

Occupational Safety and Health In Bangladesh: National Profile

Submitted to the

ILO Country Office in Bangladesh

June 2015



Bangladesh Institute of Labour Studies-BILS

House 20, Road 11 (32 old), Dhanmandi, Dhaka 1209

Tel: +88-02 8123869-70; Fax: +88-02 8114820

Email: bils@citech.net; Web: www.bilsbd.org

Lead Research Team

Jakir Hossain
Afroza Akter
Mohd. Raisul Islam Khan

Research Support

Md. Aurongajeb Akond (Chapter 3)
Habibur Rahman (Chapter 4)
Laizun Nahar (Chapter 5)
Adv. Nazrul Islam (Chapter 2)

Coordination

Syed Sultan Uddin Ahmmed
Nazma Yesmin

Research Advisory Team

Shah Mohammad Abu Zafar, *Chairman*
A A Mukit Khan, *Member*
Md. Zafrul Hasan, *Member*
Dr. Wazedul Islam Khan, *Focal Person*
Md. Alauddin Miah, *Member Secretary*

Contents

Acronyms.....	5
Introduction	6
Contextual Frame, OSH Obligations, and Legal Setting	8
Contextual Frames.....	8
Demographic and Economic context	8
Labour Context.....	8
Rights Obligations.....	9
Legal Settings.....	9
OSH Policy Landscape and Regulatory Frames	11
Occupational Accidents, Hazards and Diseases	11
Accident Prevention	11
Prevention from Workplace Hazards	13
Disease Prevention and Safeguards	14
Record Keeping and Planning.....	14
Rehabilitation and Awareness Building.....	15
Safety Equipment/Tools and Facilities	16
Fire Fighting Apparatus and emergency fire exit.....	16
Personal Protective kits.....	18
Safety of Buildings and Machineries.....	19
Workplace Environment.....	19
Health services and Medical Care	21
Workplace Safety.....	22
OSH Institutions and Collaborative Mechanisms	24
Labor Administration and Departments with OSH Functions.....	24
Department of Labour.....	24
Department of Inspection for Factories and Establishments	24
Labour Courts	25
Department of Disaster Management	25
Department of Public Health Engineering	25
Fire Service and Civil Defense	25
Government Committees	26
National Tripartite Committee for fire and Building safety in RMG Sector	26
Compliance Forum.....	26
International Initiatives on OSH	27
International Labour Organization	27
Alliance for Bangladesh Worker Safety	27
Accord on Fire and Building Safety in Bangladesh.....	27
GIZ.....	27
Solidarity Center	28
Civil Society and Trade Union Initiatives.....	28
Sramik Nirapotta Forum.....	28
Chatal Sohailota Committee	28
Ship Breaking Workers' Trade Union Forum.....	28
Domestic Workers' Rights Network	28
Training, Research and Education on OSH.....	29
Laboratories and Testing Service	30
Occupational Health and Safety Services	31
Collaborative Arrangements	32

OSH Inspection Modalities.....	34
Organizational setup	34
Authorities and Powers	34
Human and Logistical Resources.....	35
Training and Capacity Development	37
Process of inspection and Inspection Activities	37
Action Procedure and Penalty System	38
Occupational Diseases, Hazards and Risks for Workers	40
Agriculture	40
Readymade Garments	41
Construction Sector	42
Tannery	42
Shrimp.....	43
Re-rolling.....	44
Jute.....	45
Ship Breaking	45
Small Chemical Industry	46
Precautionary Efforts and Monitoring of Exposure	46
Conclusion	50
OSH related policy landscape and regulatory frames	50
OSH related Institutions, and Collaborative Mechanisms.....	50
OSH Inspection.....	51
Occupational Diseases, Hazards and Risks for Workers.....	52
The Needed Change and Recommendations	53
Bibliography	55
ANNEXES	58
FGD participant List	64

Acronyms

ARI	Accident Research Institute
BCSIR	Bangladesh Council of Scientific and Industrial Research
BEPZA	Bangladesh Export Processing Zone Area
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BILS	Bangladesh Institute of Labour Studies
BIM	Bangladesh Institute of Management
BLA	Bangladesh Labour Act
BLAST	Bangladesh Legal Aids and Services Trust-
BLF	Bangladesh Labour Welfare Foundation
BNBC	Bangladesh National Building Code
BOI	Board of Investment
BSBA	Bangladesh Ship Breakers Association
BSTI	Bangladesh Standards and Testing Institution
BUHS	Bangladesh University of Health Sciences
CIS-ILO	Center of the International Labour Organization
CSR	Corporate Social Responsibilities
CVS	Cardiovascular Disease
DDM	Department of Disaster Management
DIFE	Department of Inspection for Factories and Establishments
DoL	Department of Labour
DPHE	Department of Public Health Engineering
DRTMC	Disaster Research Training and Management Centre
DWRN	Domestic Workers' Rights Network
ENT	Ear Nose and Throat
EPB	Export Promotion Bureau
FSCD	Fire Services and Civil Defense
GIT	Gastro-intestinal diseases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoB	Government of Bangladesh
ICESCR	International Covenant on Economic, Social and Cultural Rights
ILO	International Labour Organizations
IRI	Industrial Relations Institute
JIDPUS	Japan Institute of Disaster Prevention and Urban Safety
KII	Key Informant Interview
LWC	Labour Welfare Center
MoDMR	Ministry of Disaster Management and Relief
MoHA	Ministry of Home Affairs
NAP	National Action Plan
NIPSOM	National Institute of Preventive and Social Medicine
OEH	Occupational and Environmental Health
OSBB	Occupational Safety Board of Bangladesh
OSHE	Occupational Safety and Health and Environment
PMO	Prime Minister's Office
RNG	Ready -Made Garments
RTI	Respiratory Tract Infection
SBSRB	Ship Building and Ship Recycling Board
SBSRR	Ship Building and Ship Recycling Rules
SCF	Social Compliance Forum
SNF	Sramik Nirapotta Forum (Workers Safety Forum)
US-GSP	United States Generalized System of Preference
USDOL	United States Department of Labor
UTI	Urinary Tract Infection

Introduction

Safe work is one of the fundamental rights of the workers. Occupational safety and health is an important component of decent work agenda. It means the condition of workplace where workers work is free from all kinds of hazards and risks. Safe work environment ensures safety and health for everyone at work preventing hazards and risks. Risk comes in many forms—repetitive tasks, long hours of work, exposure to harmful substances like gas and fumes, noise, insufficient lighting, damage to equipment, and psychological and physical oppression. It is estimated that globally around 160 million people are affected by avoidable occupational diseases and more than two million workers die from work related accidents each year (Kwame, Kusi and Lawer, 2014). The suffering caused by such accidents and illnesses to workers and their families is incalculable. In economic terms, the ILO has estimated that 4 percent of the world's annual GDP is lost as a consequence of occupational diseases and accidents. Besides, employers face costly early retirements, loss of skilled staff, absenteeism, and high insurance premiums due to work-related accidents and diseases.

As a fast growing developing country, Bangladesh is gradually flourishing in its commerce and industry; and, at the same time, the number of workers is also increasing in industries and factories. But the country is faced with occupational health and safety hazards in its industries. A large number of workers lose their valuable lives and are injured because of poor occupational safety and health conditions. Though there is no government source of data on how many workers suffer from occupational diseases and accidents in Bangladesh each year, according to the Bangladesh Institute of Labour Studies (BILS) newspaper based survey, a total of 5909 workers died and 14413 workers were injured in different occupational accidents during last ten years (2002-2012). Also in this survey it is too observed that 708 workers died in the year of 2012 due to different workplace accident around the country; among them 554 were male workers and 154 were female. Total numbers of injured workers were 701; among them 588 were male and 113 were female workers. And in 2013, in a single incident, Rana Plaza Building collapse, the lives of 1138 workers were lost, and total 1912 workers were killed and 5738 workers in 2013 were injured due to workplace accident and violence.

The current regulatory framework of the country on occupational health and safety refers mainly to the workers of industries but does not cover all occupations of the country. The main laws related to occupational health and safety in this country is the Bangladesh Labour Act 2006. There are a number of other laws and regulations which also have some provisions related to occupational health and safety. Due to weak implementation of the regulatory provisions regarding OSH, the standards of workforce and industries are often not enforced.

In spite of having enormous problems, hazards, accidents, and complaints relating to OSH condition of the country, getting a complete and comprehensive picture of OSH in Bangladesh is not an easy task since the information on this issue is locating at various sources, and even there is dearth of necessary information. Due to change of time and change in nature of OSH problems and hazards, the existing OSH profile developed in 2002 has become less capable to meet the information needed in this regard. Thus, developing a new profile, which will ultimately update the existing one, on OSH condition of the country is long overdue.

The core objective of this report is to update the National Occupational Safety and Health Profile of Bangladesh 2002 and develop a new profile of the national occupational safety and health. To this end, specific objectives of the study are to analyze the (a) laws and policies relevant to occupational safety and health in line with the country's human rights and labour rights obligation to occupational safety and health; (b) strengths, capacities and weaknesses of institutions involved in promoting occupational safety and health; (c) state of the occupational safety and health in major labour intensive sectors of the country; and (d) OSH related structures, and collaboration amongst stakeholders.

For updating the National OSH Profile, information has been collected from both the primary and secondary sources. Secondary information includes reviewing and analyzing the main OSH related laws and regulations, data, statistics and information on existing state of occupational safety and health in Bangladesh. A number of key informant interviews and focus group discussions have been carried out to draw on the primary information (see Annex 1 for an overview of the study design).

The study is presented in four core sections. The next section provides the background of the study exhibiting the economic, demographic, and labour context of the country in relation to country's obligation to OSH and legal settings. The third chapter is the analysis of the national laws and policies related to OSH. The fourth chapter analyses the OSH related institutions and structures, and collaboration amongst stakeholders. The fifth chapter analyses the strengths, capacities and weaknesses of the state of inspection for promoting occupational safety and health. The sixth chapter exhibits the state of the occupational safety and health in major labour intensive sectors of the country. The conclusion and policy implications are drawn in the final chapter.

1

Contextual Frame, OSH Obligations, and Legal Setting

Bangladesh, a densely populated country located in South Asia, has in recent years achieved significant human and social development. The country still suffers from various socio-economic, demographic and labour market challenges. These contexts have wider implications in terms of country's obligation to promoting occupational and safety at workplaces. This chapter provides a general overview of the economic, demographic and labour context of Bangladesh along with country's obligation and legal setting in relation to occupational safety and health.

Contextual Frames

Demographic and Economic context

The population of the country is 155.8 million (2011) with a population density of 1,015 per square kilometer. The annual population growth rate is 1.37 percent. The annual birthrate per thousand populations is 19.2 while the death rate per thousand populations is 5.5. Life expectancy of total population is 69 years while female have more life expectancy (70.3 years) than male (67.9 years).

The gross domestic product (GDP) of Bangladesh according to the Economic Review 2014 is 174.54 billion USD in nominal term in fiscal year 2013-14. The sectoral share of the GDP is industry (29.61 percent), agriculture (16.33 percent) and other service related sectors (54.05 percent). The GDP growth rate of the country has averaged at a modest rate of around 6 percent in the last ten years. The country's per-capita income in current value is 1,190 USD and per-capita GDP is 1,115 USD. In 2014 total export earning of the country stood at 24.65 billion USD that is 19.76 percent of the GDP. The country's export earnings have multiplied five times in FY 2013-14 compared to FY 2001-02. This significant export performance is because of the constant rise of the ready-made garment manufacturing. The share of garment manufacturing in total export earning is around 81 percent. The other notable export products include frozen foods, jute goods, tea, and leather.

Labour Context

Bangladesh has a huge reserve pool of labour, and every year, a significant portion of population enters in the labour force. The country is yet unable to provide adequate jobs to all new entrants. New job creation is challenged by a steady growth of labour force of 2.2 percent during the last decade which means that a more than 1.7 million enter in the labour force every year.

According to the Labour Force Survey 2010, the country's economically active population (15+ age) is 56.7 million; among them 39.5 million are men and 17.2 million are women. Majority of the labour force is still engaged in rural areas (43.4 million). Total number of employed population is 54.1 million where 6.8 million are in formal sector and 47.3 million are in informal sector. Agriculture is the biggest employment sector (25.7 million) while trade, hotel and restaurant, sales and service and manufacturing are other major employment sectors. Women have lower employment rate because most of the women in Bangladesh are still engaged in unpaid family work. According to the Labour

Force Survey 2010 almost 20 percent of the workforce are underemployed. Both underemployment and unemployment are relatively higher among women than men.

Rights Obligations

Bangladesh has ratified ILO's seven out of eight fundamental conventions on core labour rights, two out of four governance conventions on labour issues and four out of 71 up-to-date conventions (see Annex Table 1.1). These do not include any of the conventions related to occupational safety and health. The ILO obliges states to establish coherent national policy on occupational safety, occupational health and the working environment aiming to prevent accidents and injuries to health arising out of, linked with or occurring in the course of work, by minimizing the causes of hazards inherent to the working environment (ILO Convention 155, Article 4). To improve the environment of workplace, ILO Convention 120 has made various provisions on cleanliness, noise, temperature, ventilation, lighting, ergonomics, pure drinking water and gender-segregated toilet/washroom.

