Under-Reporting of Construction Accidents in Sri Lanka

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Abstract

Generally the work environment in the construction industry is more hazardous than in other industries, mainly due to the potential nature for serious accidents and health hazards by heavy use of large equipment, dangerous tools, and hazardous materials. Thus, the number of annual construction accidents are reported high and among them 50-60 are fatal. Moreover, these numbers are under reported and hence the actual number of construction accidents could be several times higher than the reported. Hence, this research attempts to investigate the most significant reasons behind underreported construction accidents and identify the loopholes of the existing reporting systems to recommend efficient mechanisms for occupational accident recording in construction industry.

Accordingly, the research problem was approached through a pre study survey and an expert survey which followed by semi structured interviews. Various stakeholders including management, technical staff and workers in construction sites were interviewed.

The findings revealed that safety representatives of most of the construction organizations reluctant to report to the Labour Department through the district factory inspecting engineer when incidents occur, due to unawareness of legal provisions and burden of paper work. Moreover, lack of knowledge, awareness, systems, management commitments and other facilities exaggerated the situation. Additionally, a strong leadership towards inculcating occupational safety and health was identified as a deliberating need. Therefore, the study propose to appoint qualified safety representatives for each construction site of construction organisations, continuous monitoring of following up the legal provision on notification of accidents, introduction of a prescribed information sheet for all organisations who are involved in a case of an industrial accident and after an accident or development of an online portal and increase the awareness programmes on importance of maintaining records and reporting of industrial accidents.

Keywords: *Construction Accidents, Accident Reporting, Construction Industry, Construction Workers.*

1.0 Introduction

Construction sites are rapidly changing environments with lots of heavy equipment, machinery and large vehicles. Therefore, construction sector has an accident rate much higher than the average in other sectors of economic activity (Pellicer, et al, 2008). Accidents in construction workplaces are unplanned and unwanted occurrences involving movement of persons, objects or materials which may result in injury, damage or loss to property or people (Hosseinian & Torghabeh, 2012). Construction accidents are caused by many factors, including work methods, site conditions, worker failure to use safety equipment, and a lack of proper worker training. Further injuries and deaths commonly involve falls, explosions, burns, electrocution, exposure to asbestos and toxic chemicals, and asphyxiation.

Data accuracy is extremely important for occupational safety and health surveillance, and this is especially true for an industry with an extremely mobile workforce like construction (Fosbroke et al, 1997). Accurate data are essential to implement new data collection initiatives to track the safety and health impacts of emerging technologies, identify the most effective and efficient intervention programs and support the development and diffusion of those programs throughout the industry. In addition, accurate data provides the basis for policy-making and resource distribution (Walter, 2011).
As mentioned above when compared with other industries, it is rendered that the construction industry is the most vulnerable with a reported number of annual accidents; in-between 750-900 (Amarasinghe, 2011). Among them 50-60 were fatal (Amarasinghe, 2011). Further, this annual figure represented a more than 30 percent of accidents which was

about 13 times higher than in the other industries (Rameezdeen, et al., 2003; De Silva and Wimalaratne, 2012). However, these statistics have not disclosed the real situation, as only less than 60percent of accidents are reported (Amarasinghe2011).Therefore, it is clear that, in Sri Lanka the underreporting of construction accidents rate is high. There are many reasons contribute for the underreporting of accidents. Among them, International Labour Organization (ILO) shows the limited coverage of reporting procedures as one of the major reasons (ILO, 1996). Accordingly, this research paper aims at identifying the loopholes of the existing reporting systems to recommend efficient mechanisms for occupational accident recording in construction industry

2.0 Profile of construction accidents

In the construction industry, at least 60,000 people face fatal accidents every year and many hundreds of thousands more suffer from serious injuries (ILO, 2003). Based on the severity, Accidents can be divide in to two, as fatal and non-fatal (Rameezdeen et al, 2003). The number of fatal accidents in the Sri Lankan construction industry is significantly high compared to other industries and it is the largest contributor to fatal accidents followed by mining and quarrying. In Sri Lanka accident rate in construction sites is higher when compared with the other industries (Rameezdeen et al, 2003)

According to the available information at the Industrial Safety Division of Labour department of Sri Lanka, the statistics of fatal and non fatal accident reports are shown as follows.

