

Report on ASM in Rajasthan

Rana Sengupta

MLPC

2005

With assistance from

Dr Kuntala Lahiri-Dutt
The Australian National University
Canberra

Introduction

Rajasthan has a glorious heritage in the field of mines and minerals. The State is geologically so endowed that it has become a veritable repository of minerals. Important minerals with which the name of this State is intimately associated are that of non-ferrous metals (lead, zinc and copper) and ferrous minerals such as tungsten and a number of industrial minerals. Presently, the State is the sole producer of jasper and wollastonite and a leading producer of cement and steel-grade limestone, soapstone, ball clay, calcite, felspar, natural gypsum, kaolin, rock phosphate, ochre and building stones, besides tungsten, lead-zinc concentrates, and copper metal. The minerals found in Rajasthan account for more than 70 per cent of India's total production.

More than 95% of mining activity in Rajasthan is in the hands of unorganised sector. Of the workforce engaged in mining 37% are women and 15% are children. Most of them are dalits and tribals. Interestingly mining is also the second largest employment sector after agriculture in the state. Rajasthan is the largest geographical state in the country and second largest in terms of mineral deposits after Bihar. Presently, the state is the sole producer of cement, steel grade limestone, soapstone, ball clay and a number of minor minerals. As many as 1266 mining leases of major minerals, 8029 mining leases of minor minerals and 18245 quarry licenses are presently in force in Rajasthan¹. The state also has the large number of small mining leases in the country. The massive unscientific mining has in the process eroded soil, caused extensive water loss, degraded forest, pastures and biodiversity in the entire state.

At present, about 44 varieties of major minerals and 22 varieties of minor minerals are being produced in the State. In the field of minor mineral particularly, of dimensional and decorative stones such as marble, Kota stone, and sand stone, the State occupies a unique position by contributing about 30 per cent of the total value of minor minerals being produced in the country².

Mines and Minerals of Rajasthan: at a glance

No. of Mineral Produced	
1. Major Minerals	44
2. Minor Minerals	22
No. of Mines	
Major Minerals	1266
Minor Minerals	8029
Prospecting licenses in force	394
Quarry License	18245

¹ Department of Mines and geology, government of Rajasthan

Production	Production (000 tons)
a. Major Minerals	68456.690
b. Miner Minerals	109153.846
Sales	Sales (in Lakh Rs)
a. Major Minerals	65306.42
b. Miner Minerals	128363.11
Labour	Average number of persons employed per day
Major minerals	27578
Minor minerals	413804

Source: Directorate of Mines and Geology, 2002

Mineral Production in Rajasthan (Percentage Contribution)

Mineral	% of India's Production
Wollastonite	100
Jasper	100
Zinc concentrate	99
Fluorite	96
Gypsum	93
Marble	90
Asbestos	89
Soapstone	87
Lead concentrate	80
Phosphate, rock	75
Ball clay	71
Calcite	70
Sandstone	70
Flaggy limestone	70
Felspar	70

The State has also has significant deposits of iron ore, bauxite, chromite, manganese, coal and petroleum. In terms of the total value of India's mineral production in the country, the State contributes 5.74 per cent of the total value and occupies the fifth position after

Bihar (13.09%), Madhya Pradesh (9.68%), Gujarat (8.55%), and Assam (7.3%). Recently large workable reserves of lignite have been identified and proved in the state. Their exploitation is likely to begin very soon and, thereafter, the State's position would significantly improve. Since 1949, significant changes have taken place in the field of mineral development. This is evident from the following facts:

During 1950, only 15 types of major minerals and 6 minor minerals were produced. During the last four decades, many new mineral deposits have been discovered. In 2002, about 44 major minerals and 22 minor minerals are being exploited in the State. In 1950, there were 50 major mineral leases and 1,200 rent-cum-royalty leases. This number has increased to 1266 major mineral leases, 8029 minor mineral leases and 18245 quarry licenses in 2002. The value of minerals produced has gone up from Rs.3.50 crore in the year 1950 to over Rs.1937 crore in the year 2002.

The labour employment in the sector has also increased from 0.32 lakh in 1950 to about 27 lakh in 2002. The State's non-tax revenue from the mineral sector has gone up from Rs.0.48 crore in 1951 to Rs. 1482.76 crore in 2002.

