Chapter: 6
STONE QUARRIES AND THE LIVELIHOOD ISSUES OF THE TRIBAL POOR

6.1 INTRODUCTION

The emerging issues related to livelihoods of the poor around mines and quarries of South East Asia are of great concern among the researchers and policy makers. Asia’s mining history is of immense antiquity. For many centuries mining flourished throughout the continent, but was scattered and relatively small scale and artisanal in nature (Lahiri Dutta, and Burke, 2011). These mines and quarries are part of the burgeoning informal or ‘unorganized’ sector of third world economies; however the term ‘informal’ is often used synonymously with ‘illegal’ (Lahiri Dutta, 2003). Internationally these informal modes of mineral extraction practices are collectively known as ‘Artisanal and Small-Scale Mining’ (ASM). The significant contribution of small mining to the world mineral production was noted early by mining engineers (see for example Argall, 1978; Carman, 1985; Noestaller, 1987; 1994). Informal mining can be defined as the low-capital, labour-intensive extraction activity in developing countries in which local communities participate in significant proportions (Lahiri Dutta, 2003). In national economics of south Asia mineral revenues only constitute an insignificant part because of low accumulation of capital. Accordingly, the small quarries and traditional mineral processing activities are part of the ‘informal sector’ of Indian economy which, according to an expert view, comprises around 88 per cent of the total economy (Harriss-White, 2003). There is a wide range of workers involved in informal mining, including traditional artisans, male wage workers, and women who participate either on their own or alongside their families and children (Carino, 2002; Burke, 1993). The foremost problem affecting research on the ASM sector anywhere in the world is the paucity of data or even literature which stems from a mix of reasons: omitted from official data because of their smallness; poor records on account of their informality; fear of government interference etc (Heemskerk 2005:84-85). A recent estimate suggests that over 20 million people in the world depend on mineral resource extraction on an informal basis for their living, a figure that is immensely more than those employed by the formal mining industries. Indeed, employment in the formal mining sector is steadily declining (ILO, 2002) The strong
anti-mining movements led by pro-environment groups have generally focused on three main areas: the negative aspects of unregulated mineral extraction; not differentiating between ASM and large-scale mining; and overlooking the question of livelihoods of the large numbers of people involved and their livelihoods in ASM (Bhanumathi, 2004; Vagholikar et al, 2003).

Using extensive fieldwork conducted in the Mohammad Bazar, a part of Rajmahal region of eastern India, this chapter examines associated issues and concerns of the poor living on the edge of informal mines, with a focus on the pathar khadan (stone quarries). As the Government of India regards “stone” or basalt as a minor mineral, it provides little official data on mining of this type or about its labour structure. In terms of research method in the present chapter much emphasis is given on the qualitative techniques to focus several livelihood issues related to stone quarries and crushers.

