

Sandstone Quarry Workers

Karauli, Rajasthan, India

A Report Prepared for

'Beyond the Resource Curse: Charting a Path to Sustainable Livelihood for
Mineral-Dependent Communities'

ARC Discovery Project
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Executive Director
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1 INTRODUCTION

'Beyond the Resource Curse: Charting a path to Sustainable Livelihoods for Mineral-Dependent Communities' is an action-research project that combines research with participatory action innovatively in order to expand scholarly understanding of mineral-dependence and to connect it to the various social and political processes, including agrarian change and the burgeoning of the informal economy in neoliberal development. It explores mineral governance, production processes and labour organisations, and gender livelihoods in informal, and Artisanal and Small-scale Mining (ASM) in India.

ARAVALI – Association for Rural Advancement through Voluntary Action and Local Involvement –a state-level development support organisation was initiated in 1994 by the Government of Rajasthan to facilitate collaboration between the government and the voluntary sector (www.aravali.org.in).

ARAVALI has more than two decade of experience, and experience-based competence in designing and supporting programmes related to the following key themes and sectors relevant to development:

- Piloting Innovations for Livelihoods Promotion for poor families
- Design and implement integrated sustainable community development programmes
- Capacity Building of Voluntary Organisations
- Local Human Resource Development
- Formation and Strengthening of Community Based Institutions

ARAVALI is a State-level development support organisation, which has been working for strengthening the capacities of various development stakeholders – NGOs, GOs, PRIs and CSR wings of corporate agencies. ARAVALI has monitored and evaluated various development interventions (esp. of the Government) in the past, contributed to State-level programming and developed State Strategy papers for various GOs and donors in Rajasthan. The organisation has designed and piloted interventions in the areas of poverty targeting, organizational governance, personal effectiveness

enhancement, and organizational development with various development agencies over the last decade. (Brief ARAVALI profile attached as annexure -1)

The study was undertaken to gain insight into the lives of quarry workers. The study focuses on quarry workers engaged in red sandstone mines in Karauli District and Kota stone mines in Kota District of Rajasthan State, India. The study was carried out by ARAVALI (Association for Rural Advancement through Voluntary Action and Local Involvement) an organisation comprising members of government, research organisations and NGOs (for more details, see Appendix)

Every quarry has its own health, livelihood and safety issues for the quarry workers. The study gives a holistic picture of lives of quarry workers and their livelihoods. It also focuses on why of the quarry workers are forced into engaging in the mining activities.

2 STUDY APPROACH, METHODOLOGY AND TOOLS

In line with the objective of the study, ARAVALI constituted spearhead team to undertake the field assessment of quarry workers of the red sandstone mines in Karauli Block. The team consisted of senior programme staff, programme assistant and two field investigators. The team prepared a design of the assessment which included process and methods to be followed and tools to be used.

Process and methods followed and tools for the impact assessment used were as follows.

- a. Desk review: Reports and relevant documents were analysed and along with it secondary information and data were collected from secondary sources. A desk review was carried out to understand existing information and knowledge available in the secondary documents.
- b. Field Methodologies: Random sampling was adopted to ensure that maximum sub-population groups and contexts were covered during the assessment. For data collection following methods and tools were tailored to meet the various information needs of the study.
 - i. Participatory Focused Group Discussions (PFGDs)
 - ii. Semi-structured Interviews with 25 quarry workers

- iii. Discussion with other stakeholders
- iv. Reconnaissance of the mines

3 STUDY AREA

Location

The study was undertaken in Karauli Block of Karauli District in eastern region of Rajasthan state of India. Karauli is located between Jaipur and Agra and was part of the Matsya Kingdom, according to the legend of the Mahabharata, a great Indian epic. However, Karauli state was founded in 1346 and after independence in 1947 became part of the Sawai Madhopur District. In 1997, Karauli was separated and made into a new district in Rajasthan. It covers an area of just over 5000 sq km. Almost the entire district is covered by hills and ravines without any lofty peaks and, because of this difficult terrain, the area is well-known for dacoities.

Karauli is known for its red sandstone buildings, palaces and temples. Karauli district is very rich in respect of tourism with famous tourist places like Kailadevi temple, Shri Mahaveerji Jain temple, Madan Mohan temple, Mandaroyal Fort and City Palace.