Table 1: Profile of construction accidents

Year		2009	2010	2011	2012
Construction & All Other Industries	Fatal	76	64	60	80
	Non-Fatal	1449	1456	1313	1319
	Total	1525	1520	1373	1399

However, ILO (2003) reported that in most of the countries, only less than 20 per cent of construction accidents are reported. That is common to Sri Lanka too and according to Amarasinghe (2009) only less than 60% of accidents are reported and therefore, actual figures are likely to be even higher.

3.0 Construction accident reporting procedures

Many incidents have occurred because organisations have failed to learn from lessons of the past. This means that there is room for improvement in the way organisations analyse incidents, generate measures to remedy identified weaknesses and prevent reoccurrence (Drupsteen, Groeneweg & Zwetsloot, 2013).Therefore there must be a process put in place to report accidents, incidents or near misses for immediate action and to help track causes. The Department of Industrial Relations, State of California trots out the importance of record keeping of accidents at work(Department of Industrial Relations, State of California, 2005). It reveals that records of accidents, work-related injuries, illnesses and property losses serve as a valuable purpose which affords an efficient means to review the current safety and health activities for better control of operations, and to plan future improvements (Department of Industrial Relations, State of California, 2005). Oregon State University (2009) states that accident records supply information to identify trends to help control conditions and acts that contribute to accidents and managers can use them as an indicator of the financial impact of unsafe behaviour and the need for loss control efforts and information can be combined with medical and disability cost figures to reflect the direct cost of occupational accidents. Further, Health and Safety Authority, Dublin (2006) says keeping records will help safety representatives to check whether remedial measures have been implemented and to monitor the effectiveness of such measures.

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995, UK, as cited in Scottish Centre for Healthy Working Lives (2014) shows that with the information provided through recording and reporting, the enforcing authorities are able to help and provide advice on how to reduce injury, and ill health in the workplace. Such

surveillance data can also be used to put forward an evidence-based rationale for the introduction of new legislation and/or guidance.

The organization needs to identify what needs to be reported, to whom it is to be reported, and how to report it, then put this process into a written procedure. For example in America any accident, incident, or near miss no matter how slight the injury or damage, must be reported to the department supervisor immediately for appropriate action. The supervisor is responsible for taking appropriate follow-up action, including getting medical attention for the injured, completing an investigation report and recommending or implementing appropriate corrective actions.

According to Health and Safety Executive (2013) in United Kingdom accidents and incidents of work related ill-health must be recorded in the official site accident book B1510. Accidents and incidents of ill health which result in an absence from work of more than three days must be reported on form F2508 or F2508A (all obtainable from The Stationery Office). These documents are held in the company office or by the senior company representative on site who may designate a responsible person to receive accident reports and make the necessary entries. Staff must be made aware of the requirement to report all accidents at induction. Where the company isa sub-contractor all accidents must be reported to the principal contractor and recorded in his official accident book. The senior representative should make this report on site.

Moreover, under the Factories Ordinance of Sri Lanka, it is compulsory for all factories to report all occupational accidents and injuries caused to workers and if it causes loss of three days, to the Labour Department. Further, all organizations are required to send a report of accidents time to time. However, this is not acclaimed by all organizations due to many reasons.

4.0 Construction accident underreporting and reasons for underreporting

There is convincing evidence that occupational injury and illness rates substantially underestimate the true magnitude of injury and illness in the construction industry. As mentioned above**,** only less than 20 per cent of construction accidents are reported in most of the countries (ILO, 2003).**I**n Sri Lanka one of the Labour Department's key challenges is lack of reporting of workplace injuries to them (SundayTimes, 06thOctober 2013).