6.2 A BRIEF HISTORY OF PATHAR KHADAN IN MOHAMMAD BAZAR
The stone quarries or pathar khadan in Mohammad Bazar first came into existence during 1960s at Bharkata and Hinglow panchayats in which the prime contributors were Nazair Hussain Mallic and his uncle Emanuel Haque. The then district collector of Birbhum gave them temporary permission to open the mines. During this period, there was no stone quarry sector at Mohammad Bazar. The first crusher unit was introduced by Nitai Ghosh and Tarapada Ghosh at Patalnagar to produce stone chips from the stone blocks. After lifting the stone blocks from the khadan of Nazair and crushing it into stone chips at the stone crusher unit of Nitai Ghosh, the stone chips were transported to the Trapada Banerjee, a contractor of building construction. This was the trend up to 1962. In same year, The Directorate of Mines and Minerals identified few mouzas namely Hatagacha, Panchami, Chanda, Nischintapur and Debangan for the opening of new quarries at Mohammad Bazar block. During this period the license of individual ownership of quarries was cancelled due to the turmoil condition of Indo-China war but later on it was reissued again. In 1964 Nazair Hussain Mallic and Emanuel Haque managed to get long term lease agreement of land for their stone quarries. The same year Sujay Krishna Dutta, Nitai Ggosh, Shanti Mondal and others started to introduce their stone business. During the year 1972-74,
the then district magistrate of Birbhum issued permission to open quarries on the vested land for rehabilitating the Naxalites for the peaceful solution of extremist movement. However, most of the Naxalites did not take this advantage. But there was no scarcity of availing facilities under rehabilitation scheme. As a result, during 1970 & 80s a large number of permission was issued to open the khadan and this led to the proliferation of stone quarry industry at Mohammad Bazar. Initially some 30 acres land ceiling was permitted to open the khadan then it was dropped down to 15 acres and now it is limited within 7.5 acres of land. However, pertaining to demand supply mismatch of land and paucity of available vested land, the traders of the stone chips, mostly the outsiders, forcibly started to engulf the surrounding tribal dominated land to open new quarries by using their money and muscle power. Thus, the tribes began to lose their farm land, forest around their homestead and their sources of drinking water due to mushrooming of stone quarries day after day. For the last three or four decades, only in the Mohammad Bazar block the number of khadan is supposed to be 117 and the number of crashers unit is about 258. However, the actual number is still unknown due to lack of proper government record for most of these illegal artisanal mines.

6.3 STONE QUARRIES AS A LIVELIHOOD RESOURCE

India is the largest producer of dimensional stones (27% of world production), and is a major exporter of stone. However, the informal nature of much of the quarrying activity in the developing world makes the reliability of the data questionable, particularly when the low profit levels of stones such as basalt are taken into account, which results in many transactions going unrecorded. The basaltic Rajmahal traps, the home of basalt stone, occupying an area of approximately 1,000 sq km, and are estimated to be 600 metres thick, and to contain 30 metres of inter-trappean sedimentary beds measuring between 10 and 20 flows of basalt with thicknesses varying from 15 to 91 metres (Pascoe, 1959; Fox, 1931; Krishnan, 1958). Within the fine-grained Rajmahal traps, a columnar structure has developed in many places due to prismatic jointing), which has facilitated pathar khadans – basalt stone quarrying in the region (Wadia, 1975).
There is no official records of the amount of production but some estimate guesses can be made from personal observations, report published in newspapers, from NGOs and the data for stone goods exported by the Railways. According to Rabin Soren, an activist of Adivais Gauntar, in Mohammad Bazar the number of stone quarry field is 74 and the number of stone crasher is about 400 (Dutta, October, 2011). The stone quarries and crushers (Figure 6.1) cumulatively produce 1800 trucks containing 90000 tons of stone chips per day. The monthly earning from these stone chips is about five crores rupees (Basu, October, 2010). Total moratorium will count some fifteen thousand people jobless including three thousand tribes (Chhotopadhyay, 2011). Indeed Chakraborty points out that just in one part of West Bengal alone (Pacami-Hatgacha), there are estimated 38,000 workers in the (basalt) stone quarries which is over seven times the number given in the Director-General of Mines Safety (DGMS) All-India list for stone quarries.

![A Google Earth View of Stone Quarries and Crushers in Mohammad Bazar Block](image)

**Figure 6.1**
*Source: Google Earth Image, 2014*

Apart from production in the quarries, the illegal transaction of money makes the business more profitable among the quarry owners. From one example the amount of earning from the pathar khadan can easily be captured. During survey at Baramasiya village under Bharkata panchayat a rough estimate of earning from a small khadan varying with a depth of 70-80 feet have been calculated. According to one khadan labour, one blasting in the khadan produces near about sixteen trucks of stone i.e. 16×200 cft
which 3200 cft stone chips. After deducting the entire expenditure of one blasting the quarry owners may earn up to Rs. 3200 in the quarry field per day. Therefore, the earning per month is about Rs. 6400×30 (at least two blasting per day) produces Rs. 1, 92, 000. Naturally, to spread the mining industry, the mafia intervention is indispensable for encroaching upon the tribal land.