Climate

Karauli has typically subtropical, dry climate with distinct winter, summer and monsoon. There is a great variation in temperature reaching to 49°C in May-June and lowest temperature being 20°C in January. The average annual rainfall is 668.86 mm spreading to an average 35 days rain between July and September.

Demographic details

As per National Census of 2011, Karauli district has a population of nearly 1.5 million of which 85 % live in the rural area. The population has grown by more than 20% since 2001; the population density is 264 persons per sq. km.

Literacy Level

The literacy rate of the district is 66% with male and female literacy being 81% and 49% respectively.

Sex Ratio

With regards to the female to male sex ratio in Karauli, it stood at 861 per 1000 male compared to the average national sex ratio in India of 940 as per Census 2011. Child sex ratio is 852 girls per 1000 boys.

Child Population

Children under 0-6 formed 17 percent population of Karauli District.

Backwardness and Poverty in Karauli District

Human Development Index of the district is 0.566 and ranks 25th amongst 33 districts of Rajasthan. Karauli is one of the country's 250 most backward districts (out of a total of 640). It is one of the twelve districts in Rajasthan that is considered to be most backward and, currently, receives funds from the Backward Regions Grant Fund Programme.



The Scheduled Caste (SC) and Scheduled Tribe (ST)¹ population in the district is around 24% and 22%, respectively. SC and ST populations in the district are quite high when compared to the national average of 16.6% and 8.6%, respectively. Whilst SC and ST families make up almost half the district population, only 30% of the 262503 total households in the districts are Below Poverty Line (BPL)².

85% of villages have access to safe drinking water but only half of the households in the district have access to electricity. Toilet facilities exist in only 16% of the households.

On an average, in the district, one medical institution serves a population of 3711. The infant mortality rate (no. of infant deaths per thousand live births) of the district is 67. The total fertility rate in the district is 4.9.

¹ The **Scheduled Castes** (SCs) and **Scheduled Tribes** (STs) are various groups of historically disadvantaged people recognized by Indian Constitution.

²**Below Poverty Line** is an economic benchmark and poverty threshold used by the Government of India to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid.

Economy

The district has abundant red sandstone, which was also the source for the famous red stone buildings, palaces and magnificent structures built by the Mughals in Agra, Delhi and elsewhere in their kingdom. Sandstone, masonry stone, silica sand, soapstone, white clay are the major minerals found in this district; but no official record is



available about the quantity of these mineral deposits in the district. There are a number of small and large red sandstone mines that employ large numbers of people. There are around 192 small units engaged in sandstone cutting and polishing to be used in construction of building that provides employment to around 1536 persons.

There are 165 agricultural, wood, leather, metal and chemical based units along with others but they employ merely 555 persons. There are no large-scale production units in the district.

Agriculture and animal husbandry are the main occupation of nearly half of the households in the district. The remaining half is engaged in non-agricultural occupation that includes mining, construction and other forms of labour.

4 POLICY ENVIRONMENT

Rajasthan is a rich mineral state. It has 79 varieties of minerals. Of these 58 varieties are being commercially exploited. Major minerals like Wollastonite, Lead-Zinc, Calcite, Gypsum, Rock phosphate, Ochre, Silver and minor minerals like Marble, Sandstone and Serpentine (Green Marble) etc., are in production in the state contributing to almost 90% to 100% of national production.

There is a large deposit of sandstone in Rajasthan. These deposits are in Northern (Churu District), Western (Jodhpur and Nagaur District), Eastern (Bharatpur, Dholpur, Sawai Madhopur, Karauli, Bundi and Jhalawar District), Southern (Chittaurgarh District) and Central (Tonk and Bhilwara District) Regions of Rajasthan. The sandstone is used as building material for roofing, flooring and cladding.

The Rajasthan Mineral Policy 2011 has made provisions for welfare of the mine labourers as also for the allotment of mines. Policy clearly states allotment of 50% of the delineated mine area to among others also to SC, ST, OBC, SBC, Unemployed mining graduates and for societies of unemployed youth of Rajasthan. It specifically mentions keeping in reserve cluster of 10% of delineated plots in new Sandstone boundaries for registered society for unemployed youth of Rajasthan.

For the welfare of mine labourers, the following provisions in the policy have been made.