Geology of Rajasthan

Rajasthan is endowed with a continuous geological sequence of rocks from the oldest Archaean, Metamorphites, represented by Bhilwara Super Group (more than 2,500 million years old) to sub-recent, alluvium and wind blown sand. The western and north-western parts of the state are covered by vast blanket of young unconsolidated deposits including the blown sand of the Thar Desert (Marusthal) of western Rajasthan. The remaining area exposes wide variety of hard rocks, which include various types of metamorphic schists, quartzites, marbles and gneisses of Pre-Cambrian age with associated acid, and basic intrusive rocks. The sedimentaries include the rocks of Aravalli Super group, Delhi Super group, Upper Precambrian Vindhyan Super group and of Cambrian to Jurassic, Cretaceous and Tertiary ages. The southeastern extremity of the state is occupied by a pile of basaltic flows of Deccan Traps of Cretaceous age. Several mineral deposits of economic importance occur in association with the above rock units.

The geological sequence of the state is highly varied and complex, revealing the co-existence of the most ancient rocks of Pre-Cambrian age and the most recent alluvium as well as wind-blown sand. The Aravallis, one of the most ancient mountains in the world, have the oldest granitic and gneissic rocks at their base, overlain by the rocks of the Aravalli Super group, Delhi Super group, the Vindhyan Super group and younger rocks. These rocks are highly metamorphosed at certain places and show rich occurrences of minerals of great commercial importance.

The characteristic feature of the geology of Rajasthan is the presence of several groups of rocks belonging to Archaean and Pre-Cambrian ages. They form the Aravalli mountain system, which runs across the state from the north of Delhi in the north-east to the Gulf of Cambay in the south-west. The central part of the Aravalli ranges is occupied by a great synclinorium composed of Aravalli and Delhi rocks. Because of the thin deposits of sand

in this region, the rock exposures are good but in the west and the south-west, they are often engulfed in sandy alluvium and desert sands.

The Archaeans consist of the Bhilwara Super group (Bundelkhand Gneiss and the Banded Gneissic complex). The Aravallis, an enormously thick series of argillaceous rocks, came into existence at the close of the Archean era when the sediments, which were deposited in the seas of that age, underwent an upheaval by orogenic activities. These vast mountains were peneplaned in later ages. The Aravalli super group is a vast formation composed of basal quartzites, shales, conglomerates, composite gneisses and slates.

The Delhi Super group overlies the Aravallies. Delhi super group is divided into lower Raliyo group, middle Alwar group and upper Ajabgarh group. Raliyo group is rich in crystalline limestones, grits, schistose rocks and quartzites. The famous marble of Makrana (Nagaur district) belongs to this group. Alwar group and Ajabgarh group consist mostly of calc-silicates, quartzites, grits and schistose rocks.

The other important lithological formations consist of a thick series of sedimentary rocks comprising sandstone, limestone and shales. These have been classified as upper and lower Vindhyan in the east and Marwar in the west. The deposition of these rocks in western Rajasthan was preceded by igneous activity, which included a thick pile of lava, mostly of an acidic nature. The plutonic equivalent of these lava are seen in the form of granite bosses and sills in Jalor, Siwana, Mokalsar and Jodhpur areas. Rocks of the above-mentioned igneous activity have been designated as Erinpura granite and Malani igneous suit.

There was an encroachment of an arm of the sea from the south-westerly direction into western Rajasthan during the Jurassic period. Jurassic formations are distinctly noticeable in a vast area around Jaisalmer and some of the fossils of this age are found in these rocks. The outcrops of these rocks are, partly, covered by wind-blown desert sands. Of special interest are the Bap (Jodhpur district) and Pokran (Jaisalmer district) beds of upper Carboniferous age, which have now been exploited for ground water. They are composed of boulders of Malani rhyolites showing effects of glaciations. Violent volcanic activity in the form of fissure eruptions marked the close of Mesozoic era in the lower Cretaceous age. The main characteristic of this was a stupendous outburst of covered volcanic energy, resulting into the eruption of thick streams of lava over vast areas. These rocks, known as Deccan traps, are found in southern and southeastern Rajasthan. The Deccan trap, extending over a vast area in southern Jhalawar and in the eastern parts of Chittaurgarh and Banswara districts, are notable formations of Upper Cretaceous to Lower Eocene age when a large area of peninsular India was also covered with fissure eruptions of black lava.

During Eocene times, marine transgression seems to have inundated a large part of western Rajasthan with the deposition of thick beds of fossiliferous limestone. To the north of Jaisalmer, the Jurassics are overlapped by nummulitic limestone.

Pleistocene sand alluvium, blown sand, kankar(calcium nodules), carbonate beds and evaporite deposits of recent and sub- recent age are found over a large area of western and eastern Rajasthan.