6.4 STONE QUARRIES AND ENVIRONMENTAL DEGRADATION

Stone quarries and environmental degradation have a strong nexus. For the last four decades, the people of Mohammad Bazar (Figure 6.1), Rampurhat-I, Nalhati-I & II, and Murarai are acutely suffering from the ill effects of stone quarries and crushers. Many times the tribal poor tried to convey their inconvenience to the quarry and crusher owners and to mitigate their problems but it remained ignored. Even the local administration did not take any necessary steps to safeguard the rights and privileges of the tribes. As a result the Birbhum Adivais Gauntar and Maji Pargana Baisi, social organizations to protect the tribal people, unanimously took the decision to write a letter to the West Bengal Pollution Control Board during June, 2010. In their appeal they highlighted the following environmental problems related to pathar khadan and crushers in Birbhum:

I. Rapid depletion of ground water table in the local ponds and wells. The people are in acute crisis of both for drinking and irrigation water.

II. The local people in large number are suffering from several lung diseases. From children to youth the people are ageing fast. Most of the cattle are engendering dead off spring.

III. During explosion at the mines, the pieces of stones thrown at high speed are damaging the surrounding houses, destroying the paddy fields. Even the accidental death due to hit by stone are not uncommon in the area.

IV. The agricultural lands are becoming unproductive due to accretion of sand dust from the crusher units.

V. The continuous noise of machines throughout day and night makes the local inhabitants sleepless.

VI. The mafias are illegally getting access to explosives from the mines.
After the meeting (16th May, 2010) with the ministry of environment, the tribal led agitators from 143 tribal villages have wrote a letter to the than chief minister of West Bengal Sri Buddhadeb Bhattacharjee to make him aware of the fact related to stone quarries and related environmental problems of Birbhum the brief which are as follows:

I. Firstly, in the stone quarry industry of Birbhum, there is no government records related to how many stone quarries and stone crashers are there. The local people through their participatory appraisal method have identified 2200 stone crashers and 350 quarries in Birbhum. The number of labour engaged is about 21,000 of which 40 per cent are local. Among the local labour, 20 per cent are tribal and 20 per cent are Muslim. The migrant labour constitutes 60 per cent of the labour force. The local per cent of the labour are strongly supporting the anti khadan movement. About 90 per cent of the total labour force is partially engaged with agriculture and animal husbandry. Therefore, the conflict between local labours Vs the local villagers or tribal Vs Muslim is untruth and distorted.

II. Secondly, the tribal movement by nature is well organized and well disciplined. However, due to conspiracy of few mines owners, the tribal movement is often correlated with Maoist activity which is very much intentional.

III. Thirdly, for the last ten years the mining operation has depleted the ground water upto 20-25 feet. Most of the tub wells and wells suffer from unavailability of water for seven to eight month in a year. If these continues what would be the future livelihoods of near about fifty thousand villagers most of which are santals and the minorities.

IV. Fourthly, in providing employment it has been observed that with the closing of pathar khadan, near about three hundred acres of land in the surrounding areas can be brought under the irrigation facilities from the water available from the deserted khadans. This large extent of agricultural productivity can create employment opportunities for
more than one and half times workers in the mines. In this process *khadans* can be replaced in next twenty years.

V. Lastly, instead of quarrying, pisciculture in the abandoned mines, animal husbandry, collection of forest resources, improved health service, MGNREGS will definitely help the poor tribes to withstand the poverty.