- The mine owners shall be made liable for compulsory maintenance of medical and life insurance policy for each mine worker at the mine owner's expense.
- Periodical medical check up camps at nearest public health centre shall be organized to medically examine the mine workers with a special attention towards mining born diseases like silicosis in sandstone mining areas and a proper record shall be maintained at public health centre level for such diseases. Special measures will be taken to prevent silicosis.
- Maintaining of safety standards laid down in various provisions of Rules and Acts by mine owners and ensuring its enforcement by Indian Bureau of Mines and Director General of Mines Safety.
- Proper rest shelters and wash rooms shall be erected in Mining areas for workers.
- Government will make efforts to open Aanganwari Kendra (Crèche) in Quarry licence areas.

However, none of the above, except for temporary shelter without much provision for resting of labourers, is being provided by the mine owners. Labourers have to make arrangement for drinking water at their own level.

In view of the increasing incidence of Silicosis being reported in the newspaper, State Human Rights Commission has suo moto Government has taken a few major steps as below.

- Engage with various stakeholders to draw out suggestive solutions to the issue of silicosis and
- Meeting with the Principal Secretary Mining and Geology Department and Chief Secretary of Rajasthan to work out solutions. Outcome of this meeting were
- Collectors authorized to grant INR 100,000 to affected persons and INR 300,000 to dependents of deceased out of REHAB (Rajasthan Environment & Health Administrative Board) Fund (2008)
- Pneumoconiosis board established after strong advocacy of civil society organisations, and the efforts of Rajasthan State Human Rights Commission.
- Registration of mines with Director General Mines Safety (DGMS) and other provisions for safety & health being enforced.
- Monitoring by District Magistrates (DMs)/Chief Secretary (CS) of Rajasthan.
- Detection of affected through National Rural Health Mission (NRHM).

5 INSIGHT INTO THE LIVES OF QUARRY WORKERS

5.1 GENERAL CHARACTERISTICS OF MINE/QUARRY WORKERS

The survey was conducted in 10 Gram Panchayats covering 18 villages of Karauli District. The survey was conducted with 25 quarry workers working in the red sandstone mines in Karauli District. All quarry workers interviewed were from Karauli Block except one person from nearby Mandrayal Block.

The age profile of the quarry workers surveyed is listed in Table 1:

Table 1: Age profile of quarry workers

Age Group (in Years)	No. of quarry workers surveyed
26-30	2
31-35	1
36-40	3
41-45	7
46-50	2
51-55	8

56 & above	2
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Caste and Economic Class

The quarry workers were from all four categories. There were 19 SC workers, 2 ST, 3 OBC and 1 from the General category. Thirteen quarry workers were BPL and remainder above.

Education level of quarry workers

Of the 25 workers, 15 are illiterate, 4 are barely literate, 5 had some primary schooling while only one quarry worker who has gone to secondary school.

Family Size:

Characteristics of the families of the quarry workers is as follows:

- Of the 25 families, there was only one joint family.
- There was one head of the family who was a widower.
- The average family size was 5.
- There were only 4 families which had an elderly member.
- Average number of children per household was 3.08.
- Whilst there was a preference for male children, there were 39 male and 38 female children in these 25 families so no actual bias.

5.2 MINE LABOURER EMPLOYMENT

The 25 quarry workers have been working as mine labourers for 10 years or more. Indeed, as indicated in Table 3, three people had been quarry workers for more forty years or more.

Table 2: Year since working as mine labourers

Year	No. of persons
2001 - 2005	1
1996 - 2000	3
1991 - 1995	3
1986 - 1990	4
1981 - 1985	5
1976 - 1980	6

Year	No. of persons
1971 – 1975	3

Age at the time of entry as quarry workers






The distribution of age when those surveyed began work in the quarries is listed in Table 4. It is remarkable that three quarters of the quarry workers interviewed entered to work as quarry workers when they were 18 or less. Even more astonishing is the case that 4 workers began mining when they were 10-12 years old. This reflects the severe poverty in these families which pushed them into mining when they should have been in schools and colleges.



Table 3: Age at the time of entry in mining

Age Group in Years	No. of person
10 - 12	4
13 - 15	6
16 - 18	9
19 - 21	4
22 & above	2

Reasons for enter into mining?