The great Boundary Fault, through which the River Chambal has carved its course, passes through southeastern parts of the state. This fault is visible in Begun (Chittaurgarh district) and northern parts of Kota. It reappears again in Sawai Madhopur and Dhaulpur districts. Besides this, several mega lineaments also traverse in the state.

Technology used in small mines

Mining is mostly manual and labour oriented. The mining method employed in small mines is generally opencast method... Opencast methods are combinations of loosening, loading and transporting earth and rock in surface excavations. The combination selected depends on shape, size and depth of pit, local topography and output required. Output method is adjusted to size of deposit, to secure minimum cost of production and removal of overburden. Removing of overburden is completed before beginning of mining or mining and stripping proceed simultaneously after a sufficient area has been uncovered to avoid interference between the two operations. Stripping is done in one or more slices and overburden is deposited within a reasonable distance and at a point where dump should not interfere with subsequent mining. Topsoil and sub-soil is removed manually or by excavators. Under the topsoil usually there is hard, thick-bedded mineral in which holes are drilled by jackhammer drills and blasted. This breaks up the ore.

There is a prevalence of growing mechanisation and technological upgradation in Rajasthan. Industries now use gangsaws, tiling plants, circular saws for polishing machines. In addition to the above quarrying equipment pneumatic jackhammers, diesel-operated compressors, hydraulic jacks, splitting equipment, winches, excavators etc., are now increasingly used in small mines.

For loading and unloading of blocks at quarrying and processing plants - jib cranes, derricks, excavators and mobile cranes are being used. For removal of blocks and overburden; the mining owners in Rajasthan are also using dumpers, trucks, tractor trolleys etc.

Regulation of Mines and Minerals

Although mineral wealth vests in State Governments, yet the subject of regulation of mines and mineral development is covered by entry 54 of the Union List under Seventh Schedule of the Constitution of India. By virtue of this, the Parliament has exclusive power to make laws with respect to regulation of mines and minerals development.

Mines and Minerals (Regulation & Development) Act, 1957 has thus been enacted by Parliament and Mineral Concession Rules, 1960 have been issued by the Central Government which, has also framed the Mineral Conservation and Development, 1988 for conservation and systematic development of minerals. These rules are applicable to all minerals except coal, atomic minerals and minor minerals. Rule making powers in

respect of minor minerals have been delegated to the States under Section 15 for the Act. In exercise of these powers, Rajasthan Minor Mineral Concession Rules (RMMCR), 1986 have been framed. Thus, the State's rule making power in respect of regulation and development of minerals is limited only to minor minerals.

Who are miners?

Majority of miners in Rajasthan are migrants from other districts of Rajasthan and also from the other states of India. According to the government data there are only 4,41,382 average workers working in the mines both major and minor but the real status is something different. The rough estimate states that about 27 lakh people work in the mines in Rajasthan of which 30 to 35% are women and 15% children. Most of the miners in Rajasthan are dalits and tribals. The mining in Rajasthan is the second largest employment sector after agriculture.

Economic status of mine workers

Mineworker belongs to the lower segment of the society whose income ranges from Rs.40 to 100 per day. The burden of a big sized family (Average size of family is 5) and low income from the mines weakens the mineworker day by day. In order to supplement the earning he has to send his wife and children to mines. 95% of mine workers are migrant labourers in Rajasthan. They make their own make shift houses near the mining sites. Usually the mine owner demarcates some part of the mining area for constructing houses. The houses are mostly temporary and unplanned. They are allowed to live in these houses as long as they work in the mines and have to vacate them once they quit their jobs. There is no proper sanitation or water facility available in the mining areas. Most of the people use mine water for bathing and washing clothes. The houses of workers do not have legal electricity connection but almost every house has an illegal connection

Migration to Mines

In Rajasthan 95% of mine workers are migrants of which, 60% to 70% are from the other district of Rajasthan and the rest are either from bordering states like, Gujarat, Madhya Pradesh, Uttar Pradesh or from distant states like, Tamil Nadu, Andhra Pradesh, Bihar, Orissa, West Bengal. The migrants from Rajasthan are seasonal migrants who tend to migrate to mining areas during drought. The other state migrants are permanent settlers in some of the mining areas. Though migration is an important coping mechanism during drought years, over time it has become a regular feature. Youths from families that have more than one working male member often go out to work in turns. Some of them go out to work for periods of up to 3 to 6 months. The comparatively better economic situation of the migrants has lured more people to join the migration stream and the number of migrating people has increased over time. Most seasonal migrations are organised where a more dynamic and enterprising persons plays the role of *thekedar* (contractor). They remain in touch with the mine owners. They arrange and organise the required number of labourers from their own or neighbouring villages. These *thekedars* charge a commission on every labourer's wage.