(Source: Kalodhvani, Vol XV, No I, August, 2010)

Forest and tribal life are inseparable. According to Sunil Soren, an activist of *Adivasi Goantar*, ten years before Nimpahari village was very close to the Gonpur forest. Due to successive encroachment of stone quarries and crushers now the *Sal* forest has shifted back by one kilometre and it is replaced by few Euchaliptus and Akaashmoni trees and haphazardly scattered stone chips. Sunil Soren lamented “We have roughly estimated that the local *Adivasi* households earn Rs. 3000 from medicine plants for domestic animal, Rs. 3000 from medicinal plants for human, they used to collect 200 calories of food per day, including 42 types of mushrooms and 22 types of fruits and vegetables from the forest. In terms of total food value in contemporary market, the amount of earning from forest resource is about Rs. 15000 to 20,000 per annum. Therefore, from a depleted forest of *Sal*, the Adivasi household can still earn Rs. 20,000 per annum”. The encroaching *khadans* are not only degrading the environmental quality but also reducing the forest and its resource base which the tribal poor used to consume since time immemorial.

6.5 THE TRIBAL POOR AND THEIR LAND

It has been clearly mentioned in the constitution of India that the tribal lands are deedless common. Except the tribes, it can not be sold or purchased among the other community. However, the tribal lands are leaseable up to ninety-nine years. The quarry owners, at the cost of a very negligible price are capturing *bighas* after *bighas* of tribal land with the help of political leaders. In exchange, the political leaders enjoy share from profit of the quarry owners. That is why, most of the quarries run illegally with improper documents. “Once a quarry or a crusher starts operation on a plot of land, it doesn’t take long time for the surrounding land to get destroyed by the stone and stone dust” said Nilu Tudu, & Dishom Majhi of nearby Chanda village. Nilu
Tudu can remember that the area was in much better condition when he joined the army in 1971. By the time he retired in 2001, the condition of land has changed considerably. He told us “you could not see clearly due to stone dust in the air”. Babulal Tudu retired from Border Security Force (BSF) in 2008 and returned to his home in Talbandh. At the end of his field, there is 150 feet drop in the level of surface due to the quarry run by Kamal Khan. Babulal lamented “when they blast the rock with explosives, the stone chips and boulders often come flying into our village. Our houses are less than 50 metres from the quarry”. Two of his brothers have lost their land to the quarry. One of the owners of pathar khadan offered Babulal Tudu and Sidhu Hansda money to move out and also threatened them with guns. “Owner told me he would never let the electricity reach the village and we have to move sooner or later to make way for the lifting of stone deposits underneath” Hansda said. According to Tudu, owner’s men told him that they would blast them out of the village. This has been happening for the last four decades now after stone quarrying started in Mohammad Bazar in 1960s. Instances says that if any district magistrate order any quarry owners to produce legal papers regarding their quarries, it take only one month for the powerful quarry owners with the help of their political nexus to make the district magistrate transferred to other district.

**Photo1:** Encroaching pathar khadan towards the agricultural land at Talband village of Mohammad Bazar block
During August 2010, the former chief minister of West Bengal Sri Buddhadeb Bhattacharjee assured the Adivasi that no khadan or crushers will be allowed to function within hundred metre radius of any human settlement. Seventy years old Mongly Murmu of Patharchala village resides within thirty feet of the nearest quarry field. After getting assurance from the chief minister as like others she also thought to get escape from the encroaching khadan. However, very soon she realized that she was wrong. “One morning, all of a sudden we saw that stone crasher units once again started to work with earlier intensity. The quarry owners have threatened us to vacate the place as soon as possible at the cost of little monetary assistance. By the sound of the stone crashers not only my home, the entire village starts to suffer from trembling. The sacred Jahar than of the Adivasi located under the banyan tree is also going down under the encroaching kadhan” (Mongly Murmu, August, 2010). Even, using the nexus in Government offices the khadan owners are changing the land records in the Block Land & Land Revenue office. One day Mongly, a local lady, saw that her land record is showing that the position of her house has been shifted 100 metres than its present location. Budhni Tudu of Sagarbandh village was also present in their meeting with the chief minister in Mohammad Bazar during 2010. As like many tribal leaders Bhudni, also told the chief minister that how the khadans have engulfed his few bighas of land. Not only the Bhudni, the adivasi agitators have explained how the stone quarries and crashers are engulfing thousands acres of agricultural land day by day. If they shouts and protests against this illegal khadan, either they are bitten up or they are forced to remain silent by the offer of very little money. After listening these sorrows and sufferings, the chief minister assured them to return their land but after four years Budhni and others have remained in the same condition.

