REPORT

ON

LIMESTONE QUARRIES OF

JHARKHAND AND WEST BENGAL

INDIA

2005

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With assistance from

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Preface and Introduction

Limestone deposits are found in the southern part of the state Jharkhand, namely in the district West Singhbhum and in the southwestern part of the state West Bengal, namely in the district Purulia. Limestone deposits, when sub-soil, these are generally 1500 to 2000 meter in diameter and 30 to 80 meters deep. In some parts these are above ground, generally large bands of rock on a hill or mountain.

In Chaibasa, the district town of West Singhbhum there is one large limestone quarry near by: ‘The Rungta mining company’. Actually there are four limestone quarries running surrounding Chaibasa in a radius of 25 kilometers. Those are at:

a) Lupulgutu;
b) Kamarhatu;
c) Suryabasa;
d) Jagannathpur.

All these are sub-soil in nature and generally under 10 to meters of earth’s surface.

In Purulia, West Bengal, there are two limestone quarries running in Jhalda block, near Jharkhand boader. Both are near the village Chirugora Marlong. Here limestones are collected from hills like Jabar pahar, where from the river Kangsabati emerges.

In these districts one geographical feature is common, i.e. the land is arid, agriculture is scanty and these areas once were covered by dense jungle. Due to unplanned deforestation top soil has been destroyed. Underground water level is down below 120 to 350 ft. digging a well is too much costly and deep tube well is almost out of question as people live here are very much poor. Rainfall is very low in these areas.

Besides agricultural work, which is as said earlier, scanty, people have to depend on these quarries for their earning. The quarry owners are not rich businessmen, especially in Bankura and Purulia of West Bengal. There are at least some owners who were previously labours of such quarries. Almost 90% people of these areas belong to scheduled tribe community, namely Santals, Kurmi, Ho, Oraon, Munda and Scheduled caste like Bagdi. Initially these people were dependent on forests. Basically they were forest people since early human history. Destruction of forest forced them to become labourers of these quarries and in agricultural field of other fertile districts like Barddhaman, Nadia, Hooghly, Howrah, Birbhum, Murshidabad etc. So one thing can be seen in these quarries of Bankura and Purulia that these quarries run for 6 to 7 months a year as in rainy season and in winter no labour is available for these quarries. They go to do agricultural work in neighboring districts.

The West Singhbhum district has a population 2,080,265 in an area of 9,907 sq. kms. District in Chaibasa urban agglomerations are Chakradharpur and Jamshedpur.

District Purulia has a population 2,536,516 in an area of 6259 sq. kms. Male is to female ratio is 51.18:48.82. Rural is to urban people ratio is 89.93:10:07.

It is commonly believed that women are not fit for mining works. But in these quarries women labours participate in quarry works with their male counter parts. In a quarry ratio of men: women labour is 60 : 40.
1. NUMBER OF MINES

1.1 What is ASM: definition

The mines which possess not more than 35 people as labourers and officials and produce not more than 300 ton a day and area of the mine not more than 2 acres is defined as small mines by the Directorate of Mines Safety, of Govt. of India.

1.2 ASM Sector Units studied

The Rongta mines of Lupungutu, West Singhbhum, Jharkhand and Jabarpahar quarry of Bharat Super, Cement, Jhalda, Purlia, West Bengal has been taken under survey.

1.3 Structure of the Industry Concerned

In these quarries number of persons engaged is like the following
a) Agent - 1
b) Manager – 1
c) Drill man – 1
d) Mate – 1
e) Bluster – 1
f) Loading labour (both male and female) – 10
g) Breaking stone (from bolder of 30 to 45 in dia length to ‘cheli’ of 12 to 18 cm. In length) – 10
h) Cleaning labour (mainly female) – 8

In the crushers for these quarries the persons engaged is like this:

a) Agent (common with the quarry)
b) Manager - 1
c) Mate - 1
d) Loading Labour – 20 - 35

1.4 ASM Standing/Advisory/Controlling Body

These quarries are run by big industrial houses. They appoint agent to look after the quarry, the crushers and marketing. If cement factory is also run by same house, the events concern in the factory also controlled by the agent.
1.5 Local Context: Physical Extent of the Area, Administrative Units

In Jharkhand the land for digging mines is leased by the Block Development Officer (hereinafter BDO) but license for mining is given by District Mining Officer (hereinafter DMO) and the safety measures should taken by a mine is controlled by Directorate of Mines Safety (hereinafter DGMS) of the district. Annual revenue is given to DMO.

