

Health and Safety Concern of Workers of Building Materials Producing Industries in Nepal

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Abstract— Workers' health and safety is an important asset, it enhances the productivity, efficiency, quality of every industry if well maintained. Construction material producer are vital industries from where supplying the demand of emerging construction materials to infrastructure and habitat projects as per projects' need. These industries employing lot of workers but they are not being worry about health and safety. Different convention of ILO as well as WHO have emphasizes to respond the issues related workers health and safety. Nepal had not yet ratified ILO convention No. 155 on occupational safety and health. Therefore lot of death, fatalities are suffered due to health and safety. It is important asset of workers that must be taken seriously by all stake holders as well as the nation. To make civilize society, all should be aware about every one's health and safety that too, workers health of safety is very important issues in every industry.

Keywords— Health, Safety, Work place Construction Materials

INTRODUCTION

In Nepal, Some large and small Industries are running for employment and fulfill the demand. Among them some industries are discussed here. Housing, apartment, road, Aggregate production industries are running for livelihood of peoples and these are being emerging industries. Lots of workers are working in these industries. Many of employees, subcontractors and third party workers work with heavy equipment and vehicles daily. They are exposed to a variety of risks which can endanger health and life. For this reason health and safety is one priority at under discussion industries. To improve in this area all party need to be aware that health and safety culture needs a stronger commitment from everyone to work safely, an absolute ban on shortcuts and unnecessary risk taking, a strict willingness to correct unsafe acts and conditions immediately and a firm belief that all injuries and occupational illnesses can be prevented. Health and safety is vital asset of workers in the building, wood, building materials and allied industries globally and not only in Nepal. The industrial occupational safety and health innovation effects sustainable development. In literatures many researchers had attempted to show the link between safety, health, environment and sustainable development[12].

1.1 Beginning

Health and safety of workers in industries is being important challenge in the world. In developed countries occupational safety and health (OSH) is being an important science. Safety means the state of being protected against physical, social, spiritual, financial, psychological, or other types of

consequences of failure, error, accidents, or harm. This can take the form of being protected from the event or from exposure to something that causes health or economical losses. It can include protection of people as well as possessions[1]. Health is a state of complete physical, mental and social well-being, and not merely the absence of disease[1]. When every worker joins to work in factories or industries, their health and safety needs to be maintained throughout the entire working period. That is the responsibility of the owner of the industries. It deals anticipation, recognition, evaluation and control of hazards from the workplace. It could impair the health and well-being of workers. It also creates awareness to possible impact on the surrounding communities and the general environment. The concept of occupational safety and health is quite new science to the people of Nepal. The definitions of occupational safety and health may be raised in different ways, but the aims at the same fundamental goal of protecting and promoting the health, safety and well-being of workers, as well as protecting the general environment, through preventive actions in the workplace. It has not been taken as a serious issue by authorized ministry and policy maker. In present scenario, less than three percent of the total labor force of the nation is engaged in industrial sector. Industrial and service sectors are new ones and hence the issues in the sector have still not been given much importance. Similarly, the high illiteracy among the workers, lack of awareness, poor performance or negligence of the authorities in implementation of OSH related policies and activities. Worker level of socio-economic realities has forced us to struggle hard for wages and some minimum benefits in order to solve hand to mouth problem. Thus up to now, the OSH has not become the prior agenda for government, workers, trade unions as well as any other concerned stakeholders too. Industrial sector is a place where the risk of occupational hazards might be prominent than other sectors. Industrial occupation may create unsafe work and work environment because of the inherent sources of hazards present in the material, process, technologies or products. These sources of hazard may pose the risk of accidents and disease to the people within the industrial premises and the general public in the vicinity and the environment. Safe work and work place for increase production and higher productivity is necessary and hence promotion and protection of safe work and work place is the complementary aspect of industrial development. Work is essential for life, development and personal fulfillment. Unfortunately, indispensable activities, such as food production, extraction of raw materials,

manufacturing of goods, energy production and services involve processes, operations and materials which can, to a greater or lesser extent, create hazards to the health of workers and the nearby communities, as well as to the general environment. Generation and release of harmful agents in the work environment, as well as mechanical, chemical, physiological, psychosocial, physical and biological hazards can be prevented, through adequate hazard control interventions, which not only protect workers' health but also limit the damage to the environment often associated

