

# Occupational Health and Safety Assessment of the Industries in Bhutan: A Three Years' Trend Analysis

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DOI: <https://doi.org/10.24321/2455.7048.201810>

## Abstract

**Introduction:** Workplace plays an important role in the lives of not only workers but also their dependents and families. Therefore, it is very important to consider safety and health in every workplace. However, the health and safety standards in Bhutan is still at a premature stage.

**Objective:** The objective of this study is to assess the overall occupational health and safety situation in the country to better understand the level of occupational safety and health standards in the country.

**Methods:** All the enterprises in Bhutan, who had constituted a health and safety committee in 2016 to 2017 were considered. Structured questioners were used for assessing and evaluating the health and safety standards at the workplace.

**Results:** The study found that the health and safety standards have improved however, improved marginally with the higher percentage of improvement falling in the fair practice of health and safety at their workplace.

**Conclusion:** The Department of Labour plays a pivotal role in taking leadership and educating employers, employees, the general public on workplace safety and health. Therefore, it is important for the Department to rigorously enforce the safety and health standards in the companies. Further, the management of the companies also needs to ensure commitment and leadership for implementation of workplace safety and health.

**Keywords:** Occupational Health and Safety, Assessment, Safety management, Workplace hazards, PPE, Emergency Management, Welfare

## Introduction

Occupational health and safety at workplace is important as it deals with the health, safety and wellbeing of employees. Laws, standards and programs related to OHS aim to make the workplace better for workers and the general public. Having a good occupational health and safety standards at workplace ensures good business, high morale and employee peace of mind<sup>(1)</sup>. Safety and health at workplace

identify and addresses various types of hazards, such as chemical, physical, biological, psychological, and accidental<sup>(2)</sup>. It enforces safety practices and examines legal perspectives. Safety and health legislation obliges the employers to provide a safe working environment today. The demands for workplace safety are ever increasing. The trend is leading to financial investments and technical innovations.

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How to cite this article: Dendup P. Occupational Health and Safety Assessment of the Industries in Bhutan: A Three Years' Trend Analysis. *Epidem Int* 2018; 3(2): 10-16.

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However, the occupational health and safety in Bhutan is at an emerging stage. Relevant agency such as Ministry of Labour and Human Resources that is responsible for safety and health legislation enforcement is incapacitated in implementation of the standards<sup>(3)</sup>. The Labour and Employment Act was enacted in 2007 and the regulations on safety and health promulgated in 2012<sup>(3)</sup>. Hence, it is important to assess the overall occupational health and safety situation in the country to better understand the level of occupational safety and health standards in the country.

## Methods

The study focused on the three-year assessment, between 2016 to 2018, of the companies that constituted safety committee in their workplace. The number of companies assessed were 56 in 2016, 63 in 2017 and 77 companies in 2018. Sectors comprised of manufacturing, mining and quarry, services and construction sectors and are spread throughout the country.

The assessment was concentrated on seven domains which includes; (i) Health and safety policy, (ii) Responsibility, participation and communication, (iii) Competency and training, (iv) Reporting and recording of accidents and illness, (v) Hazards prevention, (vi) Workplace hazards, and (vii) Welfare facilities. The workers were also included to understand their level of knowledge and understanding on health and safety.

## Results

### Industrial profile

A total of 55 companies were assessed on the good safety and health practice in the year 2016, 61 companies in 2017 and 77 in 2018. The companies are located throughout the country. The manufacturing sector had higher representation and mining and service sector had lowest in all three years as illustrated in Table 1. Chukha district represent higher number of companies engaged over the years as shown in Table 2.