In West Bengal land is leased by the BDO and revenue is also collected by his office. Only mining permit is given by DMO.

1.6 Previous Estimates by Others

No such estimates found for the area studied.

1.7 Your Estimates

In West Singbhum district almost 400 people are engaged in 4 limestone quarries.

In Purulia some 100 people work in the two quarries and in the cement factory.

2. Origins/Traditions

2.1 Local Economic Traditions

<table>
<thead>
<tr>
<th>Year</th>
<th>Total according to D.L.R., W.B.</th>
<th>Forest area according to State Forest Department</th>
<th>Current fallow</th>
<th>Other fallow land other than current fallow</th>
<th>Net Cropped area (in '000 hectares)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-1999</td>
<td>623.41</td>
<td>87.60</td>
<td>81.39</td>
<td>7.39</td>
<td>343.83</td>
</tr>
<tr>
<td>1999-2000</td>
<td>623.41</td>
<td>87.60</td>
<td>86.43</td>
<td>8.68</td>
<td>328.13</td>
</tr>
<tr>
<td>2000-2001</td>
<td>623.29</td>
<td>87.60</td>
<td>113.23</td>
<td>7.32</td>
<td>311.69</td>
</tr>
<tr>
<td>2001-2002</td>
<td>623.29</td>
<td>87.60</td>
<td>93.50</td>
<td>5.02</td>
<td>335.83</td>
</tr>
<tr>
<td>2002-2003</td>
<td>624.11</td>
<td>87.17</td>
<td>167.79</td>
<td>4.93</td>
<td>256.94</td>
</tr>
</tbody>
</table>

Source: Directorate of Agriculture, Government of West Bengal
2.2 Present Power Structures

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic</th>
<th>Commercial</th>
<th>Industrial</th>
<th>Public lighting</th>
<th>Agricultural irrigation &amp; Dewatering</th>
<th>Public water works &amp; sewage pump</th>
<th>Railway traction &amp; non-traction</th>
<th>Miscellaneous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td>51340</td>
<td>12200</td>
<td>8978</td>
<td>800</td>
<td>1950</td>
<td>320</td>
<td>20058</td>
<td>26587</td>
<td>122233</td>
</tr>
<tr>
<td>2000-2001</td>
<td>43792</td>
<td>4962</td>
<td>7027</td>
<td>-</td>
<td>891</td>
<td>-</td>
<td>24448</td>
<td>10725</td>
<td>91845</td>
</tr>
<tr>
<td>2001-2002</td>
<td>51087</td>
<td>7667</td>
<td>8117</td>
<td>-</td>
<td>194</td>
<td>365</td>
<td>23354</td>
<td>170</td>
<td>90954</td>
</tr>
<tr>
<td>2002-2003</td>
<td>53757</td>
<td>7621</td>
<td>9365</td>
<td>1080</td>
<td>181</td>
<td>252</td>
<td>20533</td>
<td>125</td>
<td>92914</td>
</tr>
</tbody>
</table>

Source: Divisional Engineer, (O&M), W.B.S.E.B., Purulia

3. LOCATION AND DISTRIBUTION

3.1 Regional Distribution

3.1.1 Regional Distribution of ASM/Informal Hard-Rock Mining

In Chaibasa, the district town of West Singhbhum there is one large limestone quarry near by: ‘The Rungta mining company’. Actually there are four limestone quarries running surrounding Chaibasa in a radius of 25 kilometers. Those are at:

e) Lupulgutu;
f) Kamarhatu;
g) Suryabasa;
h) Jagannathpur.

In Purulia, West Bengal, there are two limestone quarries running in Jhalda block, near Jharkhand boader. Both are near the village Chirugora Marlong. Here limestones are collected from hills like Jabar pahar.

4. GROWTH

4.1 Introduction: History

In Jhalda town, Purulia district, West Bengal, and some surrounding villages to it there is a large community, known locally as ‘Bagdi’, were solely dependent on lime making by burning limestone and selling their product locally. This was there family tradition since ages. There can be found many other tribal populations in these areas of Jharkhand and West Bengal who were the indigenous lime producers.

Use of Portland cement is comparatively a new concept, hardly 200 years old in this country. Establishment of cement factory stared no earlier than 1930's.
4.2 Prediction of Growth in the Short-Run

The deposits in these areas are not sufficient. Growing public requirement of cement may be able to supply the raw limestone for next two decades.