The migrants face the hardest time themselves. They live in appalling conditions – in the mines periphery where they work with no access to basic amenities like water or toilets. Drinking definitely increases among migrant men, as does unsafe sexual activity.

Alcoholism

The growing trend of alcoholism has brought more misery to the lives of labourers and their families. Women and children are the worst affected. As much as 85% of the mine workers are alcoholics and this compels them to send their wives and children to work in mines to fend for their livelihoods.

Mining History of Rajasthan

Rajasthan has a glorious heritage in the field of mines and minerals. The State is geologically so endowed that it has become a veritable repository of minerals. Important minerals with which the name of this State is *intimately* associated are that of non-associated are that of non-ferrous metals (lead, zinc and copper) and ferrous minerals such as tungsten and a number of industrial minerals. Presently, the State is the sole producer of jasper and wollastonite and a leading producer of cement and steel-grade limestone,ed equipment, which tends to be reserved for men. They are also indirectly involved through ancillary activities such as the supply of food, drink, tools, and equipment. A distinct advantage of having female members of the household involved in mining is that they are more likely than men to spend their incomes on maintaining their families – investing in, for example, food, schooling, clothing. Men are more likely to spend their wages on gambling, alcohol, and prostitutes. When women are engaged in mining as members of a mining household, however, they have less control over expenditures, as the income is still likely to be managed by men.

Women in Mining

Women have a huge presence among the workforce in these mines. But they are deprived of even the minimum wages, welfare and other aspirations. Women have very little statistical existence in the employment records of mines whether with the government or with the mining companies. They are never employed on a permanent basis. The basic nature of their work requires strenuous physical labour in heat and dust. When we visited the mines in Rajasthan, we saw women working in the open, braving the sun, rain and heat wave. There is no provision of any public utilities like toilets. A woman has to travel half a kilometer from the mines to relieve herself. Women are employed both on daily wages as well as on piece rate. In a daily wages system a woman gets a minimum of Rs 40 and a maximum of Rs 60 a day, with working hours starting at 8 am in the morning and ending during the sunset. There is no concept of paid, maternity or medical leaves. According to the Maternity Benefits Act, 1961, “every woman is entitled to the payment of maternity benefit at the rate of the average daily wage for the period of her actual absence immediately preceding and including the day of her delivery and for the six weeks immediately following that day. To be eligible for maternity benefit, a woman should have worked in an establishment for not less than 160 days in the twelve months immediately prior to the date of her expected delivery”. Rajasthan mines are a stark contrast as the women labourers working for several years now are also not entitled to any maternity benefits. Increasing mechanization has affected the livelihood of women

since most of the work done by them like loading of waste rocks and clearing of place in mines is being increasingly taken over by machines. The women are losing their jobs at an alarming rate in the Rajasthan mines. This is leading to drastic economic and mental pressure on the women because they need to earn for their households. Maintaining a family is also a very difficult work for the females in the mining area. During off days female travels at least 6 to 7 km to get the firewood from the forest. Most of the families entirely depend on firewood for cooking, while some families used dried cow dung as a fuel.

Child Labour

Child labour, in mining as in other forms of work, is rooted in poverty. Children work in the mines to help their parents, and to supplement the family income in order to buy basic goods such as clothing and food. Since much of the work is physically hard, they may not be fully involved at first. Typically children increase the scope of their activities, as they grow older. Working long hours under arduous conditions is difficult enough for adults. It takes an even more serious toll on the soft bones and growing bodies of children. Young children are also especially vulnerable to physical and chemical hazards. In Rajasthan, for example, children as young as eight are exposed to the sand dust while working in stone mines. Beyond this they also suffer psychological and social disadvantages and may sacrifice future prospects. In Rajasthan alone close to five-lakh child labour work in small and artisan mines. Most child mineworkers do not go to school, while some do so erratically – hampering their education and ultimately reinforcing the cycle of poverty. Parents are unaware of the immediate risks and long-term disadvantages of their children employed in mines, more so because they are preoccupied with day-to-day survival means

Profile of child labourers

Most children working as labourers belong to the age group of 10-16 years.

More than 60% of child labour force is working as bonded labourers.

A high percentage of these children come from scheduled castes and scheduled tribes.

