#### RESEARCH REPORT JULY 2022

# A Study on Occupational Safety and Health (OSH) practices in stone-crushing sector of Bangladesh

SUBMITTED TO Developing World Outreach Initiative (DWOI)

#### SUBMITTED BY



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# Table of contents

Executive Summary	Error! Bookmark not defined.
1. Introduction	Error! Bookmark not defined.
2. Objectives of the study	Error! Bookmark not defined.
3. Review of Literatures	7
4. Conceptual and operational frameworks	
5. Methodology	
6. State of stone-crushing yards in Burimari	
7. Survey findings	
7.1. Socio-demographic and workplace profiles of wo	orkers: Error! Bookmark not defined.3
7.2 Work stability and security:	Error! Bookmark not defined.5
7.3 Working hours, overtime and rest time:	Error! Bookmark not defined.7
7.4 Daily wages and its satisfaction:	Error! Bookmark not defined.8
7.5 OSH situation at stone-crushing units:	Error! Bookmark not defined.0
7.6 Social security and workplace facilities:	Error! Bookmark not defined.6
8. Case study from study area and mass media	Error! Bookmark not defined.
Case 8.1: Workplace accidents victim Khairul	
Case-8.2: Life and livelihood of Morjina	
Case-8.3: A stone-crushing child worker without safe	ty gear
Case-8.4: Stone-crushing workers' situation reported	in media31
Case-8.5: Stone-crushing workers' safety and health r <b>defined.</b> 4	reported in mediaError! Bookmark not
9. Recommendations	
10. Conclusion	
11. References:	

# **Executive Summary**

Stone-crushing workers' safety and health is a major issue of concern in Bangladesh because most of their factories are defying health and safety rules that cause incidents of death and injuries rampantly. This research has been undertaken to assess Occupational Safety and Health (OSH) practices in the stone-crushing sector of Bangladesh.

**Methodology:** Burimari of Patgram upazila in southern district Lalmonirhat of Bangladesh has been selected as the study area. Multiple methods ---Survey, Focus Group Discussion (FGD), Key Informant Interview (KII) and Case Study--- have been used. Some 200 stone-breaking workers from 60 stone-crushing units among 500 yards have been surveyed using an interview schedule after selecting them purposively.

**Results:** The survey finds that most of the respondents 78.5% (n-151) are male while 21.5% (n-49) female. Education level of most of the stone-crushing workers are below SSC level (94.5%). Most of the stone-crushing machines were running manually with 10-15 workers on an average.

It finds most of the stone-crushing workers (85%, n-170) get salary daily while the rest of others on weekly, fortnightly and monthly basis. Most of the workers (89%, n-178) said they can do other jobs like agriculture, driving, tailoring and construction mason etc.

The stone-crushing generally work from 10am to 5pm but 26.5% (n-53) of the workers work more than eight hours without overtime allowances. On the other, most of the workers (96.5%, n-193) get proper time to rest during midday at the workplace.

The wages of stone-crushing workers are not equal even though they work almost the same hours in a day. Almost all the stone-crushing workers (91%, n-182) get Tk 300-Tk 500 as daily wage while a very few workers (9%) get wages in between Tk 600-1,000. Most of the workers (89%, n-178) expressed satisfaction over their daily wages while 11% (n-22) others didn't as their wages are not enough to meet their living costs.

Almost all the stone-crushing workers don't have festival bonus facilities. Sometimes employers provide them with new clothes and food items before Eid followed by Ramadhan with one or two kilogram of meat during Eid-ul-Azha. But such an offer is very rare because a few companies give such food and clothes to them.

The stone-crushing workers face lots of risks and hazards at stone-crushing factories. They identified some risks at the workplace such as electrocution, falling after slipping at the sites, hurt while uploading stones, entangling with the machine or its wheels, and pain due to heavy workload. In the last one year, 60% of the stone-crushing workers (n-120) fell victim to workplace accidents while 40% (n-80) workers didn't face any workplace accidents.

The stone-crushing workers who face various workplace accidents are not provided with full treatment costs after their workplace accidents. The study finds that employers don't impart training to the stone-crushing workers on OSH and even don't give them precautionary information about risks and hazards. Most of the respondents (84.5%, n-169) said they don't get any PPEs from the owner. Most of them (84%, n-168) suffer from various occupational diseases. Among 200 stone-crushing workers, 22 workers were suffering from the deadly disease, Silicosis, which is an alarming number so far.

Almost all the workers (96.5%, n-193) said they didn't find any government inspectors at their stone-crushing sites. Most of the workers (73%, n-146) are not aware of workplace facilities and social securities. 89% (n-178) of the respondents said they don't have daily facilities and benefits like lunch, training, break-fast, health insurance, accommodation and transport. No maternity leave facilities (97%, n-194) in almost all the workplace.

**Recommendations:** The study suggests giving PPE and OSH training under a comprehensive OSH management strategy as well as work benefits and facilities with proper living wages to stone-crushing workers. SBCC and Advocacy programs should be undertaken to build awareness, attitude and behaviors of employers and stone-crushing workers towards OSH. Free treatment, monthly health check-up facilities, and workplace accident compensation should be ensured for stone-crushing workers. Enactment of separate laws is urgent to ensure decent workplace, and save their life and livelihoods. It also suggests carrying out further scientific research on other stone-crushing sites in Bangladesh.

# A Study on Occupational Safety and Health (OSH) practices in stone-crushing sector of Bangladesh

### **1. Introduction**

As a lucrative business, stones are crushed in different places around the globe. Like other countries, stone breaking factories/industries have been set up in several districts of Bangladesh, including Lalmonirhat, Panchagarh, Sherpur, Narayanganj, and Sylhet (Jaflong). "Stones are also composed of different compounds depending on the location. Large slabs of stones are broken down into smaller sizes for convenience of transportation (Khan et al., 2016)." Broken pieces of stones are used for construction of roads, railway tracks, bridges, dams, buildings, and sculptures etc while raw materials from stones used for production of medicines, animal feeds, ornaments, glasses, ceramics, and tiles etc. Stones loading and unloading are done by workers and even large stones are hammered by them manually in Bangladesh. Automated loading and unloading and operation of stone crushers are quite rare in Bangladesh. So, stone-crushing workers' safety and health is a major issue of concern in the country. "There are reportedly some severe health implications of working in the stonecrushing industry, the most common being, silicosis (Jayabalou et al., 2006)." "Silicosis is characterised by respiratory damage ranging from reversible functional changes to irreversible lung damage, and in certain extreme cases, lung cancer (Mathur & Choudhary, 1996)." "Experiencing skin irritation, gradual loss of hearing, and coughing is also common among workers who have been working in this industry for long periods of time. Dust generated from crushing stones contain silica, lead, asbestos, as well as other airborne solids (Levin, 1994)." "The various processes of breaking stones into smaller pieces for usage generate a significant amount of dust with silica particles along with a lot of noise. Particles ranging from 1 to 100 micrometers are termed to be dust particles (Ilahi et al., 2012)."