4.3 Long-Term Growth Outlook

4.3.1 Reserves of the Resource

Actual total deposit of limestone in these two states has not yet been prospected properly. There are other reserves in these two area mentioned above which are not yet either mined, or prospected, or both.

4.3.2 Rate of Consumption of the Resource

Per day consumption from 4 quarries of West Singhbhum is around 400 tons and from jabalpahar quarry of Purulia it is 50 tons a day.

4.3.3 Other Resources outside Mining Areas

In Jhalda block of Purulia there are many other hills which contains limestone rock bands.

In West Singhbhum also there are many deposits already found which either of inferior quality is or the deposit is not worth mining. There are some other deposits where mining not yet started.

5. GROWTH FACTORS

5.1 Governance Factors

5.1.1 Legal Environment

<table>
<thead>
<tr>
<th>Description</th>
<th>Year</th>
<th>Unit</th>
<th>Particulars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative set up:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District Head Quarters</td>
<td>2002</td>
<td>Number</td>
<td>Purulia</td>
</tr>
<tr>
<td>Sub-division</td>
<td>2002</td>
<td>Number</td>
<td>3</td>
</tr>
<tr>
<td>Police Station</td>
<td>2002</td>
<td>Number</td>
<td>20</td>
</tr>
<tr>
<td>Inhabited Villages</td>
<td>1991</td>
<td>Number</td>
<td>2456</td>
</tr>
<tr>
<td>Mouza</td>
<td>1991</td>
<td>Number</td>
<td>2685</td>
</tr>
<tr>
<td>Municipal Corporation</td>
<td>2002</td>
<td>Number</td>
<td>-</td>
</tr>
<tr>
<td>Municipality</td>
<td>2002</td>
<td>Number</td>
<td>3</td>
</tr>
<tr>
<td>Block</td>
<td>2002</td>
<td>Number</td>
<td>20</td>
</tr>
<tr>
<td>Panchayet Samity</td>
<td>2002</td>
<td>Number</td>
<td>20</td>
</tr>
<tr>
<td>Gram Panchayet</td>
<td>2002</td>
<td>Number</td>
<td>170</td>
</tr>
<tr>
<td>Gram Sansad</td>
<td>2002</td>
<td>Number</td>
<td>1925</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
</tr>
</tbody>
</table>

**Area of Population:**

<table>
<thead>
<tr>
<th>Area of Population</th>
<th>2001</th>
<th>Sq. Km.</th>
<th>6259.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>2001</td>
<td>Number</td>
<td>2536516</td>
</tr>
<tr>
<td>Density of Population</td>
<td>2001</td>
<td>Per sq. km.</td>
<td>405</td>
</tr>
</tbody>
</table>

**Percentage:**

<table>
<thead>
<tr>
<th>Male</th>
<th>2001</th>
<th>Percent</th>
<th>51.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2001</td>
<td>Percent</td>
<td>48.82</td>
</tr>
<tr>
<td>Rural</td>
<td>2001</td>
<td>Percent</td>
<td>89.93</td>
</tr>
<tr>
<td>Urban</td>
<td>2001</td>
<td>Percent</td>
<td>10.07</td>
</tr>
</tbody>
</table>

**Industry:**

<table>
<thead>
<tr>
<th>Registered Working factories</th>
<th>2002</th>
<th>Number</th>
<th>69</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Industrial Establishment (Registered under C&amp;S.S.I.)</td>
<td>2002-2003</td>
<td>Number</td>
<td>8966</td>
</tr>
</tbody>
</table>

**Employment in:**

<table>
<thead>
<tr>
<th>State Government Offices</th>
<th>2001</th>
<th>Number</th>
<th>14008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Working factories</td>
<td>2002</td>
<td>Number</td>
<td>4922</td>
</tr>
<tr>
<td>Small Industrial Establishment (Registered under C&amp;S.S.I.)</td>
<td>2002-2003</td>
<td>Number</td>
<td>54585</td>
</tr>
</tbody>
</table>

**Employment Situation:**

<table>
<thead>
<tr>
<th>Applicant on live register</th>
<th>2002</th>
<th>Number</th>
<th>189230</th>
</tr>
</thead>
</table>

* C & SSI = Directorate of Cottage & Small Scale Industries.

