

Occupational health in sawmills of Sarawak

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Summary

A self-administered questionnaire survey was conducted among sawmill managers in Sarawak to explore certain health and safety aspects of workers in this industry. The survey reveals that many sawmills are lacking in the provision of occupational health facilities and activities for their employees.

Key words: Sawmills, occupational health, safety, personal protective device, wood preservatives, work force, injuries.

Introduction

Forest-based industries are major contributors to the economic development of Sarawak. They accounted for 31.9% of the State's exports in 1989; second only to petroleum, liquefied natural gas (LNG) and related products¹. In addition, they directly generate about 80,000 jobs annually². Sawmilling makes up a significant part of the forest-based industries and it accounts for approximately M\$258 million worth of exports in the form of sawn timber, wooden dowels and wooden mouldings for the State in 1989¹.

Like workers in many other occupations, those in sawmills are exposed to various hazards. These include physical hazards (e.g. injuries, noise, fire); biological hazards (e.g. sawdust); and chemical hazards (e.g. wood preservatives)³⁻⁴.

Little is known about the health and safety of workers in sawmills in Sarawak. Therefore, a descriptive survey to explore this area was undertaken by the Occupational Health Unit of the Sarawak Department of Medical and Health Services.

The objectives of the survey are :

- i) To characterise the workforce by size, gender and job category.
- ii) To document the proportion of sawmills with services of health and safety personnel.
- iii) To document the proportion of sawmills having occupational health and safety activities.
- iv) To calculate the percentage of sawmills which provide personal safety devices to workers.
- v) To calculate the percentage of sawmills using wood preservatives, and to identify the major types of preservatives used.
- vi) To calculate the rate of work-related injury based on Workmen's Compensation (WC) and Social Security Organisation (SOCISO) records from the sawmills.

Material and method

A list of 145 sawmills operating in Sarawak was obtained from the Sarawak Labour Department in June 1989. This number is based on the place of employment since a particular employer can own more than one sawmill.

Under the Employment Act, 1955 (Act 285) (5); any person or employer who proposes to operate any industrial undertaking in which any employee is employed should give written notice thereof to the relevant Labour Department. Based on this legislation, it is assumed that nearly all sawmills operating in Sarawak would be registered with the Sarawak Labour Department.

A 5-page self-administered questionnaire consisting of 10 items was designed for this survey. The items were worded in the English language. A copy of the questionnaire and a self-addressed return envelope were sent to each manager of the 145 sawmills through the relevant Divisional and District Health Offices in the State, accompanied by a covering letter explaining the aims of the survey and the necessary instructions pertaining to the questionnaire.

Initially, the survey was planned for completion within a 2-month period: from the end of October, 1989 to the end of December, 1989. However, at the end of the survey period, only 21% of sawmills had responded. Reminder letters were sent to the managers of sawmills who had not responded and the survey was extended for another month in an attempt to boost the response rate. Even then, the final response rate was only 35.2%.

Returned questionnaires were checked for completeness and the data was processed using a DBase III software program.

In the analysis, the sawmills were classified according to the size of their workforce by the following arbitrary classification:

“very small” - less than 10 workers,

“small” - 10 to 49 workers,

“medium” - 50 to 99 workers, and

“large” - 100 or more workers

The results which follow are based on the 51 sawmills which responded.

Results

Workforce

There is a total of 3960 workers in the 51 sawmills which responded. The median workforce per sawmill is 70.0 with a range from 2 to 364 workers (Table I). Fifty-nine percent of the sawmills had 50 or more workers. Most of the workers were male and were daily-paid (Table II).

Health and Safety Personnel (HSP)

Only 12 (23.5%) sawmills have the services of HSP. Six sawmills provided the services of medical personnel; 3 with medical doctors, 2 with trained nurses, and one with a medical assistant. A total of six safety officers were employed by 3 sawmills.

The workforce in these 12 sawmills ranged from 19 to 357 workers. In terms of sawmill category by the size of workforce; 50% of the “large” sawmills and 25% of the “medium” sawmills had such provisions. Only 6.7% of “small” sawmills did likewise. None of the “very small” sawmills had such services.

Table I
The distribution of sawmills by size of workforce

Size of Sawmill Workforce	Nos of Sawmill	%
Very small	6	11.8
Small	15	29.4
Medium	16	31.4
Large	14	27.4
Total	51	100.00

Table II
The distribution of sawmill employees by gender and job category

Job Category	Male	Female	Total
Administrative Staff	112	53	165
Production Workers			
Monthly-paid	397	63	460
Daily-paid	2197	562	2759
Contract	475	101	576
Total	3181	779	3960

Occupational Health activities (OHA)

Twenty-one sawmills (41.2%) had some form of OHA. Eleven sawmills (21.8%) conducted First-Aid training in the previous 12 months for their workers, while 12 sawmills gave health education to their employees. Pre-employment medical examination was not performed by any of the sawmills. Local exhaust system was only installed by 8 facilities (15.7%)

Occupational Safety Activities (OSA)

Thirty-five sawmills (68.6%) had performed machine safety inspections in the year preceding the survey. Safety talks or campaigns were launched by 22 sawmills (43.1). Safety committees were only established in 7 sawmills (13.7%). Eleven sawmills had formal safety regulations for their staff.