1.2 Statement of Problem

In Nepal, the working environment is not yet being labor friendly. Owners are concentrating in productivity day to day but not worried about the health and safety of labor. The squatters where the labors are residing are not healthy. Drinking water used by labor is flowing from natural river or stream. Pregnant female labors are being treated in general condition and have to deal with lot of problems during delivery and even risk of loss of life. The national policy and legislation are not adequate although it has been recognized that the workforce is the most important segment of the social structure. In Nepal, the legislative measures for occupational safety and health are not applicable to small units employing less than ten workers outside the industrial estates. In the interim constitution of Nepal, lots of worker's issues have been incorporated. But the promulgated constitution of Nepal had yet to incorporate several labor issues. Similarly According to the ILO's fundamental Principle of occupation, health and safety are not maintained[14]. Not only the construction material producing industries but also construction industries are in big risk[9,10].

1.3 Objective of Research

Main objective of the study is workers, employee representatives engage actively in health and safety

matters and lack of ensuring industrial worker's inherent health and safety principles due to not managing risks.

1.4 Limitation

The study has tried to present briefly the overall workers situation of building and building material producing industries in Nepal, in general, and Kathmandu Valley, in particular. The study is constrained with time and resources to others labor engaged area.

1.5 Overview of Health and safety

In Nepal, some construction materials producing site jobs includes aggregates, bricks, cement, wood workplaces are very unsafe. This work includes many hazardous task and conditions such as working with height, excavation, noise, dust, power tools and equipment. The most common fatalities are caused by various causes. Risk is everywhere even in housing and real estate construction projects[9]. Construction work has been increasing in developing and undeveloped countries over the past few years. With an increase in this type of work occupational fatalities have increased. Occupational fatalities in countries such as India, Nepal and China have increased.

Global occupational safety and health programmes should be focused on the developing countries and be supported by developed countries. Many enterprises in high-income countries move to work in low-income countries: multinational corporations might move to labour intensive and often more dangerous work to low-income countries where salaries are low and regulatory measures poor. The workers in developed and developing countries are entitled to the same human dignity and decent work[8].

Table 1 Occupational accidents by country in the Other Asian Island region

Country	Economically Active Population	Total Employment	Estimated number of Fatal Accidents	Fatality Rate	Non- Fatal Accidents,<_3days			Accident Rate
					Lower Limit 0.19%	Upper Limit 0.1%	Average	
India	458720000	419560000	48176	11.5	25355777	48175977	36765877	8763
Nepal	11000000		3293	29.9	1733079	3292850	2512964	22845
China	708218102	699771000	73615	10.5	38744649	73614834	56179742	8028

Source: [8]

Table 2 Accidents in the establishments in 1997/98–2003/2004

Particulars	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04
Number of establishments	4192 4	4284	4274	4296	3617	3630	3473
No. of workers	385960	387200	392421	394541	359373	307536	306430
No. of accidents	39	42	55	37	46	36	83
Fatal	21	7	15	6	6	6	6
Serious	2	18	23	17	23	16	17
Minor	16	17	17	14	12	14	60
Man day loss	190	632	613	282	623	976	991

Source:[4]

In Nepal the above figure were found during 1997 to 2004 inspection record. The causes of accidents are varied but the major causes are lack of training, emotional stage of the workers, lack of supervision, use of old or outdated machine or equipment, poor layout, congested workplaces, violation of safety rules and unsuitable working conditions. Also, there is no concession of any kind for installing safety and health devices to replace worn out and unsafe machinery or to provide occupational health diagnosis and treatment facilities in the industries[4].

2. METHODOLOGY

In this research, trying to consider number of literatures of various authors and well renowned publication. Some of the issues are described below with problem wise. Also conducting expert views in the M.Sc. Student who were learning the constructing safety engineering at the institute of engineering collage and Nepal engineering collage in Kathmandu.

3. RESULTS BASED ON DISCUSSION

In the following research questions, trying to search the relevant question and find amicable solutions which need to be addressed by everyone in the industry.

3.1 *Safety, Health is prime need of workers, working on construction materials producing industries?*

The dust generated by the stone crushing works contains a high amount of fine inhalable matter. The presence of a high percentage of silica in the dust and the particle size distribution further suggest that the occupational environment of the workers and surrounding areas may be hazardous to human health. Air quality and the health survey conducted at the site indicate that the observed dust may be producing significant damage to respiratory health[5]. Every worker are suffering from health and safety issue either working big construction industries or small like aggregate crushing industries. The exposure to airborne dust and work environmental conditions carried out in the Stone-Aggregates manufacturing industry provided complete information for the time. The airborne dust generated contains high percentages of free silica, both in total dust accumulated during respiration, that may lead to occupational diseases silicosis if exposure is prolonged and the concentration of dust is high[11]. ILO adopted numbers of labour's issue in labour market, those were a) respect of fundamental human rights b) Protection of wages, c) Employment security, d) Working condition, e) labour Market and social aspect, f) industrial relation etc[16].