The country is also obliged to uphold workers' rights through numerous international human rights instruments, particularly under the aegis of the United Nations. The instruments originating in the United Nations, particularly the Universal Declaration of Human Rights (UDHR), International Covenant on Economic, Social and Cultural Rights (ICESR) and International Covenant on Civil and Political Rights have bestowed workers with economic, social, cultural, civil and political rights. Moreover, the Convention on the Rights of the Child (CRC), and Convention on Elimination of All Forms of Discrimination against Women (CEDAW) also provide the basis of protection of worker-rights especially for young, and women workers.

A number of labor standards have been applicable to export-oriented industry and their workers due to the country's continued integration into the world economy, particularly in its bid to capitalize the opportunities such as generalized system of preference (GSP) in different developed country markets. US-GSP specifies acceptable conditions of work with respect to minimum wages, hours of work, and occupational safety and health as one of the conditions for preferential duty-free entry to US market.¹ The EU-GSP makes reference to UN Covenants (ICCPR, ICESCR, and CRC) and ILO Core Conventions as conditions to comply with to access non-reciprocal trade preferences.

Legal Settings

The constitution is the highest legislation of Bangladesh, and provides its citizens the right to freedom of association, reasonable wages, equal opportunity in employment, social security and prohibits forced labour (Articles 7, 14 and 20). The constitution has indicated work as a right and duty of the citizen (Art. 20)

The Bangladesh Labour Act 2006 is the most important labour legislation of the country. It has been amended three times since its formulation, and the latest amendment was done in 2013. The Labour Act consolidated 25 separate acts into single labour code in 2006. The BLA regulates trade unions, working hours, minimum wages employment and industrial relations. It sets occupational safety and health standards, compensation for injury and accidents in the workplace, maternity benefits, factory inspectorate and restrictions in child labour. The act also established the Minimum Wage Board, the

¹ The benefits for Bangladesh under the scheme has been suspended since 2013 in the aftermath of industrial disasters like Rana plaza building collapse and fire accidents in Tazreen Fashions.

Labour Court, and the National Council for Industrial Health and Safety, the mechanisms to solve industrial disputes such as strikes and lockouts.

The provisions related to EPZs enterprises are within the EPZ Workers Association and Industrial Relations Act (2010) (EWAIRA 2010). Factory Rules 1979 (currently under consideration for a new Rules) elaborates the legal framework for the country. Numerous other laws including the Fire Prevention and Extinguishing Act 2003, Bangladesh National Building Code 2006, Bangladesh Labour Welfare Foundation Act 2006, and Ship Breaking and Ship Recycling Rules 2011 have provisions related to OSH.

Through the legal provisions on OSH related issues, Bangladesh established tripartite National Industrial Health and Safety Council in 2009. The Council has formulated a National Occupational Safety and Health Policy in 2013 and working towards implementation of the policy in every industrial sector. Numerous other policies of the country including National Labour Policy, National Child Labour Elimination Policy, Industrial Policy and Children Policy provide guidelines on OSH in respected field of policy.

A range of factors determines occupational safety and health in Bangladesh. These include the vision and the strategies for promoting OSH standards set in country's policy landscape and in its regulatory frameworks. This chapter provides an analysis of the state of laws and policies in the country to ensure occupational safety and health. Juxtaposing with the loopholes and challenges of the current policy landscape and regulatory frames are drawn. The analysis below is presented in three broad areas of occupational safety and health related issue: 1) occupational accidents, hazards and diseases; 2) safety equipment, tools and facilities, and 3) workplace environment.

Occupational Accidents, Hazards and Diseases

The key provisions of the occupational accidents, hazards and diseases relate to accident prevention regulations, prevention from workplace hazards, disease prevention and safeguards, record keeping and planning, rehabilitation and awareness building.

Accident Prevention

At the national policy level, the National Occupational Safety and Health (OSH) Policy, the National Labour Policy and the National Industrial Policy deal with the issues of workplace accident prevention.

The National Occupational Safety and Health Policy include a number of provisions/obligations to prevent accident at workplace. These are:

- Necessary measures to ensure workplace safety and health protection in light of international Conventions/Declarations/Recommendations/Instruments (Article 3.a.1).
- Implement national laws and regulations in relation with workplace safety and occupational health (Article 3.a.2).
- Setting up national standards on OSH (Article 3.a.14).
- Review and updating of all laws relating to OSH (Article 3.a.15, Art. 4.a.20).
- Development and implementation of national policies and legal framework (Art. 4.a.2).
- Developing Strategy and Action plan to ensure proper implementation of national laws and regulations (Art. 4.a.3).
- Inclusion of OSH issues in the policies and programs of all related Ministries and agencies (Art. 4.a.13).
- Establish labour courts in the industrial zone as the workers and trade unions can have easy access to the courts for implementing the mandatory provisions of OSH (Art. 4.a.15).
- Impose mandatory terms and conditions upon the Construction agencies to follow the OSH polices during govt. run construction works (Art. 4.a.22).
- Providing financial support to the establishments that maintain and practice the rules and regulations of OSH (Art. 4.a.24).
- To ensure maximum safety standards during factory construction and implement all standards and regulations on internal safety environment (Art. 4.d.1).

There are some other policies those also deal with the overall implementation of the health and safety status in the industrial sector. For instance, the National Labour

Policy urges government to bring necessary amendments in the laws to ensure safe, healthy and women friendly workplaces and maternity protection (Section 19).

The Industrial Policy of Bangladesh states that it's one of the main objective is to mentioning the policies and institutional mechanisms in the Industrial Policy to ensure the implementation of the international standards on environment, health, safety and standard working environment in the industrialization process (Section 2.15)

In terms of the legal framework, the Bangladesh Labour Act 2006 has extensively described the measures to prevent occupational accidents in the workplaces. BLA on OSH encompasses three areas of protection: (i) occupational accidents, hazards and diseases; (ii) safety equipment and facilities; and (iii) workplace environment.

The BLA states that every establishment shall be provided with firefighting apparatus and one alternative fire exit. In absence of such fire exit, the inspector may give a written order to the employer of the establishment. The doors affording exit shall not be locked or fastened and all such doors will open outwards unless they are of sliding types. Every window, door or other exit affording means of the establishment shall be distinctively marked in Bangla in red letters of adequate size or by some other effective and clearly understood signs. Clear and audible means of warning together with a free passageway giving access to each means of escape in case of fire shall be maintained [Sec. 62, BLA].

In case of 10 workers working above the ground floor or explosive or highly inflammable materials, effective measures shall be taken to ensure that all the workers are familiar with the fire escape, and are adequately trained. In case of 50 or more workers, employer shall arrange at least once a year a mock fire-fighting and shall maintain a book of record [Section 62, BLA].

If there are machineries which are moving and in motion, they should be securely fenced [Section 63, BLA] and screw, belt or key or any revolting shaft, spindle of any machinery driven by power should be covered as well [Section 67, BLA]. The floors, stairs, passages and gangways of the establishment should be of sound construction and properly maintained, and all floors, ways and stair ways should be clean, wide and clear of all obstructions [Section 72, BLA] and no persons should be engaged in any factory to lift, carry or move any load so heavy as to be likely to cause him injury [Sections 74, 83-86, 90, 323, BLA]

BLA also states that notice to be given of accidents: (1) when any accident occurs in an establishment causing loss of life or bodily injury, or when an accidental explosion, ignition, outbreak of fire or irruption of water or fumes occurs in an establishment, the employer of the establishment shall give notice of the occurrence to the Inspector within two working days (Section 80, BLA 2006), Section 80 of BLA 2006 (Amended 2013) further includes, immediately after incident, to minimize the damage or bring the situation under control, the factory authority shall inform the matter to the government, fire service, inspection department, police station, if necessary the nearby hospital or government-non government health service organization by phone, mobile phone or SMS or fax.

According to Factory Rules 1979, In case of fatal or serious injury factory manager is obliged to give notice to the Chief Inspector, Deputy Commissioner, Inspector, Commissioner, and especially in case of fatal accident to the officer in charge of the local police station (Rule-84).

The Bangladesh Ship Breaking and Ship Recycling Rule 2011 necessitates that only trained workers shall be employed who has theoretical or on the job training from

designated training institute or the Ship Braking and Ship Recycling Board (SBSRB). No person shall be employed without appropriate training certificate (Rule, 17.1).

Prevention from Workplace Hazards

At policy level The National OSH Policy, and Children Policy National Child Labour Elimination Policy state about the prevention of workplace hazards. Along with The Bangladesh Labour Law 2006, Factory Rule 1979, the Bangladesh National Building Code (BNBC) 2006 and the SBSRR 2011 deal with the issue.

The National OSH Policy ensures safety in transportation, maintenance and use of chemicals used in the production process (Clause, 3.a.6).

The National Child Labour Elimination Policy has determined some conditions related to the working environment of working children to protect them from workplace hazards. It has mentioned that all necessary steps and efforts should be taken to rescue the children from hazardous works that are harmful for their physical and mental health (Clause 10).

Also in Children Policy it has mentioned that adolescents will be protected from all kinds of harmful works and those who are involved in the household works will not be engaged with the hazardous works (Clause 7.4 and 9.5). The state will also take necessary measures to protect adolescents from the physical, mental and sexual harassment in any industrial establishment (C 9.6).

The Bangladesh Labour Law has declared a number of provisions for preventing the workers from workplace hazards, which includes; a) every establishment is kept clean and free from effluvia arising out of any drain, privy or other nuisance [section 51, BLA], b) the temperature of the work room is of comfort and prevent injury to health, c) every employer is required to make effective and suitable measures for securing and maintaining adequate ventilation, sufficient and suitable lighting [section 52], d) to prevent gathering dust or fume in the workroom and its inhalation by the workers [section 53], e) The work room of an establishment should not be such overcrowded that is injurious to the health of workers and for that nine and a half cubic meter of space should be provided for every single worker in a factory [section 56], and f) every establishment should arrange sufficient number of separate toilets with sufficient light, air and water for its male and female workers [section 59]. According to labour Law, the employers are also entitled to provide sufficient supply of pure drinking water [section 58], sufficient lighting (section 57), adequate number of gender segregated toilet and washroom, and sufficient number of clean and hygienic dustbin and spittoons at convenient places [section 60].

The Bangladesh Penal Code 1860 indicates that an employer will be criminally liable for making atmosphere noxious to health [section 278, Penal Code] and for being negligent with respect to poisonous substance/ fire or combustible matter/ explosive substance/ machinery/pulling down or repairing buildings [sections 284 – 288, Penal Code].

The Factory Rule 1979 states that in every factory all electric supply lines and apparatus shall be of proper size and sufficient strength and shall be constructed, situated, protected, worked and maintained in such a manner as to cause no risk of bodily injury (Rule 41). No process or work shall be carried on in any factory in such a manner as to cause risk of bodily injury (Rule 42).

The Bangladesh National Building Code 2006 necessitates that chimneys, vents and ventilation ducts shall be constructed with noncombustible materials. Every Boiler,

central heating plants, electrical rooms or hot water supply boiler shall be separated from the rest of the occupancy for prevention of any major hazards or use by not less than two hour fire resistive construction (Section 2.11.7).

According to The Bangladesh Ship Building and Ship Recycling Rules 2011, the SBSRB is entitled to examine the ship for hazardous waste and material excluding in built hazardous and toxic materials that could harm the workers and the environment and also can issue an environment clearance certificate for that particular ship (Rule 3.3). It again states that the SBSRB in cooperation with the Department of Explosives will issue two certificates (one is 'gas free for man entry' and another is 'gas free for hot work') regarding toxic gas existence (Rule 4).

Disease Prevention and Safeguards

The National OSH Policy and the National Child Labour Elimination Policy include some clauses regarding disease prevention and safeguard.

The National OSH Policy has made some mandatory obligation which include to a) identify the risk of health and safety [clause .a.3], b) give orientation to the persons engaged with formal and informal workplace on the risk of possible accident, health risk and safety issues (Clause 3.a.4), and c) make specialist who can identify the occupational diseases and to ensure health service in the factory and establishment [Clause 3.a.10]

The National Child Labour Elimination Policy calls on formulating separate action plan both for work place and home within the purview of the National Health and Nutrition Policy and ensuring its implementation to provide sufficient physical and mental healthcare facilities and adequate nutrition for working children. The Policy also urges the government to undertake and implement comprehensive health and nutrition programs and projects for working children in line with the National Health and Nutrition Policy in order to prevent diseases in the workplaces. (Clause 12)

The BLA 2006, (Amendment 2013), the BNBC 2006, and the SBSRR 2011 provides a number of regulations regarding the issue of safeguards or disease prevention measures to prevent work related diseases and accidents at workplace.

The Bangladesh Penal Code ensures the punishment in case of negligent and /or malignant act likely to spread infection of disease dangerous to life [section 269 & 270,].

The Bangladesh National Building Code obligates the installation of automatic fire and smoke detection system when the size, arrangements and the occupancy of a building become such that a fire itself cannot provide adequate warning to its occupants for their safeguard. The automatic fire and smoke detection system shall include spot or line type heat sensitive detectors and optical, ionized or chemical sensitive type of smoke detectors (Section 4.4)

Bangladesh Ship Breaking and Ship Recycling Rule 2011 suggests to identify and mark all non-breathable spaces by the safety offices at the yard and also identification and marking all places containing or likely to contain hazardous wastes or toxic chemicals to prevent any workplace related diseases (Section 17.3).

