

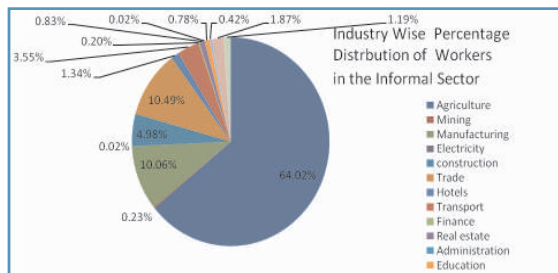
Occupational Health & Safety in the Informal Sector

Evidences from the craft sector



Key Facts & Issues

- Of the total workforce of 457.46 million workers in India, 92.38% are informal workers. Of 92.38%, while 86 % are in the informal sector, the remaining 6.38% are actually sub-contracted workers in the formal sector.
- Out of the total workforce of 457.46 million workers, 70 million (15.30%) are engaged in trade and manufacturing related to small scale industries consisting of a large part of the textile sector, handlooms, powerlooms and traditional industries



including handicrafts. These sectors account for about 49.5% of industrial production and 55% of national export

- Over the years, the number of informal workers has increased and this increase is generally found to be low quality employment constrained by low productivity significantly correlated to absence of occupational health and safety (OHS) facilities at workplace.
- Occupational health risks are one of the leading causes of morbidity and mortality in the world in general and developing countries in particular.
- According to a study done in 1999, the estimated annual incidence of occupational disease is in the range of 924,700 to 1,902,300 cases and 121,000 deaths have been reported in India.
- The existing legislation and policies protecting workers are grossly inadequate as they cover only four sectors- factories, mining, ports, and construction. More than 90% of the Indian labour force falls outside the purview of the Factory Act (1948) provisions.
- In practice, legislation and laws have been blatantly violated by the employers in providing occupational health and safety facilities to informal workers in small enterprises.
- The National Policy on Safety, Health and Environment at Workplace was declared in February

2009 seeking to cover the formal and informal sectors. The policy does not have detailed guidelines to enable enforcement of health and safety at workplace.

- Occupational health is under the mandate of Ministry of Labour and not the Ministry of Health and Family Welfare.
- The number of supervisors (to report conditions of work, health of the workers) is grossly inadequate and in most of the cases, they are not aware of the occupational health and safety requirements at the workplace.
- There is a dearth of research and statistics on incidence/prevalence of occupational diseases and injuries in the country.
- A baseline study recently conducted under SWITCH ASIA Project focussing on textiles and crafts revealed the following:
 - ❖ Regular work reflects better health for the workers as compared to short term contractual work.
 - ❖ The workers exposed to vapours, gases, fibres, and particles in a work atmosphere that is not conducive to pulmonary health, display a marked tendency towards chronic bronchitis as they spent more years in the job
 - ❖ Low level of strength in the hand grip meter test is directly related to repetitive and strenuous work that the workers have to do with very little movement and minimum breaks.
 - ❖ Eyes are mostly affected due to direct impact of chemical agents like metallic fumes and physical agents like dirt, dust, particles etc. Even poor lighting in the workplace often creates strain in the eyes which leads to watering and damage to eyesight.
 - ❖ Across different crafts groups, large number of artisans reported muscular pain, calluses, and hardness of skin, spots, cuts, burns, tremors and skin problems.
- There is a need to create a network of various stakeholders working in the sector to generate comprehensive information on occupational health issues to sensitize employers, artisans, law makers and policy makers.

Background

The informal sector in India¹, including almost the entire craft sector², plays a significant role in the Indian economy in terms of its share in employment, output production and wealth creation. In the total workforce of 457.46 million workers in India, 422.61 million (92.38%) are informal workers. Of 92.38%, while 86 % (394.90 million) are in the informal sector, the remaining 6.38% (27.71 million) are actually sub-contracted workers in the formal sector (NSSO 61st round, 2004-05 & Ajay Naik, 2009). Going by industry group, after agriculture, a sizeable number of informal sector workers are engaged in trade and manufacturing related to small scale industries and traditional industries covering Khadi and Village Industries, Handlooms, Powerlooms, Sericulture, Coir and Handicrafts. These sectors account for about 49.5 per cent of industrial production (2003), 55 % of national export and generate employment opportunities for about 70

million persons -both full-time and part time (Vyas, 2007).