3.2 *Labor status, Labor Act 1991 and National Building Code are enough for Occupational Health and Safety (OHS) regulation?*

The labour force is about 75 percent of total population, above 10 years, who works for any length of time during the 12 months preceding the census date which constitutes the present human resources for Nepal by quantity[18].

In the Interim constitution on Nepal 2007, several provisions were incorporated regarding labor issues,

which formed the foundation of labor administration in the country. Some of them are inter alia prohibition of slavery and forced labor, freedom of assembly, association and speech, freedom of trade union rights, business, and profession, right of equality, promotion of social justice and economic well-being of the people, and eradication of social evils and so on[15].

3.3 *Do you think WHO-ILO's OHS tool to minimizing risks mostly developing country like Nepal?*

The origin and evolution of efforts to improve worker health, safety and well-being are complex, as ideas about how best to achieve the WHO's and ILO's goals for workers have evolved overtime. WHO and ILO joined forces soon after WHO's formation, in the Joint ILO/WHO Committee on Occupational Health, recognizing the importance of these issues. It is relatively recently, however, that health promotion has specifically been linked to the workplace. For several decades, health promotion activities and occupational health activities operated in two somewhat separate streams. In recent years the streams have converged, and the linkages have become stronger, both within WHO and between WHO and ILO[1].

3.4 *Industries' owners are supportive agent to address the OHS risks in Nepal?*

Construction materials producers are small industries sector largely comprises of self-developed entrepreneurs many working within the family environment. As the activities expand, this venture develops into the form of industry in informal sector with or without paid workers. Due to the small nature of the industry, and in many cases, with the involvement of family members, the setting is very informal resulting in family-like behavior of the employers in work and with workers. They personally work hard and naturally expect others also to work hard irrespective of the time and work conditions. They lack professionalism in managing the business and the people. They conduct many transactions informally and simply without much paperwork. In fact, they try to avoid bureaucracy, refrain from formal relationships concerning written documents. This is one of the reasons for majority of small industries not being formally registered. They cater to humane and socio-cultural needs of the workers who work for them with diligence and sincerity. The employers are generally resource constrained, and therefore, improvement of the working condition and living condition of workers is not a prime concern for them[17]. Workers in the small industries generally come from poor economic background from rural or semi-urban areas of the country. They comprise of all age groups in the economically active population. A large proportion of them are child, women and ethnicity or minor workers, mostly deserted or runaways. The workers are mostly illiterate or semi-literate, unskilled, and are therefore engaged in manual and laborious work. Those skilled have better chances of employability in industries in the organized sector. These people work hard for longer hours, many in unhealthy

working conditions, to retain their jobs and satisfy their aspirations that are not possible back home. Very few raise their voice about the work conditions and employment conditions. Many do not have the time or the inclination to organize for raising issues and concerns collectively. Coming from poor economic background, most aspire for the opportunity to become self-employed or even to start their own business, while the majority does not see anything beyond the present[13].

3.5 *How far women workers have suffered due to not maintained OHS?*

More importantly, the lack of control over the work process and the roles women are expected to play enhance or impede their ability to prevent and manage work-related risks. It may thus be argued that, with inadequate recognition from social, scientific and insurance systems, women bear many of the health costs of current production and market policies. As a 'silent epidemic' this may have short-term yields, but may also create long-term costs for development. Such costs may manifest in uncontrolled population growth, high infant and child mortality, poor socialization of and social underdevelopment of children, increased poverty, ineffective agriculture, food insecurity and high levels of sexually transmitted disease. Conversely, investing in women generates returns in health, social and intergenerational development, in a manner that has greater potential to reach the most vulnerable groups. Indeed, the analysis of women's work-related health is a strong testimony to the fact that there is an urgent global imperative to make the structure and quality of growth as critical development as its quality[6].