Children start with getting involved in activities like taking care of the instruments used in mining, assisting their parents, fetching water, tea.etc

85% of children are not school going but the rest too can be seen working in mines in holidays.

The wages of child labours varies from Rs.15 to Rs.40 per day.

A wide range of reasons explains the constant growth of child labour in Rajasthan mines,

1. The low wages of parents (Rs 40 to 50 per day) is one of the main reasons of increasing child labour.
2. Alcoholism in male adults pushes children to supplement their father's earning.
3. Lack of schooling facilities for the migrant workers. Since migrant workers live in proximity to mines, which are 4-5 km away from the main village, young children of the migrant labourers cannot avail schooling facilities.
4. More than 90% of mine workers are frequent migrants from various states and districts, which make it difficult for children to get enrolled in one particular school.

5. Most of the children are born and brought up around mining sites. Children growing in the surrounding environs get habituated while playing or helping their parents in rocks. Their psychology gets so moulded that they tend to develop a natural disinterest in studies even when they are offered an opportunity.

6. Bonded labour practice remains one of the prime causes of child labour in Rajasthan. Since the labourers are not entitled to any medical facility or compensation they depend upon contractors and mine owners to borrow money in case of any ailment. At times when the money exceeds beyond the repaying capacity of labourers, the parent labourers tend to induct their children into work in order to supplement the income of the family. In case of a death of a labourer who has borrowed money for medication, the entire burden of debt falls upon their children.

Bonded Labour

The Government of India recognizes bonded labour system as a gross infringement of the fundamental human rights and is committed to its total eradication in the shortest possible time. India has ratified ILO Convention No.29 (Forced Labour Convention 1930) on 30th November 1954. Following the ratification, the Bonded Labour System (Abolition) Act, 1976, was passed by the Parliament. It freed unilaterally all the bonded labourers with simultaneous liquidation of their debts. The state governments are implementing the Act. Though not much information is available on the extent of bonded labour system in mines, it can be assumed that the practice is still prevalent.

Rajasthan: Bonded for life

Mines of Rajasthan denote one of the places where bonded labour system is still prevalent. Despite of stringent laws in place in India, implementation is lax. However, there is no accurate statistical picture of the bonded labour system. Following are some of the instances, which allow persistence of the bonded labour system.

During the rainy season (July to September) there is no mining activity in the area and hence no employment. Labourers are forced to take advance of Rs. 10,000 to Rs. 15,000 to meet their needs and requirements. According to contract, the borrowed amount has to be returned to the owner with due interest in a certain period of time. Since there are no fixed interest rates, the borrower is forced to pay whatever the lender asks to pay. Illiteracy plays a major role as the borrower seldom cross checks or asks for the accounts from the lender. This makes it difficult for the labourer, to repay all debts before next monsoon. Gradually, the cycle of debt begins rolling turning him/her into a bonded labourer to a particular mine owner or contractor for no less than 5-10 years. This is a common practice in Rajasthan and surrounding areas.

The money disbursed to these labourers during accidents or deaths are also treated as debt and many times the children of a borrower are forced to succumb to the bonded labour system.

There is another crude form of recruitment mechanism that leads to bonded labour. Agents in the villages of Madhya Pradesh, Uttar Pradesh, Orissa and Bihar bring villagers for excursions to Rajasthan. The agent sponsors the trip spending all the money required

for the trip. This includes their travel, food, accommodation, and sight seeing etc. Once the trip is over, the ignorant villagers are told to return huge amounts of money spent on them. Their inability to return the amount forces these people to work as bonded labourers in Bundi and Kota.

TVs, DVDs and other luxury items supplied by the contractor or mine owners sometimes induce labourers and their families. The cost price of these items is then deducted from the wages of these labourers at an inflated rate. One can see most of the latest electronic gadgets in houses of these labourers.

Alcoholism is another way of retaining bonded labour in Rajasthan mines. Illicit liquor is made and supplied to labourers at subsidized rate i.e. Rs10 per 180 ml.

Labour Exploitation

Under the Constitution of India, labour is on the Concurrent List. This means that both the Central and State governments can enact legislation in the benefit of the workers. The Mines Act, 1952, regulates safety, health and welfare of workers in mines. Employment in mines, trade union rights and liabilities, dispute resolution, contract labour are also regulated under different Acts and Rules. Despite all these safeguards, labourers are one of the most-exploited segments of the mining industry in Rajasthan and in other areas. Labourers are exploited in a number of ways

Mines in Rajasthan employ about 27 lakh labourers from the state and surrounding areas. Due to increasing mechanization of mining, livelihood of most of these workers stands threatened now. Insecurity makes the labourers obey the harshest of order of their master. Since the working force has increased (number of labourers), daily wages of labourers has decreased.