The summary of the reasons given for entering into mining as mine labourers is as below.

Reasons	No. of Quarry Workers
 To contribute in paying off the huge debt on the family accrued due to advance from the contractor, loan on the family, not adequate income from mining, pushing them into debt. Thus father pushing the sons in their teen age into mining activities.	- 5
 Family pushing them so that they learn the skill and contribute to the family income	- 12
 No alternate occupation or options for employment	- 6
 Landless or land holding being too small to have substantial income for sustaining the needs of the family and the household	- 4
 After the death of bread winner in the family and family having no earning member.	- 7

-  Economic conditions of the family being relatively and in absolute terms being weak pushing them into mining activities. - 9
-  Opportunity to work in mine as mine labourer is abundant and easily available in the area, thus pushing the economically poor families in mine labour activities. - 2

5.3 SHIFT IN OCCUPATION OF THE HOUSEHOLDS

It is evident from this survey, that there has been shift in family occupation. Reason, is without doubt, that agriculture was unviable due to fragmented land with meagre land holding. Fragmentations of land were due to division of the land within the family. Apart from this, the other significant factor for this shift, was also the easily available employment opportunity along with no other alternate options. The table below gives details of shift of family occupation.

Table 4: Shift in occupation

Types of occupation	Family Occupation		
	Traditional	Grandfathers'	Fathers'
Mine Labourer	19	11	22
Agriculture & Animal Husbandry	4	10	1
Agriculture & Labour	1	2	1
Beggary	1	0	0
Rope making	0	1	0
Vegetable vendor	0	1	0
Mechanic	0	0	1

5.4 WORK CHARACTERISTICS OF MINE / QUARRY WORKERS

- Of the 25 quarry workers surveyed, 11 were seasonal worker who work on an average for 7 months in a year in the quarries. On average they have been working as seasonal workers for 27 years. The remaining quarry workers work throughout the year.
- There were 4 seasonal quarry workers, who did agricultural work in their fields during the rainy season to cultivate rain-fed crops.
- None of the quarry workers worked on non-farming activities.

- There are only three workers who stay away from home for quarry work for an average 6 months in a year. The remaining average six months period they are back in their village and engage in agricultural operations as labour.
- Nearly all the quarry workers have liking for splitting of stone blocks into stone slabs.
- Aspects of the mine work they dislike are as follows:
 - 5 workers dislike drilling
 - 5 workers dislike
 - 7 quarry workers do not like loading stone slabs in trucks.
 - 8 workers have no liking for breaking stones using hammer.

5.5 ASPIRATIONS OF MINE / QUARRY WORKERS REGARD TO THEIR SON WORKING IN MINE

Of the 25 quarry workers, only two want their son to work in mine as there is no other alternative option. The remaining quarry workers do not want their sons to work in mine for the following reasons:

- Working in mining is accompanied with ill health
- There is constant fear of accidents
- More physical labour which drains the person physically.
- Not adequate income to run the household despite hard labour of more than 8 hours in the blazing sun.
- There is more expenditure on health of miners than their income.
- There is more hardship in this employment.
- Have experienced above aspects.

5.6 MAJOR LIVELIHOODSHOCKS FOR QUARRYING HOUSEHOLDS

Out of the 25 families, 18 have had a major shock in the family which has pushed them into the debt trap making the family highly vulnerable. Of these 18 families, the head and the main bread earner in the family has had long illness or TB/silicosis or major accident and treatment thereof has caused



drain on the family resources forcing to take huge loans and thus pushing them into debt. In 4 families the illness / accident occurred to a family member which forced them to take a loan and incur a large debt. In one case, the family lost productive livestock which pushed them into a poor economic situation. In another case, the family lost land due to its acquisition by the government for construction of Panchana Dam and therefore, in search of employment, he took up work in mine as labourer.

All the families are living on the edge. Any major health shock in the family, like severe illness or any accidents just pushes them into debt leading to severe poverty.

The main cash earners live in a lot of pain and mental agony. Those who are not able to cope, fall prey to ill health.

5.7 FAMILY HEALTH

Respiratory Diseases in the families

It was found from the survey that 21 members from 20 quarry workers household suffer from respiratory diseases. Of these 21 cases, 17 cases are of the quarry workers themselves. Details are in Table 5.