The stone-crushing industry poses quite a threat to the workers in the sites. Various studies find that direct inhalation of dust particles causes restrictions in pulmonary functions, lung cancer, skin irritation, and loss of hearing from noise pollution generated from stone-crushing machines. If related rules and guidelines are not enforced in and around the factories, stone-crushing activities and production of raw materials greatly impacts surrounding environments and also on the worker's safety and health. According to a 2012 report by the Department of Inspection for Factories and Establishments (DIFE), most of the stone-crushing factories in

the Burimari area are running in blatant defiance of a number of health and safety rules (Dhaka Tribune, 2017). Incidents of death and injuries from stone-crushing workplaces are frequent in Bangladesh due to lack of safety measures. A newspaper report says: "A debilitating lung disease caused by silica dust is taking a huge toll on the health of laborers working in the stone-crushing industry in Bangladesh's north and north-eastern regions (Dhaka Tribune, 2017)." Quoting Safety and Rights Society, the report also says: "...over 65 laborers have died in three villages under Burimari, Srirampur and Patgram unions alone in recent years. According to officials of Patgram Upazila Health Complex, at least 16 former laborers of stone-crushing factories in Burimari area have died of the disease in the past five years (Dhaka Tribune, 2017)." Another newspaper report quoting the Burimari Union Parishad Chairman says: "At least 67 stone-crushing workers died of silicosis in the last six to seven years. The union has a list of 100 stone-crushing workers with the disease (The Daily Star, 2020)." But these are the first hand reports only where many of the incidents go unreported. There is negligible data regarding workplace accidents in the stone-crushing industry in Bangladesh. Some studies focusing on occupational safety and health in other formal and informal sectors have been conducted, but no systematic study on the country's stone-crushing sector is carried out for better understanding of the state of occupational safety and health. Furthermore, systematic research must be carried out to monitor whether the domestic and international laws that have been passed as well as the rules and frameworks that are in place, are being actually enforced or not in the stone-crushing factories to ensure safety and rights of workers.

Despite there being a handful of stone-crushing sites in Bangladesh, there has not been enough research on occupational safety and health (OSH) of workers, and their rights. So, due to lack of research, the knowledge gap prevails not only in academic arena but also in execution and enforcement of occupational safety and health as well as legal rights in the stone-crushing sector in Bangladesh. This study has been done mainly to close this knowledge gap which will help policy formulation and execution of occupational safety and health in the stone-crushing sector. This study can be used to develop safety measures to eradicate the threats that are rampant in the stone-crushing sector, engaging State and non-State actors, as well as workers and employers to improve OSH situation in factories. So, this research project aims to understand impacts of stone-crushing activities on workers' health and rights, and assess Occupational Safety and Health (OSH) practices in the stone-crushing sector of Bangladesh. It is expected that the study findings will help ensure safety and rights of stone breaking workers, execution of OSH by employers, monitoring by civil society organizations and rights bodies as well as OSH enforcement by the concerned government authorities.

### 2. Objectives of the study

This study was carried out with the following objectives in mind-

- To assess Occupational Safety and Health (OSH) practices in the stone-crushing sector of Bangladesh.
- To identify gaps and limitations of OSH conditions to help choose future intervention for improving OSH situation in the stone-crushing factories.
- To explore the state of job security, working hours, opportunity of work and social security of stone-crushing workers and other rights.

# 3. Review of Literatures

Jayabalou et al. (2006) in their study assessed the generation of particulate matter size distribution in a cluster of fifty stone-crushing units in Pammal, India to explore the effects of such particulates on pulmonary functions of workers. This study found that the pulmonary functions of workers in these sites are less than that of an average Indian male. Since the sector employs seasonal workers in rural areas they are hugely unskilled and get exploited by not receiving the proper safety measures, it said. The researchers carried out- weather, air quality monitoring, and particle size analysis in the study area. Then, they did assessment of occupational exposure level and health assessment.

The health assessment was done by initially doing a general examination where the workers filled out a questionnaire and a physical examination was done. Then it was followed by a pulmonary function test and blood sample test. Though this study did not assess the personal exposures to free crystalline silica but did positively relate that workers are being highly exposed to dust containing silica leading to increasing respiratory ailments where workers with the most experience in the industry had the severest obstruction of pulmonary function Jayabalou et al., 2006).

Khan et, al. (2016) in a study explored the socio-economic status and the long term health effects of stone-crushing workers in Sargodha of Pakistan. The processes of stone-crushing involve different stages like drilling and blasting rocks that produce a lot of dust,

transportation of raw materials, crushing, screening, size classification, storage operations and transportation of final product.

Depending on size and weight of particles produced during the processes they remain in air for different time periods leading to a number of cardiovascular and respiratory problems that also includes mortality, hospital visits, the study said. The study was conducted through field visits and questionnaire surveys with a sample size of 150 workers. This showed only 6% of the workers were provided personal protection equipment. This leads to nearly all of the workers suffering from adverse health effects due to their working environment (Khan et, al., 2016).

Kabir et. al. (2018) showed that there is a positive relation between developing lung cancer of stone-crushing workers in Lalmonirhat of Bangladesh. They were being exposed to silica for long periods of time over the years. A multi method approach was applied to gather data through a questionnaire survey, in depth interview, and spirometric examinations in 2016. The sample size for this study was 240. The study found that workers that smoke regularly were at a higher risk of suffering respiratory problems.

The study found that the most common respiratory problem was coughing, shortness of breath, and tightness of chest. It found that 63.12% workers reported not suffering from any respiratory diseases. The study demonstrated a correlation between pulmonary function and duration of work as well as smoking habits. Being exposed to dust in the occupational environment affects other organs along with the lungs. Though the study did not measure dust concentrations, it also did not determine whether the workers wore PPE during their crushing processes Kabir et. al., 2018).

Kitcher et. al. (2012) examined the effects on hearing of workers working in the stonecrushing industry for a prolonged period. The study stated that working in an environment that generates 85 dB noises for a period of 8 hours per day predisposes workers to suffer from noise-induced hearing loss (NIHL). The city of Accra was chosen as the study area where 140 workers participated in the research. The results were compared to a controlled group. The study found that workers were averse to wearing protective gears due to discomfort. Ilahi et. al. (2012) investigated the adverse effects of being exposed to stone dust on the liver and kidneys of stone crushers by testing their Glutamate pyruvate transaminase (GPT), Bilirubin, Alkaline phosphatase (ALP) and creatinine levels. 66 workers of stone crush plants in various localities of Swat and Dir (L) districts of Khyber Pakhtunkhwa, Pakistan were taken under this study while 66 unexposed people were also chosen as part of the control group. The study concluded that the levels of SGPT on the workers were significantly higher than those of the control group. Stone dust contains various toxic substances.

Mandal et. al. (2020) investigated the effects of Covid-19 lockdown on areas with stonecrushing units in India. They found that the particulate matter (PM) near the stone-crushing industries greatly and significantly decreased during the lockdown when the units were shut down to prevent spread of coronavirus. Along with PM the noise pollution was also a lot less than when the units were operational. From this investigation it is understood that the lockdown had a positive effect on the air quality as well as a notable decrease in land surface tension.

Iftikhar et. al. (2004) assessed the connection between silica dust inhalation and chronic obtrusive pulmonary diseases (COPD) among workers where there is significant dust generation in Peshawar of Pakistan. They stated that COPD is more prevalent in Asian countries than developed countries. From their sample size of 160 workers they found that only 35% showed symptoms such as coughing, dyspnea, wheezing while 65% of the workers were asymptomatic. They also found a connection between being symptomatic and asymptomatic and for how long they have been working in the stone-crushing industry.