Established dominance of mine owners and landlords, most of who are from the upper castes and are politically powerful, remains unchallenged. Most of the mine owners were elected to the village panchayat in February 2005. This new position has given them the authority to exploit human and natural resource

There are two classes in Rajasthan mining area - haves and have-nots. Haves are the landowners who own mining companies. This comprises of predominately uppercast people and have-nots are mining labourers consisting of ST, SC and Backward class people.

Women and children are important contributors to mining in Rajasthan. Women perform unskilled work but difficult tasks while children are primarily engaged in cobbles and slab making. An independent estimate suggests that out of 27 lakh mineworkers, roughly 500000 are children.

No records are maintained for labourers, making it difficult for them to avail or claim compensation or any other benefits accrued on the mining company or from government.

Workers never work directly under the mines owner, perhaps they work for and are paid by the contractor, who is considered the second master of workers. No safety gadgets (Helmet, safety jackets, masks etc.) are provided to workers either by the owners or by the contractors. Workers are entitled to daily wages only. They cannot claim any medical expenses, insurance cover, earned holidays or any other compensation at the event of accident or death. Non availability of any means of entertainment, promotes alcoholism among male workers

Poor wage pattern in Rajasthan

In Rajasthan, wage patterns differ for different mines. The average wages are as follows:

-

A male worker is paid anywhere between Rs. 60 to Rs. 100.

A female worker gets Rs 40 to Rs 60 for working 12 hours as a loader in the mines.

A child labour gets Rs. 20 To Rs. 40 for 10 to 12 hour job

A supervisor gets a monthly salary of Rs 4,000 to Rs 6,000 depending upon his experience and closeness to the mine owner.

Truck and tractor drivers get Rs 2,500 to Rs 4,000 per month.

Most of the mechanical jobs are on contractual basis and therefore it is difficult to estimate the average wages of these people. But, it is clear that their wages are certainly higher than the mine labourers. Salary is settled from between the 5th and the 7th of the month. In some mines, salary disbursement practice is different so that workers draw small amounts every week and balance is settled at the end of the month. This also enables mine owners to exploit illiterate mineworkers. The illiterate mineworkers often believe the calculation of the contractor or the mine owner and never dares to cross check the amount.

Workers organisation - Trade Union

The poor working conditions have persisted because of a complete absence of collective bargaining by the workers. Sporadic attempts at union formation, which have been made in nearly all major mining areas, have so far not been successful due to the unorganised nature of production, low awareness levels amongst the workforce and the feudal relations still existing in some pockets. Mine Labour and Protection Camping (MLPC) is one of the pioneer organisation, which is dedicated to work in the mining issue for past 10 years. The absence of workers organisation-trade union is attributed to:

Almost 85% of the labourers are migrants, who constantly keep moving resulting which a permanent union cannot be formed. Since the labour force belongs to different regions and culture, they tend to live in their respective cultural clusters curtailing any communications among themselves. The low wages of these labourers casts a negative impact on the morale of these workers making them feel insecure and spineless.

Confusing contract system makes labourers clueless about the authority to report to. Bonded labour is another main reason for unorganised labour force.

Health and safety issues

Most of the mining operations are being conducted unscientifically, which affect the environment as well as puts the lives of the labourers in danger. If we look at the average of last five years, every year more than 200 labourers are killed in various mines and many accidents have taken place. Some of the labourers become permanently handicapped. But till today not even one percent of the dead or injured have been given adequate compensation. The families of the dead are made quiet by offering a paltry sum because they are poor, powerless and unorganised. In all such cases the mine owners is at fault because they make labourers work in an unscientific and uncontrolled environment in order to earn larger profit in less time.

Health standards

While death is sudden in accidents, it can be slow and painful for workers afflicted by occupational diseases. Silicosis, tuberculosis and bronchitis due to inhalation of dust are common among mineworkers. Mechanization generates dust and finer particles, which remain suspended in the air for longer periods and are inhaled by the miners. The absence of safety equipment also increases the vulnerability of the workers.