Table 5. Extent of respiratory diseases

	Self	Mother	Wife	Son
No. of cases	17	2	1	1
Average Age	52	63	35	9

From the survey it was found that 12 quarry workers lost their lives due to respiratory disease which could have been silicosis or TB. They all worked in quarry for average 37.8 years.

Water:

The families have access to water within or near the village though it may be matter of distance from their home. In the morning and evening there are long queues for fetching

water from the common public points and this entails spending minimum 30 minutes to an hour by every household in fetching water.

17 families fetch drinking water from hand-pump, 4 from a well, 3 from a well and hand-pump while 1 from deep-well and hand-pump. Similarly, 13 families uses hand-pump for bathing and washing, 3 use well water, 3 use water from a well and a hand-pump, 1 uses deep-well and hand-pump whilst 5 use river and dam.

Medical Facilities:

Of all the 25 families, 23 quarry worker go to the District Government Hospital for their health treatment which is at an average distance of 15.6 kms from the place of their residence. While in one case, a quarry worker goes to the Health Sub-Centre in the village of their residence and in another case, a quarry worker goes to Hospital in Gangapur which is 60 km from his village. 13 quarry workers sought help for respiratory disease including TB and silicosis and in 14 cases for fever, cold, cough and seasonal disease.

5.8 RESOURCES

Nearly all the families are resource poor, with very limited family resources that could help support the livelihood of the family.

Housing:

All but two of the families, have a *kachha* house. The *kachha* house is basically a semi-permanent structure. In Karauli area, a *kachha* house is constructed using only stone slabs without using of any binding material like cement or lime.

Only 14 families have residential land and the remaining families are living on encroached land. Average size of residential plot owned by families is 1276 Square Feet and it ranges from 150 to 4800 square feet. On this residential plot they live along with their livestock, if any.

Bathroom and Toilets:

Of the 25 households only one household which has bathroom while none have a toilet in their house. All family members, in general, bathe in open and resort to defecation in open except in one case where women bathe in bathroom and one case where the family uses a community toilet.

Land Holding

Only 13 families out of 25 families have land. Of those, the average land holding is 0.22 hectare. 6 families have irrigated land with average holding of 0.24 hectare and remaining 7 families have unirrigated land with an average holding of 0.19 hectare. The source of irrigation for irrigated land is a well or a bore-well owned by others except for one case where it is joint ownership. Land owning families, grow wheat in their irrigated land and, in 2 cases, mustard as well. While in the unirrigated land, the 7 families cultivate millet during the rainy season. Income from agriculture supplements the household income.

Livestock

Of the 25 families, only 11 families have livestock - 6 families have a buffalo each, 2 families have 1 to 2 cows and 5 families have 1 to 4 goats (average 2 per families).

13 families have 1-4 trees, mostly neem trees. Income from animal husbandry is more like a supplementary income.

5.9 CASH CAPITAL AND ITS MANAGEMENT

Nineteen families have a bank account, of which 10 families are using the bank for managing their cash. However, the deposit in the bank is not huge and it ranges from Rs 500 (~\$10) to Rs 2000 in individual accounts. It was also found, from the survey that only 4 families had cash in hand ranging from Rs.500 to Rs. 5000. Nearly all the families were under debt with the highest debt being Rs. 400,000 and the lowest being Rs.10,000. As indicated in section 4.6, the loans were taken for health expenditure and also for adhering to the social customs and rituals entailing financial expenditure. There is practice of taking loan from private money lenders on a high rate of interest which ranges from 2% to 5% per month. It was also observed, that before the clearing of an earlier loan, families were taking a second or third loan for emergency/family needs.

Therefore, the loan amount keeps increasing. Further, in absence of adequate savings, the families, in general, pay the interest amount annually only. Thus, the principal amount reduces insignificantly.

As per the survey, it was found that 12 families had taken a loan for marriage of son or daughter or sister, while 15 families took loan for health expenditure mostly for treatment of a mine worker. However, it was also found that, in two cases, a loan was taken for education of children. In one case, a quarry worker received advance money from the mine contractor and spent it on the needs of his family. Therefore, he had to take loan from local money lender to engage additional labourer to complete the committed quarry work for which he had already been paid by contractor.