Record Keeping and Planning

The National OSH Policy urges the collection and maintenance of all records on OSH related accidents, injuries, death, treatment, compensation, cases, decisions etc. (Clause 3.a.7; 4.a. 8,;and 4.d.5) and also states that the respective institutions will use those data and information to make action plan and OSH specialist for ensuring OSH at

workplace (Clause 3.a.8, 4.a.9, and 4.d.6). The National Health Policy as well ensures health information for all.

The BLA 2006, The Factory Rules 1979 and the Ship Breaking and Recycle Rules provides obligation on record keeping and planning about OSH. Section 90 of BLA 2006 provides compulsory obligation of keeping and maintenance a safety record book and a safety board in every establishment and factory wherein more than 25 workers are employed

According to the Factory Rules 1979 , manager of each factory is obliged to maintain a register of all accidents and dangerous occurrences which occur in the factory (Rule 100). Bangladesh Ship Breaking and Ship Recycling Rule 2011 suggests to establish systems and procedures to be followed to document and keep track of all hazardous waste generated during recycling, as well as hazardous substances found on board of the ship and their transport to the disposal facility or registered recycling facility in safe and sound manner (Rule 17.3).

Rehabilitation and Awareness Building

The National OSH Policy, the National Health Policy and Child Labour Elimination Policy deal with the issue of rehabilitation and awareness building.

The National OSH policy mandates to ensure the treatment and compensation of victim workers, and rehabilitate the victim workers as per his/her capability (Clause 4.b.11 and 3.a.12,). For crating awareness on OSH issue the Policy includes a number of clause. These include— a) regular observance of 'Occupational Health and Safety Day' on April 28 by the state (Clause 4.a.25), b) publicity on OSH related issues through govt. and private TV channel and others media (Clause 4.a.26), c) inclusion of OSH issues in the curriculum of Secondary and Higher Secondary education (Clause 4.a.27), d) motivate the employers to implement the OSH policy, Labour Act and related laws on OHS Clause 4.b.1), e) arrange discussion, consultation and training for Employers' member organizations (Clause 4.b.2), f) provide information on laws relating to OSH, rights and responsibilities of trade union regarding safe and healthy workplace and arrange orientation to the workers (Clause. 4.c.1), and g) to motivate the workers by the trade union to obey the laws on OSH (Clause. 4.c.2).

The National Health Policy urges for awareness building on capacity development and behavioral change, aware the people about their rights, opportunities, responsibilities, duties and prohibitions regarding health services. The awareness-building program on "Health for All" is focused on prevention of diseases and to control non-infectious diseases.

The National Child Labour Elimination Policy advises to crate social awareness on elimination of child labour; motivating people against child labour and changing attitude and behavioral pattern towards child labour. The targeted activities are to create social awareness amongst mass people including children and their parents or guardians, employers' or owners' associations, trade union, professional associations, and media about the harmful consequences of child labour (Clause 12).

The Children Policy as well calls upon awareness raising programs to be taken for rising awareness among the parents on negative impact of child labour (Clause 9.9)

The Labour Amendment Act of 2013 states that if there is any provision to provide accommodation to the workers in any industrial establishment, while allotting the houses the disabled workers will be given preference (Section 94A).

The Bangladesh Workers Welfare Foundation Act 2006 established a workers welfare foundation which is devoted to provide financial help to severely injured and disabled workers for their rehabilitation and necessary medical treatment to the sick workers due to any workplace hazard (Section 5).

Safety Equipment/Tools and Facilities

The safety equipment/tools and facilities include firefighting apparatus and the emergency fire exit, protective kits and the safety of buildings and machineries.

Fire Fighting Apparatus and emergency fire exit

The Bangladesh Labour Act necessitates all institutions/factories to arrange alternative stairs and necessary equipment to fight fire (Section 62). Annual drill should be arranged in factories where more than 50 workers are working. The law has also made mock fire-fighting drill mandatory for the industries where fifty or more workers are employed [Section 62, BLA].

Section 62 of BLA (Amended 2013) has also described some precaution in case of fire. These are:

- In every establishment during work the doors affording exit from any room shall not be locked or fastened and the exit way cannot be obstructed or blocked.
- All doors shall be made in such a way that they can easily and immediately be opened from inside.
- Where the door is between two rooms, the doors shall be made in such a way so that they can be opened in the direction of the nearest exit of the building and no such door shall be locked or obstructed while work is being carried on in the room.

The Factory Rule, 1979 has brief indication about the provisions of using fire-fighting apparatus in the workplace. The provisions discussed at Section 52 are as follows:

- (1) In every factory there shall be provided and maintained two fire buckets of not less than two gallon capacity each for every 1,000 sq. ft. of floor area subject to a minimum of four such buckets on each floor and every bucket shall (a) conform to appropriate Bangladesh standard specification; (b) be kept in a position approved by the Inspector and shall be used for no other purpose than for extinguishing fire; and (c) at all times be kept full of water, except where the principal fire risk arises from inflammable liquid or other substances where water cannot be used:
- (2) In factories having more than 1,000 sq. ft. floor area and where fire may occur due to combustible materials other than inflammable liquids, electrical equipment and ignitable metals, soda acid or equivalent type of portable extinguishers at the rate of one for every 5,000 sq. ft. of area spaced at not more than 100 ft. apart subject to a minimum of one extinguisher shall be provided in addition to fire buckets required under sub-rule (1).
- (3) In factories where fire may occur due to inflammable liquids or grease or paint, the extinguishers to be provided at the scale laid down in sub-rule (2) shall consist of foam, carbon tetrachloride, dry powder, carbon dioxide, chloro-bromomethene or other equivalent type.
- (4) In factories where fire may occur due to electrical equipment, the extinguisher to be provided at the scale laid down in sub-rule (2) shall consist or carbon dioxide, dry powder, carbon tetrachloride or equivalent types.

- (5) In factories where fire may occur due to magnesium, aluminum or zinc dust or shavings or other ignitable metals, the use of liquids, carbon dioxide or foam type extinguishers shall be prohibited and an ample supply of clean, fine, dry sand, stone dust or other inert material shall be kept ready for extinguishing such fires.
- (6) Every type of portable fire extinguisher shall be kept mounted in a position approved by the Inspector, and shall (a) conform to the appropriate standard specification;(b) be kept charged ready for use, properly mounted in a position approved by the Inspector and accompanied by the maker's printed instructions for its use; and(c) be examined, tested or discharged periodically in accordance with the maker's recommendation.
- (7) Every factory shall keep and maintain sufficient number of spare charges for each type of extinguisher provided in the factory with a maximum of 12 spare charges always in stock and readily available.
- (8) Every worker of the factory should, as far as possible, be trained in the use of portable fire extinguishers subject to a minimum of at least one-fourth of the numbers engaged separately in each section of the factory.
- (9) Each factory shall have a trained officer who shall be responsible for the proper maintenance and upkeep of all fire-fighting equipment.
- (10) The Manager of the factory shall prepare a detailed 'Fire Safety Plan' for proper enforcement of fire safety rules and for actions to be taken, in proper sequence, in the case of a fire in the factory.

Section 51 of the Factory Rule 1979 provides briefly the means of escape in case of fire. They are as follows:

- (1) Each room of a factory building shall be provided with not less than two exits for use in case of fire, so positioned that each person will have a reasonably free and unobstructed passage from his work place to an exit.
- (2) No such exit shall be less than 32-0" in width and less than 6-6" in height.
- (3) In the case of a factory building or part of a factory building has more than one floor and in which not less than 20 persons work at any one time, there shall be provided at least with one substantial stairway permanently constructed either inside or outside the building and which affords direct and unimpeded access to ground - level.
- (4) In the case of a factory building or part of a factory building in which 20 or more persons work at any one time above the level of the ground floor wherein explosive or highly inflammable materials are used or stored, or which is situated below ground level, the means of escape shall include at least two separate and substantial stairways permanently constructed either inside or outside the building and which afford direct and unimpeded access to ground level.
- (5) Every stairway in a factory which affords means of escape in case of fire shall be provided with a substantial handrail which, if the stairway has open an side shall be on that side, and if the stairway has two open sides, such handrail shall be provided on both sides.
- (6) In the case of a building constructed or converted for use as a factory, the requirements are:(a) at least one of the stairways shall be of fire resisting materials;(b) every hoist-way or lift-way inside a factory building shall be completely enclosed with fire-resisting materials and all means of access to the hoist or lift shall be fitted with doors of fire-resisting materials;(c) no fire escape stair shall be constructed at an angle greater than 45 degrees from the horizontal;(d) no part of a factory building shall be at a distance (along the line of travel) of 150 or more from any fire escape stair; and(e) no stairway shall be less than 45" in width.

The National Building Code 2006 also has detailed provisions about the means of exit. All exits shall be easily discernable and accessible from any part of the buildings and all exits shall be so located and arranged that they provide continuous and unobstructed means of escape to the exterior of the building leading to a street or to other designated areas of refuge (Section 3.4). The Code also discusses about the fire extinguishing system to be used in different industrial establishment. Manually operated fire alarm system along with portable fire extinguishing system has to be installed in the low hazard industry. For the moderate hazard industries, area up to 750 m² shall be installed with automated fire alarm system with portable fire extinguisher and area above 750 m² shall be fitted with automatic sprinkler or automated fire alarm system with portable fire extinguishing system (Section 5.8).

The Bangladesh Ship Breaking and Ship Recycling Rules 2011 indicates that adequate open space on the yard for safe passage and easy movement of firefighting units and equipment, maintenance of passage ways so as they have unobstructed access for fire-fighting units and equipment (Section 17.3). The Rule also obligates to provide facilities of water storage and pumping facility and firefighting device such as portable fire extinguisher, fire-fighting suites, liquid foam, oxygen mask, sand boxes/buckets, fire hose with complete attachment in accordance with the national firefighting requirements (Section 17.8)

Personal Protective kits

The National OSH Policy obligates to provide training, guideline on safety, Personal Protective Equipment-PPE to the workers and ensure their use in the workplace (Clause 4.d.7). It suggests to obey and maintain OSH related guidelines provided by the authorities/employers and use Personal Protective Equipment-PPE given by the authorities/employers by the workers (Clause 4.e.1). It also ensures in taking care of protection of self and colleagues' health and safety by the workers (Clause 4.e.2).

The BLA 2006 states that suitable goggles should be provided for the workers where eyes are at risk by reasons of exposure to excessive light or heat [section 75]. Inspector may prohibit the use of any building, machinery or plant of any establishment if it appears to him dangerous to human life or safety [section 61(2)]. The management shall provide proper protective clothing etc. to employees, who work on machines, handle toxic chemicals or perform specialized jobs [section. 39, BEPZA instruction No. 1].

The BLA (Amendment 2013) Section 78A sets obligation for using safety appliances for personal safety: (1) Where applicable, the employer shall supply safety appliances, and shall not employ any person before ensuring the use thereof, and on this matter a record book shall be maintained by the employer in prescribed manner. (2) The workers concerned shall be held responsible if they do not use the safety equipment after those are being supplied to the workers. (3) To ensure occupational health safety and protection, all workers shall be made aware of the risks of the work through trainings.

The Factory Rule 1979 indicates that effective screens or suitable goggles shall be provided for the protection of persons employed in or in the immediate vicinity of the following processes:

- dry grindings of metal or metal articles applied by hand to a revolving wheel, or disc driven by mechanical power; turning (external or internal) of non-ferrous metals or of cast iron, or articles of such metals or such iron, where the work is done dry, other

- than precision turning where the use of goggles or screen would seriously interfere with the work, or turning by means of hand tools;
- welding or cutting of metals by means of electric, oxyacetylene or similar processes;
 - fettling, cutting out cold rivets or bolts, chipping or scaling, and breaking or dressing for stone, concrete slag and the like by hand tools or other portable tools (Rule 49).

The Bangladesh Ship Breaking and Ship Recycling Rule 2011 necessitates that all workers in the ship yard has to provide with personal protection equipment including head protection, face and eye protection, hand and foot protection, respiratory protective equipment, hearing protections, protections against radioactive contamination, protection from falls and appropriate clothing. All protective equipment has to be Bangladesh Standard Testing Institute (BSTI) certified (Section 17.2).

Safety of Buildings and Machineries

BLA 2006 illustrates that inspector may prohibit the use of any building, machinery or plant of any establishment if it appears to him dangerous to human life or safety [Section 61(2)]. Section 72 (BLA Amended 2013) includes that in every establishment during work the doors affording exit from any room shall not be locked or fastened and the exit way cannot be obstructed or blocked. All floors, stairs, passages and gangways shall be of sound construction and properly maintained and to ensure safety steps, stairs, passages and gangways shall be provided with substantial handrails and the passage and stairs shall be kept open during working hours. There shall, so far as is reasonably practicable, be provided and maintained safe means of access to every place at which any person is, at any time, required to work; and ways and stairways shall be clean, wide and clear of all obstructions. To ensure security of the factory and the workers, all ways, stairways, gate, store and common utility area can be brought under close circuit camera. All doors shall be made in such a way that they can easily and immediately be opened from inside. Where the door is between two rooms, the doors shall be made in such a way so that they can be opened in the direction of the nearest exit of the building and no such door shall be locked or obstructed while work is being carried on in the room.