The study found that workers who have worked for less than 6hours were asymptomatic while those who had 8 hours work shift all showed signs of being affected by the silica dust having respiratory issues. The severity directly corresponds with how long the workers have been working in the industry along with the size of the particulate matter and their smoking habit Iftikhar et. al., 2004).

Ugbogu et. al. (2009) in a study investigated the correlation between the inhalation of dust particles from parent rock materials by the quarry workers and them showing symptoms of respiratory and skin diseases. The study was conducted in three quarry sites in Nigeria with the sample size of 270 workers. Though, the researchers did not include any smokers in their

sample. Furthermore, they also assessed the knowledge of the workers regarding the risks of dust inhalation. They found that despite 83% of the workers being aware of the risks continued working in the quarries due to their financial status.

The study showed that the health risks associated with working in the stone-crushing industry correlate with the type of dust produced along with its composition (Ugbogu et. al., 2009).

Through conducting this review of literature it can be positively inferred that the manual work of crushing stones causes many health problems, including that of respiratory, cardiovascular, skin diseases along with a gradual loss of hearing. But the workers have no other option other than working at the quarries because they are economically at a disadvantage. There is also a lack of wearing protective gear because the workers do not feel comfortable with wearing such safety equipment though their owners are not providing enough safety equipment. The policies in developing countries are also quite lax leading to more suffering of health and safety issues by stone-crushing workers.

# 4. Conceptual and operational frameworks

Occupational safety and health (OSH) is now an important concept in both academic and applied areas because of health or safety risks associated with it. According to WHO, "Occupational health is an area of work in public health to promote and maintain the highest degree of physical, mental and social well-being of workers in all occupations." According to Safeopedia, "Occupational health and safety (OHS) is a branch of public health aimed at improving workplace health and safety standards. It studies injury and illness trends in the worker population and offers suggestions for mitigating the risks and hazards they encounter on the job (Safeopedia, 2021)."

The International Labour Organization (ILO) in its Constitution sets out the principle that "workers must be protected from sickness, disease and injury arising from their employment." The UN organization has adopted 40 standards and over 40 Codes of Practices to deal with occupational safety and health at workplaces. About half of ILO instruments directly or indirectly are dealing with occupational safety and health issues.

ILO sets out the Decent Work Agenda for which OSH is an integral part. According to ILO, decent work is defined as "the right to productive work in conditions of freedom, equity,

security and human dignity. Work can only be decent if it is safe and healthy." ILO further elaborates this principle as: "Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men."

This study sets out a target to investigate job security in the workplace and social protection of stone-crushing workers, working hours and working condition, opportunities for work, as well as the state of safety and health of workers at the stone-crushing units in Burimari zone under Lalmonirhat district of Bangladesh.

#### 5. Methodology

Burimari of Patgram upazila in Lalmonirhat, a southern district of Bangladesh, has been chosen as the study area and unit of analysis for this research. This study area has been selected purposively as most of the stone-crushing factories/industries of Bangladesh are in operation there. There are about 500 stone-crushing factories in the Bangladesh-India bordering area, the entry point of Burimari Land Port.

This study has employed a mixed method approach of qualitative and quantitative aspects. Data has been collected both from primary and secondary sources. Mainly a survey method using an interview schedule has been followed. Three other methods -- Focus Group Discussion (FGD), Key Informant Interview (KII) and Case Study, have been used also to substantiate data to be gathered from the survey. The interview schedule has been developed seeking personal and factory information, job security, working hours, work availability and social security of workers, as well as safety and health conditions at the workplace. The interview scheduled in Bangla has been pre-tested with five workers for testing its appropriateness. The data enumerators have been trained up before the start of the survey. Authentic media reports searching with "stone-crushing workers in Bangladesh' or using other related words on Google, have been downloaded and presented in this report to know their ordeals or OSH situation. Among the Google-searched reports, two media reports have been selected based on their authenticity, time and location.

Some 200 stone breaking workers from 60 stone-crushing units have been surveyed using an interview schedule after selecting them purposively from stone breaking factories situated in Burimari Land Port area of the district. One FGD, and five key informant interviews (KIIs) have also been carried out while two cases of workers' testimonies and two newspaper reports taken under this study to explore in-depth understanding of the occupational safety and health in the stone-crushing sector in Bangladesh where defiance of safety rules are rampant. The collected data using printed interview schedules have been inputted in Google Form for generating quick statistical findings. Both quantitative and qualitative analyses have been made for writing of this report.

Secondary information has been extracted from books, research reports, journal articles, newspaper reports reviewed and used mainly in introduction and review of literature sections.

The study has been conducted in three phases. The first phase comprises inception for finalizing data collection tools and brings about clear understanding of the issues involved. The second phase is the implementation phase, which includes data collection and report writing. The third phase is the validation phase that incorporates comments from different stakeholders for finalization of the study. The study starts with the conceptualization and issue identification brainstorming session that has finalized the strategy, including methodologies and helped make an initial list of issues to be covered. A draft report has been prepared based on primary information collected through active utilization of various research tools. The draft findings have been presented before the researchers concerned and finalized at the end of study period. The whole activities have been carried out in four months.

#### 6. State of stone-crushing yards in Burimari

Burimari is a land port area under Patgram upazila in Lalmonirhat, a bordering southern district of Bangladesh with a population of about 24,719 (Census 2011). Regularly tonnes of stones are carried from India and Bhutan in squat white trucks and are deposited in a place called "Zero Point" right beside the border in Burimari (Islam & Roy, 2019). Since a significant amount of stones are imported from nearby countries and are unloaded in this area, it has given rise to many stone-crushing industries. But unfortunately no stone-crushing factories are locally owned rather operated by people living outside of Burimari. These stones are crushed in various yards, which have coined the place as a village of stones. From Zero

Point till the next 10km hundreds stone-crushing units can be found on both sides of the road in Burimari (Islam & Roy, 2019). Stone-crushing is the main source of income for hundreds of people in and around the upazila. Due to a lack of proper protective measures, and governance oversight by the industries, numerous workers employed in these stone-crushing units for long are showing signs of silicosis and many have already lost their lives. There is no document that reveals exactly how many stone-crushing units in Burimari and how many workers are employed in these yards. A local journalist, who also works for stone-crushing workers' rights as a local representative of a Dhaka-based rights NGO, said: "There are 600 mobile stone-crushing machines (one machine installed for a yard), of which 400 are running in Burimari. About 50 automated stone-crushing and 40-45 lime stone-crushing machines are also there. Each small stone-crushing unit employs about 15 workers on an average."<sup>1</sup> As per the account of the rights defender, there are about 500 stone-crushing factories in Burimari. A hefty number of the population of Burimari is involved in this industry. A report of The Daily Star (2020) quoting Burimari Union Parishad Chairman Abu Sayed Newaz Nishat said "...more than 20,000 workers are employed in the stone-crushing industry at Burimari." Heavy machinery is used to crush the imported stones that are later used for constructing roads, bridges, buildings etc. Stone-crushing factories are being run in the area causing heavy environmental pollution with dust.

#### 7. Survey findings

#### 7.1. Socio-demographic and workplace profiles of workers:

Some 200 stone-crushing workers have been surveyed as respondents of this study conducted in Burimari of Lalmonirhat district in Bangladesh. Gender, age, marital status, education, types of workers, and their working experiences have been analyzed in this section to know their socio-demographic and workplace profiles.