5.10 INCOME AND EXPENDITURE

Only five families out of 25 families had one additional bread earner in the family. In two cases, they work in the quarry, two worked as labourers and one in a hotel.

The two tables below provide picture of the household income and expenditure of the 25 families' survey.

Table 6: Income Source

Details	Occurrence in No. of Families	Income Range (Annual) in INR	Average annual income in INR
Agriculture	9	1000 - 20000	7778
Livestock	7	1000 - 40000	1057
Wages (Mining)	21	15000 - 80000	3959
Wages (Agriculture / Construction/ others)	8	2000 - 7000	4438
Remittance	2	5000 - 80000	42500
Other Income	3	5000 - 15000	10667
Total Income	25	16000 - 87000	45116

Table 7: Expenditure of families

Expenditure Items	Occurrence in No. of Families	Family Expenditure Range (Annual) INR	Average family Expenditure (Annual) INR
Food	25	10000 - 42000	26344
Clothing	25	500 - 12000	4748
House Construction / Repair	0		0
Illness	25	1500 - 70000	11536
Farming	9	500 - 7000	3000
Livestock	9	250 - 8000	3917
Social customs	10	500 - 8000	3850
Investment	0	0	0
Others	2	1000 - 7000	4000
Total Expenditure	25	21400 - 96000	46978

Income from agriculture, livestock and wages from non-mining activities supplement the household income. If these sources of income, as provided in Table 1, were not available to the families, these families would have been in situation extreme poverty and very high vulnerability. However, it seems that on average, the extra income only adds Rs 1000-7000 per annum

As for the household expenditure, overall, it was found from the survey that in these 25 families, food is the first preference for making expenditure followed by illness, clothing and other expenditure including education of children.

Average difference in annual income of families over annual expenditure is (-) Rs. 1862 and it ranges from (-) Rs. 51600 to Rs.28000. This balance of income over expenditure is in negative in 56% of the families. The situation of remaining 44% families is no better. The families are on the edge of financial vulnerability due to constant fear of illness and accidents that may render them non-productive member of the family and lead the family to extreme poverty.

5.11 LINKAGE WITH INSTITUTIONS AND PUBLIC SERVICES

The social capital of the mine workers in general was very weak. This has been strengthened in the geographical area where the survey was carried out by the initiative of ARAVALI and Dang Vikas Sansthan by forming their organisation which facilitates families to get benefits from government schemes. All the families surveyed were members of the Khan Majdoor Suraksha Sangathan, a labour organisation in Karauli. Seven quarry workers have stated that importance of this organisation in their life as average while 8 quarry workers say that its importance is very high.

Table 8: Access to Public Institutions and Services

	Av. Distance (km)	Distance Range (km)	Regular	Occasional	Never	No response
All-weather road	1.8	0-10	18	6	0	1
Bus-stop	2.8	0 - 10	14	9	0	2
Government health centre/hospital	7	0 - 25	14	8	1	2
Private health clinic	12	0 - 30	13	3	2	7
Nearest town	14.9	0 - 25	16	7	0	2
Periodic market (Haat)	11	0 - 25	13	9	0	3
Regular market	11	0 - 25	13	6	0	6
Tehsil/ Block office	14	0 -30	14	8	0	3
Banks	13	0 - 25	14	5	1	5
Credit cooperatives	12	0 - 25	14	2	4	5
Post office	12	0 -25	14	6	1	4
Police station	11	0 - 25	13	1	7	4
Primary School	1	0 - 10	19	0	0	6
Upper Primary School	2	0 - 10	18	0	1	6
Middle School	2	0 - 10	14	0	2	9
Secondary School	5	0 - 15	14	0	2	9
Senior Secondary School	6	0 - 21	14	1	3	7
College	11	0 - 30	8	1	4	12
Institute for Skill development	10	0 - 25	10	0	2	13

However, looking at the debt of the quarry workers, they are not practicing micro-saving. Thus, it was evident from the survey that none of the members of the 25 families surveyed were members of any Self Help Group providing micro-saving and credit services.

The backwardness of the quarry workers is also reflected from the fact, from the survey it was found that there is only one quarry worker who is member of the Village Development Committee and also the Caste Panchayat.

The details of the use of infrastructure is indicated in Table 8.