The Fire Safety Act 2003 forbids building any multi-storied industry or commercial space without the certification of the Director-General of the Fire Service and Civil Defense (FSCD) about the fire prevention, fire extinguishing and other fire safety related issue (Section 7).

The Bangladesh National Building Code 2006 has detailed provision on the safety of buildings. Minimum ceiling heights of every floor of an industrial establishment will be 3.5m for non-air-conditioned and 3.0 m for air-conditioned buildings (Section 1.12.2). The minimum width of staircases of an industrial establishment has to be at least 2.0 m and handrails will have a minimum height of 0.9 m (Section 1.12.5). The exterior walls of industrial buildings shall have a fire resistance of at least 2-3 hours (Section 2.4.1)

Workplace Environment

The Rules and Regulation regarding health and safety issues at the workplace environment highlights in this section in terms of cleanliness, temperature, ventilation, lighting, working space, dust and fume, pure drinking water, dustbin and spittoon,

gender segregated toilets, washroom, restroom and canteen, ergonomics², workplace safety and health services and medical care. It is however noticeable that except on the issue of health service and medical care, no issue relating to workplace environment is available in any policy.

The Labour Act 2006 obligates that every establishment should be kept clean and free from effluvia arising out of any drain, privy or other nuisance (Section 51). Bangladesh Factory Rule, 1979 states that in every factory, all inside walls and partitions, all ceilings or tops of rooms and all walls, sides and tops of passages and staircases, if painted or varnished and have smooth impervious surfaces, shall be washed with water once every fourteen months and, if necessary, by soap and brush (Rule 11) and the factory have to keep up-to-date record of the cleanliness Rule 12).

The BLA 2006 indicates that the temperature of the workroom would be such, which secure to workers the reasonable conditions of comfort and prevent injury to health [Section 52 (2)]. The Bangladesh Factory Rule 1979 obligates that there shall be no artificial humidification i.e. the introduction of moisture into the air of a room by any artificial means whatsoever, except the unavoidable escape of steam or water vapor into the atmosphere directly due to a manufacturing process in any room of a cotton spinning or weaving factory (Rule 15).

According to the BLA, every employer is required to make effective and suitable provisions for securing and maintaining adequate ventilation in every workroom by the circulation of fresh air [Section 52 (1)]. The Bangladesh National Building Code 2006 indicates that all rooms and interior spaces designed for human occupancy shall be provided with natural or mechanical ventilation. Ventilation of toilets is also necessary through ventilation shafts (Section 1.17). The quality of mechanical ventilation has to be approved by the concerned authorities (Section 2.11.4).

The BLA 2006 necessitates the arrangement of sufficient and suitable lighting, natural or artificial or both and for that glazed windows or skylights always should be kept clean (Section 57). The Factory Rule 1979 states that the lighting of, and the light fittings in, the interior parts of a factory where persons are regularly employed and in other parts shall be of such specification or, as the case may be, of such manner, as the Chief Inspector may specify in this behalf (Rule 24). The Bangladesh National Building Code 2006 indicates that all rooms and interior spaces designed for human occupancy shall be provided with natural or artificial lighting (Section 1.17).

Bangladesh Labour Act indicates that effective measures should be taken by the employers to prevent gathering of dust and fumes in the workroom and its inhalation by the workers (Section 53). The Factory Rule 1979 necessitates that every chamber, tank, vat, pipe, flue or other confined space in which persons may have to enter and which may contain dangerous fumes to such extent as to involve risk of the persons being overcome thereby, shall, unless there is other effective means of egress, be provided with a manhole which may be rectangular, oval or circular in shape, and which shall in the case of (a) rectangular or oval shape, be not less than 16" long and 12" wide; and (b) circular shape, be not less than 16 " in diameter (Rule 50).

The BLA obligates that the work room of an establishment should not be such overcrowded that is injurious to the health of workers and for that nine and half cubic

²Ergonomics is about designing for people, wherever they interact with products, systems or processes. It is also known as comfort design, functional design, and user-friendly systems. Essentially it is the practice of designing products, systems or processes to take proper account of the interaction between them and the people that use them.

meter of space should be provided for every single worker in a factory (Section 56). Bangladesh Ship Breaking and Ship Recycling Rule 2011 suggest that the yard should have sufficient area for processing of cut pieces of the ships (Section 17.5).

The Factory Rule 1979 indicates that no building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging or other structure, whether a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury (Rule 38). No railway or other electrical or mechanical means of transport within the precincts of a factory shall be constructed, situated, operated or maintained in such a manner as to cause risk of bodily injury (Rule 39). No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury (Rule 40).

The Bangladesh Acts 2006 mandates that factories shall arrange pure drinking water for workers at suitable places [BLA Section 58(1)] and during summer period, cold-water shall be provided for the workers of factories where more than 250 workers are working [Section 58(3)].

Labor laws of Bangladesh has made it mandatory that the Employer shall establish rest-room for the workers (in the case of more than 50 workers) with facilities of water supply so that they can eat meals brought with them and take rest [section 93(1), BLA]. Separate rest rooms for male and female workers shall be established if the number of female workers is more than 25 [section 93(3), BLA]. It has also been provided under the Instructions of BEPZA that every enterprise shall provide and maintain a reasonable number of toilets, and washing facilities for their employee [section 36, BEPZA Instruction No. 1]. In every company in EPZ, there shall be a suitable rest room where employees can take rest or can eat their meals brought by them [section 38, BEPZA Instruction No.1].

The BLA (Amendment 2013) also indicates to set up hygienic latrines and urinals of prescribed types and they should be conveniently situated and accessible to workers at all times while they are in the establishment (Section 59).

Health services and Medical Care

The National OSH Policy obligates to ensure treatment, compensation for the injured worker (Clause 4.a.12,). It also suggests Periodic Medical Examination to identify workplace related diseases/occupational health problems (Clause 4.b.12), provide support to the Occupational Health Surveillance programs (Clause 4.b.13). It established the worker's rights to inform the authorities about health problems and go to doctor (Clause 4.e.5).

The National Health Policy obligates primary health and emergency medical facilities for all and ensures treatment elements and equipment to all. It suggests quality and easy accessible medical service to poor people, Establish Community Clinic (one for every six thousand people). It gives priority to emergency medical service. It ensures healthy life of workers engaged with industries and agriculture.

The National Labour Policy indicates that physical and mental health of the workers is very essential for the enhancement of national production. This is why Government should take measures to establish Health Centers in the labour prone industrial area through government, non-government, private or joint initiatives. The government should also introduce Health Insurance Scheme and ensure availability of Health Workers and deliver necessary treatment equipment (Clause 10).

The National Child Labour Elimination Policy has clear provisions regarding the health services and medical care of the working children. It has stated that if a child falls sick or faces any accident while working, the employer or owner should bear all expenses of his or her medical treatment and rehabilitation required; and the family member should have the opportunity to meet the child during his or her illness (Clause 10).

In Bangladesh's legal framework the Labour Act 2006, its Amendment 2013, the Bangladesh Export Processing Zones Act (BEPZA) and the Factory Rule have regulations about the issue. The National OSH Policy, Health Policy, Labour Policy and the Child Labour Elimination Policy are the national policy frame that has suggested ensuring health services and medical care for the workers.

BLA 2006 and Bangladesh Export Processing Zones Act have made it mandatory for every institution to arrange a first-aid box or an almyery equipped with first-aid application for every 150 workers [section 89(1) & (2), BLA and section 37, BEPZA Instruction No. 1]. In Bangladesh, it has been made mandatory that the employer must provide an equipped dispensary with a patient-room, doctor and nursing staff should be arranged where more than 300 workers are working[s 89(5) BLA] Each company shall contribute a sum of money to Medical Centre Trustee Board, per month for the maintenance of Medical Centre established for First Aid to the employees [section 40, BEPZA Instruction No.1].

The BLA (Amendment 2013) also has made mandatory for the employers to establish a permanent Workplace Health Center where more than 5000 workers work recruitment of Welfare Officer where more than 500 workers work (Section 28). Employers also have to establish a Safety Committee comprise with 50% worker representatives where more than 500 workers work (Section 30). If a worker has given notice of an accident, the employer, at his own costs, has to be the worker examined by a registered medical practitioner within three days and if the nature of the disease/injury is serious in nature the employer will provide necessary treatment immediately at the workplace (Section 160). The employers also have to provide adequate number of workers necessary training on first aid for at least six months so that they can give some emergency treatment to the injured workers (Section 35A).

The factory Rule 1979 has provisions about fixing the first-aid boxes in the workplaces. Rule 55 indicates that the first-aid boxes or cupboards shall be distinctively marked with a red cross on a white ground. The section also deals with the quantities of equipment in the first-aid boxes according to the number of workers.

Workplace Safety

The National OSH Policy suggests building up Safety specialist (C. 3.a.9, and 4.a.10). It necessitates ensuring maximum safety standards during factory construction and implementing all standards and regulations on internal safety environment (Clause 4.d.1). It obligates to identify all of the risks regarding OHS and orients all persons of the workplace on possible accidents and OHS risks (Clause 4.d.2). It also suggests developing a safe work plan and ensuring its effective practice (Clause 4.d.8).

Regarding the provision for the working children the Children Policy states that safe working environment in relation to physical and mental health of the adolescents has to be ensured and the adolescents will not be involved with any type of hazardous works (Clause 9.1).

In terms of legal framework, the BLA states that if any Labour Inspector finds that any building or any part of the building of an establishment, its machineries and plants poses serious threats to the workers then he can issue written notice to the owner of the establishment for necessary remediation and the owner have to follow the notice according to its deadline (Sec. 61).

Section 39 and 44 of BLA (Amendment 2013) restricted the employment of adolescent in certain work; the government, from time to time by gazette notification shall publish the list of the risky works. No adolescent shall be employed in any work declared as risky by the government. No adolescent shall be allowed in any establishment to clean, lubricate or adjust any part of machinery while that part is in motion or to work between moving parts or between fixed and moving parts, of any machinery which is in motion. No disabled shall be allowed to work on dangerous machines or in risky works.

According to the Fire Safety Act 2003, in order to use a building or certain places of a building or establishment as warehouse or workshop, certain person/group have to issue a license under the Act from the Director-General of the Fire Service and Civil Defense Department (Section 3).

The National Building Code 2006 necessitates that elevator shafts, vent shafts and other vertical openings shall be enclosed with a construction of at least 4 hour fire resistance and all exit requirements have to comply with the existing national acts (2.11.5).

Bangladesh Ship Building and Ship Recycling Rule 2011 suggests maintaining safety distance for storage of petroleum products or any combustible materials on the dismantling ship or in the yard (Section 17.7). There should be constructed facility for removal and handling of asbestos on the yard and necessary provision of showering of the asbestos or other available asbestos handling system (Section 17.9).

BLA Amendment 2013 Section 90A necessitates the constitution of a Safety Committee in every factory where fifty or more workers are employed and the safety committee will be constituted and effective in the prescribed manner (Section 30)

Amendment of Section 99 mandates Compulsory Group Insurance: (1) in any establishment, where minimum 100 permanent workers are employed and the employer will introduce group insurance in accordance with the prevailing insurance law. (2) The insurance money will be in addition to the other entitlements mentioned in the Act. Provided that in case of death of a worker, it shall be the responsibility of the employer of the establishment to realize/collect the claimed amount and the employer shall disburse the insured amount to the dependents directly. Provided further that notwithstanding anything contained in any other law, if an insurance claim is raised/made the same shall be resolved within 120 days by the insurance company and the employer jointly (Section 32).

In Bangladesh, numerous national and international institutions and initiatives promote occupational safety and health issues. The existing systems include structures and bodies initiated by the government, non-government organizations, civil society, trade unions and international organizations. This chapter sketches the existing national and international institutions and initiatives currently functioning on occupational safety and health issues of Bangladesh. The coordination, cooperation and collaboration amongst the different stakeholders are presented below along with the structure and activities of the existing statutory bodies and initiatives in order to explore the current strengths and weaknesses of the existing mechanisms related with OSH.

Labor Administration and Departments with OSH Functions

The quality of work and workplace governance is determined partially by the efficiency of labor administration system promoted for policy setting, formulation, and implementation. At the centre of Bangladesh's labor policy formulation and implementation is the Ministry of Labor and Employment (MoLE). Department of Labor (DoL) as one of its implementing agencies is responsible for overall administration and implementation of policies and programs. The DoL too acts as conciliation machinery that deals with labor disputes including strikes and lockouts. The inspection of factories, and prosecution against violations of labor laws in courts are prerogatives of the Department of Inspection for Factories and Establishments (DIFE). All factories/ establishments except those in the EPZs are under the purview of DIFE's monitoring and enforcement, whereas for factories in the EPZs, the Department of Industrial Relations (DIR) acts as a substitute.

Department of Labour

The DoL is mainly responsible for facilitation of effective labour management relations, collective bargaining and negotiations and ensures prompt and efficient settlement of labour disputes in the industrial sectors of Bangladesh. The DOL has one head office and four divisional offices under which there are 16 regional offices, 4 training institutes (Industrial Relations Institutes), and 30 Labour Welfare Centers in different industrial areas. Its function include (a) registering trade unions and maintain trade union register; (b) lodging complaints with the Labour Courts for action against any offence or any unfair labour practice or violation of any provisions; (c) determining the CBA in relation to establishment/ group of establishment; (d) supervising the election of trade unions executives; (e) acting as conciliator in any industrial dispute; and (f) supervising the functioning of participation committees.