Silicosis the killer disease

Workers in mines and quarries belong to the high-risk group. They inhale minute dust particles (varying in sizes from 0.1 micron to 150 microns). The average life of a mineworker is estimated to be between 40 to 50 years. Inhalation and deposition of silica particles in the lungs result in silicosis, which leads to pulmonary fibrosis and premature death (Health for the Millions, Volume 25, No.4.). Mine owners are insensitive to the situation and not keen on providing safety equipment to the workers. Lack of awareness and poor nutritional status worsen the situation. This problem is serious in Rajasthan because there are very few hospitals or healthcare centres near the mining areas (12247 medical institution for the populace of 565 lakh). In the absence of qualified doctors, the people including the mineworkers have to rely on unqualified local doctors for treatment. Mine owners or the contractors are not responsible for any treatment or healthcare facility either for minor or major accidents. Labourers pay for their own medical expenses. Workers are not paid for the days they are absent from work due to accidents or sickness. The vulnerability of mineworkers, reflected in the accident rate, is compounded by the fact that the mine owners do not adhere to the Workmen's Compensation Act.

Malaria

Malaria is a problem of serious concern in the state. In Rajasthan the disease is, to a large extent, a man made problem. It is believed to be related to the water storage habits of the people. Another reason is the water collection in craters created in the mining areas. Water collection in both these situations encourages the breeding of malaria mosquitoes. And the problem is magnified due to delay in seeking medical help. In addition to the above mentioned factors, several other reasons reel behind the slow progress in achieving control over malaria, some of them being:

- Poor compliance to complete course of drugs
- Emergence of multi-drug resistant strains of the disease
- Discontinuation and repeated resumption of treatment for short periods,
- Malnutrition, and

- Socio economic factors like unawareness, poverty, overcrowding, poor housing..

Living conditions of mineworkers

The villages around mining areas supply about 10 percent of workers in quarrying, especially the contractors and those doing better-paid tasks. These are traditional, well established villages with a school and a health clinic and a large proportion of school-going children. The rest of the workers are migrants who have set up their own 'colonies' around the mines. Some of these colonies have been around for as many as 20 years and have the semblance of normal villages with the difference that the residents come from all over India. Many of them go back to their native villages during the monsoon season when there is no work available in the mines. The lowest paid workers, and their families, live on-site in makeshift 'shelters' consisting of nothing more than four five-foot high walls made with piled up bits of waste stones.

Case study

Sandstone mines of Jodhpur district

Jodhpur's sandstone is famous for its durability. Its heat, cold and water resistance qualities besides its strength and beauty are well known. It is probably because of these qualities that the inhabitants of this region started using sandstone in construction of building. Large number of monuments, places and buildings were constructed using Jodhpur's sandstone. In New Delhi the Central Secretariat, Viceroy's House, Parliament House, etc. were constructed from Jodhpur's chitae stone. The 'Chitter' and 'Ghatu' stone are the two popular and commonly mined sandstone in this region.

Total revenue from sandstone during 2002-2003 was Rs. 103941.10 and total production was 1629.17 tones. Sales of sandstone during 2002-2003 were Rs. 4362.16.

Sandstone Mining Belt

In Setarava village of Shergad Tehsil in Jodhpur district, there is a mining belt known as "Thumbali" or "Cholpaul". In that area there are 60 mines. These mines started in 1966 and work on quarry license. 50 owners own these 60 mines. Each mine is allotted with an area of 100 x 50 ft.

In Lavaran village of Shergad Tehsil in Jodhpur district, there is a mine named 'Kumbrali'. This mine started in 1989. This mine is operating illegally and has applied for lease.

In Deda village of Shergad Tehsil in Jodhpur district, there are other mines also. Numbers of these mines are 25 and work on quarry license. These mines started in 1985.

Age wise distribution of mine workers

Workers interviewed were grouped into four categories. This categorization was done to analyse the presence of child labour, their age and period of work. Majority of workers i.e. 80% of 50 workers were in the age group of 16 to 40 years, which is the most productive period of their lives.

The number was much less in the age group of 40 to 50 years. It seems that after 40, the capacity to do hard physical work goes down. In this sample I found 5-child labourers below the age of 15 years (Table 1). The general practice in this occupation appears to be that the young boys join mines as helpers to remove scrap and rubble and gradually learn the art of making holes and braking slabs, lifting, etc. Women working in these mines are 10.

Table 1: Age wise distribution of workers

Age	No. of workers
0-15	5
16-25	10
26-40	25
41-50	8
Above 50	<u>2</u>
	<u>50</u>

Composition of work force

The workers, who can break big slabs from rocks or those who can run the pneumatic drill, are considered as skilled labourers. Those who can run the drill but cannot break slabs are considered semi-skilled and those engaged in removing hard soil, scrub, rubble, etc. are considered unskilled. In this sample of 50 workers, there are 22 skilled, 18 semi skilled and 10 unskilled workers. There are no organized training practices for labourers to be categorised as skilled, rather it is only through the practice and learning that workers acquire their due status.