The process of land transfer (Figure.6.2) from tribal to non tribal is a complex one. In order to investigate the process of illegal land transfer from tribal to non-tribal, the research highlights three case studies from three villages of Mohammad Bazar block:

A. Saloni, a tribal woman, had few acres of land at Girija village. Kamal Khan, owners of many stone crashers of Southsal village, was very keen to occupy Saloni’s land at any cost. To occupy Saloni’s land Kamal has got
married Saloni Marandi of Girija village and thus he has become the owner of the land and Saloni has become the land looser with very little monetary benefit. This scenario is very common in Mohammad Bzar Block where very often the Muslim crasher or khadan owners forcibly pursue marriage with the tribal women to occupy the tribal land.

B. According to the Government land registration rule only tribe can purchase or sale the tribal lands of the other. In Baramasiya village, however, many tribes from the out sides are introduced to make deed or even lease agreement of land with the local tribal land owners to eye wash the Government land registration rule. According to local inhabitants, for the purpose of making registration of tribal land to open the quarries or crushers, many illiterate tribes from out sides are introduced at the cost of very little monetary help. As a result, the literally registered land owners get nothing but little money and the non tribal becomes the real owner of land. This is the process by which other than the tribes are getting the unofficial land right and using the land for making new quarries or crushers.

C. In Sagarbanddhi village, Kalu Sk. has forcibly registered the land of Budhni Tudu. After searching the land, Budhni Tudu found that the Cadastral Survey (CS) number, which is oldest land number is found missing. Even the BL & LRO, DLRO or the District Magistrate could not answer the reason behind this illegal change of land ownership.

In this chapter it has already been mentioned that the stone quarry sector often lacks proper official documentation of actual number of quarries or crusher units as most of these are running illegally. The present study area is not exception. From the field survey in the Mohammad Bazar block, it is found that with regards to total crashers about 41 per cent occupied by Hindu, 57 per cent is occupied by muslim and the tribes constitutes only 0.87 per cent. Therefore, in terms of land right the local tribes are overwhelmingly deprived by the outsider traders and thus loosing their prime livelihood resource. In Birbhum, according to some newspaper and journals (Anandabazar Patrika, 2010, 2011; Kalodhvani, 2010) the total number of crushers is 403 of which 270 are legal and there are 200 stone mines of which only 78 are legal.
Mr. Lakshiram Kishku, an activist of Adivasi Gaunter, told us that they are only demanding to know who have the legal paper of their crushers to operate. The government should immediately probe who have the proper land acquisition papers, site map, explosive license, pollution certificate etc. According to Kishku (2012), “but many of the crushers operate without land documents, pollution free modern equipment to control dust. They don’t care for the project affected inhabitants (Photo: 4) of the area. No sign of corporate responsibility which is essential part of the stone mining is seen. The stone crusher owners forcefully encroaches the land of Adavasi but nothing happens”.

**Process of Illegal Land Transfer**

![Diagram](image)

6.6 OCCUPATIONAL DISEASE

Birbhum is the latest minefield where Adivasi lives are at stake. In khadan dominated areas of Birbhum, Silicosis is a common disease among the workers in the quarry field. According to Kunal Dutta (2013), an Employees' State Insurance (ESI) medical officer, Silicosis is caused due to inhalation of stone dust or quartz which creates a layer of stone dust in lung among the workers in both the field and the crushers. The
inhalation of less than five micron size of silica lessens the immunity power of body as well as the normal functioning of lung. This is not a curable disease and the average lifespan is curtailed by fifty years and cause early death. Although problem of Silicosis is not only confined to West Bengal only. Evidences from different sources reveal that in neighboring state of Jharkhand near about 25 lakhs quarry and crusher workers are suffering from Silicosis. According to Samit Kar, an activist of Occupational Safety and Health Organization, that in between 2002 to 2012, near about 22 thousands workers died due to Silicosis. Furthermore, World Health Organization (WHO) also reported that every year 30,000 labourer are dying due to Silicosis in India. A report published from Director General of Mines in India sates that around 57 per cent workers engaged in quarrying and mining are suffering from Silicosis (The Sunday Indian, 30th September, 2012).