The NCEUS report points out that over the years, the number of informal workers has increased and this increase is generally found to be low quality employment constrained by low productivity (Taskforce report, V.S. Vyas, 2007). The low productivity of the informal workers could be correlated to a large extent to the fact that they are deprived of the three key kinds of livelihoods securities: 1) Employment security (no protection against arbitrary dismissal), 2) Social security (maternity and health care benefits, pension, etc.), 3) Work security (no protection against accidents and illness at the work place). This policy brief focuses on work security issues which include occupational health and safety of workers, that remains neglected in the policy arena.

Occupational Health & Safety: An Overview

According to the World Health Organization (WHO) report 2002, occupational health risks are one of the leading causes of morbidity and mortality in the world in general and developing countries in particular. In India, there is a lack of awareness about occupational safety and environmental hazards that severely affect the vulnerable and marginalized working population. Numerous studies and reports have raised concern over poor occupational health and safety issues of workers in India. About a decade ago, Leigh et al. (1999) estimated an annual incidence of occupational disease between 924,700 and 1,902,300 cases and 121,000 deaths in India. Studies on many industries including the leather tanning industry, textiles and metalware have found that workers in these industries work in inhuman physical conditions for very long hours. (Usha 1984; Banerjee and Nihila 1999; Nihila 2002, ; Labour Bureau reports 2000; 1998; 1996; 1992b; 1992a). According to another study of 20 million workers involved in the textile industry

conducted in 1995 with the help of an NGO, 54 out of 179 individuals working in the dusty sections of a textile mill had byssinosis. Among the lock factory workers in Aligarh, 73% of the subjects under the study were suffering from respiratory tract problems. Occupational morbidity amongst the tannery workers of Kanpur industrial slums was recorded at 28%. More specifically, the Second National Commission on Labour (2002) has pointed to the high incidence of lung diseases in mines and bangle industries due to inhalation of toxic fumes, smokes and dust. The commission also found that dyes and chemicals used in textiles block printing and poor physical working conditions such as improper ventilation have caused serious health hazards to workers. Another study highlighted that problems created by allergy to dyes while hitting the block were reported by 75 per cent of the workers (IDS 2006). This study also pointed out that health hazards and job insecurity become inter-related problems in this sector and affect the earnings of the workers.

¹ Informal sector consists of unincorporated private enterprises owned by individuals or households engaged in sale and production of goods and services operated on a proprietary/partnership basis with less than ten total workers (National Commission on Enterprises in the Unorganized Sector, 2007)

² An all inclusive definition of the Craft Sector includes: Manual labour with minimum or low input from machines, substantial level of skills or expertise, significant element of tradition and history of survival on a significant scale (World Bank Preliminary Analysis Report on Hand Made in India, 2001)

³ Byssinosis is a chronic, asthma-like narrowing of the airways. Also called brown lung disease, byssinosis results from inhaling particles of cotton, flax, hemp, or jute.

Laws, Policies & Enforcement

Laws

The Indian constitution, in its directive principles, recognises the right of workers to live with safety and dignity. However, existing legislation, policies and rules protecting workers are grossly inadequate as they cover only four sectors- factories, mining, ports, and construction. Much of this legislation covers workers in larger enterprises employing more than a certain number of workers. The Factory Act (1948), for instance, covers only those registered establishments employing more than 10 people with aid of power or 20 people without the aid of power. More than 90% of the Indian labour force does not work in factories and hence they fall outside the purview of the act. The act provides guidelines on working conditions in hazardous places, but does not have provisions to safeguard workers' rights against occupational disease and related hazards. A number of occupational health and safety laws are applicable only in a fragmented manner. These regulations have specific objectives to cover the problems of occupational health and safety to a limited extent. Some of the legislation covers all workers but in practice the rules have been blatantly violated by the employers in providing occupational health and safety facilities to informal workers in small enterprises.