**Table 1. Number and percentage of companies by year**

Year	Construction		Manufacturing		Mining		Services		Total
	n	%	n	%	n	%	n	%	
2016	11	20.0	36	65.5	5	9.1	3	5.5	55
2017	10	16.4	41	67.2	5	8.2	5	8.2	61
2018	13	16.9	49	63.6	5	6.5	10	13.0	77

**Table 2. Number and percent of companies by location and year of assessment**

District	Years					
	2016		2017		2018	
	n	%	n	%	n	%
Chhukha	25	45.5	24	39.3	34	44.2
Pemagatshel	2	3.6	4	6.6	3	3.9
Samdrupjongkhar	4	7.3	2	3.3	4	5.2
Samtse	7	12.7	10	16.4	10	13.0
Sarpang	3	5.5	3	4.9	3	3.9
Thimphu	3	5.5	6	9.8	8	10.4
Trongsa	4	7.3	4	6.6	5	6.5
Wangdue	7	12.7	7	11.5	7	9.1
Mongar	0	0.0	1	1.6	2	2.6
Trashiyangtse	0	0.0	0	0.0	1	1.3

## Safety Management

A comparative analysis on occupational health and safety policy, trained safety officers, fire safety training, orientation program, self-inspection, proper safety communication system accident reporting and recording showed an increased trend over the three years as illustrated in Table 3. However, it was observed that there is a decreasing trend in deploying full-time safety officers, and conducting quarterly H&S meetings. The findings may be due to the lack of commitment and leadership of the management in implementing safety and health at workplace.

**Table 3. Number and percent of companies by Safety management system**

Safety management	2016		2017		2018	
	n	%	n	%	n	%
Occupational Health and Safety Policy	39	70.9	47	77.0	65	84.4
Conducting quarterly H&S committee meeting	36	65.5	32	52.5	40	51.9
Safety representative	38	69.1	41	67.2	67	87.0
Safety Rep. as member of H&S committee	41	74.5	42	68.9	66	85.7
Fulltime safety officer	25	45.5	19	31.1	26	33.8
Trained Safety officer	28	50.9	38	62.3	61	79.2
OHS Communication system	36	65.5	32	37.7	45	58.4
Monitoring/Inspection	46	83.6	30	49.2	39	50.6
Conducted safety induction/orientation	38	69.1	30	49.2	54	70.1
Fire safety training	43	78.2	39	63.9	58	75.3
Internal Accident Reporting Procedure	38	69.1	40	65.6	56	72.7
Records of accident& illness	45	81.8	43	70.5	59	76.6

## Occupational Health

The study observed that even though majority of the companies do health check-up during the recruitment only about 60% of companies carry out annual health check-up. An increasing trend in health check up every 6 months was observed. However, the study found that there is a slight decline in the percentage of companies maintaining proper health records as illustrated in Table 4. There was an increase in the percentage of companies having trained first aider from 2016 to 2017 but decreased slightly in 2018. From 2016, onwards a small increasing trend is observed with regards to having provision of first aid boxes and also sufficient of it at the workplace.

**Table 4. Number and Percent of companies with Occupational health provision**

Occupational Health	2016		2017		2018	
	n	%	n	%	n	%
Maintained Health records	34	61.8	36	59.0	39	50.6
Annual health check-up	33	60.0	37	60.7	51	66.2
Health check-up every 6 months	8	14.5	9	14.8	22	36.7
Health check-up-before recruitment	46	83.6	50	82.0	61	89.7
Trained First Aider.	46	83.6	58	95.1	57	74.0
First aid record	28	50.9	35	57.4	52	67.5
Provision of first aid box	48	87.3	56	91.8	69	89.6
Sufficient first aid box	26	47.3	40.0	65.6	52	67.5

## Workplace hazards

The study found that majority of the companies had improved their practice in terms of maintaining safety of machineries, noise, intensive illumination and housekeeping. However, there is a slight decline in the usage of appropriate safety signage as shown in Table 5.