3.6 *Risks due to OHS must be analysis before starting the working phase?*

It is investigated from various research indicated that the frequency and severity of construction human injury accidents are caused by combination of failures in the factors including; demographics and organization factors, type of occurred accidents, factors related to the work conditions and equipment, unsafe acts and unsafe conditions such as poor housekeeping, nature of accidents, failure in health and safety training and health and safety control measures, and temporal and vocational influences. Thus, to prevent frequency rate of the construction accidents and reduce the severity rate of these injuries, all these factors and a precise combination of them should be considered[3]. Sustainable development becomes trustworthy in relation to workplace safety and health improvement. Culture, political and technological factors also responsible to maintain health and safety at industry site. With these factors, sustainable development can also be guaranteed by considering workplace safety and health innovation for all internal and external entities engage at work. This is because of the implementation all these factors reduce the working environment accidents and disease. So this research focuses on the workplace safety & health innovation, introducing new aware for sustainable development, their impact on sustainable developments and indicating the future research areas. Methods like literature

review is used. There were few researches found on how sustainable development affected by workplace safety and health innovation approaches. By ensuring health and safety, this study showed that the innovation of workplace brings sustainable development through healthy people, safer workplace, reduced cost of accidents, controlled environment, managed workplace accidents and improved workplace safety knowledge. The researchers have also attempted to forward roads toward sustainable development through occupational safety and health innovation and improvement

3.7 *How can actively ply the role by the Government of Nepal to response the safety risks?*

The authorized ministry is the Ministry of Labor and Transport Management to look after the irregularities. The Department of Labor is responsible for health, safety and working conditions. It is the apex body in the labor administration and mainly functions in policy level. However, the inspection and regulation of labor offices is not being sufficient for establishing a sound healthy workplace condition in Nepal. Concerning the safety and health of workers are the overall responsibility of the Inspection and Manpower Section of the Department of Labor. The health and safety provisions under the Labor Act, 1992 are enforced by the Factory Inspectors of Labor Office[7].

3.8 *How to provide health and safety to industries workers ?*

Knowledgeable management is needed and awareness of the benefits of human factors or ergonomics and the prevention of injuries through ergonomic design of work systems is needed. Information on ergonomics should be made available to industries. Workers need to be trained systematically in ergonomics, trained productivity as well as health and safety too. It becomes beneficial to both workers and management. The workplace and work design should be carried out using ergonomic guidelines, acts and recommendations considering the user population. The environment must be given adequate consideration. Strategies should be formulated and implemented in order to introduce ergonomics systematically through ergonomic programs in industry to improve worker productivity, safety and health and environment. Not only limited on the above point but worker's squatters, hygienic drinking water and other amenities need to easily available[19].

3.9 *Work Place health and safety Act is needed to promulgate in favor for construction related industry security?*

In all most all construction material producing industry, level of health and safety awareness is low, the implementation is inadequate, the implementation of legislation is inadequate, accidents have occurred and risk-taking behavior is prevalent, management commitment is inadequate, health and safety management systems do not exist in many organizations, and procedures and protocol are inadequate for the implementation of health and safety[2]. The government

needs to update the acts or endorse to new acts related to workers of industries, building material producers and other industries. Law needs to be likely fairer for long-run business. Law can provide certainty to uncertainty. The act could not be for benefit of industries owner but for all. Government need to endorse the appropriate polices to maintain minimum level of regulations or to maintain standard, which could effectively address concerns of affordability and access to industries to the people. The mitigation framework also could help to minimize the detail risk management system. The only permanent solution in which risk identification, risk analysis, risk ranking, and risk response plan can give the integrated package[9].

4. CONCLUSION

Owner of industries does take the health and safety is only for the workers and not for the investors but it is not true. Health and safety is for workers, when workers confidents, moral become high, enhance the productivity, efficiency, quality of entire industrial process, ultimately get more benefit to industries. So, establishing a sound ergonomic work environment in any establishment is the important aspect of industrial development. Industrial sector itself is a new one for Nepal and of course the issues pertaining to occupational safety and health are in their infant stage. Nepal has not yet ratified ILO convention No. 155 on occupational safety and health. Department of labor under the ministry of labor and transport management is the apex body in the labor administration and mainly functions in policy level. The safety and health provisions under the Labor Act, 2048 (1992), are enforced by the factory inspectors of labor office. However, the inspection and regulation of labor offices is not being sufficiently able for establishing a sound health and safety condition in Nepalese industries. The inspection, record and monitoring of OSH related activities and the policy formulation and implementation are very poor in Nepal especially in industrial sector. Therefore, sufficient research, development and recording of OSH issues and their proper management is the current need of the country for establishing safe, environment friendly, and hazard free work and workplace in industrial sector in order to increase labor productivity, efficiency and overall industrial development of the country.