**Source:** District Statistical Hand Book, 2003, Purulia.

### 5.1.2 Administrative Constraints

Permission for mining is not controlled by a single authority. This is controlled by:

1) District Mining Officer (hereinafter DMO),
2) Directorate of Mines Safety (hereinafter DGMS),
3) District Magistrate or District Collector, locally by the Block level Officer on behalf of him,
4) District Land and Land Reforms Officer,
5) State Pollution Control Board,
6) District Forest Officer,

Local administrative bodies have no practical influence on these big industrial houses. For example, the Rungta Mining Company of Chaibasa is actually the largest iron ore exporter of this country whose mines are running in the state Orissa. They have direct access to the Central cabinet ministers, Secretaries of the Central Government and leaders of big political parties.
5.2 Socio-economic Factors

5.2.1 Socio-economic Environment

In both states limestone quarries run in remote places. These places were covered by dense jungle even some decades earlier. People live in these areas are mostly tribal Santal, Munda, Ho and of such other community. Basically these people were dependent on the surrounding forests. Deforestation caused total socio-economic changed to these communities. They are now the contract labours for agriculture to some distant places or they are the labours of such quarries, stone crushers and in local cement factories.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jharkhand</td>
<td>1.59</td>
<td>7.32</td>
<td>6.34</td>
<td>0.353</td>
</tr>
<tr>
<td>West Bengal</td>
<td>0.41</td>
<td>14.99</td>
<td>10.06</td>
<td>0.056</td>
</tr>
<tr>
<td>All India</td>
<td>1.07</td>
<td>7.32</td>
<td>5.99</td>
<td>0.160</td>
</tr>
</tbody>
</table>

Source: Planning Commission, Government of India.

5.2.2 Shortage of Herder Income Opportunities

Except working in the agriculture fields of other districts in working seasons, the local tribal people have no alternative for earning. Those who live nearby a quarry may get employment there.

5.2.3 Shortage of Framework Income Opportunities

There is no industrial infrastructure in these places so no employment is possible in such fields.

Earlier, especially in Jhalda I block of Purulia district, West Bengal, there was a large industry on production and processing lac. It used to provide at least two to three thousand man-day of work to the local people surrounding this area. Presently this industry is totally destroyed by present day’s commercial varnishes.

There was another industry running in this area. This was production of lime from burning limestone. Limestone is abandoned in this area on the hills and these are exposed rock bands on mountains. The local Bagdi community, at least three to five hundred families, was solely dependent on this profession. Present day’s cement factories produce commercial packet lime and sell those in the market. These has been destroyed the local demand of the lime produced locally.

5.2.4 Desire for Higher Education
Present policy of Indian central Govt. emphasized on free primary education to every child. This has been enhanced the desire for education among rural backward people also.

<table>
<thead>
<tr>
<th>State</th>
<th>Primary/Junior Basic School</th>
<th>Middle/ Senior Basic School</th>
<th>High School/ Higher Secondary Intermediate/ Pre-degree/ Junior College</th>
<th>Colleges for General Education</th>
<th>Professional Education</th>
<th>Universities/ Deemed University and institution of National Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jharkhand</td>
<td>16643</td>
<td>4187</td>
<td>1157</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>West Bengal</td>
<td>52426</td>
<td>2384</td>
<td>9436</td>
<td>354</td>
<td>88</td>
<td>28</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jharkhand (previously part of Bihar)</td>
<td>12.20</td>
<td>21.80</td>
<td>19.90</td>
<td>26.20</td>
<td>38.50</td>
<td>47.53</td>
</tr>
<tr>
<td>West Bengal</td>
<td>24.00</td>
<td>34.50</td>
<td>33.20</td>
<td>40.90</td>
<td>57.70</td>
<td>69.22</td>
</tr>
<tr>
<td>All India</td>
<td>18.30</td>
<td>28.30</td>
<td>34.45</td>
<td>43.57</td>
<td>52.20</td>
<td>65.38</td>
</tr>
</tbody>
</table>

Source: Office of the Registrar of General of India.

<table>
<thead>
<tr>
<th>State</th>
<th>Classes I-V (6-11 years)</th>
<th>Classes VI-VIII (11-14 years)</th>
<th>Classes I-VIII (6-14 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Total</td>
</tr>
<tr>
<td>Jharkhand</td>
<td>100.51</td>
<td>76.34</td>
<td>88.56</td>
</tr>
<tr>
<td>West Bengal</td>
<td>112.72</td>
<td>106.82</td>
<td>109.8</td>
</tr>
<tr>
<td>All India</td>
<td>105.29</td>
<td>86.91</td>
<td>96.30</td>
</tr>
</tbody>
</table>


5.2.5 Reasons for Engaging in Illegal Mining

In Jharkhand some people engage themselves in illegal coal mining as they have no alternate source of income in one hand, in other hand, the simple local tribal people
used to think that the things on an under earth is given for the use of some of the soils by mother earth.