The death of Michu Murmu was perhaps the first incidence of death due to Silicosis disease in 2012 in Talbandh area of Mohammad Bazar (Roy, 2013). Before his death, Michu had worked for five years in a crusher which has no legal khadan related papers or any medical treatment facility. The death of Michu Murmu aroused a movement among the tribes by socio-cultural organization Adivasi Gaunter as many tribes are engaged in stone crusher activities in Birbhum. Along with Adivasi Gaunter the two other NGOs namely Rising Occupational Safety and Health Network (ROSHNI) and Occupational Safety and Health Organization also worked together to detect the silicosis patients among the workers in the pathar khadan. With their joint efforts, it was possible to detect two Silicosis patients Debu Routh, a forty nine years old stone crusher workers of Kendrapahari, and Sukal Tudu, a thirty five years old stone crusher workers of Habrapahari. Debu has been working in crusher for twenty years and Sukal for nine years. An environmental and epidemiological survey on stone quarry workers by the National Institute of Occupational Health (NIOH) under the Ministry of Health has revealed the evidence of silicosis among the 22.4 per cent of the khadan workers in Birbhum (November, 2012). NIOH also added that in most of the cases, silicosis was found in the workers who had worked for over 10 years in the quarry field. The mean total dust concentrations in the quarries were 3.38 and 3.72 mg/m3 and respirable dust concentrations in two quarries of Kendrapahari and Habrapahari area of Mohammad Bazar block were 0.80 and 0.85 mg/m3 respectively.
with about 70 per cent free silica (NIOH, 2012). After the death of Michu Murmu, the
government conducted a survey to collect Silicosis related information among the
workers engaged in quarrying activity in Mohammad Bazar block. According to the
survey report, among 350 workers it was found that near about 50 workers are
primarily sufferings from Silicosis. More specifically, on an average one worker in
every seven are affected due to Silicosis. In many khadans seven out of seven workers
are suffering due to Silicosis. According to Sunil Soren, a chief activist of Adivasi
Gaunter, 30 to 44 per cent of the workers are affected with Silicosis in pathar khadan
areas of Birbhum (November, 2013). However, according to CMOH of Birbhum “in
September 2013, 25 workers have been diagnosed but no one found with Silicosis”. Perhaps this initiative was taken by the health department to keep the crusher owners
aloof to give compensation to the affected people. Kunal Dutta (2013), ESI medical
officer, mentioned the reason that why this disease has remained undetected. According to Mr. Dutta, “in general medical course, there is no scope of Silicosis
study. To detect silicosis the doctor’s should rate X-ray plate according to ILO norms
whether there is any silica exposure, however, most of the doctors do not do that.
Even, if doctor can detect the symptom of Silicosis, they conceal the fact due to fear
factor from the owners and treat the disease as simple Tuberculosis”. As a result, the
question arises that how the poor Silicosis affected tribe can demand the
compensation package from the crusher owners where they have no proper
recognition as workers in this informal sector.