**Gender:** Among the respondents, 78.5% (n-151) of the respondents are male while 21.5% (n-49) female. In the stone-crushing units in Burimari, most of the workers are male. One or two female workers were found working in a stone-crushing unit during this survey.

**Age:** The survey finds that most of the respondents (36%, n-72) are above 36 years old while 7.5% (n-15) of the respondents between 15-20, 13% (n-26) between 21-25, and 23% (n-46) between 26-30 and 19.5% (n-39) between 31-35. Only two respondents (1%, n-2) are below

<sup>&</sup>lt;sup>1</sup> KII held at Burimari on 27 July 2022.

15 that means they are child workers. The researchers found very few child workers in the stone-crushing units of Burimari. A worker said parents don't engage their children with such risky, hazardous and heavy work.<sup>2</sup>

**Marital status:** This survey finds that among the 200 respondents, most of the respondents (84.5%, n-169) are married workers while 11.5% (n-23) unmarried workers, 2% (n-4) separate and 2% (n-4) widow.

**Education:** The survey finds that the education level of the stone-crushing workers is comparatively much lower and poorer than any other such occupations. Among 200 stone-crushing workers, 24.5% (n-49) of the respondents are illiterate and 20% (n-40) can sign and read only. 27% (n-54) stone-crushing workers have completed Class I to Class V level of education while 21% (n-42) Class VI to Class X. Only 5.5% (n-11) of the workers have passed SSC while 1% (n-2) HSC and 1% (n-2) other degrees.

**Number of workers in a factory:** The stone-crushing workers were asked how many workers work at their respective units, 41.5% (n-83) of the workers said their factories have 11-15 workers while 16.5% (n-33) said 6-10 workers, 29% (n-58) mentioned 16-20 workers, and 10.5% (n-21) pointed out above 21 workers while 2.5% (n-5) mentioned 1-5 workers in their stone-crushing factories. It was observed during the survey that most of the stone-crushing machines were running manually with 10-15 workers.

**Types of work they perform at stone-crushing units**: Among the 200 respondents, the most of the workers crush stones (39.5%, n-79) with machines and others lift the crushed stones (45.5%, n-91). Some 12.5% (n-25) of the workers control machines as drivers while 1% (n-2) others break big stones for putting those into the machines, 0.5% (n-1) supervisors, 0.5% (n-1) do monitoring at the workplace and 0.5% (n-1) limestone workers.

<sup>&</sup>lt;sup>2</sup> FGD at Burimari held on 27 July 2022.



**Work experiences:** Of the respondents, 40.5% (n-14) workers are working below one year while 40.5% (n-81) workers for 1-5 years, 39% (n-78) for 6-10 years. Only 2% (n-4) stone-crushing workers are working above 20 years while 7.5% (n-15) for 11-15 years, 4% (n-8) for 16-20 years.



7.2 Work stability and security:

**Way of getting work:** The respondents were asked how they got their present work at their respective workplace. In reply, around 33% workers (n-66) said they have got their job through labour contractor (Sardar), while 29% (n-58) through owners, 19.5% (n-39) through co-workers, only 2% (n-4) gets job by own-self, 4.5% (n-9) through labour organization, and 12% (n-24) through relatives,

Way of getting stone-crushing work	Frequency	Percent
Directly through employers	58	29%
Through labour organization	9	4.5%
Through labour contractor (Sardar)	66	33%
Through relatives	24	12%
Through co-workers	39	19.5%
Own-self	4	2%
Total	200	100%

#### Table 1: Way of getting work

**Wage payment methods:** The stone-crushing workers were asked when their employers pay their wages. Most of the workers (85%, n-170) said they get salary on daily basis, 4.5% (n-9) get on monthly basis, 6% (n-12) weekly, 3% (n-6) on contractual basis, and 1.5% (n-1) fortnightly. It was observed that most stone-crushing workers work on a daily basis as a day labourer.

Wage payment methods	Frequency	Percent
Daily	170	85%
Weekly	12	6%
Monthly	09	4.5%
As per agreement	06	3%
Fortnightly	03	1.5%
Total	200	100%

Table 2: Wage payment method at stone-crushing units

Again, they were asked who hands over their wages to them? 41.5% (n-83) of the stonecrushing workers said they receive their wages from the owner while 22% (n-44) from the manager/officer, 35% (n-72) from the labor contractor (Sardar) and 0.5% (n-1) from others.

**Daily work opportunity:** The stone-crushing workers were asked whether they can do their work daily. Most of the respondents (80.5%, n-161) said they can do their work every day while 19.5% (n-39) workers don't get work every day. Of the 39 workers who don't get job daily were asked how many days they can't work in a month, 53.5% of the workers (n-21) said they don't get work for 1-5 days in a month while 30.8% (n-12) don't get work for 6-10 days, 15.4% (n-6) workers for 11-15 days in a month.

Days	Frequency (39)	Percent
1-5	21	53.8%
6-10	12	30.8%
11-15	6	15.4%
Total	39	100%

 Table 3: Stone-crushing workers without job in a month

**Ability to do other works:** The stone-crushing workers were asked whether they were able to do other works except stone crushing. Most of the workers (89%, n-178) respond they can do other jobs like agriculture, driving, tailoring and construction mason etc. On the contrary, 11% (n-22) can't do any work without stone crushing.

#### Table 4: Ability to do other works

Ability to do other work?	Frequency	Percent
Yes	178	89%
No	22	11%
Total	200	100%

# 7.3 Working hours, overtime and rest time:

**Daily working hours:** The stone-crushing generally works from 10am to 5pm. When asked, 73.5% of the respondents (n=147) said they work eight hours in a day while 26.5% (n-53) said they work more than eight hours. Most workers during this survey demanded that the working hour has to be reduced.

Table 5: Daily working hours

Working hours	Frequency	Percent
Eight hours	147	73.5%
More than eight hours	53	26.5%
Total	200	100%

The respondents again asked whether they get overtime allowances for additional work. Among 200 respondents, only 26.5% (n-53) stone-crushing workers said they get overtime bills while most of the workers 63.5% (n-127) said they didn't get any overtime allowances. 10% other workers (n-20) said overtime bill is not applicable for them as they work within the working hours. On the other hand, most of the workers (96.5%, n-193) said they get proper time to rest during midday and 3.5% don't get proper rest time during their work at the workplace.

 Table 6: Rest-time facilities of stone-crushing workers

Rest-time facilities	Frequency	Percent
Yes	193	96.5%
No	7	3.5%

Total	200	100%

Those stone-crushing workers get rest time during their work and were asked how much time they get for their rest at the workplace. Of the respondents (n-193), 65.5% (n-127) of the workers said they can rest more than one hour daily while 34.5% (n-66) less than one hour. Most of the workers during the survey express their satisfaction on their rest.

When asked about rest time during work, Bikash Shah, a stone-crushing worker, said: "We 13-15 workers are working at a site against a wage of Tk 380 each day which is the same for a female worker. We work from 9:00am to 5:00pm and take two breaks from 11:00am to 11:30am (half an hour) and 2:00pm to 2:30pm (half an hour). We arrange our lunch by ourselves."