Policies

After the Bhopal gas tragedy, amendments were made in the Factory Act (1987) and this was a turning point for policy making in India on issues of occupational health and safety, especially in hazardous industries. In later years, the view has gained ground that besides the normative argument for ensuring minimum conditions of work for all workers, there are also strong economic arguments for providing these conditions. Improved working conditions will result in better health conditions and improved productivity of the workers. As a result of increasing pressure on the Government, the Planning Commission of India constituted a working group on occupational health and safety. The Directorate General, Factory Advice Service & Labour Institutes (DGFASLI), Ministry of Labour prepared a policy

document on the same. The National Commission on Labour drafted a bill in 2002 on occupational safety and health at the workplace seeking to extend a worker's right to safe working conditions in the organized as well as informal sector including the textile and craft sector. The bill however failed to become an act. In 2004, the National Commission on Enterprises in the Unorganized Sector (NCEUS) set up by the UPA Government, prepared two draft bills-1) Unorganised Sector Workers Social Security Bill, 2005, and 2) Unorganised Sector Workers (conditions of work and livelihood promotion) Bill, 2005. While the former one was passed, after several modifications, the latter, dealing with conditions of work and livelihood promotion was dropped.

The Government of India declared a 'National Policy on Safety, Health and Environment at Workplace' on 20 February 2009. This policy seeks to protect workers' right to a safe working environment in all units in the organized as well as informal sector. However, this policy at best can only be called a document of intent and hence, at the enforcement level, it is not likely to bring about the desired compliance to health and safety rules at workplace. (For details on the national policy visit: www.dgfasli.nic.in/npolicy/nationalpolicy.htm)

Enforcement

In India, the enforcement of the legal and policy provisions regarding occupational health and safety is extremely weak. This may be largely due to the fact that occupational health is the mandate of Ministry of Labour and not the Ministry of Health and Family Welfare. At the state level, The Directorate of Industrial Safety and Health at State level carries out enforcement, assisted by DGFASLI, Ministry of Labour. The enforcement agencies operate mostly in the organised sector, neglecting the unorganised sector almost completely. The medical inspector of each state working under the directorate of Industrial health and safety organisations supervises the state of workers. The standards laid out in the papers are hardly implemented on the ground. The number of inspectors for the purpose is grossly inadequate and in most of the cases, the inspectors themselves

are not aware of occupational health and safety requirements at the workplace. The inspectors often seek their inputs from the employers and not from the workers, hence making the inspection meaningless. Hence, there is a need for capacity building and regulation of the enforcement agencies.

In the wake of the changing Indian economy, characterised by a change in job patterns, working relationships, competitive manufacturing, rise in self-employment, outsourcing of work, etc.; there is a need for more research on incidence, prevalence and prevention (Agnihotram RV. 2005). The statistics for incidence/prevalence of occupational disease and injuries in the country is scanty. Following the recommendations of the First National Commission on Labour submitted in 1969, the Labour Bureau under the Ministry of Labour, Government of India began surveys and data collection on the conditions

of work in selected industries and has been regularly publishing these reports on the 'Working and Living Conditions' since 1977. However, because of methodological deficiencies yielding poor data, not much useful analysis could be undertaken. The NCEUS report 2007 suggests that the data on important aspects of conditions of work in the unorganised sector should be obtained through surveys of workers and enterprises by independent investigators to obtain data on physical conditions of work such as space, illumination, ventilation, humidity and hygiene. Under the SWITCH ASIA project, a baseline study (report available at <http://aiacaonline.org/researchr.html>) was undertaken by the Hazard Centre, Delhi, to generate data on occupational health and safety in the crafts and small scale textiles sector. The findings of the study are presented under in brief:

Baseline Study on Occupational Health and Safety

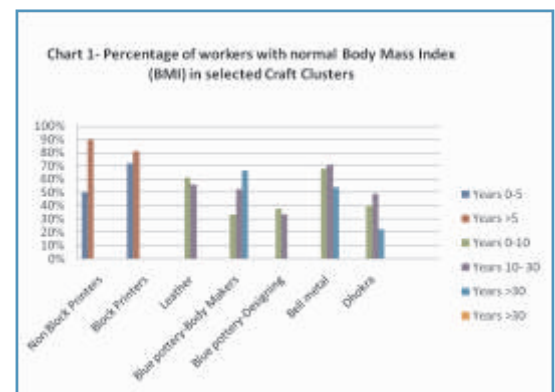
The baseline study was conducted in five craft clusters: Block Printing (Bagru and Sanganer) in Rajasthan, Leather (Beawar) in Rajasthan, Blue Pottery (Jaipur) in Rajasthan, Dhokra (Ransinghpur and Badparpur) in Orissa and Bell Metal (Balakati) in Orissa. The field surveys for the purpose included small scale or cottage industry units and semi-structured interviews were conducted with the workers and owners of each unit. Samples of a hundred artisans from each cluster were interviewed and at least 10% workers were interviewed from each of the units with different work patterns. The study documented the production processes adopted in selected clusters, current health status of workers, and the impact on the environment.