Personal Protective Device (PPD)

Forty-three sawmills (84.3%) had provisions of (PPD) to their employees. Glove was the most common item, given by 82.4% of sawmills. Respiratory masks and ear protectors were provided by about one-quarter (27.4%) and one-tenth (9.8%) respectively, of the respondents.

Wood Preservatives

Thirty-four sawmills (66.7%) used wood preservatives to protect their products. The most common class of agent employed was pentachlorophenols which was used alone by 7 sawmills and in

combination with other preservatives in 23 other sawmills.. Other classes of agents used include chlorinated hydrocarbons, carbamates, organophosphorus compounds and pyrethroids.

Three of the 34 sawmills (8.8%) which treat their wood products with preservatives did not provide any PPD. Of the remaining which did supply some form of PPD, it was not possible to ascertain the appropriateness of the PPD.

Work Injuries

Based on data from 1986 to 1988, there was an annual average of 202 reported work injuries in the sawmills survey (Table III). Assuming that the mid-year workforce in the 51 sawmills in 1989 was 3960, the injury rate was 51.0 per 1000 workers.

Discussion

From the outset, it must be stressed that this survey is only exploratory in nature. In order to strike a balance between depth of details and the likelihood of compliance by the recipients, only certain aspects of occupational health and safety in sawmills were looked into.

Table III
The tally of injuries and fatalities for WC and SOCSO compensation cases from 1986 to 1988 in the sawmills surveyed.

Year	No. of Injuries	No. of Fatalities
1986	165	1
1987	215	2
1988	226	1
Total	606	4

The main limitation of this survey is the low response rate. As such, findings in this survey may not be representative of all the sawmills in the state. Nonetheless, this survey does provide a rough idea of the present state of affairs. The actual situation may be worse since it is likely that those sawmills which did not respond are those where the occupational health and safety (OHS) aspects of workers are not given much priority. In fact, the low response rate may reflect the overall apathy in the industry with regard to OHS.

Difficulties with the English language among some of the managers might be another possible explanation for the low response rate. In order to achieve a higher response rate, an interview questionnaire may prove more effective.

The low priority accorded to OHS of workers by the sawmill industry in general is suggested by the low proportions of sawmills which have the services of HSP. Similarly, the percentage of sawmills with OHA and OSA is also not satisfactory. A possible reason for this unsatisfactory state of affairs is the fact that 69.7% of workers in the sawmill industry are daily-paid workers. There is thus little incentive for the managements to devote their resources to OHS.

More than half the sawmills belong to the "medium" or "large" categories in terms of size of workforce. This implies that OHS programmes are likely to be feasible in the majority of sawmills.

The availability of HSP appears to be directly related to the size of the sawmill's workforce. This is expected since bigger sawmills are more likely to have the necessary resources for this service. However, smaller sawmills are not absolved from the moral obligation to provide such a service.

The fact that none of the sawmills did any preplacement medical examinations (PPE) on their employees is a cause for concern.

PPE should be done to ensure the employees' fitness for the job and the absence of serious medical conditions which could pose a danger to the employee or his/her colleagues⁶. Furthermore, they provide baseline data of the health status of workers for future comparison.⁶

In view of the dusty nature of this industry, local exhaust systems should be installed to remove dust at the source of generation. This will minimise contamination of the working environment and reduce the workers' exposure to sawdust. This is particularly important in view of the potential hazards of sawdust exposure e.g. allergic conditions, nasal cancer⁶. However, the survey shows that only 15.7% of sawmills had installed such a device.

Safety committees have an important role to play in enhancing safety at the workplace.⁶ These committees involve the participation of both management and workers. By getting the workers involved in decision-making, they will be more cooperative and compliant in observing safety rules. After all, safety is the joint responsibility of workers, management and occupational health and safety personnels. However, only 13.7% of the sawmills have established such committees.

The best way to ensure the safety and health of workers is to make the work environment safe and health⁶. Nevertheless, it may not always be possible to eliminate hazards altogether. In this situation, PPD of the appropriate type should be provided. In this survey, the percentage of sawmills providing ear protector devices is very low (9.8%). This finding causes such concern as noise exposure to such noise intensity can lead to noise-induced hearing loss (NIHL).

The number of injuries in the sawmills increase from 1986 to 1988. This may have been due to better reporting or increase in number of workers employed in these 51 sawmills. The injury rate of 51.0 per 1000 workers is high and can easily be reduced based on experience in oil industry with more emphasis on safety and health. Of great concern are the 4 fatalities reported from 1986 to 1988. These could certainly be preventable as work in sawmill are under controllable environment. Expertise to reduce fatalities and injuries certainly exist in the State.

Conclusion

In conclusion, this survey shows that much need to be done to educate and encourage management and workers to take more interest and measures related to occupational health and safety in sawmills.

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