Department of Inspection for Factories and Establishments

Ensuring workplace safety including fire safety, structural integrity and welfare of workers is core responsibility of DIFE. In order to establish the workplace safety and health standards, it inspects factories, shops, industries and commercial establishments, tea gardens, railway, internal water transport and road transport under the Bangladesh Labour Law along with the other existing regulations. Its activities also includes the monitoring of factories with high hazardous risks, approving the industrial lay-outs,

modification and expansion plan of a factory, assisting international organizations in making survey report on labour inspection, wage administration, condition of work and occupational health and safety.

Labour Courts

The labor courts deal with both industrial disputes and individual grievances. A dispute may be referred to labor courts by the employers, the workers, or by the government. Currently, there are seven Labor Courts—three in Dhaka, and one in each of the four divisional headquarters. The maiden appellate tribunal with only one Bench is in Dhaka. The jurisdiction of the High Court Division can be invoked on the grounds of violation of fundamental rights or any procedural error by the Labor Courts. Any party aggrieved by an award, decision, sentence or judgment given by a Labor Court may proceed with an appeal to the Tribunal within sixty days of the judgment, and the decision of the Tribunal is final. Besides access to the Court and Tribunal, the law allows workers' access to the criminal court for offence of criminal nature.

Department of Disaster Management

DDM is responsible to execute the directions, recommendations by the Government in connection with disaster management as well as the national disaster management principles and planning. The department has the mandate to implement the objectives of Disaster Management Act by reducing the overall vulnerability from different impacts of disaster by undertaking risk reduction activities; conducting humanitarian assistance programs efficiently to enhance the capacity of poor and disadvantaged as well as strengthening and coordinating programs undertaken by various government and NGOs related to disaster risk reduction and emergency response.

Department of Public Health Engineering

The DPHE is the national lead agency responsible exclusively for water supply and sanitation facilities along with advisory service to GoB in framing policy and action plans. The department facilitates the washing and sanitation facilities for the workers especially for the informal workers. Social mobilization for awareness raising towards proper management of water supply and sanitation infrastructure and promotion of personal hygiene practices, capacity building of the community, LGIs, private entrepreneurs and NGOs with technical know-how, information, training etc. in terms of water supply and sanitation are the notable functions of this department. Underlying this functional mandate it can train the, employers, workers and trade union in terms of water supply, sanitation and personal hygiene.³

Fire Service and Civil Defense

The department under the Ministry of Home Affairs (MoHA) performs the roles in the Fire Prevention and Fire Fighting Law 2003. It is the responder of disasters and accidents particularly first responder for firefighting, fire prevention, search and rescue, to render first aid, to send the serious casualties to hospital and to provide fire safety. It provides training on fire safety and rescue mechanism. Especially it has targeted to train 62000 volunteers whereas 16000 volunteers have already completed their training and 600 volunteers trained for slum areas. It provides training and inspection of government and non-government office, educational institutes and industrial unit. The government of

³ <http://www.dphe.gov.bd>

Bangladesh is committed to establish fire station in every Upazilla. Currently it has 273 fire stations across the country with 6874 manpower and numerous equipment including 264 water tender cars, 191 pump tender cars, 54 rescue cars, 518 pumps, 54 ambulances, and 9 fire floats.

Government Committees

An eleven member Cabinet Committee on Garments Sector⁷ has been formed to uphold stable environment in garment sector through regular discussion and giving necessary instruction. The cabinet committee includes 8 ministries headed by the Minister, MoLE. The other members of the committee are Ministers, Ministry of Textile and Jute, Ministry of Local Government, Rural Development and Co-operatives, Ministry of Home Affairs, Ministry of Industry, Ministry of Commerce, Ministry of Disaster Management and Relief and Honorable State Ministers, Ministry of Labour and Employment and Ministry of Housing and Public Works. Two Task Forces has formed under the direction of cabinet committee.

The Task Force in Building and fire safety in Ready Made Garments Industry is headed by Joint Secretary, MoLE. Task force involves the Cabinet Committee for the RMG Sector, MoLE, MoRDM, MoLGRD, FSCD, Power Cell of Power Division, Energy and Mineral Resource Division, BEF, BGMEA, BKMEA, NCCWE, IBC.

Task Force on Expansion and Simplification of Ready Made Garments Industry⁸ headed by and one Additional Secretary of Ministry of Commerce respectively. It involves the Cabinet Committee for the RMG Sector, MoLE, FSCD, Department of Environment, Department of Explosives, and DIFE. The scope of work under this task force includes Review of factory licensing and certification procedures and consideration of the establishment of a one-stop service for fire safety licensing and certification.

National Tripartite Committee for fire and Building safety in RMG Sector

The National Tripartite Committee has been formed in May 2013 to monitor implementation of the National Tripartite Plan of Action in Bangladesh Garments Industries. A sixteen-member Tripartite Committee headed by secretary, MoLE has been formed to implement the National plan of Action. A working group headed by the Joint Secretary (Labour), MoLE has been formed to assist the committee. ILO is providing overall support including technical assistance. The committee has approved a common operating manual developed by BUET.

Compliance Forum

The Forum, established in June 2005 for safety and welfare of RMG workers, is headed by the Minister of Commerce, and the State Minister for Labour acts as Co-chairman. The forum includes the participation of Board of Investment (BOI), Secretaries of Commerce, Home, Labour, Textile, Industries, Works and Women and Child Affairs, Bangladesh Export Processing Zone Area (BEPZA), Export Promotion Bureau (EPB), Prime Minister's Office (PMO), Fire Service and Civil Defense, Department of Labour, Bangladesh Garment Manufacturers and Exporters Association, Bangladesh Knitwear Manufacturers and Exporters Association, Bangladesh Terry Towel and Linen Manufacturers and Exporters, Bangladesh Independent Garments Workers Union Federation, Representatives from Workers, Business Social Compliance Initiative, Nari Uddog Kendra (NUK), Karmajibi Nari, UNDP, GTZ, ILO, LCG.⁴

⁴ <http://www.epb.gov.bd/details.php?page=12>

International Initiatives on OSH

The international labour rights organizations, human rights organizations, brands, buyers, retailers and trade unions work to improve the OSH situation of Bangladesh. Many of these initiatives relate to the RMG Sector. Two of the prominent ones are Alliance for Bangladesh Worker Safety and Accord on Fire and Building Safety in Bangladesh.

International Labour Organization

The ILO is devoted to create decent working environment for the workers of Bangladesh. Underlying the principle of decent work ILO has taken wide ranges of activities to ensure a safe workplace removing the workplace hazards and accidents. The ILO Country Office for Bangladesh in cooperation with the Ministry of Labour and Employment, Bangladesh Employers' Federation (BEF), National Coordination Committee for Workers Education (NCCWE), and social partners such as the Occupational Safety and Health and Environment (OSHE) Foundation and the Bangladesh Institute of Labour Studies (BILS) work to foster a preventative safety and health culture by strengthening national Occupational Safety and Health (OSH) systems.

The ILO directly facilitates the better works program, Bangladesh that aims to improve compliance with labour standards and promote competitiveness in global supply chains, in particular in labour intensive industries. With support from the ILO, European Union and governments of Bangladesh and USA launched a Sustainability Compact to promote continuous improvements in labour rights and factory safety in the Ready Made Garment and Knitwear Industry in Bangladesh.

Alliance for Bangladesh Worker Safety

Alliance is a worker safety initiative founded on December 2013. A group of North American apparel companies and retailers and brands jointly launched the Bangladesh Worker Safety Initiative to help improve worker safety in Bangladeshi ready-made garment factories. The Alliance is focused on systemic and sustainable improvements in fire, structural and electrical safety within Bangladesh's garment factories.

Accord on Fire and Building Safety in Bangladesh

The Accord is an initiative over 190 apparel corporations, two global trade unions—IndustriALL and UNI, and numerous Bangladeshi unions to create a safe and sound workplace for the RMG workers. It is an independent and legally binding agreement targeted the all garment factories in Bangladesh to make as safe workplaces. The building standards that the Accord uses are largely based on the Bangladesh National Building Code and are the product of discussions between the Accord, the National Tripartite Plan of Action, and the Alliance for Bangladesh Worker Safety (Alliance) initiated and facilitated by the International Labour Organization. It includes independent safety inspections at factories and public reporting of the results of these inspections.⁵

GIZ

The *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)* is working to improve the workplace safety. Improvement of health and safety in shipyard and readymade garment sector is the priority working area of this organization. Notable activities

⁵ <http://bangladeshaccord.org>

include the collaboration with one of Bangladesh's leading shipyards, Western Marine Shipyard Limited and the Ministry of Health and Family Welfare, to improve the health and safety of shipyard workers and community members alike.

Solidarity Center

The Solidarity Center is a non-profit international worker rights organization that assists workers to achieve safe and healthy workplaces, family-supporting wages, social protections and a voice on the job. In Bangladesh, the Solidarity Center working in the RMG sector and seafood processing sector. It aims to protect worker rights and strengthen unions to protect worker rights to ensure safe and productive workplaces and constructive labor-management relations.⁶

Civil Society and Trade Union Initiatives

As a part of Occupational Safety and Health activities the Trade Union and Civil Society are considered to be a key partner of national and international initiatives on OSH.

Sramik Nirapotta Forum

The Sramik Nirapotta Forum is a coalition of civil society, labour, women's, human and environmental rights organizations that have come together in a forum to provide assistance and to seek justice for the victims of workplace disasters. SNF was established after the collapse of the building of the Spectrum Sweaters Industries at Palashbari, Savar, Dhaka on April, 2005. SNF aims at advocacy towards workers' rights and safe workplace.

Chatal Sohaiota Committee

Chatal Sohaiota Committee—Chasok (Rice Processing Workers Support Committee) was formed in 2007 for advocacy on minimum wage, livelihoods, workplace safety and betterment of rice processing sector workers with the initiatives of Bangladesh Institute of Labour Studies-BILS. Regional bodies of NTUC associated with BILS formed 2 separate committees in member Mymensingh and Dinajpur, the rice processing dominating area of Bangladesh. The committee is working to organize and establish the rights of workers in rice processing sector and ensuring workplace safety.

Ship Breaking Workers' Trade Union Forum

Ship Breaking Workers' Trade Union Forum comprises of major national trade union federations to organize workers and continue advocacy in case of accidents and injuries, workers death, exploitation and deprivation. With the support of BILS it has successfully conducted numerous surveys, studies, FGDs, training programs on occupational health and safety issues, on labour law and labour rights, organizers training, workshop, seminars, round-table, lobby meeting with labour Inspection department officials, run legal aid and advocacy related activities, health-camps which were participated by thousands of ship breaking and metal sector workers, local and senior TU leaders, public representatives, civil society members, government officials and other stakeholders.

Domestic Workers' Rights Network

Trade unions, human rights organization and NGOs are working for the rights of domestic workers under the network titled "Domestic Workers' Rights Network

⁶ <http://www.solidaritycenter.org/content.asp?contentid=448>

(DWRN)” which was formed in December 2006. A total of 32 organizations comprising trade unions, human rights organizations and NGOs are member of the Network. The network is concerned to establish the legal recognition of domestic workers and regularly protect and protest the workplace violence and victimization to ensure decent work for the domestic workers of Bangladesh.

Training, Research and Education on OSH

In Bangladesh both the national and international institutions conducts training and research on OSH.

Fire Service and Civil Defense provide training and awareness services. It conducts training on Fire Fighting, Evacuation, Rescue and First Aid Course (Staff), Training Course on Risk of Chemical Fire, Building code, fire safety manager’s course etc. It publishes safety tips to create mass awareness and primary caution against fire accidents.

The Industrial Relations Institute (IRI) is a training institute under the Department of Labour that conducts mainly two types of courses training on industrial relations (4 weeks) and workers education course (1 week). The training course mainly includes the labour law, Industrial relations, labour administration, labour conventions, workplace safety and health issues as covered under law. The IRI also provides training under the Labour Welfare Center on occupational safety and health, workplace environment (Citizen Charter, DoL, MoLE, GoB). At present, 4 IRIs are running to provide training services, which is located at Gazipur, Chittagong, Khulna and Rajshahi.

The Alliance Basic Fire Safety Training is implemented through a Train-the-Trainer approach. 43 trainers from local worker NGOs and 3rd party organizations have been selected and approved by the Alliance to train factory representatives (management and workers), who are responsible for creating training action plans, delivering the training to their entire workforce and integrating it into their training and orientation programs.⁷

Bangladesh Garment Manufacturers and Exporters Association (BGMEA) runs a Social compliance improvement project to improve the compliance standard. It organizes training for the member factories on social and environmental standards. It has job placement program for the people-with-disabilities. It also conducts fire drills and fire safety training program in member factories as CSR activities. BGMEA has undertaken an initiative for RMG sector of Bangladesh to conduct TOT program with Fire Service and Civil Defense (FSCD) to Prevent Fire in RMG sector.

Bangladesh Institute of Labour Studies-BILS, established regularly conducts occupational Safety and Health related studies both in house and with collaboration with the other partners. Organizing training and awareness program for the Trade Unions is the regular activities of BILS to educate the workers on safety and health issues. Participation in the policy formulation process at the national level and advocacy with DIFE is also working mandate of BILS. BILS runs support health center for the workers to provide medical services and OSH information in Dhaka and Chittagong.