5.12 LINKAGE WITH ENTITLEMENT SCHEMES OF THE GOVERNMENT

There are various national and state government schemes aimed at social security, employment, health, housing, horticulture and other support and welfare schemes. However, it is surprising to note that:

- ✚ Only 14 families have availed opportunity for employment under Mahatma Gandhi National Rural Employment Guarantee Scheme since the scheme came into existence.
- ✚ One family took benefit of the National Rural Health Mission for delivery.
- ✚ No families availed themselves of benefits under the National Horticulture Mission for establishing an orchard in their farm land.
- ✚ One family out of 3 BPL families has received benefit of the housing scheme (Indira Awas Yojana) for the families living poverty line (BPL).
- ✚ Seven persons are receiving benefit (Rs. 500 per month) under the Pension Schemes (Old Age, Widow, Disability)

6 CONCLUSION AND RECOMMENDATIONS

All the quarry workers are living in abject poverty. With meagre land holdings, if any, there is no substantial income from agriculture. Livestock holding too is very limited. Therefore, the families in the rural area particularly are turning to the more hazardous alternative occupation of quarry work in the sandstone mines, where there is abundant employment opportunity. Nearly all the families are in debt, the cause of which is to be found in the illness of quarry workers and system of advance given to quarry workers. The quarry workers are paid only for the usable marketable stones, making it difficult to earn enough to sustain their family. On top of this, quarry workers often get injured and

gradually over the years, get caught in respiratory diseases and ultimately are in grip of silicosis rendering them to slow and gradual loss of life. There is a continuous health expenditure on minor accidents and respiratory diseases. On top of it the doctors are not able to diagnose correctly the respiratory disease and are treated for Tuberculosis rather than silicosis.

Nearly all the quarry workers are in debt due to meeting household needs, illness and social obligations (i.e. expenditure on marriage, death feast and other social rituals). These debts continuously accumulate, and are only able to pay the interest to the lenders.

To improve the lives of the quarry workers and their family, there is an urgent need for

- (a) Mines are made safer to work. It is only possible through following wet drilling, watering during stone cutting operations and promotion of safety measures in the all the process.
- (b) Adoption of safety measures for quarry workers, particularly, ensuring that sandstone dust is not inhaled by quarry workers during the mining process.
- (c) There should be regular health check-ups of quarry workers and appropriate treatment be provided.
- (d) Linkage of the quarry workers with various schemes of the government including labour welfare schemes should be encouraged.
- (e) Work with mine labourers to reduce their debt burden.
- (f) Education and skill building of children of mine labourers needs to be put in place.
- (g) Promoting community based micro-saving and credit programme like Self Help Group.

It has been established that the rural poor engage in multiple activities to sustain their livelihoods and reduce their risk. Livelihood is primarily constituted by the total income of the family from diversified sources through use and management of available resources (these include financial, human, natural, physical and social) to ensure a decent life for the family. The income that they receive from the multiple activities help them in only meeting their subsistence needs, without surplus income for the family.

ARAVALI's understanding of livelihood augmentation is based on the overall developmental goals set by the country, which includes "growth with equity and stability". To this, additional condition of "sustainability" is added. Based on this understanding livelihood augmentation should lead to the following outputs:

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| <ul style="list-style-type: none">• Increased income at household level• Diversified sources of income for the household.• Reduced vulnerability of sandstone quarry workers widow.• Increased equity and empowerment of the poor and marginalised.• Increased participation and empowerment of women |
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To enhance the quality of life and ensuring sustainable livelihoods for sandstone quarry workers the focus should be on the following key aspects:

- Targeting the poor- strengthening the poorest family targeting approach for SHG formation and increasing the outreach. Currently only BPL status is looked for targeting the poor.
- Facilitating accompaniment support to sandstone quarry works by developing a pool of entitlement facilitators from the members of the communities itself, who would be as accompanier to facilitate linkages with Government schemes (day to day), holding meetings, documentations etc. as well as carrying developmental initiative in their own villages. They should be given training for enhancing their knowledge, skill and attitude by specialised mentoring and capacity building organisations, giving emphasis on both on-field trainings as well as class room trainings.
- Livelihoods pilot for widow-headed households: during study it has been observed that large numbers of households are headed by the widow. High prevalence of silicosis and other lung infection decrease the life years of sandstone quarry works, early death of stone quarry workers resulted in large number of young widows. An alternative livelihoods pilots will be not only

strengthening the livelihoods of the quarry workers family but also create an opportunity for his children to get education.