#### 7.4 Daily wages and its satisfaction:

**Daily Wages:** The wages of stone-crushing workers are not equal even though they work almost the same hours in a day. Some 60% of the workers (n-120) get Tk 400 daily while 16% (n-32) get Tk 500. On the other 15% (n-30), 6%, (n-12), and 2% (n-4) get a daily salary of Tk 300, Tk, 600 and Tk 700-800 respectively. Only two workers (1%) get daily wages of Tk 1,000.



**Wage cut:** The stone-crushing workers were asked whether their wages were cut by the owner. Most of the workers 85.5% (n=171) said that they had never been faced with a wage hash. On the other hand, 7.5% workers (n-15) said they never cut their wages while 2% (n-4),

2% (n-4), *and* 1% (n-2) said suddenly, sometimes, and often respectively. However, 2% (n-4) workers stay without giving any answer.

**Satisfaction over wages:** Most of the workers (89%, n-178) are satisfied with their daily wages. On the contrary, 11% (n-22) workers think their wages are not enough to meet their living costs.

Satisfied over wages or not?	Frequency	Percent	
Yes	178	89%	
No	22	11%	
Total	200	100%	

 Table 7: Satisfaction over wages

Md Faruk, an office staff of Modina Feed, which crushes lime stones, said 18 workers in three groups work at their factory regularly on production contract basis. A worker earns Tk 1,500- Tk 1,800 based on production, but can't work every day. They work on the basis of rotation and production. When power goes out at the factory, their work remains off. As a result, they only get Tk 200-Tk300 in a day as production remains stopped. Such is the reality for workers who work based on production. But this scenario is not the same for the stone-crushing workers who work for a daily wage basis.

The study finds that wages of the stone-crushing workers are very poor. Most of the workers get Tk 400-500 as daily wages. They have no lunch or rest time food facilities (Khoraki) from employers' sides. No transport facilities. So, from their wages they have to spend money for rest time, food at the workplace and transport fares to go to the sites/return to home. As a result, Tk 100 has to be spent from their daily earnings. The rest of the daily money they earn, not enough for meeting daily living costs. Jamal, a stone-crushing worker of PS Traders, said: Two year ago I was an agriculture worker. Now I am working as a stone-crushing worker. I get Tk 380 as daily wage but I have to spend Tk 50 each day for transport costs."<sup>3</sup>

Almost all the stone-crushing workers don't have festival bonus facilities. Md Faruk, an office staff of Modina Feed which crushes lime stones said: Workers don't get any festival bonus as they work on a daily basis and production basis. Sometimes employers provide them with new clothes and food items before Eid followed by Ramadhan with one or two

<sup>&</sup>lt;sup>3</sup> FGD was held at Burimari on 27 July 2022.

kilogram of meat during Eid-ul-Azha. But such an offer is very rare because a few companies give such food and clothes to them, he said.<sup>4</sup>

Shahida Begum, a worker, said: "We spend our day in a miserable way with our family as we get very poor daily wages. How will we bear the cost to run our families? We could not bear the cost of education for our children."<sup>5</sup>

#### 7.5 OSH situation at stone-crushing units:

**Workplace risks and hazards:** In replying to the question what types of risk and hazards they can identify at the workplace, the stone-crushing workers have given some worrying information about their risks and hazards. The stone-crushing workers said that there are lots of risks and fear in stone-crushing factories and many of them faced such risks causing workplace accidents. So, while asked, they identified some risks at the workplace based on their experiences. Of the respondents, 5% (n-10) said sometimes incidents of electrocution occur at the workplace, while 52.5% (n-105) identified being hurt by falling after slipping out at the sites. 59% (n-118) mentioned that workers are hurt while uploading stones while 17% (n-33) said they entangle with the machine or its wheels. 57.5% of the respondents (n-115) said workers suffer from body pain due to heavy workload of stone crushing, while 10% (n-20) said workers are hurt by running pieces of broken stones while crushing and 1% (n-2) identified other risks. Only 1% (n-2) of the stone-crushing workers (n-2) said they don't perceive any risk at the workplace.

Workplace risk factors	Frequency	Percent
Electrocution	10	5%
Hurt by falling after slipping out	105	52.5%
Hurt while uploading stones	118	59%
Entangled with machines	34	17%
Body pain	115	57.5%
Hurt by running stones	20	10%
Other risks	2	1%
No risk identified	2	1%

 Table 8: Identification of workplace risks and hazards by workers

NB: Multiple answers.

**Facing workplace accidents:** In reply to the question whether they have fallen victim of workplace accidents in the last one year, 60% of the stone-crushing workers (n-120) said they

<sup>&</sup>lt;sup>4</sup> KII held at Burimari on 27 July 2022.

<sup>&</sup>lt;sup>5</sup> FGD was held at Burimari on 27 July 2022.

fell victim of workplace accidents while 40% (n-80) workers didn't face any workplace accidents.



**Type of accidents:** Of the respondents (60%, n-120) who have faced workplace accidents were asked what types of accidents and injuries they experienced during their work, they gave multiple answers. 5.8% (n-7) got electrocuted during work, 52.5% (n-63) was hurt during uploading stones, 37.5% (n-45) entangled with machines (10%, n-12), while 0.8% (n-1) got hurt in fingers, 50.8% (n-61) hurt by running stones, 0.8% (n-1) eye injury and 0.8% (n-1) leg injury.

Types of accidents and injuries	Frequency	Percent
Electrocution	7	5.8%
Hurt by falling after slip out	63	52.5%
Hurt during uploading stones	45	37.5%
Entangled with machines	12	10%
Got hurt in fingers	1	0.8%
Got hurt by running stones	61	50.8%
Eye injury	1	0.8%
Leg injury	1	0.8%

 Table 9: Stone-crushing workers' types of injury and accidents and injuries

NB: Multiple responses.

**Treatment facilities:** The stone-crushing workers who faced various workplace accidents were asked what types of treatment and other facilities their employers provided after injuries. 50.5% (n-101) said they were provided with treatment cost while 38.5% (n-77) with medicine cost only, 4% (n-8) with compensation against the injuries and 2.5% (n-5) with only

primary treatment. On the contrary, 22.5% (n-45) workers said they were sent back to home after workplace accidents and 22.5% (n-45) others said they don't get any treatment facilities.

<b>F</b>		
Treatment facilities	Frequency	Percent
Sent to hospital	44	22%
Provided treatment cost	101	50.5%
Provided medicine cost only	77	38.5%
Sent back to home	18	9%
Provided compensation	8	4%
Did nothing	45	22.5%
Provided only primary treatment	5	2.5%

Table 10: Workplace accident victims' treatment facilities

NB: Multiple responses.

For a decent workplace, the employers should impart training in safety and health to the workers but the employers don't give any training to the stone-crushing workers. Some employers only make them cautious about the workplace risk and hazards before engaging the workers with the factory works. When asked whether they get precautionary Information about occupational risks and hazards, 79.5% of the stone-crushing workers said they did not get any precautionary information about the occupational risk and hazards while 20.5% said they have got such information from the employers' side. During the survey, many of the workers said they get information from other workers or relatives that have previous work experiences at the stone-crushing sites.

