DGMS is unable to keep a check on erratic operations of mines due to inadequate staff. He further affirmed that the present system needs to be strengthened with better technical support and strict enforcement strategies. On asking about State's role in providing compensation to the occupational hazard victims, the Additional Joint Labour Commissioner, Labour Department, GoR, said that it is difficult to collect evidences from communities and to establish the employer-employee relationship between the mining operators and labourers due to lack of attendance registers and frequent shifting of the mine workers because of which it not possible for the State to help all the victims.

VIII. Risks to the people around mining areas

As mentioned earlier, mining is hazardous in terms of health and environment. The respondents told that mining causes various health related problems not only to its employees but also to the people residing near the mining areas. The table below shows the type of health problems that the people residing in the mining areas are most likely to suffer due to mines as reported by the respondents.

As shown by the table above, 54.08% of the total mine workers said that the people living near the mining areas are more likely to suffer from respiratory problems like asthma, TB, cough, allergies etc.. Almost 13% of them do not know about the risks imposed by the mines were they are working or to the people residing around mining areas and 15.1% of them think there are no threats to the people living around the mining areas. Some reported hearing impairment and headache as problems faced by people living near the mining areas. Other health problems reported by them were malaria and skin diseases.

Table 39: Kind of Health Related Problems that can be Faced by the People Living Near the Mining Areas

District	Don't Know	No Problem	Respiratory Problems like TB, Asthma, Cough, Allergies etc.	Hearing Impairment	Headache	Others like Malaria, Skin Diseases (Itching), Allergy etc.
Ajmer	2	0	27	1	8	32
Bundi	0	0	40	7	14	9
Jaipur	41	0	28	1	0	0
Jodhpur	10	24	34	0	0	2
Karauli	0	4	58	0	0	8
Rajsamand	0	0	65	0	0	5
Sri Ganganagar	11	46	13	0	0	0
Total	64 (13.06%)	74 (15.1%)	265(54.08%)	9(1.8%)	22 (4.48%)	56 (11.42%)

Source: BARC survey, 2014

8.1 Disposing the overburden

Mining operation results in huge amounts of overburden/ debris. Visits to the sites show that most mine owners just dump the overburden outside the mine, hence polluting the surrounding area and destroying the ecology. The table below shows the response of the mine workers about the measures adopted by the mine workers to dispose off the debris.

Table 40: Measures Adopted by the Mine Owners to Dispose the Debris

District	No Debris	Throw it Outside the Mine	Leave it in the Mine	Reuse It	Do Nothing
Ajmer	0	44	1	6	0
Bundi	0	61	1	1	1
Jaipur	0	29	37	0	4
Jodhpur	0	45	27	0	0
Karauli	0	65	1	0	0
Rajsamand	0	58	1	0	1
Sri Ganganagar	69	0	0	0	1
Total	69 (15.2%)	302 (66.6%)	3 (0.6%)	7 (1.5%)	7 (1.5%)

Source: BARC survey, 2014

As shown by the table, not all the respondents had information about what happens with the overburden/debris after excavation is completed. Among those who answered, 66.6% respondents said that the overburden from their mines is just thrown outside the mines by the mine owners. Only 1.5% said that the debris is reused for making boundaries or construction work. The other said that it is usually left at the mine site only and the mine workers do not adopt any proper measures to dispose the huge heaps of debris/ overburden collected in the process of mining.

8.2 Benefits from mining

Mining is one of the biggest economic activities in Rajasthan that provides employment to a large number of people. However, according to the response of the mine workers, it seems that employment is the only benefit that they get from mining.

Table 41: Kind of Benefits the Mining is Providing to the Respondents

District	No	Employment	Better Roads
Ajmer	29	41	0
Bundi	10	60	0
Jaipur	47	23	0
Jodhpur	20	50	0
Karauli	23	47	0
Rajsamand	8	62	0
Sri Ganganagar	16	48	6
Total	153 (31.2%)	331 (67.5%)	6 (1.2%)

Source: BARC survey, 2014

The table above shows that 67.5% out of the total respondents said that they got employment from mining. However, many respondents also confessed that they do not think of employment as a benefit from mining as they are bound to work in the mines due to various reasons and if given better opportunity, they will leave mining. Few of them said they think roads have become better in their area due to the presence of mines and 31% of the total respondents said they are not getting any benefits.

IX. Conclusion and Recommendation

The present study has reconfirmed the known facts that in a majority of mines in the State, the mine owners and contractors have resorted to the unlawful practice of concealing the number of labourers working in their mines in order to bypass labour laws and to evade other restrictions and rules under Mines Act, 1952. Only 20 out of 70 mines visited for data collection were found to be filing the compulsory returns to DGMS which may enable some kind of monitoring of the non-implementation of labour laws. Also, a large number of mines do not provide with even basic safety equipments. The non-implementation of labour laws and other regulations in the mining sector has made the life of the mine workers miserable. Also the apathy of the Government towards the situation of the mine worker has provided the mining industries with opportunities to walk away from any responsibility towards the workers and the communities affected by mining.