- Facilitation for the health check-up of all the mine workers
- Skill advancement of sandstone quarry workers

7 REFERENCES

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5. Rajasthan Mineral Policy – 2011, Department of Mines & Geology, Rajasthan

APPENDIX 1. TEAM MEMBERS

Study Team Members		
S. No	Name	Role and Functions
1.	Dileep Kumar Yadav, Regional Coordinator, ARAVALI	Team leader for study design, schedule of assignment, various formats for survey field work, supervision of survey and facilitation of stakeholders engagement, data analysis and report preparation
2.	Divya Kaliya, Regional Coordinator, ARAVALI	Associate team leader for study design, schedule of assignment, various formats for survey field work, supervision of survey, data analysis and report preparation
3.	Varun Sharma, Programmes Coordinator, ARAVALI	Relationship Management, study design, schedule of assignment, various formats for survey field work, supervision of survey and facilitation of stakeholders engagement, data analysis and report preparation
4.	Ambuj Kishore, Executive Director, ARAVALI	Providing over all guidance during the assignment, finalisation of structure of the report and inputs in preparation of report
5.	Rajesh Sharma and Vikram Singh Gurjar, <i>Daang Vikas Sansthan,</i> Karauli, Rajasthan	Field Investigators, conducting field work, survey and data collection

APPENDIX 2. BRIEF BACKGROUND OF THE ASSESSMENT ORGANISATION

ARAVALI – Association for Rural Advancement through Voluntary Action and Local Involvement was **established by the Government of Rajasthan** in the year 1994 **to promote voluntary action for socio-economic development of the state**. ARAVALI has been registered as a society under the Rajasthan Societies Act, 1958, under the Foreign Contribution Regulation Act, and also under the relevant Income Tax Acts, as applicable.

It is a member-based organization with representation from voluntary agencies, research institutions and representatives from various Departments of Government of Rajasthan. The Governing Council (policy making body) and the Executive Committee

have senior functionaries such as Principal Secretary / Secretaries of the Government of Rajasthan as Ex-officio members (Departments of Finance, Rural Development, Education, Social Justice, Planning, Agriculture and Forests) along with elected members from voluntary organisations. The Chairperson of ARAVALI is nominated by the Government of Rajasthan.

VISION AND MISSION STATEMENT OF ARAVALI

VISION: “All round and large scale development of communities requires a combination of efforts and approaches which cannot be solely provided by any one agency or system. “To ensure that the benefits of development reach the poor in particular, and people in general, it is necessary that different agencies working for development pool their strengths and become partners.”

MISSION: Statement of ARAVALI: Within this context, ARAVALI intends to ensure that there are an increased number of effective Voluntary Organisations working closely with marginalised communities in every district of Rajasthan and that an enabling environment is developed within which the government and these organisations can form effective partnerships.

Building, strengthening, and expanding the institutional base of voluntary organisations in the development sector in Rajasthan state is the core of ARAVALI’s work since it became operational in 1997. The major segment of ARAVALI’s support has been small locally evolved voluntary organisations in small towns and rural areas in the state and which have been set up by people with a keen interest in addressing developmental issues.

ARAVALI has more than two decade of development experience, and experience-based competence in designing and supporting programmes related to the following key themes and sectors relevant to development:

- Training and Capacity Building of Voluntary Organisations in the State of Rajasthan.
- Piloting Innovations for Livelihoods Promotion for rural poors
- Institutionalisation of Innovative Themes and Approaches
- Human Resource Development
- Organisational Development
- Evaluation of Development Programmes & Projects

ARAVALI is a State-level development support organisation, which has been engaged in strengthening the capacities of various development stakeholders – NGOs, GOs, PRIs and CSR wings of corporate agencies. It has monitored and evaluated various development interventions (esp. of the Government) in the past, contributed to State-level programming, and developed State Strategy papers for various Government organisations and donors in Rajasthan. The organisation has designed and piloted interventions in the areas of poverty targeting, organizational governance, personal

effectiveness enhancement, and organizational development with various development agencies.