Get information about occupational risks and hazards?	Frequency	Percent
Yes	41	20.5%
No	159	79.5%
Total	200	100%

**Table 11: Precautionary information about occupational risks and hazards** 

**Personal Protective Equipment (PPE):** Personal Protective Equipment (PPE) is essential for stone-crushing workers as they do very risky and hazardous work with stones. The respondents were asked whether their employers provide them with safety equipment like boots, gloves, safety glass, most of the respondents 84.5% (n-169) said they don't get any PPEs from the owner. Only 15.5% (n-31) said they get PPEs and added that they (only 30 workers) get masks while one gets boots during work time. Again, the respondents were asked whether they know about PPE, most of the workers (85%, n-170) have no knowledge about PPE while only 10% (n-20) know about them and 5% (n-10) others didn't reply to this question. The real picture of the workplace is worrying as no workers were found wearing

any PPE while the researchers were visiting 60 stone-crushing sites at Burimari during this survey. Photos on some stone-crushing units taken there reveal such a worrying picture.



Image: These photos show that these workers are working without wearing PPE. The photos were taken on 27.07.2022 at different stone-crushing sites at Burimari in Lalmonirhat of Bangladesh.

**Training on OSH to cut risks:** In reply to the question whether they get any training on OSH to reduce workplace risks and hazards, most of 98% (n-196) respondents said they don't get any training on OSH to reduce risks and hazards. Only 2% (n-4) workers said they get training on OSH from employers and labour contractors, which means such training is not formal rather informal advice to the workers .

8.11			
Should I get training on OSH or not?	Frequency	Percent	
Yes	4	2%	
No	196	98%	
Total	200	100%	

#### Table 12: OSH training opportunities

**Frequency of occupational disease:** The stone-crushing work causes several diseases and sickness among workers but most of the time they can't realise such symptoms. However, most of the stone-crushing workers 78% (n-156) said they suffer from various occupational diseases sometimes and 5% (n-10) said they always suffer while 1% (n-2) for long periods and 16% (n-32) said they never suffer from such diseases. This finding indicates that 84% (n-168) suffer from various occupational diseases.

Frequency of suffering	Frequency	Percent	
Always	10	5%	
Sometimes	156	78%	
Long time	2	1%	
Never	32	16%	
Total	200	100%	

Table 13: Frequency of suffering from occupational diseases



Those stone-crushing workers who (84%, n-168) suffer from occupational diseases were asked what types of diseases they suffer. They gave multiple answers mentioning various diseases. Most of the respondents (69%, n-116) said they have suffered from head pain while 54.2% (n-91) cold. Other diseases are asthma 50.6% (n-85), silicosis (13.1%, n-22), eye

problem (38.7%, n-65), less hearing (48.8%, n-82), skin disease (6%, n-10) and body pain (19.6%, n-19).

Among 200 stone-crushing workers, 22 workers were suffering from the deadly disease, Silicosis, which is an alarming number so far. Md. Azizul Islam, a shop owner who left stone-crushing work 20 year ago, said 20-25 years ago a group of workers in a factory had affected with silicosis and 11 of them died with the disease. Many of the workers then left the stone-crushing work like him fearing the deadly disease.<sup>6</sup>

Types of occupational diseases	Frequency	Percent	
Asthma	85	50.6%	
Head pain	116	69%	
Cold	91	54.2%	
Silicosis	22	13.1%	
Eye problems	65	38.7%	
Less hearing	82	48.8%	
Skin disease	10	6%	
Body pain	33	19.6%	

Table 14: Types occupational diseases workers suffer

NB: Multiple responses.

**Smoking habits:** The survey finds that 63.5% (n-127) of the stone-crushing workers smoke while 36.5% (n-73) don't. Severity of lung diseases or problems intensify because of smoking along with exposure to stone dust. "The synergistic effect of tobacco smoke and occupational silica dust exposures on decreasing lung function has been well documented by various researchers (Iftikhar et. al., 2004).

 Table 15: Stone-crushing workers' smoking habits

Smoking habit?	Frequency	Percent
Yes	73	36.5%
No	127	63.5%
Total	200	100%

**Inspection by government agencies:** The stone-crushing workers were asked whether they knew about the government inspection to enforce safety and health rules on the sites, 95.5% (n-191) workers said they didn't know about government inspection. Only nine workers (4.5%) found such inspection at the stone-crushing units.

<sup>&</sup>lt;sup>6</sup> KII held at Burimari on 27 July 2022.

Know about govt. Inspection?	Frequency	Percent
Yes	9	4.5%
No	191	95.5%
Total	200	100%

 Table 16: Knowledge about government inspections

In replying to another query whether the respondents find any inspector at the stone-crushing sites, 96.5% (n-193) workers said they didn't find any government inspector at the sites. Only 3.5% (n-7) found inspectors inspecting at the workplace. A staff of a factory said: Some government officers of the Department of Inspection for Factories and Establishments, and the Department of Environment from Rangpur make a day long inspection in Burimari one or two times in a year and return to the divisional headquarters.

# 7.6 Social security and workplace facilities:

**Social security:** In stone-crushing factories, there is some social security of the workers from the owner but it is a matter of concern that 73% (n-146) of the workers are not aware of workplace facilities and social security. 18.5% (n-37) of the workers said their factories have compensation against workplace injuries or death while 3% (n-6) said about provident fund, 0.5% (n-1) group-insurance, 1% (n-2) maternity leave and 1% (n-2) said about Eid bonus. On the contrary, 3% (n-6) of thee workers said they have no such types of facilities at the workplace.

	-	
Social security facilities	Frequency	Percent
Provident fund	6	3%
Group insurance	1	0.5%
Gratuity	0	0%
Compensation for injuries or deaths	37	18.5%
Maternity leave	2	1%
Don't know	146	73%
Eid bonus	2	1%
No facilities	6	3%
Total	200	100%

 Table 17: Stone-crushing workers social security facilities

The stone-crushing workers were asked again about daily facilities and other benefits like lunch, training, break-fast, health insurance, accommodation and transport. Whereas 89% (n-178) respondents said they don't have any of the facilities. On the other hand, 8.5% (n-17), 1% (n-2), 0.5% (n-1) and 0.5% (n-1) get breakfast bill, lunch, accommodation, health insurance and transport allowance respectively.

Other facilities	Frequency	Percent
Breakfast bill (Khoraki)	17	8.5%
Lunch	2	1%
Health insurance	1	0.5%
Accommodation	1	0.5%
Transport allowance	1	0.5%
No facilities	178	89%
Total	200	100%

Table 18: Stone-crushing workers' other facilities

The stone-crushing workers were asked again about other facilities like safe water, noise control, male and female separate toilets, maternity leave, and enough lighting that they are getting at workplaces. They gave multiple answers. 73.5% (n-147) of the respondents said they are getting safe water at the workplace and the rest of them (26.5 %, n-53) don't. Most of the workplace (91%, n=192) have no loud noise control mechanism, which has only 9% (n-18) sites. 78.5% (n-157) said they have washing facilities at the stone-crushing units while 21.5% (n-43) said they haven't. They have a dust-free environment (11% (n-22) while 89% (n-178) don't have. 24% (n-48) have sanitary latrines and 76% (n-152) don't get such sanitation facilities. Almost all the stone-crushing units (99%, n-198) have no dust measuring devices. Only two units have such facilities of dust measuring. No maternity leave facilities (97%, n-194) in almost all the workplace while only 3% (n-6) have such facilities.