In Purulia, West Bengal the Bagdi community who used to live on homely production of lime, still use limestone from the quarry run by other owner. They are forced to do this to earn a living.

5.3 Geological Factors

5.3.1 Combination of Special Geological Factors

The two fields taken under this survey of two adjoining East Indian states have some common geological features, at least in some areas. The limestone deposits are not alike in character in these two areas. Limestone deposit in Jharkhand is totally sub soil. On the contrary deposits of Purulia district of West Bengal is as rock bands on mountains.

5.4 Mining Sector Factors

5.4.1 Resource Losses due to Mining Operations

The area under study was completely covered by dense jungle earlier. Even in some areas forest was in its full bloom some to decades earlier. These mines are causing total deforestation.

5.4.2 Resource Losses due to Mineral Processing

Crushers depending on these mines causing air pollution with suspended stone dusts. These dusts are getting deposited on agricultural fields and also causing some lung diseases like silicosis etc.

5.4.3 Resource Losses due to Mine Closures

Sub soil mines leaving the left mines fields without filling those.

6. SOCIO-ECONOMIC CHARACTERISTICS

6.1 Who are the Miners

Miners are from the local poor community. Mostly they are belonging to some tribal casts.

6.1.1 Introduction to the Miners

Mostly this people are the local inhabitants living near by the quarry concern.

6.1.2 Previous Employment of Males

Mostly males were engaged in either agricultural work or fetching fuel wood from near by forest and selling those in local market or both.

6.1.3 Previous Employment of Females

Women earlier were engaged in agricultural and household works, namely fetching water and fuel wood, herding cattle and goats.
6.1.4 Classification of Miners by Age

Minors are mostly in the age range of 25 to 45. Some times there are miners below or above this range, but that is not regular feature.

6.2 Categories of Miners

6.2.1 Actively Involved in Alternative Occupations (farming, herding...)

Most people were engaged in agricultural works in the time of monsoon and in harvesting season. The people don’t have their own agricultural land go to other places where they can earn from this kind of work.

6.2.2 Formerly Involved in Alternative Occupations

There are some people who were engaged in some brick fields.

6.2.3 Alcoholism

Alcoholism is prevalent among male workers of all age. Female workers drink only in weekends or during festival time.

6.3 Socio-economic Influences

Jharkhand:

Economy: The net state domestic product at current prices (new series) in 2000 – 2003 (advance estimate) was Rs.27, 358 crores. The per capita net state domestic product at current prices (new series) in 2002 – 2003 (advance estimate) was Rs.9955.

Agriculture: The main crops grown in the state are paddy, wheat, pulses and maize.

Purulia, West Bengal:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Establishment</th>
<th>Own account Enterprise</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Agr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agri.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Agr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agri.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Agr.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>259</td>
<td>9897</td>
<td>477</td>
</tr>
<tr>
<td>Urban</td>
<td>71</td>
<td>4277</td>
<td>200</td>
</tr>
<tr>
<td>Combined</td>
<td>330</td>
<td>14174</td>
<td>677</td>
</tr>
</tbody>
</table>

Source: Economic Censes 1990 and 1998, Bureau of applied economics and statistics, Govt. of West Bengal.
### Number of Person Working usually in Rural and Urban Enterprises in the district of Purulia

<table>
<thead>
<tr>
<th>Sector</th>
<th>Establishment</th>
<th>Own account Enterprise</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>11</td>
<td>526</td>
<td>24</td>
</tr>
<tr>
<td>Urban</td>
<td>4</td>
<td>342</td>
<td>11</td>
</tr>
<tr>
<td>Combined</td>
<td>15</td>
<td>868</td>
<td>35</td>
</tr>
</tbody>
</table>

Source: Economic Censes 1990 and 1998, Bureau of applied economics and statistics, Govt. of West Bengal.

### 7. GENDER CONCERNS

#### 7.1 Women’s Work Participation: History of Region/Country

Women among tribal community of this region taken under survey have equal role in family and in society. This is not true among rural or urban middle class society, at least decades earlier. There is prominent division of labour among men and women in middle class society. But in tribal community or among lower economic group of backward classes other than the tribal people men and women share their job.