**Table 5. Workplace hazards preventative measures taken by companies in three years**

Workplace hazards	2016		2017		2018	
	n	%	n	%	n	%
Proper machine guarding	46	83.6	40	65.6	60	77.9
Appropriate safety signage	37	67.3	31	50.8	47	61.0
Safety signs installed properly	32	58.2	31	50.8	50	64.9
Noise level within the permissible limit (90dBA)	51	92.7	43	70.5	56	72.7
Adequate lighting	47	85.5	48	78.7	65	84.4
Good housekeeping	44	80.0	39	63.9	55	71.4
Has proper stacking and storage	44	80.0	41	67.2	65	84.4

### Personal Protective Equipment

With regards to the PPE issuance and the measures taken in ensuring workers use PPE all the time, it was observed that there is an insignificant decline in the percentage from 2016 to 2018. However, when it comes to usage of PPE by employees it is found that majority of them use PPE and shows an increasing trend as shown in Table 6.

**Table 6. Number and percent of companies by issuance and use of PPE**

Personal Protective Equipment	2016		2017		2018	
	n	%	n	%	n	%
Issued PPE	55	100.0	54	88.5	75	97.4
Ensured PPEs are used	44	80.0	38	62.3	57	74.0
Employees used PPE	43	78.2	39	63.9	63	81.8

### Emergency Management

The study found that over the years, companies had begun to understand the importance of having an emergency management plan at their workplace. Though insignificant, an increasing trend in percentage of companies having emergency management plan in place was observed. Likewise, an increasing trend was observed in conducting mock drills, identifying assembly points and risk assessment as detailed out in Table 7.

**Table 7. Number and percent of companies by emergency management practice**

Emergency management	2016		2017		2018	
	n	%	n	%	n	%
Emergency management plan	25	45.5	27	44.3	42	54.5
Fire drill / mock drills	32	58.2	28	45.9	48	62.3
Identified Assembly point	31	56.4	41	67.2	54	70.1
Risk assessment system	25	45.5	27	44.3	38	49.4

### Welfare

When it comes to availabilities of welfare facilities at the workplaces, the study found that there is an increasing trend in terms of providing proper rooms for eating and safe drinking water. However, a declining trend was observed when it comes to providing hygienic restrooms separate for male and female. Over the three years, not much difference was found when it comes to conducting risk assessment at the workplaces as shown in Table 8.

**Table 8. Numbers and percent of companies by welfare facilities**

Welfare facilities	2016		2017		2018	
	n	%	n	%	n	%
Proper canteen/rest/lunch room	39	70.9	41	71.9	48	80.0
Portable and safe drinking water	48	87.3	45	73.8	68	88.3
Hygienic toilet and urinal	49	89.1	47	77.0	56	72.7
Separate toilet for female and male	46	83.6	48	78.7	58	76.3
Rehabilitation and return to work program	20	36.4	30	32.8	30	39.0

### Overall performance of occupational health and safety

In the year 2016, a higher percentage (40%) of the companies had poor performance of health and safety at their workplace, and only more than one fifth (23.6%) of the companies had good safety and health practices. However, an increase in the percentage of fair safety and health practices in 2017 (52.5%) and 2018 (39.0%) is observed. Nonetheless, there is a decline in the percentage of companies with good practice in 2017 (18%) but insignificant increase in the percent in the following year (22.1%). The details are shown in Table 9.

**Table 9. Number and percentage of companies by year and their performance on Occupational Health and Safety at workplace**

Year	Poor		Fair		Good	
	n	%	n	%	n	%
2016	22	40.0	20	36.4	13	23.6
2017	18	29.5	32	52.5	11	18.0
2018	30	39.0	30	39.0	17	22.1

### Workers survey (2018)

The study found that in 2018, majority (>80%) of the workers are aware on the safety policy, existence of safety committee, safety officer, first aid box and aider, emergency exist and equipment, high risk area at the workplace and PPE to be used at their workplace as illustrated in Table 10.