Table 2: Composition of work force

Particulars	No. of workers
Skilled	22
Semi-skilled	18
Unskilled	<u>10</u>
	<u>50</u>

Residence of workers and distance from mines

25 workers of our sample belong to village situated in close proximity to mines and 5 workers live in the slums made by the leaseholders on the working field. Workers pay rent to leaseholders. 20 workers come from different villages, which are 100 to 150 km far from their field. These workers come by bus and pay their bus fair daily. Those who live near the mines walk down to mines.. In some mines there are no proper roads leading to them, as a result workers face difficulties in reaching their respective work place.

Wages

Some workers get their wages daily and some draw it on monthly basis. Workers drawing monthly salaries are better paid than the ones working on daily basis. Men labour get Rs. 60-70 per day or 1560-1820 monthly, women labour gets 30-35 per day or 780-910 monthly and child labour gets 20-25 per day or 520-650 monthly.

Table 3: Wages of workers

Labourers	Per day (Rs.)	Monthly (Rs.)
Men	60-70	1560-1820
Women	30-35	780-910
Children	20-25	520-650

Reasons for working in mines

Out of 50 workers interviewed 42 workers said that since they do not have any other choice or alternative employment in their villages they have to work in mines while the other 8 workers work due to poor financial condition. Workers reported that they do not have shade to rest and not even a first aid box in case of injury. Almost all workers said that basic amenity like drinking water is not provided by the mine owners. Workers informed that there is no system of holiday or weekly off. They further said that if they fail to come to mines their wages get deducted.

Compensation

Workers said that according to their knowledge, not a single legal case of compensation or for providing any other facility for which they are entitled have ever been made or filed in any of the courts. Despite of the fact that many workers get seriously injured while at work that nocompensation is provided to them either. ..

Health and accidents

In this sample survey, 38 workers complained for respiratory problems. Some of them were either under treatment for tuberculosis or were suffering from perennial cough syndrome. Accidents are frequent as most of the work is done manually with the help of heavy hammers, chisel and other primitive tools.

Many times, heavy slabs, stone, etc. fall on workers resulting into serious injuries. During recovery period, workers don't get wages. Workers have to bear for their cost of treatment themselves.

Soapstone in Udaipur

Udaipur, the seat of erstwhile Mewar state has been known for its mineral wealth for the last few centuries. The area is endowed with numerous multimetal belts and equal significance can be placed for some of the non-metallic minerals like rock phosphate, soapstone, limestone, etc.

Soapstone is a massive silicate. Steatite (some times termed lava tuff) is a compact, massive talcose rock with no visible grains. The inferior and hard variety of soapstone is called postone.

Udaipur district produces 229675 tones of soapstone. Total soapstone mines are 144 and area covered by these mines is 6319.897 hectares

Kaloda Mines

Kaloda is 40 km away from Udaipur. Kaloda comes under the Ghirwa Panchayat Samiti. There are 5 mines of soapstone of which one mine has been surveyed.

Features of surveyed soapstone mine

	Information by Mine owner	Actual Information
Name of the Mine	M/s. S. Sohan Singh Joginder Singh & Co.	
Name of Mineral	Soapstone & Dolomite	
Lease size	405.462 Hect. (Semal) 32.37 Hect. (Kaloda)	
Production (2001-2002)	Soapstone – 7048 M.T.	
Employment		
Male	65	85
Female	55	163
Child	Nil	18
Executive	7	7
Quality of product	Different grades of soapstone	
Wages		
Male	Rs.100	Rs.60 to 80
Female	Rs.77	Rs.40 to 60
Child	Nil	Rs.25 to 40
End use of minerals	Paper industries, detergent unit	
Accident statistics	Nil	Not reported
Fatal/serious/reportable		
Occupational health survey & standard maintained	Periodic medical checkup of workers done	No checkups and no compensation given to workers
Welfare measures taken	Have 1 st Aid Centre Ambulance Room as per rule	No such things exists
Environment Management	a) 600 saplings were planted b) Regular watering is done by own water tankers	There is no sign of new plantations near the mines

Workers contract a number of infectious diseases while working in these mines. No medical facilities are provided by the mine owners. Medical checkups revealed that out of every 12 men 7 were having tuberculosis. Male labourers get only Rs. 40-50 per day, women get Rs. 30-35 and child labour gets only Rs. 20-25 per day.