Bangladesh Institute of Management (BIM) is regularly conducts both long and short-term training on labour law, its amendment and human resource management training. The frequent training on Bangladesh Labor Act, and Labour Law for Manager and executives mainly focuses the health, safety and Hygiene, welfare and working conditions of workers.

⁷ Training: The Alliance's Commitment (<http://www.bangladeshworkersafety.org/programs/training>)

Bangladesh Occupational Safety, Health and Environment Foundation (OSHE) facilitates debate and discussion in labour market and society on policy issue related to workers' rights, occupational safety, workers health and environmental issues and working to develop participation of workers in public health policy dialogues from workers health perspective and develop positive actions by workers initiative. OSHE is the national collaborating center of International Safety and Health Information Center of the International Labour Organization (CIS-ILO).

The BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) undertakes collaborative and linkage programs in the field of disaster reduction and urban safety. Research, Training, testing, investigation and consultancy services in the field of Disaster Prevention and Urban Safety are the main mandate of is institution.⁸

Institute of Engineers, Bangladesh also work on OSH including Training and Awareness, Formulation of Safety Rules, Regulations and Policy, Safety Audit Program and Implementation, Pollution Control and Environment Management, Occupational Health Service Management, Compiling Safety Codes and Manuals for individual industries ,Conducting Research, Universities Linkage Programs for introducing syllabus on Safety.

Training Institute for Chemical Industries is an institute of Bangladesh Chemical Industries Corporation (BCIC) which provides occupational safety and health related training mainly cover the issues of Industrial Safety, Accident Prevention, Electrical Maintenance Techniques, Electrical Safe Work Practices for Process Industries, Safe Handling of Chemicals in Laboratories, Industrial Safety in Mechanical Maintenance, Industrial Safety and Disaster Management.⁹

NIPSOM is the only national level public health institute produces post-graduates capable of satisfying the needs of the community in promoting and restoring health. NIPSOM has a specific OSH related department and it has 40 faculty members. It conducts regular Research, Training and Education Program on Occupational health and safety issues. It conducts Master of Public Health course on Occupational and Environmental Health (OEH) that is a one-year duration full time course. It also conducts short course on Occupational Safety and Health. The laboratory for Occupational and Environmental Health includes a unit for the detection of arsenic in different samples leading to the diagnosis and treatment of arsenicosis and supports the researchers in their research activity.¹⁰

Laboratories and Testing Service

There are no specialized occupational hazards and risk assessment and its control and prevention testing laboratories in Bangladesh. The government scientific institution and laboratories like Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh Standards and Testing Institution (BSTI), the laboratories under the academic institutions and professional training institutions like BUET JIDPUS Laboratories, Safety laboratories of Training Institute for Chemical Industries, DNA Laboratory are the notable laboratories which provide testing facilities about chemical, biological and physical hazards.

BCSIR Laboratories have developed processes for the production of fire extinguishing powder. Encouraging results have been achieved for the preparation of

⁸ <http://www.buet.ac.bd/jidpus/>

⁹ <http://tici-bcic.org/>

¹⁰ www.nipsom.org/

refractory, iron pigments, arsenic test kit, inorganic pigments based on cadmium and castebles etc. It provides testing facilities related to acid, alcohol, arsenic, toxicity, poison, and chemical composition.

BSTI is entrusted with the responsibility of formulation of national standards of industrial, food and chemical products keeping in view the regional and international standards. The function includes to provide or arrange facilities for examination, testing and inspection of commodities, processes and practices for any investigation, research or promotion of export that may be necessary and to issue test reports.

The Laboratory of Training Institute for Chemical Industries is furnished with demonstration models and equipment to demonstrate and carry out experiments on safety aspects such as fire hazards, explosion hazards, static electricity hazards, personal protection, firefighting, properties of materials, toxic hazards, and hazards in confined space. The lab also houses equipment for demonstration of flash point, explosion limit, and simulation of fire and explosion hazards, detection and measuring of toxic gases, ionizing radiation and noise level.¹¹

The BUET though its four laboratories—Earthquake Engineering Laboratory, Geotechnical and Geophysical Testing Laboratory, Computational and Simulation Laboratory, and Non-Destructive Testing Laboratory—provides testing facilities on geotechnical and geophysical investigation, structural health monitoring and earthquake loading facility. These laboratories and testing facilities can be used to measure the sustainability and risk of industrial infrastructure as a pre-cautious measure.¹²

The National Forensic DNA Profiling Laboratory (NFDPL) at Dhaka Medical College is equipped to provide all kinds of DNA testing service related to criminal investigation. DNA analysis can also help solving disputes arising over issues like, paternity, maternity, immigration or inheritance and determining the identity of missing children, disaster victims or mutilated bodies. Identification of dead body is one of the major functions of the laboratory that is highly essential for workplace accident.

The Department of Public Health and Engineering laboratories provide testing facilities related to chemical materials.

Occupational Health and Safety Services

The workers of Bangladesh enjoy some direct health service from the government, non-government and employers organizations. The MoE operates Labour Welfare Centre under the DoL. The Centre provides direct health services like treatment and free medicine for the workers and their family. There is a practice of providing health service for the government employees through separate departmental service, the government hospital have also specialized unit for the facilitation of workers rehabilitation. The nongovernment and labour rights organization, Like BILS, provides health service through establishing separate health support service center and organizing health camps. The employers association, like BGMEA, also organizes the health service for its workers as a CSR activity. The legal support for compensation in case of workplace accidents is provided by the legal aid support organizations like BLAST.

Labour Welfare Center provides free medical treatment and free medicine, pathological test, family planning materials/contraceptives and counseling services for

¹¹ ci-bcic.org/index.php/training-information/training-departments.html

¹² <http://www.buet.ac.bd/jidpus>

workers and their family members.¹³ Currently, 30 Labour Welfare Centers are in operation with Medical Officer, Family and Welfare Officer and Labour Welfare Organizer (Residential and Non-residential) to provide welfare support to the workers.

The establishment based health services is available in Bangladesh mainly for the employees of government establishment. Such the jute mills under the Bangladesh Jute Mills Corporation have hospitals and primary medical treatment centers to provide health facilities to their officers, employees and workers. It has 4 Hospitals and 20 primary medical treatment centers. The railway department has also medical facilities for its employee. The public universities of Bangladesh have also their own medical centres where the employees have access to health services.

CRP's innovative Work Rehabilitation Program is conducted by the Occupational Therapy Department to help people with a spinal cord injury to return to their previous work. Each month, 2 patients are chosen to be involved. The physical skills necessary for their work are identified and therapy is targeted to these skills. A follow up visit is conducted in their workplace to assess the progress of these interventions.

BGMEA runs 12 Health Centres for the garment workers and their families. These centres provide pre-medical services and medicines at free of cost. Besides, it run awareness program on HIV/ AIDS, tuberculosis, reproductive health and the use of contraceptives. The BGMEA also runs hospitals at Chittagong and Dhaka with outdoor and indoor healthcare facilities including surgery, burn unit, and modern laboratory and all diagnostic facilities.¹⁴

BILS provides rehabilitation and physiotherapy services to the injured workers. BILS Kaje Fera (Rana Plaza Victim Support Center) at Savar and BILS Information and Training Center (Support the Ship Breaking Workers) at Batiari, Chittagong provide medical treatment, physiotherapy services, and free medicine. Legal support is also provided to the workers by the support center. It also organizes health camp to provide treatment and free medicine.

BLAST provides legal aid, advice and representation across a range of areas, including civil, criminal, family, labour and land law, as well as on constitutional rights and remedies. Rights to workers safety are one of the priority areas of its operation. It deals with many cases of compensation following workplace death and injury.

Collaborative Arrangements

The OSH is multi-sectorial and multidisciplinary in nature. It involves a wide range of stakeholders including several government jurisdiction and numerous other actors. The MoLE deals the overall activities related to the OSH. It collaborates and coordinates among the other ministries and organizations at the national level activities relating to policy formulation and labour welfare. DIFE maintains collaboration with different government and non-government organizations, agencies as well as with international organizations especially with the ILO to facilitate policy, planning, measures and directions to enhance occupational safety and health for all workers by appropriate working conditions and environment (DIFE, 2014).

The collaboration among the ministries, government departments, and international and national social partners is a common practice to ensure workers safety by constituting forum. The Cabinet Committee on Garments Sector and Compliance

¹³ <http://dol.gov.bd/citizen-charter/>

¹⁴ BGMEA Hospital, Dhaka, Emdad Haq on 1 June 2014

forum are the best example of inter-ministerial collaboration regarding the occupational safety and health issues of Bangladesh.

The government, employers and workers participation have been committed in the labour welfare initiatives of the country based on the principle of tripartite collaboration. Most of the key policies related to labour are negotiated collectively between the three partners—government, employers and workers representatives. Based on the principles of tripartite collaboration, a 22 members National Council for Industrial Health and Safety has been formed. National Tripartite Plan of Action on Fire Safety for the Ready-Made Garment Sector in Bangladesh is one of the best examples of practicing the principle of tripartite collaboration. The high level tripartite committee reports to the Cabinet Committee that is chaired by the Secretary of Labour.

The collaboration among the international organization to equip and develop the capacity of the relevant institution is another mechanism to work on the workplace safety and compliance. The ILO and GIZ cooperate with the MoLE to ensure the adequate capacities of the inspection department. The capacity building program provides basic inspector training through the local Industrial Relations Institutes under the MoLE. The GIZ donated vehicle as a means of cooperation with the government bodies to support factory inspections.

The collaboration and involvement of international community has recently gain much attention, especially on RMG Sector after the two crushing tragedy of the nation's history—the Rana Plaza building collapse and the Tazreen Fire Accident. The Accord and Alliance is the two notable international initiatives for workers safety currently functioning in the country.

The High Court Division of the country has also provides direction time to time to ensure the safety and compensation of the workers. The High Court ordered the DIFE to provide list of vulnerable RMG industries. It also issued an order on April 30 to form a committee, headed by general officer commanding (GOC) of Nine Infantry Division, be formed to find ways to compensate the Rana Plaza victims adequately and to rehabilitate them.

The human rights organizations of the country have been working to ensure the workplace safety with intensive collaboration. The Sramik Nirapotta Forum (SNF) is a coalition of civil society, labour, women's, human and environmental rights organizations that have come together in a forum to provide assistance and to seek justice for the victims of workplace disasters.

The multi-stakeholder collaborative mechanism in OSH expands to include supportive stakeholder like the civil defense department, local government, scientific laboratories, research centers, academic and training institutions, and specialized hospitals. The Rana Plaza Coordination Committee is an example of multi-stakeholder approach for OSH. It involves Government (MoLE), Industry (BGMEA and BEF), Trade unions (IndustriALL Bangladesh Council (IBC), National Coordination Committee for Workers' Education (NCCWE), IndustriALL Global Union, Brands (El Corte Ingles, Loblaw and Primark) and NGOs (BILS, Clean Clothes Campaign).

The inspection of factories and establishments, and prosecution against violations of labour laws in courts are prerogatives of its Department for Inspection of Factories and Establishment (DIFE). Currently, the department conduct following functions: (a) inspection of factories and establishments, prosecution against the violations of labour laws in different courts; (b) approval of lay-out plans, construction and extension of factories; (c) issue of registration and licenses; (d) grant of exemption from operation of different provisions of labour laws (e) liaison with ILO, government departments, employer's organizations and trade unions on enforcement of labour laws; and (f) assistance to the government in formulation of policies and labour laws. All factories except those in the EPZs are under the purview of the DIFE monitoring and enforcement. For factories in the EPZs, the Department of Industrial Relations (DIR) operates as a substitute.

Organizational setup

The DIFE with its three wings—(i) safety; (ii) health; and (iii) general—monitor the enforcement of legal provisions regulating work and workplace. The safety wing oversees accident prevention and compensation, the health wing looks after health and safety, maternity and welfare benefits, and the general wing is entrusted with issues related to working hours, leave and rest, wage and employment contract.

In 2010 total manpower strength of the department was increased to 314 where numbers of inspectors from three wings were 184. Among them number of OSH Inspectors were 59. The current total manpower strength of 314 has been increased to 993 with 679 new posts in the expansion scheme. In the latest set up, number of Inspectors are 575 out of which number of OSH Inspectors are 373.

The Inspector General (IG) being the head of the department with supreme authority under the relevant chapters of BLA 2006 is assisted by an Additional Inspector General (AIG), four Joint Inspector General (JIG), four Deputy Inspector General (DIG) and some other officers and staffs comprising of 84 posts at Head Quarter and he is also supported by 23 district offices situated in six divisions of the country (See Annex Figure 4.1). Each district office is headed by a Deputy Inspector General with its own set up comprised of Assistant Inspector General (AIG) and Labour Inspector (LI) from all wings and other office staffs (see Annex Figure 4.2). In the district offices the inspection of shops and establishment section is now treated like a separate wing. Out of 993 sanctioned posts number of class I staff are 215, class II 365, class III 206 and class IV are 207.