The main findings of the study were as follows:

I. Body Mass Index (BMI)

BMI indicates general physical well-being of a person and is dependent on patterns of food consumption, living-working conditions, nature and duration of physical work etc. As shown in Chart 1, the survey found that within the block printing industry, 90% of workers engaged in work other than printing for more than five years had normal BMI whereas only 50% of the workers working for 5 years or less in the same unit had normal BMI. It therefore clearly points out that **regular work reflects better health for the workers as compared to short term contractual work.** A similar trend was visible of the workers engaged in blue pottery. 33.3% workers who have been working

for 10 years or less in the same occupation had normal BMI. This increased to 52.38% for those working for 10 to 30 years and further increased to 66.6% for those working for more than 30 years. However, for the workers engaged only in the designing and colouring of the pottery, the BMI remains almost constant varying from 37.5% to 33.3%. This indicates



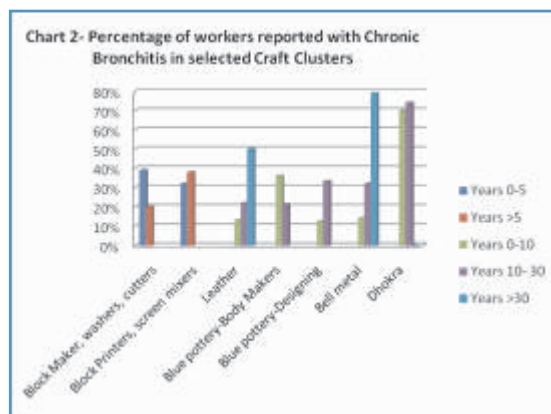
that doing multiple tasks with frequent changes in occupation and exposure patterns is beneficial for workers than doing specific tasks with continuous exposure.

For leather and bell metal crafts, the survey revealed an opposite trend: the health of the producers actually deteriorated over time. Surveys of leather artisans in and around Beawar revealed a slight reduction in their BMI over time, from 61% for those working up to 10 years to 57% for those working up to 30 years. The BMI exhibits a similar trend for Dhokra (metal craft), declining from 68% in those working for

less than 10 years to 54% for workers working for more than 30 years. The BMI of the workers in Dhokra indicated that 59% of the total workers are underweight and only 40% are normal. Further research is needed to establish the causes for a contrary relationship between length of work and BMI in these two clusters. But one potential reason is that these processes deal with raw materials (leather and metal) and chemical processes with greater adverse health impacts over time.

II. Pulmonary Function Test

The measurement of the Pulmonary Function Test (PFT) revealed an alarming health condition of workers across the clusters. Only 5% of the workers tested in the block printed industry were found to have normal functioning lungs. The workers exposed to vapours, gases, fibres, and particles in a work atmosphere that is not conducive to pulmonary health, display a marked tendency towards chronic bronchitis as they spent more years in the job.



In Leather craft, only 8% of the leather artisans examined had normal functions in the lungs. Most artisans complained of constant cough in the mornings and evenings. In the 0-10 working years group, 76% of the artisans examined were found suffering from asthmatic problems and in the 10-30 working years group the figure was 65%. But as the years of work increase, the cases of chronic bronchitis rise sharply from 13% for the short term to 22% for the medium term to 50% for long term exposure. In Dhokra, only 9% of the total workers tested have a lung function that would be considered to be normal for an adult person. 31% have asthmatic tendencies and 60% show signs of chronic distress. 15% of the workers have shortness of breath in the short term (0-10 years working period), growing to 40% in the long-term (11-30 years). Absence of adequate safety measures to metallic fumes and high temperatures in the work environment is hazardous

and unfavourable for the health of the artisans.

Similarly, the workers in blue pottery are exposed to hazardous fine particles of quartz, powdered glass (silica particles), and metallic oxides in the work atmosphere. They do not use appropriate dust masks while working. These workers exhibit a high rate of asthmatic tendency and chronic bronchitis. The amount of exposure clearly leads to deterioration in lung function. Only 10% of all the workers examined had a normal lung function. 50% of the workers engaged in all tasks have shortness of breath in the short term (work up to 10 years), growing to 64.28% for work in the medium term. There is a clear trend of lower PFT values across all the crafts as the number of working years increase.