The underreporting has mainly originated due to lack of awareness of legal reporting requirements, penalties for poor record keeping infrequently levied on firms, and burden of completing the relevant paperwork posing to firms etc. (Lim, 2007). Therefore, it is important to identify a strong mechanism to mitigate the issues on construction accident reporting in Sri Lanka.

5.0 Research methodology

Comprehensive literature review has been carried out in order to observe existing literature on construction accident reporting procedures and reasons for underreporting. A pre study survey was carried out to document the existing accident reporting procedure used in Sri Lanka. Further an expert survey was carried out to validate the documented reporting procedure and to explore its prevailing gaps. Ten experts who are expertized in the area of occupational safety and health were selected for this task and in-depth interviews were conducted. The professional experience of these experts were ranged from ten years to over twenty five years and hold managerial level positions in the industry. Semi-structured interviews were conducted and interview guidelines were prepared prior to the data collection. The design of the interview guidelines was done in accordance to capture the required data to analyse the research problem. The questions of the interview guidelines were developed based on the objectives of the study. While interviewing, note taking and tape recording were done to maintain the accuracy ofdatacollection and avoid losing data as it is impossible to note down everything during the interview. The interviewees' experiences were ranged from 1 to twenty five years. Further four most experienced experts were again interviewed to identify enhancing strategies to proposed recommendations to address the shortfalls in the existing construction accidents reporting system. The collected data were analysed using the content analysis technique.

6.0 Findings

6.1 Existing reporting system of construction accidents

In the existing reporting procedure (Figure 1), if an accident arises in a construction site,the flow of reporting procedure from the workplace to the Department of Labour can be demonstrated and depicted as follows:

1) If there is a victim who suffered from an injury, hospitalisation of him/her immediately relies with the safety representatives of the site.

2) Immediately after the hospitalisation, the records of the accident should be kept in internal documents of the workplace. Keeping internal records of accidents will help safety representatives to develop prompt arrangements to prevent recurrence of similar kind of accidents and to monitor the effectiveness of such measures. Therefore, internal records are maintained as an accident prevention strategy of most construction organisations.

3) The Section 61(Notification of Accidents) of Factories Ordinance No. 45 of 1942, as last amended by the Factories Amendment Law No. 12 of 1976, describes that, "where any accident occurs in a factory (i.e. in a workplace) which (a) causes loss of life to a person employed in that factory; or (b) disables any such person for more than three days from earning full wages at the work at which he was employed; or (c) makes any such person unconscious as a result of heat, exhaustion, electric shock or inhalation of irrespirable or poisonous fumes or gases, etc., written notice of the accident, in such form and accompanied by such particulars as may be prescribed, shall forthwith be sent by the occupier or manager or the superintendent (in the case of an estate factory) to the District Factory Inspecting Engineer (DFIE)" who is appointed for the respective district.

   Accordingly, if an accident categories under one of the above conditions, the employer is liable to send the notice of accident via "Form 10"to the DFIE who is appointed for that particular district. Further, the Section 92(01) of same ordinance prescribes that a"general register"known as "Form 11"should be maintained to record every accident which reported with Form 10. Further a copy of this general registeris required to send to the DFIEonce in six months.