#### 7.2 Gender Roles

##### 7.2.1 Recent Changes in Gender Roles

Infiltration of urban culture and invasion of cable TV network changing the live pattern of these tribal people. One interesting think noted among them is adolescent boys like to maintain four or five girl friends at a time on the contrary, girls are not interested to mix up with the boys of their own community. Free mixing and uninhibited sex was the norm of tribal community like Santals, but they hate to mix up with the people of other community.

##### 7.2.2 Family-Kin Networks

These people under survey maintain a closely knit family with grand parents and other members. The total community also lives together and the village is controlled by an elder member of the society known as ‘Gaonbura’ they have there own code and court for any social or family dispute.

##### 7.2.3 Women’s Needs

Women among these communities need some institutional education. This is already looked after in some areas but it should be available to all. Public health service is almost lacking. Especially medical help should be available to the would be and new mothers.
7.3 Gender Roles in Mining and Processing

7.2.1 Division of Labour in Mining

In mining ratio of female is to male labour is 40:60.

7.2.2 Division of Labour in Processing

In processing ratio of male is to female labour is 60:40.

7.2.3 Division of Labour in Transporting

In transportation ratio of female is to male labour is 60:40.

7.2.4 Division of Labour at Home

At home household works are done by females. In cases where females go out for external work their male counter part performs the domestic works, especially it is seen in Santal community. In other communities male don’t takes part in household works. If the women goes out to other works, she has to it in addition to the household works.

7.4 Wages

7.4.1 Wages in Other Activities

In other activities like agricultural work earn a labour Rs.60 a day for 8 hours work. Those who are engaged in fetching fuel wood from forest earn only Rs.35 for a days work.

7.4.2 Wages in ASM/Informal Mining

It varies from Rs.70 to Rs.120 a day depending on the total work done in a day by a labour. Because in mines workers appointed in contract.

7.4.3 Women’s Views on Wages

At least in this part of country women are paid equally to the men. So hey don’t have any complain against their wages.

7.5 Working conditions

7.5.1 Provision of toilets, crèches

There is no provision of toilet or crèches in or around a mining area because these mining are very small and number of working women here is not more than 12 to 18 in a mine.

7.5.2 Household chores, family support

Household chores are carried out by women in general. But in some cases they are supported by their other family members like her husband, son or brother and the household chores are shared by them.

7.5.3 Sexual harassment
These are very small quarries and no labour colony culture is there. Infrequent incidents of sexual harassment take place sometimes but there are seldom police cases.

### 7.5.4 Women’s Perceptions of Sexual Harassment

Most of he women victim of such cases don’t like to make fuss with it. Some of them take such incident as professional hazard.

### 7.6 Work Organisation and Division of Labour

#### 7.6.1 Gender-based Structure

<table>
<thead>
<tr>
<th>Sector</th>
<th>Hired Workers</th>
<th>Female employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>4.25</td>
<td>4.77</td>
</tr>
<tr>
<td>Urban</td>
<td>1.15</td>
<td>1.34</td>
</tr>
<tr>
<td>Combined</td>
<td>2.06</td>
<td>2.42</td>
</tr>
</tbody>
</table>

*Source: Economic Censes 1990 and 1998, Bureau of applied economics and statistics, Govt. of West Bengal.*

### 8. CHILD LABOUR ISSUES

#### 8.1 Introduction

##### 8.1.1 Overview

Concern of children and the elimination of child labour continue to be an area of great concern and article of faith for successive government. According to the census 2001 figures, there are 1.25 crore working children in the age group of 5-14 as compared to the total child population of 25.2 crore of which 1.07 crore working children are in the age group of 10-14.

Existing laws prohibit the employment of children below 14 years of age in factories, mines and hazardous employment and regulate the working conditions of children in other non-hazardous areas of employment. The government of India adopted a national policy of child labour in 1987 with a three fold strategy; legal action plan, general developmental programs and project based action plan. Under the project based under plan, the Government of India has adopted two schemes, namely, National Child Labour Project Scheme (NCLP) and Grant-in-Aid to voluntary organizations for taking up action oriented programs in the field of rehabilitation of child labour. There are currently 100 NCLPs covering 2.11 lac working children. Government has approved the continuation of the above schemes during the tenth plan. It has also been decided to sanction additional 150 NCLPs during the tenth plan. Action is already underway for sanctioning these new NCLPs. Under the Grant-in-Aid Scheme, voluntary organizations involved in rehabilitation of child labour have been provided financial assistance for the projects undertaken by them in areas not covered by the scheme of NCLP.
8.1.2 Children of Miners OR Child Miners?

A large number of children of miners are presently gone to school. But these children rarely continue there education. Mostly there dropped their study after primary level. Very few continue up to secondary standard.