III. Hand Grip Test

The poorer health status of the craft workers indicated by BMI and PFT is also visible in the hand grip meter (HGM) test. In non-printing occupations, in the early years, 61% workers displayed below-normal grip strength in the right hand and 56% in the left hand, and this improved to 30% and 40% in later years as the percentage of above-normal hand grips in the right hand increased significantly. But for printers, the below-normal figures are 44% for the right hand and 64% for the left hand for the first 5 years, going up to 52% and 62% respectively after that, with no particular improvement in the above-normal figures.

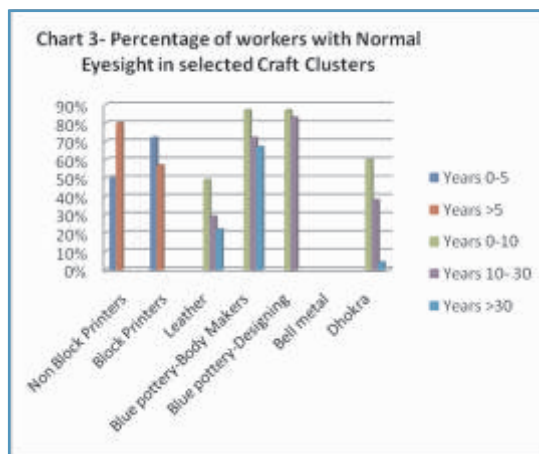
Similar trends were visible for the workers of blue pottery. Amongst the workers in occupations related to body making and other work, in the early years 17% workers display below-normal grip strength in the left hand and 23% in the right hand, and this deteriorates to 40.5% and 43% respectively in later years. The percentage of the above normal hand grips in the right hand decreases marginally (30% to 26%) over the years while that of left hand decreases significantly (53% to 21%). For the people doing designing and colouring, the below normal figures are 12.5% for the left hand and 25% for the right hand for the first 10 years of work, going up to 67% and 50% respectively for work above 10 years. Low level of strength in the hand grip meter test is directly related to repetitive and strenuous work that the workers have to do with very little movement and minimum breaks.

IV. Eyesight

Apart from the effects of work on the body, lungs and muscle tone, repetitive work and continuous visual attention to detail also seems to have impacted on

attention to detail also seems to have impacted on the eyes of the workers. **Eyes are mostly affected due to direct impact of chemical agents like metallic fumes and physical agents like dirt, dust, particles etc. Even poor lighting in the workplace often creates strain in the eyes which leads to watering and damage to eyesight.**

In the non-printing section, among those working for less than five years 50% demonstrated normal eyesight and among those working for more than five years 80% demonstrated normal eyesight. However, among the printing workers, these percentages dropped from 72% to 57%. The numbers displaying hypermetropia and myopia in the printing workers was also much higher at 37% than the 21% for non-printing workers. In addition, a few of the workers also reported symptoms of watering, cataract, strains and swelling in the eyes in both categories. Similar trend was observed also in the case of eyesight of the leatherworkers. Workers with normal eyesight number 49% over the shorter span of 0-10 working years, decreasing to only 29% for the range of 10-30 working years and 22% for more than 30 years of continuous work. Dhokra crafts also exhibited the same trends. In the short term (0-10 years), 60% of the craftworkers demonstrated normal eyesight which decreased to 38% as the working years



increase over 10 years, it further decreased to 4% as the working years increased to more than 30 years. The proportion of people suffering with hypermetropia increased from 10% to 38% and further to 91% indicating that as the working years increase there is increasing pressure on the artisans' eyesight. Similar trends are visible in the case of myopia for which the proportion of people suffering with it has increased (5% to 10% to 61%) with the increase in working years. In addition, several artisans reported problems of watering, strain and night

blindness mainly due to smoke and fumes in the workplace.

39% of Bell metal workers having worked for less than 10 years recorded normal eyesight which reduced to 16% among 10-30 years of work and further decreased to 3% in the later years. With the increase in working years, hypermetropia and myopia is detected to rise. Watery eyes are a very common symptom among the workers which surged up from 57% to 71% and 93% with the increase in working years. Few aged workers were also suffering from cataracts, with some having undergone operations to cure it.