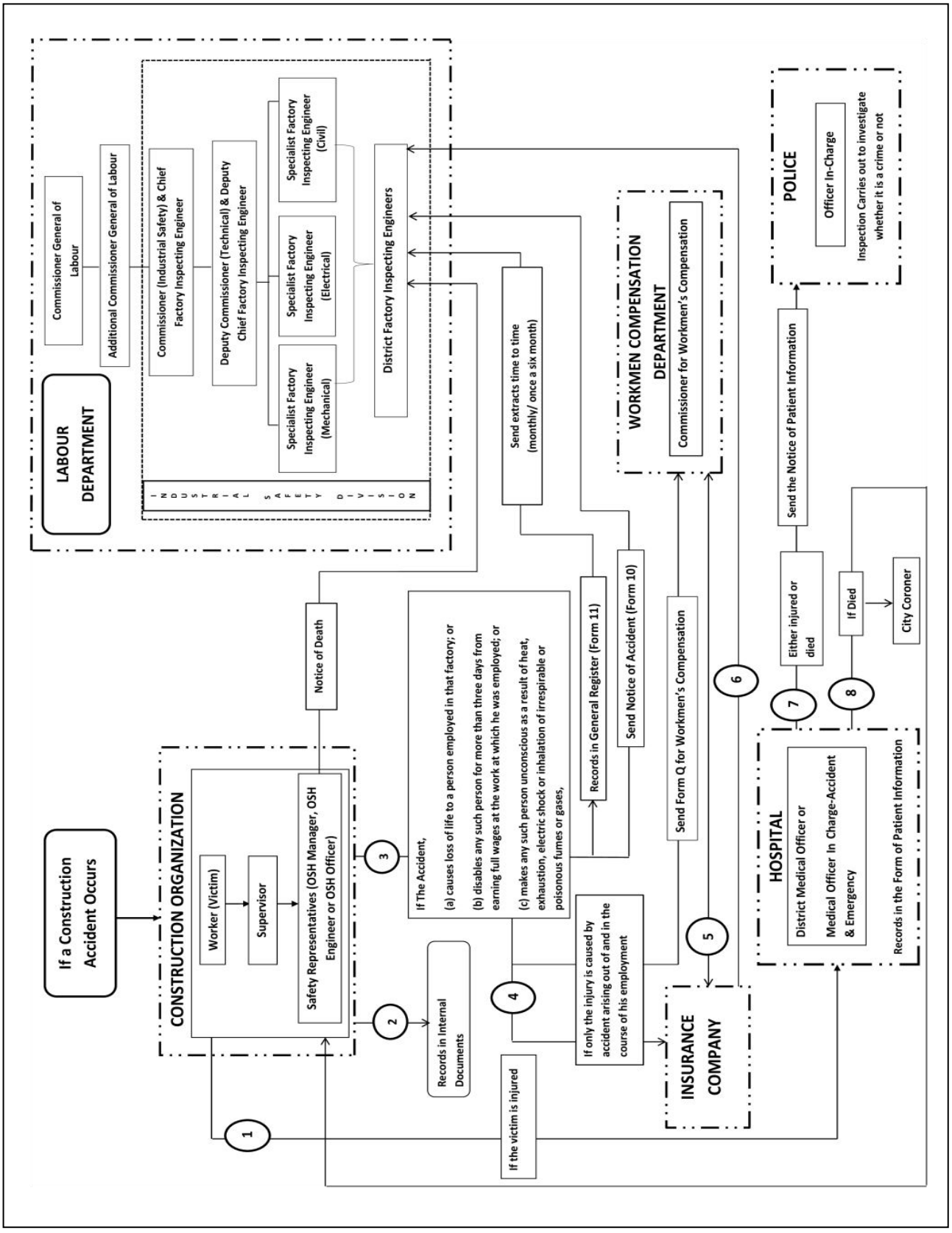
4) If theinjury is caused to the workman while he is working in the course of his employment and if it is resulted in the total or partial disablement of the workman for a period exceeding three days, only then the commissioner for workmen's compensation is informed. (Workmen Compensation Ordinances Nos.19 of 1934). The commissioner for workmen's compensation should be informed via "Form Q".In addition to the Form Q, the insurance company is informed,when the organization claims the insurance coverage.

5) When a victim is made an insurance claim, the insurance company and the commissioner for workmen's compensation work closelyin order to release the compensation by the insurance company.

6) The insurance company is further, bound to provide information of such construction accidents to the Department of Labour.