Child miners in this particular field are almost absent.

8.1.3 Opinion of Parents

Most parents of present day one they are child should study at least up to 10+2 standard so that he or she can get some white collar job.

9. LABOUR PROTECTION, HEALTH AND SAFETY ISSUES

9.1 Labour Protection

9.1.1 Labour Protection in Mining

Regional office of the Director General of Mines Safety looks after the labour protection. This doesn’t help labours much. It only sees whether there is a blasting shed or the labours are getting protective eye glass.

9.2 Working Conditions

9.2.1 Opinions of Miners on Working Conditions

The conditions in which a miner has to work are not judged by them. They are happy if the amount and more of payment is good. They are not aware whether there should be any accident policy or any medical policy covering them.

9.2.2 Labour Pressure

There is organized labour union almost in all mines, stone crushers and cement factories. But these unions only are interested in raising the payment. They don’t care to pressurize the mining authority for labour insurance or for any other necessary matters.

9.2.3 Mining Season

Everywhere the season is from January to May and from September to November

9.2.4 Working Hours

Working hour in these mines is from 8 to 12 in the morning and 2 to 6 at afternoon, that is 8 hours.

9.3 Health and Safety

9.3.1 Opinions of Miners on Health Conditions

Most of the miners are unaware about their right of getting medical support against health hazard. Only they get some medical health on behalf of the owner company in cases of accidents.
10. METHODS AND EQUIPMENT

10.1 Tasks

10.1.1 Mining Tasks
After prospecting the upper earth surface is removed and limestone deposit is taken out during mining.

10.1.2 Processing Tasks
Taken out limestone from the mine in the form of boulders are taken to a stone crusher. The crushed stone are then taken to a cement factory or to limestone factory has the case may be.

10.2 Equipment

10.2.1 Mining Equipment
Earth cutters are used to remove the top soil. Drills and compressors are used to dig holes in the limestone. Gelignite sticks are used for blasting. Boulders produced after blasting is broken down in smaller pieces manually. These pieces are taken to a crusher by dumpers.

10.2.2 Processing Equipment
Smaller pieces of limestone of the size 6 to 8 inches long are processed in a stone crushers to be used in cement factories.

10.3 Method – Transport
Method of transport is by trucks or dumpers because most of the mining companies employ their own transportation system and if necessary they construct earthen road to the mine or they influence local authorities to construct roads.

10.4 Methods and Equipment in One or Two Case Study Village(s)
One especial case study worth mentioning. In Jhalda town of Purulia district there is a large Bagdi community who earlier where the limestone miners and producer of processed limestone. Still some of the families follow this profession.

Women of this community are engaged in this work. They purchase limestone form the casual miners, mostly from the Santal community stay nearby. This limestone is then burnt in a earthen furnace for 12 hours. This is the processed lime used in painting houses or to be used with beetle leaves or with tobacco. In this process one woman of a family can earn Rs.1000 to Rs.2000 a month.

The community who were dependent on breaking limestone from a hill and sale those to the women who make lime generally earns Rs.1200 to Rs.2000 a month.

Profit from home made lime:
11. INCOME AND FINANCIAL FLOWS

11.1 Income

11.1.1 Annual Income

12. LEGAL AND ADMINISTRATIVE ISSUES

12.1 Law and Order and Human Rights

12.1.1 Law and Order

Generally law and order situation in and around mining area is trouble free. The people work here come from such a community who have their own code of conduct of their life and have a constant surveillance over their social activity.

12.1.2 Human Rights

No such activity is seen for maintaining and perseverance of human rights from any govt. or non-govt. agencies.
12.2 Overview of Legal Issues

12.2.1 Exploration Licenses

Exploration license is provided by the district mines office.

12.2.2 Mining Licenses

This is given by the Director General of Mines Safety, District Mining Officer and District collector or District Magistrate, District Land and Land reforms Office and District Forest Officer.

12.2.3 Central Government Measures to Legalise Informal Mining

So far limestone mining is concern; it is not any informal field.

12.3 Conflicts with Traditional Rights

12.3.1 Conflicts with Traditional Land Use Rights – Pastures, Forestry and Farming

Not a large area is required to run a limestone quarry. This is not the direct cause for destruction local forestry and pastures. The only thing these mines causing deprivation to the local people is they have taken away the access to use the limestone for their own survival.