Authorities and Powers

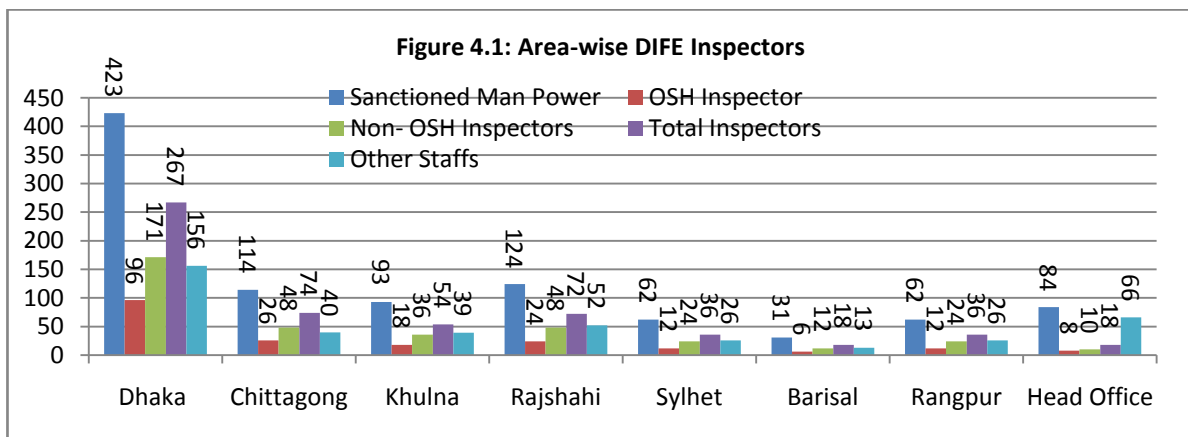
Legal authorities and powers of the Inspectors have been enacted in the BLA-2006. These are:

- An Inspector possesses the power to enter, inspect and examine any place or premises functioning as factories and establishments under law.
- Require relevant records of production, registration and other documents in pursuance of the law and order and may examine, copy, or seize any of it.

- Make much examination and enquiring as deemed fit to ascertain the compliance of the provisions of laws, regulations, orders or schemes.
- May examine or interrogate any person in respect of matters pertaining to laws, orders or schemes.
- May require the persons examined to sign the records of versions.
- May require explanation from the employer for any deviation as identified in records or documents.
- May exercise such other powers and functions as are prescribed under the law.
- Shall have the power to call for or to seize any record, register or document relevant to the enforcement of the Act, Regulations, or schemes.

Human and Logistical Resources

The new organogram of the DIFE reveals a total official set-up of 993 persons with 31 categories of post. The DIFE’s human resource strength is weak too despite labour law obligation to the Government to appoint a Chief Inspector and requisite number of Deputy Chief Inspectors, Assistant Chief Inspectors or Inspectors for investigating workplace activities (BLA Art. 318). ILO convention (Con. 81), to which Bangladesh is signatory, also obliges the government to ensure that the status and conditions of service of inspection staff are such that they are assured of stability of employment and are independent of changes of government and of improper external influences (Art 6). Nonetheless, the department currently has only 993 allocated personnel of which 418 are filled. Only 575 inspectors are responsible for carrying out inspections around all factories estimated around 25000 registered ones. Amongst which only 202 inspectors are responsible for OSH issues (Figure 4.1).



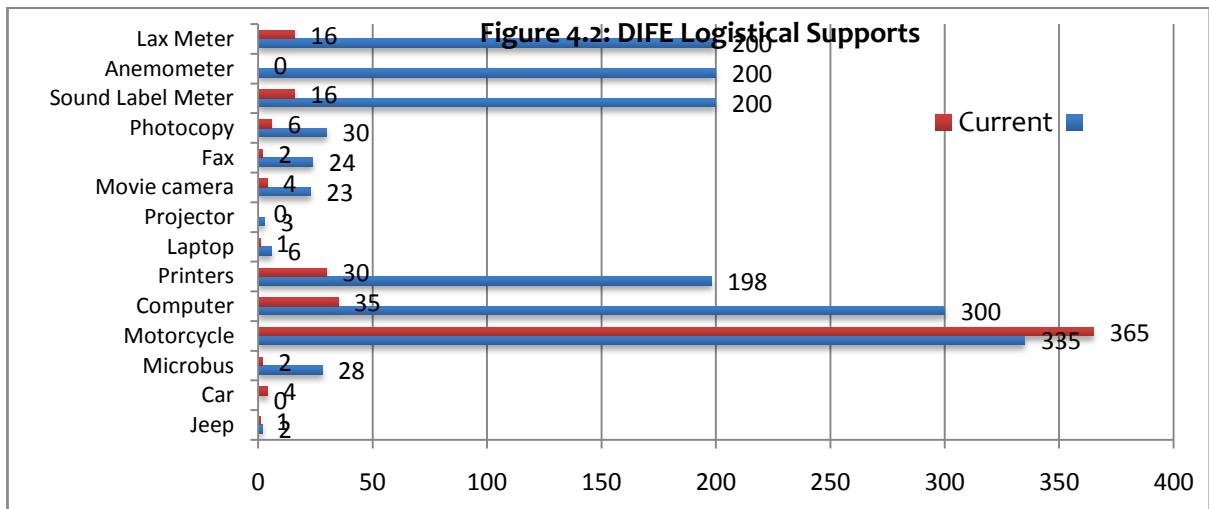
Source: Department for Inspection of Factories and Establishment

The gender segregation of the OSH inspectors could not be made available. But the latest budget of DIFE shows that amongst the 354 current manpower of the department only around 5 percent of the employees are female (Annex Table 4.1). The post-wise distribution (also Annex Table 4.2) shows that the organization’s human resources are concentrated in 3rd and 4th class employee who together constitute around 84 percent of the total human resources.

There are 23 teams made up of two members per team that currently conduct random inspections in all factories, 20 of which devoted for Dhaka, Gazipur and Narayanganj and 3 tems are deployed in Chittagong. Having considered the number of inspectors and the team formation, If all the inspectors were deployed for the garment

sector alone (with around over 5000 operating factories), the inspections would not be well knitted.

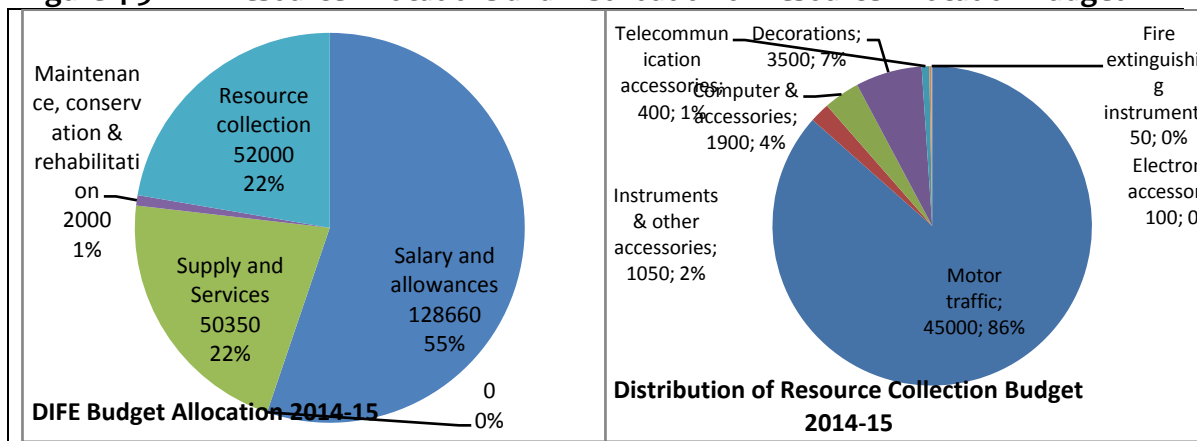
Similarly, till date only 60 Councilors have been assigned to ensure the proper implementation of the EPZ labour law through the DIR. The shortage of human and material resources while left the factories mostly uninspected, the factories in the EPZs more or less rely on foreign buyers' visits for compliance with regulatory provisions. Moreover, the DIFE lacks transportation vehicles and inspection equipment for inspectors. The availability equipment for inspecting i.e, sound level meter, anemometer, and lax meter hardly exists (Figure 4.2).



Source: Department for Inspection of Factories and Establishment

The poor state of planned increase of the inspection equipment is too evident in the department's budget allocation. Although the yearly budget of the DIFE for 2014-15 fiscal year BDT 233.01 million is almost three times bigger than the revised budget of the 2013-14 fiscal year, the budget allocation for resource allocation is termed as 'unproductive capital cost' and includes any an allocation of 10.50 thousand BDT for purchase of instruments and other accessories. The dominant share of the resource collection is planned to be for motor traffic—purchase of 8 microbuses and 2 SUVs (Figure 4.3).

Figure 4.3 DIFE Resource Allocations and Distribution of Resource Allocation Budget



Source: Department for Inspection of Factories and Establishment

Training and Capacity Development

With a view to strengthen the capacity building activities of the labour inspection service different training are orientation courses are often arranged by different national and international bodies or organizations. Some programs run as projects by the providers, and ILO always plays leading role in this respect. Sometimes ILO's collaborating countries, international organizations, foreign Institutes etc. provide different short term and long term training programs in order to promote overall capacity relating to effective labour inspection and to promote national framework for OSH program. Trainings both in home and abroad also facilitate the partners to build up a healthy industrial relation between the workers and the employers (see Annex Table 4.3 for the details of training for DIFE)

Basic induction training is provided to the newly recruited Inspectors by the DIFE and the tripartite training courses provided institutionally by the Industrial Relations Institute (IRI) under the DOL may be treated as regular training course on labour inspection and administration system in the country. Some international training courses are being regularly held in different countries through some development cooperation organization. Most of the foreign training courses are of short-term that extends up to one or two weeks and held once in a year. Some of them are extended even up to 9 months. Unfortunately DIFE sometimes drops out from availing such international courses for unknown reasons.

Other than regular courses some sorts of occasional training are also provided time to time, by different international bodies like ILO, GIZ and also by some local authorities like Ministry of health, authority of FS & CD. However, frequency and effectiveness of this type of occasional training programs are comparatively better and befitting in the context of immediate requirements.

Most of the ILO's training courses are projectized for different sectors and generally continues for 2 or 3 years. At present such a comprehensive training program named 'Institutional Capacity Building for DIFE' under the project of 'Improving Working Condition in RMG (2014-2016)' has been running in the country and also in abroad.

It is reported that in OSH related foreign training courses, sometimes the representation is poor, even sometimes it is participated by the officers having no OSH background. In some high profile foreign training courses sponsored by the government authorities of UK, Netherland, Japan, the sponsoring authorities have discontinued Bangladesh's participation. Moreover, how far the knowledge accrued through training are being applied by the trained up officers after coming back home is not monitored or evaluated by the authorities concerned. Even the summary reports that are submitted after returning from foreign training are neither evaluated formally.

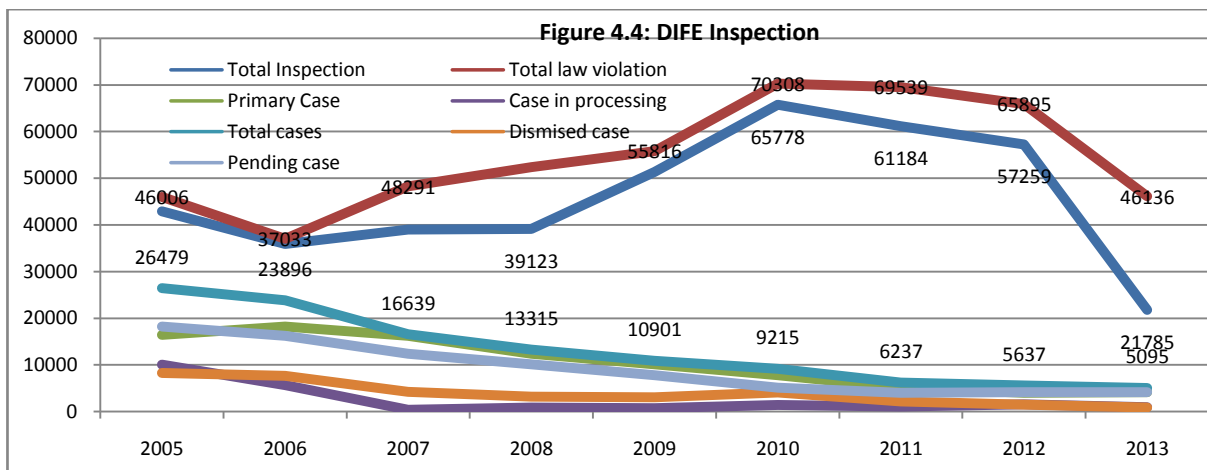
Process of inspection and Inspection Activities

Generally inspection is of two categories. One is ordinary or routine inspection and another is special visit. Special visit depends on the following factors: (a) follow up visit; (b) complaints; (c) accident or occupational diseases; (d) labour crisis; (d) surprise visit for checking overtime, night work, and child employment; (e) collection of social data; and (f) special assignment.

A factory or establishment is mainly inspected in four areas—building security, fire security, electrical security and general security. A factory building is assessed with 100 marks in total where building security has ten issues with 20 marks, fire security has eight issues with 16 marks, electricity security has twelve issues with 24 marks and

general security has twenty issues with 40 marks. Each issue is marked with satisfactory (2), somewhat satisfactory (1) and not satisfactory (0). Each sector has individual letter grading with A (Satisfactory), B (Somewhat Satisfactory) and C (Not Satisfactory).