**Table 10. Number and percent of workers by the level of awareness (n=257)**

Particulars	Aware on the subject		Not Aware on the subject	
	n	%	n	%
OHS policy	193	75.1	64	24.9
OHS representative	178	69.3	79	30.7
OHS committee	210	81.7	47	18.3
Safety Officer	224	87.2	33	12.8
First Aid Box and Aider	215	83.7	42	16.3
Assembly Point	170	66.1	87	33.9
Emergency Exit and Equipment	223	86.8	34	13.2
High risk area	227	88.3	30	11.7
Knowledge on PPE	243	94.6	14	5.4

### Training on occupational health and safety

Over the years, the Department of Labour had provided education and training on occupational health and safety and industrial first aid to 2951 industrial workers.

Table 11. Numbers of workers educated and trained by fiscal year

Fiscal Year	Training and education (numbers of participants)	
	OHS	Industrial first aid
2016- 2017	702	600
2015-2016	661	540
2014-2015	448	0

Source: Annual Report of Department of Labour

## Discussion

The study found that the good safety and health practice at the workplace has increased but insignificantly over the years. This shows that the occupational health and safety standard is still at the infant stage and more effort is required to meet the regional and international standards.

Over the years, an increase in the numbers of companies having safety and health policy and constituting health and safety committees at their workplace is observed. According to the safety and health legislation of Bhutan, a workplace having more than 50 workers or is involved in hazardous process is required to establish health and safety committee. This could be one of the reasons for increase in the establishment of the safety and health committee. However, there is a decline in the percentage of companies conducting meetings quarterly as required by the legislation. Similar nature was also observed with regard to the issuance of PPE and ensuring the use of PPE by the workers. These declines could be firstly, due to lack of commitment by the management at industrial level and, secondly, due to lack of effective and constant monitoring by the Department of Labour.

The safety officer is the key players in safety and health at the workplace, but the findings show that there is a decline in the numbers of full-time safety officers. Majority of the companies employ safety officers with dual responsibilities. In addition to safety officer responsibilities, they either function as administration or Human Resource officer thereby inhibiting the safety officers from focusing on the safety and health matter. Therefore, it is highly recommended to have a dedicated safety officers and safety unit in every company to initiate promotion activities and preventive measures.

It is vital to have health check-ups at a workplace. According to the safety and health legislation, the employers are required to examine their workers' health at the time of recruitment and conduct regular health check-ups during the course of employment in order to keep track of the workers' health. The study, on the other hand, found that only two third of the companies conduct annual health

check-up even though majority (<80%) of the companies do conduct health check-up before recruitment. Thus, there is need to strengthen in terms of conducting health check-up annually to not only understand the health of the workers but also the presence of health hazards at the workplace. This will ultimately enable the companies to come up with preventative measures.

The workers survey 2018, indicated majority of workers are aware of the OHS issues at their workplace and the responsible person to be dealt with in terms of workplace safety and health issues. This could be the results of education and training conducted by department of labour from 2014.

The study also observed that over the years, an increasing trend with regards to industrial first aiders, maintaining records, and sufficient first aid boxes. This could be a direct result of the Industrial First Aid training initiated and conducted by the Department of Labour from 2015 onwards where more than 1000 industrial workers were trained ever since.

## Conclusion

The comparative analysis statement of OHS assessment for last three years indicate that the Safety and Health at Workplace has improved but only marginally. The activities initiated by the DoL had a positive effect on the safety and health management of the companies. Activities such as training the safety officers, industrial workers, first aider, and education on maintenance of health records had a direct impact on the improvement of occupational health and safety of the companies. In addition, failing to train and educate the workers had a negative effect on the OHS performance. Thus, it is highly recommended for the Department of Labour to take a serious role in educating, training, and advocating OHS at every workplace to create a safe and healthy workplace for all.

## Acknowledgement

My appreciation goes to all the companies assessed and all Labour Officers under the Department of Labour and Health officials who are involved in the collection of the data.

**Conflict of Interest:** None

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Date of Submission: 2018-07-04

Date of Acceptance: 2018-07-07