6.7 SOCIAL AND CULTURAL EXPLOITATION OF TRIBES
By nature quarrying and mining activities leave a conspicuous impact on the social
and cultural life of the tribes. Along with the male labourer, the kamin, a feminine
equivalent of the term coolie, is common in the entire stone quarry areas of
Mohammad Bazra. In spite of their heavy work load, get low wage than that of men
workers. Beside the economic oppression, the stories of desertion and rape are not
uncommon. Basari Majhen of a certain quarry was raped several times by the khadan
manager and when the news came out, she was thrown out of the khadan by the
owner with the stigma of immoral character put on her by her male colleagues. Her
husband left her and got married to another girl (Samay Paribartan, 2012). Dinu Soren
of Harinsingha village wakes up before sunrise to clean her mud hut and to cook
lunch for herself and her family of two children and an ageing father-in-law. She tugs her children when she goes for work in the khadan, some three kilometres away from her village. After working for the entire day when she returns back, she often does not even get little food after feeding her family. Therefore, she has to depend on panta or water soaked leftover rice. Yet, Dinu’s husband believes that she is not working hard enough and spending her time chatting to her khadan manager. Apart from family responsibilities, cultural barrier act as major obstacle in determining perception of women workers among the male workers. Low wage rate and hard manual work encourage drunkenness and alcoholism among men. Naturally, the women get more tied to their children. It is not uncommon to find a young Adivasi mother carrying a head load of 30-40 kilograms whilst a baby is tied to her back. They often keep their children lying under the shade of a tree while working in the field. As soon as the children are able to perform work, they are employed in the khadans.

It is not only the quarry owners, who oppress the Adivasi Santals. Local panchayat pradhan, political leaders, government officers also join hands in torturing the tribes in many ways. In 2011, the villagers of Habrapahari, Natunpara, Girijor, Huchukpahari, Jebia and Sagarbandhi together, after getting no man days from NREGA, have filled up form under ‘scheduled A’ of NREGS Act. According to this act, the panchayat is bound to provide work within fifteen days after the application. If the panchayat is unable to provide work, then the panchayat has to provide unemployment allowance. However, the panchayat does follow their rule. Even after complaining to the block development officer or the district magistrate, the local panchayat says: “no work will be provided to them”.

In the villages of Mohammad Bazar, about 99 per cent tribes are poor but they do not have below poverty line (BPL) status. During the period of identification of BPL families, most of the tribal households scored 30-42 values which is more than the minimum values i.e. 28 to be categorized as BPL, but they did not get the BPL status. When some forty Adivasi family of Kendrapara asked the BDO of Mohammad Bazar under the Right to Information (RTI) act that why they are not in BPL category, the BDO had no answer and told the villagers to file RTI from again (2010). Even, the funds allocated under several poverty alleviation schemes are looted by the panchayat.
members, political leaders, government officials and the brokers while making the poor deprived. A Self-help-group from Kapasdanda village took a piece of land on lease from the Bharkata panchayat area for tree transplantation. However, the khadan owners have forcefully occupied that land and bulldozed all the trees grown there at the cost of hard labour of those poor women.

A quarry owner may sometimes stop the work tentatively in one mine and move on to another that is determined to be more cost effective. Thus within the khadan zone, there are both operational and abandoned khadan. Along with the changes in physical environment, the society and culture of the region have also undergone fundamental alterations. According to 1951 census of India, about 95 per cent of the population of the region belonged to farming community, whereas in 2001, only 13 per cent were identified as engaged in cultivation. The expansion of quarry has largely made agriculture impossible in this part of Birbhum district.

6.8 AGRICULTURAL Vs MINES: AN ECONOMIC APPRAISAL

Pathar khadans not only reduce the agricultural productivity but also engulf the paddy field. Apart from few migrant labourers from Murshidabad or adjacent state of Jharkhand, the local people depending on agriculture are very much against the ongoing stone quarries and crushers. Except the migrant labourer, nobody believes that quarrying is better than mining. When it is asked to few tribal people of Garia village of Mollarpur that why people go to the kahadans and stone crushers for earning? Are they do not have any other option for earning? They answered “yes we have”. The villagers stated that “actually we are quite habituated to go to the khadan and crushers”. If the social status and morality of any Adivasi is lost due to committing some unfair means in khadan, he/she could not able to work anywhere other than the quarries. “Sometimes we are compelled to pursue some work against our morality to solve impending financial crisis without reasoning much but latter on we have no option to return to the mainstream tribal society”. Those who are the farming people and also go to the quarries, their status of savings is comparatively better than those who are entirely dependent on the khadan. Even the local money lenders are much reluctant to provide credit to the khadan workers because they do
not have either intention to repay or do not have the capacity to repay the loan. In contrary, those who are the small and marginal cultivators or agricultural labourers are much efficient to repay their loan. Moreover, pathar khadan provides only twenty days’ work in a month and the rest of the days the workers do not have any employment. Work in the quarry field also adds some extra accidental costs compared agriculture.