V. Pains, Accidents, Injury and Other Health Problems

Across different crafts groups, large number of artisans reported muscular pains in the back, joints and lower abdomen. The proportions in the block-printing rose distinctly higher from 12% to 57% for those engaged in printing processes over the years. Musculo-skeletal pains are also prevalent among the Bell Metal workers due to their bad working posture as their body are uncomfortably stooped during work. 21% of workers in the earlier years do not show any musculo-skeletal problems but this worsens to 7% in the long term. The vigorous up and down motion of the hand while beating the vessel with the hammer results in wrist (7% to 14%), elbow (21% to 29%), and shoulder (39%) aches, which increase with the years of work. The problem of abdominal pain was found in 67% for the workers involved in all tasks. In addition, major accidents are very common among the workers who have worked for at least 10 years. These accidents take place during the repeated beating by 6-7 workers together to give shape to the vessel. Other than the hands and lips, the forehead is one of the common places where they get hurt either through their own or a co-worker's hammer. Sometimes the hit is so severe that the skin gets ruptured and has to be stitched leaving permanent scars behind.

Some visible impacts that were inspected include calluses, hardness, spots, cuts, burns, tremors and skin problems. Most of the work is done in the open with only casting being done in sheds made for the purpose. The workers continuously inhale metallic fumes and smoke from the furnace. Itching and acne appears on the skin of the upper back of the body due to metallic dust deposition on the bare skin. Other common complaints included hernia and high/low blood pressure, low appetite and sleep, weakness,

stomach upset, gastric and vomiting, and may be related to the strenuous work environment with irregular food intake. Low appetite, problems in sleeping, and weakness are mainly due to long working hours.

Most of the workers were found to have a case history of fever and typhoid due to consumption of contaminated water and no proper sanitation facility. This is further compounded by the fact that the majority of the workers are not permanently employed and only 13% reported having access to facilities such as Employees State Insurance and Provident Fund. Few facilities were observed to be provided to the workers at the work-site, including

toilets, rooms for resting and eating, washing places, natural or artificial exhaust systems for circulation of fresh air, adequate lighting, and first-aid facilities. A few good practices were observed, such as provision of cold drinking water, plaser strings for positioning the blocks, cut-out patterns, registration dowels on the blocks, safety guards on moving parts, and separate storage and mixing rooms with containers clearly marked. But these were few and far between with awareness and implementation of safety measures being poor across the board.

Recommendations

While information is available on occupational health hazards in modern occupations (mechanized, organized), the hazards from traditional occupations in the informal sector are yet to be adequately studied and documented. Key remedial measures to improve occupational health and safety of informal sector workers need to focus on a cycle of gathering relevant data from various sub-sectors; creating norms for minimum safety standards relevant to the informal sector; disseminating and publicizing such information to sensitize employers, artisans and law makers; and building coalitions and networks to push for legislative change and more efficient

enforcement mechanisms. Regular work is better than short term contractual work and attempts to improve OHS need to be in the context of ensuring regular income and livelihood security of workers. Legislation targeting improvements in OHS for informal sectors will need to rely on creating norms, raising awareness and providing capacity building services to help small-scale units and workers to meet safety standards. Awareness-raising is particularly important for home-based workers, who would fall outside the purview of any enforcement mechanism, but nevertheless would suffer from basic issues such as lack of safety equipment and proper lighting and ventilation.

Suggested Next Steps

Building a network of trade unions, industry bodies, government bodies and development organizations to collate data on OHS issues relating to the informal sector; develop agreement on basic norms; and develop draft OHS legislation for informal sector workers.

- Developing and disseminating a tool-kit on OHS for the informal sector that includes basic OHS norms. The norms can include issues such as:
 - Regular breaks in between work hours and rotation of jobs so that exposed workers are able to reduce the duration and intensity of their exposure.
 - Regular medical check-ups at periodic intervals at the workplace with increased emphasis on preventing health problems rather than curing them.
- Workers provided with information on occupational, health and safety at workplace by conducting regular trainings and workshops
- Exhaust systems which ensure proper ventilation and regular supply of fresh air in group work spaces.
- Redesign and retro-fitting of shared work spaces to ensure better natural lighting in normal seasons and sufficient provisions for artificial lighting that illuminates the work site during abnormal periods.
- Basic norms on work practices that improve OHS need to be publicized through partnerships with industry associations and trade networks to raise awareness of both small-scale units as well as the workers themselves.

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