Enough lighting has 83% (n-166) of the working sites while 17% (n-34) don't have. Malefemale separate toilets have 4.5% (n-9) of the stone-crushing units while no such facilities in almost all the working sites (95.5%, n-191). 22% (n-44) of the workplace have a healthy lunch room while 78% (n-156) don't have such facilities.

Facilities	Yes	No
Safe Water	73.5% (n=147)	26.5% (n=53)
Loud noise control mechanism	9% (n=18)	91% (n=192)
Hand and leg washing facilities	78.5%(n=157)	21.5% (n=43)
Dust-free environment	11% (n=22)	89% (n=178)
Sanitary toilet	24% (n=48)	76% (n=152)
Dust measuring device	1% (n=2)	99% (n=198)
Maternity leave	3% (n=6)	97% (n=194)
Enough lighting	83% (n=166)	17% (n=34)
Male-female separate toilet	4.5% (n=9)	95.5% (n=191)
Healthy room/place for lunch	22%(n=44)	78%(n=156)

Table 19: Stone-crushing workplace facilities

NB: Multiple answers.

# 8. Case study from study area and mass media

This section has been developed based on case studies of two workers who were interviewed separately during carrying out this research in Burimari and two media reports have been presented here to know the ordeal of the stone-crushing workers in Bangladesh. Photographs have been presented with their consent as we literally say `a picture is worth a thousand words'.



Case 8.1: Workplace accidents victim Khairul

Khairul Islam, a stone-crushing worker, is showing his right hand before the principal researcher at his present workplace at Burimari in Lalmonirhat district on 27 August 2022. Khairul was entangled with a machine in another factory four years ago that left his three fingers of the right hand cut off. He was admitted to Rangpur Medical College and Hospital. He spent about Tk 1 lakh and ten thousands for his treatment but the then employers gave only Tk 8,000 to him. He sold cattle and a goat and took loan for his treatment. His wife is also a stone-crushing worker who works with him.

#### Case-8.2: Life and livelihood of Morjina

Morjina Begum, a 35-year-old stone-crushing worker, works at a factory at Burimari land port in Lalmonirhat. Wages from stone-crushing is her main source of income to run her family. She gets Tk 300-400 as a daily wage. She was found crushing stones at about 2.30pm under a tree at the open workplace at Burimari. She told her ordeals to the researcher saying: "How many days had I not eaten food during Covid-19 pandemic when did you come here to listen my ordeals? During corona situation, she had faced a big trouble as passing the days without food in her house like other stone-crushing workers.

She said: "Now I am working and earning daily wages from this factory but I am eating cooked rice most of the time mixing with only salt and water. I have not received anything from the government yet." She said her life and livelihood is not good. She has to do hard

Morjina Begum said: "I have been working for 10 years in this factory. I have got injured many times while crushing stones. But I did not get proper treatment and medicines." She added: "There is no good hospital around this area. Two years ago, she was admitted to Rangpur Medical College Hospital with injuries from a workplace accident and spent Tk 1 lakh for her remedy."

work from sunrise to sunset and gets a little amount of money as wages to feed her children. She said they are neglected all times at the workplace and also ignored in getting other benefits from the employer as well as welfare initiatives from the government.

Morjina said: "I have been working for 10 years in this

factory. I have got injured many times while crushing stones. But I did not get proper treatment and medicines." She added: "There is no good hospital around this area. Two years ago, I was admitted to Rangpur Medical College Hospital with injuries from a workplace accident and spent Tk 1 lakh for my remedy. She added that the weather of this area is also very bad. Her family members are affected with many diseases. Morjina said: "Now I get work and get money. But I don't get work every day in a week, I get work for one day and have to remain idle for next two days."

Case-8.3: A stone-crushing child worker without safety gear



Case-8.4: Stone-crushing workers' situation reported in media



# A report published by The Daily Star on 31 March 2020 Silicosis claims lives of 67 stonecrushing workers in six to seven years

The stone-crushing workers in Patgram upazila are left to suffer as most are too poor to afford treatment for an irreversible lung disease silicosis which is their occupational hazard.

Silicosis is a disease caused by silicon poisoning -- a common side-effect of working in stone-crushing yards. The workers breathe in the silica dust while working in the yards, and the silicon settles in their lungs, slowly solidifying their respiratory systems.

Patgram is dotted with hundreds of stone-crushing yards, where large mountain boulders imported from Bhutan or India are broken down into small chips and fine powder to make products for mosaic, plaster, and building construction.

At least 67 stone-crushing workers died of silicosis in the last six to seven years, said Burimari Union Parishad Chairman Abu Sayed Newaz Nishat, adding he has a list of 100 stone-crushing workers with the disease in the union. However, the number could be higher as more than 20,000 workers are employed in the stone-crushing industry there, he stated.

There is no official figure for the total number of deaths resulting from silicosis.

When the stone-crushing yards first started operations, impoverished villagers of the border area flocked to sell their labour, but soon realised the job came with fatal side-effects.

Stone-crushing workers affected by this disease have become physically weak and lost their ability to work. With poverty and hunger hanging over the workers' heads, they are left with nothing to do but wait for death.

Fifty-five-year-old Tofazzal Hossain, from Kamarerhat village in Burimari, has been suffering from silicosis for seven years.

He was forced to sell his lone asset -- eight decimals of land -- to meet his treatment costs. After selling his land, he sought shelter on other's land.

"I have been dying of this disease for the past six years," said Tofazzal. "We used to work as a group of 15 people all of us have been affected by silicosis. Only eight of us are alive now," he said. Worker Momin Ali had explained to a correspondent of this newspaper last year that the silicosis-affected workers need to take Pulfibro, a life-saving medication for these workers, four times a day. Each pill costs Tk 60.

Today, the workers earn between Tk 360 and Tk 400 a day for their labour. Pulfibro, the brand name for the drug Pirfenidone, reduces the fibrous tissue formations which fill up the air pockets inside the lungs of the silicosis affected workers. As long as the silicon resides in the lungs of the workers, the lungs will continue to envelope the pollutant with scar tissue, and the workers will have to continue taking this expensive pill to undo the damage.

Momin Ali passed away year at Rangpur Hospital, as his collapsed. He was the unofficial Burimari-"Silicosis Patient fought for the rights of

The workers have been assistance for their administration, public wealthy locals. But unheard.

Many have ended up to a lack of money; with no treatment.

"When I receive better. Whenever I stop But I cannot afford all said Rashidul Karim, labourer of Ufarmara silicosis.

"By selling off my only land, I sought treatment of Diseases of the Chest as well as hospitals in Lalmonirhat. There is



"When I receive treatment, I feel a little better. Whenever I stop treatment, I fall sick. But I cannot afford all the medical expenses," said Rashidul Karim, 45, a stone-crushing labourer of Ufarmara village suffering from silicosis. "By selling off my only asset, one bigha arable land, I sought treatment at the National Institute of Diseases of the Chest and Hospital in Dhaka, as well as hospitals in Rangpur and Lalmonirhat. There is nothing to sell anymore so I cannot afford the medical treatment," he said.

on February 15 this Medical College respiratory system coordinator of an based group called the Association", which the workers.

seeking financial treatment from the local representatives, and their pleas remain

foregoing treatment due many others have died

treatment, I feel a little treatment, I fall sick. the medical expenses," 45, a stone-crushing village suffering from

asset, one bigha arable at the National Institute and Hospital in Dhaka, Rangpur and nothing to sell anymore

so I cannot afford the medical treatment," he said.