Recurring draughts and failure of agriculture compel rural population to look for alternatives which also leads to migration of labour to the mining sector to survive. The unregulated mining is destroying the landscape and environment of the area along with threatening the life and culture of indigenous population in Rajasthan. Mine workers are exposed to various hazardous materials like silica, and are prone to life threatening diseases and crippling physical injuries. Men work in mines for a living but die early due to occupational diseases like silicosis, bagassosis, asbestosis and tuberculosis etc. In this regard, mine owners must be made liable for compulsory implementation of labour laws, adoption of safety measures, and maintenance of medical and life insurance policy for each mine worker and the State Government should conduct frequent medical check-up camps at the nearest public health centre to examine the mine workers with a special attention towards occupational diseases.

The mines visited for data collection were mines of only Minor Minerals especially the stone mines. Most of these mines were operating for 8 hours per day and most of the work was done manually. It was found that no mine had a Grievance Redressal Cell and a Gender Cell and only 6 out of 70 mines had Safety Committee. Only 26 mines out of 70 gave some kind of compensation for accident. Large proportion of mining in Rajasthan falls in the domain of unorganized sector where violation of the provisions of Mines Act, 1952 is prevalent and affects the miners including women miners considerably. Important provision of having separate toilets for women was not found in any of the mines visited and only 2 mines had crèche facility.

According to the findings of the study, almost every mine visited was violating the provisions under the Mines Act, 1952 by not providing some/ all the basic facilities. It was found that only 18 mines provided drinking water, 13 had toilets, 27 had resting shelter, 21 had canteen and only 15 mines had First Aid facility at the mining site. The mining areas did not have schools for their children, hospital, market places etc. Even the safety measures were not present in most mines.

Gender inequality seemed prevalent in the mines. Only men are employed in extricating stone from rocks using a hammer and a chisel for which considerable human strength is required while both men women are

involved in the loading of broken pieces in trucks/ trolleys and removing the rubble. Men are considered to be stronger than women and so women's capacity to carry load is assumed to be lesser than men because of which they are paid less. Out of the total respondents only 16.73% said that women and men get paid equally for equal work.

Most of the mine workers were found to be in high debts mainly due to medical expenses. It can be concluded from the study that the mine workers are not economically secure and stable. The nature of mining operations in Rajasthan is hazardous and so the mine workers are prone to falling sick or meeting with accidents. Despite of several forms of hazards associated with mining, around 77.3% of total respondents reported that they have never received any safety equipment. Only a few mines workers knew about Pneumoconiosis Board. Also, there are no safe measures used by the mine owners to dispose-off the overburden from mines which can be hazardous for the ecology around the mines.

The study shows that the mine workers are mostly unaware of their entitlements and rights. Most of the mine workers are illiterate and have not received any kind of training. Less than 50% of the respondent mine workers are receiving minimum wages while others are getting much less and only 32.4% of the respondents are receiving payment for overtime. Incidences of wage theft like paying single rate for overtime or not paying at all, under payment of statutory minimum wages, non-payment of benefits, miscalculation of working hours, less wages to women etc. are common. Therefore, mines workers are required to be made organized and made aware of their rights and entitlements. As most of the mines do not have registered workers, it become difficult to establish employer-employee relationship which creates hurdle for the mine workers in getting their due compensation and other entitlements. Although, in February 2015, the Government of Rajasthan has issued an order to make the registration of mine workers and providing them with identification cards compulsory from March 1st, 2015, it seems it will take a long time for this to be really implemented.

Recommendations:

1. Effective implementation of existing provisions of Mines Act, 1952, other mining related Acts and rules related with Environment Protection should be ensured and for this purpose Department of Mines and Geology, Office at the CLC, DGMS and other law enforcement and implementation agencies should be strengthened accordingly.
2. Even though adoption of “Wet Drilling” and “registration of mine workers” have been made compulsory from March 1st, 2015, its implementation must be ensured.
3. There should be stringent monitoring of the mines for violations of the laws and the offenders and violators should be penalized and should not be considered for allotment of new mines or renewal of the existing mines.
4. Alternative means of employment of mine workers should be generated.
5. It is high time to create Mining Policy for the State instead of a Mineral Policy.
6. The government must prepare a detailed plan for combating potential hazards of increasing

the land used for mining to more than three times as mentioned in the Mineral Policy, 2015.

7. Mine owners must be made liable for compulsory implementation of labour laws, adoption of safety measures, and maintenance of medical and life insurance policy for each mine worker.
8. The State Government should conduct frequent medical check-up camps at the nearest public health centers to examine the mine workers with a special attention towards occupational diseases.
9. The draft of rules for DMFT has provided for more space for local level intervention and so more and more local NGOs and CSOs must involve in welfare issues of the mine workers.
10. There is a need to increase involvement of gram panchayats more actively in the process of granting of leases keeping the welfare of the villagers and it's surrounding in mind.
11. The panchayats must develop their environment management plan so that a check on the mining activities can be kept and least harm to the natural resources and the livelihood support system can be ensured.
12. Implementation of the provisions of mine plan and mine closure plan should be closely monitored especially in the tribal region so that the hazards from a closed mine can be controlled and the land can be reused effectively.

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Budget Analysis Rajasthan Centre (BARC), Jaipur, an unit of Astha, Udaipur, was set-up in 2002 as a budget study and policy research centre. The role of the Center is to analyze the Rajasthan state budgets and public policies from a pro-poor and marginalized people's perspective in an attempt to promote transparent, accountable, participatory governance, and a people-centered perspective with regard to the preparation and implementation of budgets. It also helps the individuals and organizations working at the local levels, to learn how to use the budget data in their advocacy work and provides its analysis to media and the elected representatives.

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