REFERENCE

- [1] WHO, WHO Healthy Workplace Framework: Background and Supporting Literature and Practices, 2010, www.who.int/occupational_health/healthy_workplaces/en/index.html.
- [2] Tucker Eric, "Worker Participation in Health and Safety Regulation: Lessons from Sweden." *Studies in Political Economy* 37 (1992): 95-127.
- [3] Soltanzadeh Ahmad, Mohammadfam Iraj, Moghimbeigi Abbas and Akbarzadeh Mahdi, "Analysis of occupational accidents induced human injuries: A case study in construction industries and sites", *Journal of Civil Engineering and Construction Technology*, Vol. 7(1), pp. 1-7, January 2016, DOI: 10.5897/JCECT2015.0379, ISSN 2141-2634 www.academicjournals.org/JCECT
- [4] S.N. Vaidy, "Occupational safety and health situation in Nepal", Department of Labour and Employment Promotion, Kathmandu, Nepal
- [5] R. Sivacoumar, R. Jayabalou, S. Swarnalatha and K. Balakrishnan, "Particulate Matter from Stone Crushing Industry: Size Distribution and Health Effects", *Journal of Environmental Engineering*, Vol. 132, No. 3, March 1, 2006. ASCE, ISSN 0733-9372/2006/3-405-414/
- [6] R. Loewenson, " Effects of globalization on working women.", the Finnish Institute of Occupational Health Topeliuksenkatu 41 a, A FIN-00250 Helsinki, 2001;11:66-67
- [7] R. Djalante, " Adaptive governance and resilience: the role of multi-stakeholder platforms in disaster risk reduction" ,*Natural Hazards and Earth System Sciences*, Nat. Hazards Earth Syst. Sci., 12, 2923-2942, 2012, www.nat-hazards-earth-syst-sci.net/12/2923/2012/, doi:10.5194/nhess-12-2923-2012
- [8] Paivi Hamalainen, Jukka Takala and Kaija Leena Saarela, "Global estimates of occupational accidents", *Safety Science* 44 (2006) 137-156, doi:10.1016/j.ssci.2005.08.017
- [9] M.P. Koirala, "Risk in Housing and Reaal Estate: Construction Projects Studyin Nepal", (Doctoral dissertation, PhD Thesis, for the Degree of Doctor of Philosophy at Singhanian University), Pacheri Bari, Jhunjhunu(Raj.) India, 2013
- [10] M.P. Koirala, "Risk in Housing, Infrastructures Projects due to Safety Engineering Practice in Nepal", Nepal, Engineering Professional's Association, Vol. 2, January 2016, Kathmandu, Nepal
- [11] M. H. Fulekar, "Occupational Exposure to Dust in Quartz Manufacturing Industry", Vol. 43, No. 4, pp. 269-273, 1999, British Occupational Hygiene Society Published by Elsevier Science Ltd.
- [12] K. Jilcha and D. Kitaw, " Industrial occupational safety and health innovation for sustainable development", *Eng. Sci. Tech., Int. J.*, 2016, <http://dx.doi.org/10.1016/j.jestch.2016.10.011>
- [13] ILO, " Labour and Labour-Related Laws in Micro and Small Enterprises: Innovative Regulatory Approaches, Small Enterprise Programme" , Job Creation and Enterprise Development Department International Labour Office- Geneva, 2007
- [14] ILO, "Fundamental Principles of Occupational Health and Safety" , International Labour Office Geneva: ILO, 2008, www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf
- [15] Government of Nepal, "Interim Constitution of Nepal.", Government of Nepal, 1991
- [16] Fields, G. S. (1995). "Trade and labour standards: A review of the issue", Paris: Organization for Economic Co-operation and Development, 1995, www.digitalcommons.ilr.cornell.edu/reports
- [17] Dean Pallen. "Reinventing the City: The Role of Small Scale Enterprise", Asia Branch, Canada Development agency, 2001, www.borish.com/downloads/new-city.pdf
- [18] Central Bureau of Statistics, "Population Census 2001.", National Report, Kathmandu, NPC/HMG/N
- [19] Ashraf A. Shikdar and Naseem M. Sawaqed, "Worker productivity, and occupational health and safety issues in selected industries, Department of Mechanical and Industrial Engineering", Elsevier Ltd. 2003, doi:10.1016/S0360-8352(03)00074-3,