7) If the victim ishospitalised, it is the medical officer's responsibility to keep records of the patient in the hospital itself and inform the police post of the hospital or nearest police station via a note.Afterwards, the police can start their investigations on the incident.

8) The section 61 of the factories Ordinance further describes that"where any accident causing disablement is notified, and after notification thereof results in the death of the person disabled,notice in writing of the death shall be sent to the DFIE by the occupier or manager or the superintendent (in the case of an estate factory) as soon as the death comes to his knowledge".Accordingly, when the death comes to the employer's knowledge, DFIE is informedby the employer via a "notice of death", and when the city coroner is informed by the hospital, the post-mortem is carried out and report will be provided.


If a Construction Accident Occurs
CONSTRUCTION ORGANIZATION
Worker (Victim)
Supervisor
Safety Representatives (OSH Manager, OSH Engineer or OSH Officer)
LABOUR DEPARTMENT
Commissioner General of Labour
Additional Commissioner General of Labour
Commissioner (Industrial Safety) & Chief Factory Inspecting Engineer
Deputy Commissioner (Technical) & Deputy Chief Factory Inspecting Engineer
Specialist Factory Inspecting Engineer (Civil)
Specialist Factory Inspecting Engineer (Electrical)
Specialist Factory Inspecting Engineer (Mechanical)
District Factory Inspecting Engineers
INDUSTRIAL SAFETY DIVISION
Notice of Death
Send extracts time to time (monthly/ once a six month)
WORKMEN COMPENSATION DEPARTMENT
Commissioner for Workmen's Compensation
POLICE
Officer In-Charge
Inspection Carries out to investigate whether it is a crime or not
Send the Notice of Patient Information
If The Accident,
(a) causes loss of life to a person employed in that factory; or
(b) disables any such person for more than three days from earning full wages at the work at which he was employed; or
(c) makes any such person unconscious as a result of heat, exhaustion, electric shock or inhalation of irrespirable or poisonous fumes or gases,
Records in General Register (Form 11)
Send Notice of Accident (Form 10)
Send Form Q for Workmen's Compensation
Records in Internal Documents
If only the injury is caused by accident arising out of and in the course of his employment
If the victim is injured
INSURANCE COMPANY
HOSPITAL
District Medical Officer or
Medical Officer In Charge-Accident & Emergency
Either injured or died
If Died
City Coroner
Records in the Form of Patient Information
1
2
3
4
5
6
7
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6.2 Loopholes in existing construction accidents reporting

The main role of reporting a construction accident lies with the particular construction site. Therefore there should be a systematic approach for reporting and recording of accidents within the organisational/site level. However lack of knowledge, awareness, systems, management commitments, facilities and leadership have caused for the unavailability of a systematic reporting and recording system at this level.

Moreover, due to the inattention, lack of awareness of legal reporting requirements and burden of completing paperwork, most of the safety representatives of the sites and workers do not persuade to report accidents occurred in the sites via notice of accident form (Form 10) to the respective DFIEs. They consider that involvement of the department of labour would create additional distress to them. Further, it was revealed unavailability of a stringent monitoring procedure for following up the law has need of reporting. However, the construction organisations who have already obtained and who are being implementing OSHAS 18001, track this practice as it has been mandated by OSHAS 18001.

As per the Factories Ordinance No. 45 of 1942, it for all factories to report accidents and injuries caused to a worker if the worker is absent for three working days due to an OSH incident. Therefore, the accidents that categorise under "less than three working days from earning full wages at the work" are not reported to any authorized body as there is no legal requirement in the law. However, most of the organisations maintain internal documents for recording of all type of these accidents including "near misses" as a strategy to prevent recurrence of same incident.