"I have been suffering from this disease for the last five years. Four of my co-workers have gone," he said. With no ability to work, he has to sit at home.

Shaheen Islam, a 42-year-old worker from Dangirpar village, said that he did not know about silicosis when he started work in the stone-crushing yards 14 years ago. Without any precautionary measures in place, all the workers were affected.

"I have been suffering from this disease for eight years. Some of my friends have died of it. My condition is not good either. I'm dying while trapped in my house," he said.

"If I could get treatment, I would probably survive a few more days," he added. Stone-crushing labourers Rezaul Haque, 38, of Dolapara village; Rahimuddin, 46, of Natarbari village; Altaf Hossain, 48, of Islampur village; Noor Islam, 48, of Bamandal village; Afaz Uddin of Kamerhat village, and others have also given up due to their financial condition and lack of help.

"Many of us now work while covering our nose and mouth with clothes but most people still don't know to do this," said Nazrul Islam, a 42-year-old labourer in the Burimari land port area.

"We have no alternative work so we crush stones. I know how dangerous and incurable silicosis is, but there is no way out," said another labourer, Safiar Rahman.

Dr Bipul Chandra Roy, a tuberculosis and chest disease specialist at RDRS Bangladesh in Lalmonirhat, said that he is providing treatment to many patients suffering from silicosis. While some receive regular treatment, most are irregular patients as they cannot afford the medicine.

Lalmonirhat Deputy Commissioner Md Abu Jafar told The Daily Star a team from the Ministry of Labour and Employment met with the labourers a month ago. The ministry is preparing to provide financial assistance, he said, but when the help will arrive is a question he does not have an answer to.

"I am contacting the ministry to speed up the steps. And if anyone with the disease appeals to me, I will help," added the deputy commissioner.

Contacted, Patgram Upazila Health and Family Planning Officer (UHFPO) Dr Arup Paul said silicosis affected patients are more vulnerable to the coronavirus infection. They all must stay at home during the ongoing crisis period. Health officials are collecting information of the silicosis affected people, he added. Case-8.5: Stone-crushing workers' safety and health reported in media



[A report published by The Financial Express on 2 April 2022] Burimari stone crushers expose workers to health risks



LALMONIRHAT, Apr 02: Rampant use of stone crushers is posing health hazards to several thousand workers who carry stones or operate the machines in the Lalmonirhat's Burimari land port area under Patgram upazila.

Visiting some stone-crushing sites, this correspondent has recently found that most labourers have no health safety equipment for crushing stones. They have for long been working without wearing face masks or hand gloves.

The dust entering their lungs can cause many difficulties, said a worker.

Saleha Begum, a widow labourer, alleged that they have no other alternatives but to work in stone-crushing fields.

"We get only Tk 350 each after working from morning till evening," she said.

"Getting only Tk 350-380 as wages per day is too scanty to survive nowadays," she added.

Abu Alam, another labourer, said, "Maize and tea farming has become popular in our area. If the government can set up agro-based industries here, it will create job opportunities for all of us."

"If it is done, then we'll be able to move away from hazardous works like stonecrushing," he added.

When asked, Dr Abul Kashem, former civil surgeon (CS) of Lalmonirhat, said,

"Stone dust is very harmful for our lungs and respiratory system. If a person works for long in stone-crushing sites, he/she may suffer from acute lung and bronchial diseases."

"Many young labourers of this area died in the past few years due to silicosis diseases," he added.

Upazila Nirbahi Officer (UNO) Md Saifur Rahman of Patgram said, "We have initiated several programmes to make stone-crushing workers aware of their health safety. We even encourage the employers to provide their labourers with all the safety tools," he added.

# 9. Recommendations

Following are some suggestions to remedy this dire violation of workers safety-

- Employers should provide workers with helmets, hand gloves, footwear, safety goggles, masks, towels and other protective gears. Workers should be imparted training in occupational safety and health issues. A comprehensive occupational safety and health management strategy is an imminent need for the stone-crushing sector.
- Ensure compensation for those stone-crushing workers who die or/are injured in workplace accidents. Employers should bear the treatment cost of workers who are victims of workplace accidents and being affected with various diseases for working at the stone-crushing yards.
- Behaviour Change Communication (BCC) and Advocacy Communication programs should be undertaken targeting policy makers, employers and stone-crushing workers in the country to limit health and safety risks at the workplace in a bid to build their awareness, attitude and behaviours.
- State of the art technology should be used in the yards to ensure that as little as possible dust is being generated due to the stone-crushing activities. Covering open operation for dust control as well as windbreak walls are urgent to be introduced at stone-crushing sites. Noise from stone-crushing machines should be controlled by any means. Such manual machines can be replaced by automated machines to reduce dust and noise pollution.
- Stone-crushing workers can't get work every day due to lack of work opportunity at the sites. The government should create alternative occupations for them and those workers who aren't able to do heavy and risky stone-crushing works. Under the government's 40-day job creation project, 1681 male and female stone-crushing workers from impoverished families of Lalmonirhat's Patgram upazila have got an opportunity to do alternative work (The Daily Star, 2022). Such work should be created more to make it sustainable.
- Employers should increase daily wages and provide various allowances and benefits to stone-crushing workers.
- Health insurance and life insurance facilities are urgent to be introduced for their life long survival.
- Fix working hours within eight hours with one hour rest time and pay overtime allowances for their additional work.
- Safe drinking water, and toilet and washing facilities, clean dining room, and resting place should also be ensured at stone-crushing sites.
- Free treatment and monthly health check-up facilities at the workplace or near the workplace should be ensured for stone-crushing workers.
- Rationing of food and daily essentials should be introduced for stone-crushing workers.
- Ensure proper work environment and opportunities, and maternity facilities for female workers.
- Ensure assistance from state-run worker welfare funds and other government facilities created only for them.
- Controlling "excessive interference" of owners at the workplace is imperative to reduce their mental pressure.

- Inspection from government agencies concerned at the stone-crushing yards should be strengthened and increased to enforce the existing laws and policies related to this sites.
- Formulate stricter policies by which the owners of stone-crushing industries are forced to input protective measures to ensure workers' safety and health.
- A bargaining agent or workers' union to be formed can be of great help to fight for the rights of stone-crushing workers, including workplace facilities, proper compensation and social security benefits.

These recommendations are suggested after conducting literature review and carrying out interviews of the workers employed at the stone crushing factories

# **10.** Conclusion

The Burimari stone-crushing yards, where thousands of workers employed, are in dire need of reform. These workers are needlessly losing their lives due to lack of protective measures at the workplace. Without major reforms in the operation of these yards, the situation is unlikely to become worse and worse. This stone-crushing sector needs special attention from policymakers as the work of stone-crushing workers is different from other day labourers. Enactment of separate laws and policies can reduce the ordeals of stone-crushing workers. This research has been conducted on a small area, as other stone-crushing zones of Bangladesh could not be taken under this study. Moreover, carrying out further scientific research to understand and comprehend the effects of stone-crushing activities on workers is extremely important to bridge the gap in knowledge. So, such in-depth studies on other stone-crushing sites in Bangladesh is urgent to be carried out.

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