13. ENVIRONMENTAL ISSUES

13.1 Environmental Factors

13.1.1 Negative and Positive Factors

The negative aspect of limestone mining is that it is indirectly causing deforestation of the area and loss of pastures for the cattle raised by the local people. Only positive aspect of a quarry is it provides employment at least to 35 – 40 people and providing some part of the government revenue.

13.2 Key Impacts

13.2.1 Local Ecosystems

During initiation of a quarry it is necessary to clear up the earth surface. This localized deforestation encourages the local wood mafia to destroy the total forest of that region. Mines run normally in arid regions where rainfall is low. Destruction of forest causing lack of rainfall in those regions which has a long run impact on the local agricultural field and so on the people who depend solely on agriculture.
### State wise summary status in 17 category of highly polluting industries

<table>
<thead>
<tr>
<th>State</th>
<th>Total no. of Units</th>
<th>Status (No. of Units)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>Compliant</td>
<td>Defaulters</td>
<td></td>
</tr>
<tr>
<td>Jharkhand</td>
<td>21</td>
<td>3</td>
<td>16</td>
<td>2</td>
<td></td>
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<tr>
<td>West Bengal</td>
<td>66</td>
<td>17</td>
<td>44</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Ministry of environment and forests.

### 13.2.2 Entire Ecosystems

As mentioned earlier, starting a new quarry in some area causes permanent damage to the entire ecosystem.

### 13.2.3 Forests

All the quarries running in this moment, be it in Jharkhand or in West Bengal, are in such a place which was earlier dense forest. Directly or indirectly these forests were lost due to mining.

### 13.2.4 Biodiversity

Loss of forest in a area causes displacement of forest animals. Most are killed in the process of deforestation. Animals like elephants, when displaced they try to find out new are places for their grazing ground. Loss of forest in Jharkhand and in West Bengal forced many herds of elephants to invade on cultivation land in other districts even some 300 kilometers away. This is a regular problem t the districts dependent solely on agriculture.

### 13.2.5 Cultural Heritage

Many people in these areas who earlier were lime makers are now displaced by these organized mining houses. They are forced to be labours in some distant brick fields where they are to live in slums getting uprooted from their own village, society and customs. They are getting alienated from their own culture and tradition.

### 13.2.6 Indigenous Peoples

As mention earlier people live in these areas are tribes of Santal, Ho, Oraon, Munda and such other casts. They were originally the forest people depending solely on the flora and fauna of a forest. They were the real preserver of forest lands. Civilized country law all over the world deprived them from their own assets.

### 14. Community Issues

#### 14.1 Community Benefits

#### 14.1.1 Poverty Reduction and Employment Generation

The mine running in a area causing at least some reduction of poverty in a locality as they cause employment to some people.
14.1.2 Local Economy

May be in a minimum level but these mines have some impact on local economy as these are providing some raw money at least to some percentage of that locality.

14.1.3 Transport

May be indirectly, but these mines are causing enhancement of local transport system.

14.1.4 Raising Revenue

These mines are earning the government at least some revenue. May be this is not much in respect of the total annual budget of a state, yet this is a concrete earning for the government.

15. CONTACT LIST OF NGO'S, RESOURCE PERSONS AND GOVERNMENT OFFICIALS

1) MR. S. MURLIDHAR RAO, AGENT, RUNGTA MINING CO. LTD., JAMSHEDPUR.
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3) MR. SANJEEB MALICK, RUNGTA MINING CO. LTD., CHAIBASA.
4) MR. DEBEN SAU, ENGINEER, TULIN, PURULIA.
5) MR. AMAR SANKAR MAHADONI, JHALDA, PURULIA.

16. BIBLIOGRAPHY OF PAPERS AND REPORTS USE

1) DISTRICT STATISTICAL HAND BOOK – 2003, PURULIA, BUREAU OF APPLIED ECONOMICS AND STATISTICS, GOVERNMENT OF WEST BENGAL
2) ECONOMIC SURVEY – 2003 -04, GOVERNMENT OF INDIA, MINISTRY OF FINANCE, ECONOMIC DIVISION.
3) WEST BENGAL FEMALE HUMAN DEVELOPMENT REPORT – 2004, DEVELOPMENT AND PLANNING DEPARTMENT, GOVERNMENT OF INDIA
4) ECONOMIC REVUE – 2003-04, STATISTICAL APPENDIX, GOVERNMENT OF WEST BENGAL
5) THE PENGUIN INDIA, REFERENCE YEAR BOOK – 2005, PENGUIN BOOKS INDIA PRIVATE LIMITED, NEW DELHI, INDIA.