6.2 Recommendations

6.2.1 Employing qualified safety representatives for construction organisations

Employing qualified safety representatives is essential in construction organizations/sites to enhance safety management to and thus to eliminate the first two gaps in the reporting procedure. Safety representatives can be Health, Safety and Environment (HSE) officers, Occupational, Safety & Health (OSH) Engineers or OSH Managers. In Sri Lanka, basic qualifications of safety representatives are not defined and therefore, in most of the construction sites, not properly qualified officers are engaged. Therefore, it is recommended defining qualifications that should be required to appoint qualified safety representatives. In line with this, sufficient educational programmes should be introduced to produce qualified people in this arena.

6.2.2 Awareness programmes on accident records and reporting

The awareness programmes on safety and health of workers are conducted frequently. However, the awareness programmes on legal provisions and importance of documentation of accidents are not seen as important aspect. It was identified that some of the staff who work as safety representatives even do not aware the legal provisions. Therefore, awareness programmes should be increased in order to have an efficient recording and reporting of the accidents.

6.2.3. Decree to implement the SLS OSHAS 18001 Standard

The Institute for Construction Training and Development (ICTAD) as the governing body of construction industry in Sri Lanka, can decree to implement the SLS OSHAS 18001 for all grades of construction companies in Sri Lanka. SLS OSHAS 18001 is particular on documentation. Therefore, it will lead every construction organisation to document each and every aspect of health and safety of construction sites.

6.2.4. Encourage construction organisations to apply for OSHE excellence award

National Institute of Occupational Safety and Health of Sri Lanka in collaboration with Ministry of Labour and Labour Relations offers awards for organisations who excel in occupational health and safety. This would be a strategic movement to motivate construction organisations to follow OSH guidelines and practices and eventually to fill the gaps in the prevailing under-reporting condition. Further, such a promoted OSH culture will reduce risks of occupational accidents.

6.2.5. Amendments to the existing regulations on OSH

Penalties for the underreported accidents

Even though the Factories Ordinance call for the reporting of construction accidents it does not has any verdict on the result of none reporting of an accident. Therefore with the above mentioned difficulties the safety representatives of the construction sites are not willing to report the accidents occurred. However, if there is any penalty for none reporting then there is an influence to report the accidents by the responsible parties. Therefore introduction of a penalty will support in systematic reporting system.

Certification by Labour department to issue the insurance claim compensation

In the current insurance compensation system some the insurance companies do not request a labour department certificate to issue the insurance claim. However if there is such regulation imposed on all the insurance companies then they will ask for a certification by labour department from the construction companies. This will pressure the construction companies to report major accidents to the labour department.

Regulation to report the accidents that categories under "less than three working days from earning full wages at the work"

It is identified that to have an effective recording it is necessary to record all the accidents in the construction industry. Therefore as the existing law lacks the necessity of reporting accidents in the category of "less than three working days from earning full wages at the work", the law should be amended with a sentence on necessitating the reporting of all accidents in the construction sites.

7.0 Summary

Effective and efficient accident reporting and recording system for construction industry in Sri Lanka is a deliberate need. Since the accident rate of construction industry is getting high, it is a responsibility of the authorized bodies to working closing together to reduce the situation. Having said that, availability of reliable data of accidents are important. The research makes it clear that there are prevailing gaps in the existing accident reporting procedure, which creates inefficient recording system. As the main role of accidents reporting and recording lies with the construction site it was identified that appointment of qualified safety representatives for each construction site of construction organisations, continuous monitoring of following up the legal provision on notification of accidents, increase the awareness programmes on importance of maintaining records and reporting of industrial accidents, decree to implement the SLS OSHAS 18001for occupational health and safety management systems and encourage the construction organistions to apply for OSH excellence awards as strategies to mitigate the gaps in existing accident reporting and recording procedure of Sri Lanka. Moreover it is recommended amendments to the existing regulation by adding penalties for non reported accidents, request a certificate by the labour department to issue insurance claim compensations and regulation to report the accidents that categories under "less than three working days from earning full wages at the work"**.** These proposed strategies will serve on unveiling an efficient and effective recording system for construction industry to enhancing its image of OSH.

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