Habil Sk., a villager of Gonpur area, is a share cropper. Habil does not own agricultural land. In the year 2012, Habil has cultivated some 5.5 bighas (more than two acres of land) of land on lease. Now one bighas of land produces some five quintals of rice paddy. After reaping the paddy Habil earns 650×5= Rs. 3250 at the rate of Rs. 650 per quintal. The cost of farming per bigha is about Rs. 800. Therefore, the net profit is about Rs. 1250. The same amount of land is also used for boro cultivation. The net amount of production is about 9-10 quintals if R.I 36 category of rice is transplanted. After deducting Rs. 3000 as agricultural cost and Rs. 1200 for the landlord, Habil can earn upto Rs. 2300 (Rs.6500-Rs.4200=Rs.2300) through farming even on others land. The example of of Habil Seikh emphasizes how agriculture can be an economically viable option compared to quarrying activities for the generation of livelihoods.

6.9 IN SEARCH OF ALTERNATIVE LIVELIHOODS

On the one hand traditional livelihood practices have declined directly or indirectly due to the impacts of quarrying activities, while on the other hand employment at quarries has become the only source of income. According to the khadan owners, if the quarries remain close, the local people would have nothing to survive on. However, if the khadan will remain close, is indeed the Adivasi will die for hunger and starvation? Perhaps this is not the fact. Some fifty years back when there was no khadan and the land was virgin, the Santal tribes were there with some traditional livelihood practice. Now-a-day when Adivasi lives are at stake due to the encroaching impact of pathar khadan, the local inhabitants are very much against the continuation of illegal quarries and supporting the anti-khadan movement. During the field survey we explored that the local people have several alternative options in their mind in search of sustainable livelihood which are discussed as follows:
There are a number of abandoned quarry field in the Mohammad Bazar stone quarry sector. During Left regime in 2011 the fishery department of West Bengal by incorporating the local tribes has started piscicultural activities on co-operative basis in twelve abandoned *pathar khadan*. Thus, the available abandoned quarries (Photo: 2) can be utilized for pisciculture to sustain livelihood in the abandoned quarry affected areas.

The available palm trees (Photo: 3) might be a good source of livelihood resource for the local tribes. The food processing industry based on palm juice can be developed to sustain the tribal poor.

The intervention of Self-Help-Groups for making leaf plates or other forest based products from the available palm trees may be a good practice.

*Photo 2: Abandoned khadan* at Utchadanga village, located in the North Western part of Mohammad Bazar block, where villagers have started pisciculture.
Photo 3: Palm trees as source of alternative livelihoods at Bharkata village

Photo 4: A land evictee collecting money from trucks containing stone chips for using her land as temporary road at Habrapahari village

6.10 CONCLUSION

There is no doubt that because of lack of government control, the stone quarries of Mohammad Bazar have a devastating impact on its overall regional environment. The physical environmental quality is rapidly deteriorating day by day for this illegal operation of *pathar khadan* and stone crushers. However, the less visible impacts have been social in character, having a great bearing especially on the survival of poor indigenous tribes living in this region (Photo 4). Costs of several occupational diseases, accidental costs put great hardships on the livelihoods of the poor. In all
spheres, quarrying activity has annihilated the social fabrics of tribal life. If this continuous, the tribal community will be at the verge of extinction in near future. Therefore, more and more environment friendly sustainable livelihood measures should be taken into account both for the environment and the tribal community. With this, the government sponsored poverty alleviation measures should also be more transparent and accountable to support the livelihoods of the tribal poor.