Overall state of inspection done by the DIFE in the last nine years indicates that the number of cases filled by the Department reached its peak in 2010 with 65778 inspections but slowed down in following years. Remarkably, the year 2013 in which the country's poor state of occupational safety records in the RMG sector came to light more profoundly, evidenced a much low inspection activities. In 2013, a total of 43993 less inspections were carried out than in 2010, which is around 67 percent lower than that of the 2010 (Figure 4.4).



Source: Department for Inspection of Factories and Establishment

The percentage of the dismissed cases is similar on an average. Almost two third of the cases remained pending. Total revenue earned through fine, issue of new license and license renewal is much higher in the latter years though the number of dismissed cases is smaller than the previous years. In 2014, till July, the DIFE team has inspected 9061 factories in 23 districts. The numbers of total executed cases were 399 where 64 cases were filled in the RMG sector (See Annex Table 4.4).

The processes of inspection are further hampered by the low administrative status of the inspectors in Bangladesh's overall administration hierarchy. This has to a large extent left the decisions of the inspectors unimplemented at the workplaces. Again, the legal provision pertaining to penalties for labour law violations have made the existing enforcement institutions ineffective.

Action Procedure and Penalty System

In case of non-compliance or violation of provisions of law the owners are always advised verbally for rectification that is followed by a written notice asking the owner to rectify the infringements of law within a prescribed time limit. A copy of the inspection report simultaneously sent to the Head Office. If the owner responds positively and takes necessary measures towards compliance it is followed up for verification.

If during inspection it is found that there is an imminent threat to the safety on account of any building, machinery or process, the inspector serves a written order to stop the work totally or in part. Where there is no compliance report from the owner within the prescribed time and where the violations are of serious nature, or where the

violations, though minor, are found to have been repeated by the owner, legal proceedings is instituted against the owner.

Bangladesh's labour law provides numerous provisions on penalties—both financial and imprisonment—for the violation of labour law. Some of these penalties (Section -289, 290, 291, and 294) are: (a) imprisonment for a term which may extend to one year or fine which may extend to five thousand taka, or both for the payment of wage at a rate below than the rate of minimum wage; (b) fine up to three thousand taka and imprisonment up to six months, or both, based on the severity of accidents, for failure to give notice of accidents; (d) maximum fine ten thousand taka and imprisonment up to two years for unfair labour practices; and (e) one year imprisonment and fine up to five thousand taka, or both for illegal strike or lock-out. These penalties are truly not at all severe; trade union leaders and civil society actors in Bangladesh have for long been demanding for more strong punishment system.

Yet, for numerous types of law violations, in an effort to change the provision of punishment for the labour law violating employers, the penalty has been reduced to a financial meager (BDT 5000) waiving imprisonment provision. In the recent move, change has been brought in Article 307 of the BLA 2006 related to penalty for offences for which no specific penalty has been imposed in other articles of the law. According to this change, employers are now required to pay only Tk. 5000 as fine instead of previous punishment – 'imprisonment up to three months, or fine up to Tk.1000, or both'. Accordingly, the current penalty system does not take into account the need for striking a balance between savings accrued by violating labour law provisions and cost of compliance.

Work related diseases, hazards and accidents cause not only death and injury to workers, also include enormous emotional and financial costs to family as well as to the society. The main aim of this chapter is to ascertain the prevalent occupational diseases, hazard and risk or accidents faced by workers of different sectors. We also tried to find out the causes of these incidence, probability or likelihood of occurrence and severity of consequence. An attempt made in this chapter is to know the status of precautionary efforts and monitoring of exposure at workplace, as well as actions taken by authority after detection of diseases/hazards and risk.

Understanding the probability or likelihood of occurrence and severity of consequence, we ranked the likelihood of occurrence (probability) in (a) low—less prevalence or low chances to occur; (b) medium—occasional occurrence, will occur in time if no preventive action taken; and (c) high—likely to occur immediately and regular phenomenon. For ranking consequence (severity), the scale used is (a) low—may cause minor injury/illness with little or no lost working time; (b) medium—causes lost time due and medium risks due to injury/illness; and (c) high—may cause serious or fatal injury/illness. The analysis for nine sectors below is presented in three broad areas of occupational safety and health related issue: 1) occupational accidents, hazards and diseases; 2) safety equipment, tools and facilities, and 3) workplace environment.

Agriculture

The most common diseases in the agriculture sector reported by the FGD participants are fever, asthma, diarrhea, skin diseases and malnutrition. Women agriculture workers also mentioned about gynecological complications. The FGD participants stated that they have to work in the field under hot sun, rains or early cold mornings. Due to work for day long under the hot sun, often they suffer from dehydration, heat stroke, sunburn, skin diseases. Suffering from fever and cold allergy is also frequent among them.

Most of the FGD participants also claimed about their suffering from respiratory diseases like asthma, bronchitis, and allergies. According to them, in agriculture related works all-time they have to work with dust, particles and pesticides. Allergies from these elements contribute significantly to increase asthma-related illness, specifically bronchitis and asthma. According to FGD participants, the occurrence of suffering from diarrhea is also high among the agriculture workers. It is due to lack of safe drinking water, lack of sanitation facilities and use of unsafe water.

The female participants from FGD however mentioned about frequency of suffering from gynecological complication like excessive white discharge, uterus is coming out, pain and burning during urination, itching and irritation in the vagina. They further claimed that since they work long time by sitting on foot without any support, it is the cause of their uterus problem (uterus coming out). Back pain, lower abdomen pain is also occurred often due to carry over weight.

People employed within the agriculture sector are exposed to a wide variety of occupational hazards. Physical hazard like, hearing losses caused by exposure to noise from stationary or mobile machinery, heat stroke occurred due to Long time exposure to sun, skin and eye irritation or blister, and chronic poisoning occurred by handling pesticides. Severe respiratory tract, eye and skin injuries and chronic poisoning may

cause due to extensive use of chemical and biological products like; anhydrous ammonia (NH₃), and silage, additives (formic acid). Injuries are known to occur resulting from rusted agricultural tools and machinery. Anthrax, Brucellosis caused In contact with infected cattle musculoskeletal disorder like ergonomic type. Musculoskeletal disorders arise as a result of lifting heavy loads and, use of poor manual handling techniques, exposure to vibration while driving agricultural vehicles and using equipment, awkward postures while harvesting etc. The FGD participants reported the common health hazards due to agriculture work as; fever, cough cold allergy, asthma, skin disease, back pain, and injury.

The agriculture workers are always at the risk of accidents (which include work related injury and fatality), and suffering from occupational diseases like— respiratory tract infection, skin diseases, zoonotic diseases and even risk of particular cancer. Exposure to pesticides and other agrochemicals also constitutes the occupational risks, which could lead to illness or death. The workers mentioned in the FGD that the most common risks in the agriculture work are cut hand and leg by sharp tools, suffering from illness and chronic infection by use of pesticides and working long time under the toxic water.

Readymade Garments

The workers of garments industry mainly suffer from the diseases in respiratory tract such as flue, cough, bronchitis, asthma and tuberculosis caused by dust, working environment and person-to-person contact. In GIT tract, occupational diseases are peptic ulcer, diarrhea and dysentery that are occurred due to irregular food habit and unhygienic sanitation. Urinary tract infections occurred due to lack of toilet facility and prolong work time without taking water. Another illness e.g. headache, musculoskeletal pain, eyestrain and malnutrition are more common among the garments workers (Nahar, 2009). These are causes due to tension, workload, discomfort working environment, concentration on stitching for long working periods same monotonous job, and less food intake. However, fungal infections like dermatitis also produce by person to person. Most of the FGD participants reported about occupational diseases by which they suffer frequently are; headache, chest pain, physical weakness, vomiting tendency, fever, cough, jaundice diarrhea, dysentery and urine infection. One of them also reported about reproductive health problem.

Physical hazards in theses sector include hear impairment causes by high pitch sound, eye strain for long time work in the low light, heat stroke due to humidity, breathing problem due to excessive dust and particle dust. Chemical hazard occur when liquid agent come into contact with skin or long time using it. If chemical vaporize and worker inhaled it produce difficulty in breathing to chest pain. Biological hazard mainly caused by parasite, helminthes, fungus etc. It creates abdominal discomfort, flue, dermatitis etc. Ergonomic hazard occur due to manual handling with repetitive work.

Workers in garments sector are working under various types of occupational risks or accident. According to participants of FGD and discussion meetings, the most common risk in garments sector is the “pricking of finger by needle” followed by cutting hand’. Some other common risks as mentioned by them of this sector are sewed hand by machine, burning of hand by hot machineries, nail damage and risk of fire.

Construction Sector

In general, construction workers mainly suffer from health hazards and diseases like hearing loss, skin diseases/ allergies, asthma, lung cancer, headache, back pain, jaundice, silicosis, asbestosis, bronchitis, white finger disease, and neurological disorder (Ahmed and Akter, 2011). These diseases are closely associated with the nature and types of work they are engaged in. The workers who work in noisy condition for a long period of time usually suffer from hearing loss. Skin disease/allergy is common to the masons and others who work with cement and lime. Exposure to dust, fumes, gases, mists, vapours generally lead the workers to asthma, lung cancer, headache, bronchitis etc. The workers who are engaged in asbestos insulation, pipe filtering and building demolition suffer from asbestosis. White finger disease appears among the workers who use vibrating drill.

Back pain is mainly caused by work in extreme postures (e.g. working overhead) often in confined spaces. Another cause is the manual handling of heavy loads. Even the handling of smaller loads, such as bricks, can cause such disorders and injuries. Other musculoskeletal disorders, injuries to muscles, nerves, tendons and joints, may be caused also by physically demanding work.

Workers in a construction site may be exposed to various hazardous substances and physical agents, e.g. asbestos, lead, silica dust, organic solvents, sewer gases, welding fumes, radiation, noise and vibration. Excessive exposures to these substances/agents may result in acute injury, chronic illness, permanent disability or even death. Loss of concentration at work and fatigue arising from poor health conditions may increase the risk of accidents. Construction work is featured by high labour turnover; constantly changing work environment and conditions on site, as well as different types of work increase the health hazards of workers.

Accidents and injuries, minor to major or severe, occur frequently in the construction sector. Among the occupational accidents, falling down from the heights is the most common one. Besides, injuries in hand and leg from sharp objects/tools, struck by objects, electrocution, hurt in eyes and head (especially for brick and stone-breakers) etc. are some other accidents occurring most recurrently at the construction sites.

The nature and types of accidents and injuries occurring in this sector are mainly subject to the types of construction work. In soil cutting/digging and road construction workers frequently face injuries in hand and leg. Brick and stonebreakers commonly face eye, hand and leg damages, and the incidences of falling down from high places are generally observed more in case of civil works and painting than any other type of construction work (Ahmed and Akter; 2011: 17-18).

Tannery

Tannery industry is the place where skin of animal is processed to lather. The tannery workers particularly who involve in soaking, limning, delimiting, bating pickling, chrome tanning and re-chroming activities suffers from different types of skin diseases, gastric, asthma, rheumatic fever, coughing, liver, lung and stomach problem, weakness, and chest pain. A study found that about 35% of the tannery workers are suffering from gastrointestinal disease, 25% from dermatological disease, and 10% from Headache, Hypertension and Lethargy (Mohanta et al, 2012). The study however reveals that skin related diseases are predominant among the tannery workers. Azmol, working for 17 years in tannery industry said in the focus group discussion, “We suffer mainly skin diseases at our work place. Our skin starts etching continuously within very short time

after joining the work.” Another worker named Helal said, “We have different problem like headache, gastric, chest pain, stomach problem, but skin diseases are our main problem. Our skin etches due to handling of many chemical used in our factory”.

The FGD findings however shows that workers of this industries are expose to hazardous cocktail of chemicals when measuring and mixing them, adding them to hides in drums, or manipulating hides saturated in them this causes them several skin diseases like, skin burn, contact dermatitis, scabies and fungal infection.

It is found that gastrointestinal disease is also common among the tannery workers. The local doctors opined that this was due to irregular eating habits and the length of time between meals. Table-1 shows occupational diseases of tannery worker with causes, likelihood of occurrence and consequences.

Tannery industries use almost 40 different chemicals. Many of these chemicals are hazardous for human health. Tanning chemicals used for processing the hides are consists of sulphuric acid, sodium sulphate, chromium sulphate etc. Exposure to these chemicals can cause dermatitis in human body. Presence of chromium which has carcinogenic potential is available in tannery waste. Acids are used in pits water while processing the hides which causes burn on skin of workers.

The dry lather polishing process makes huge dust that can cause respiratory problem such as asthma. Due to unhygienic working site biological hazards e.g. fungal infection is also persistent among tannery worker. Acidic effluents can cause severe respiratory problems. Gaseous emissions from the tanneries contain sulfur dioxide that is converted into sulfuric acid on contact with moisture and can damage lungs (SEHD, 1998).

A worker, who is working 4 years in this sector said, “I was suffering from severe back pain from lifting heavy hides. I had to visit doctor, but do not recover properly. Now back pain is regular phenomena to me and due to this often I cannot work.” The risk of occupational accident in the tannery industries is significant due to lack of proper guiding facilities in various dangerous parts of the machines. Hide processing is mainly a manual method of processing lather in Bangladesh. Worker lifts heavy weight of hides while working. This causes backache among the worker. Hot plates are used to press the hides. Many times this plate falls on operator hand and causes skin burn. Razor blade used in cutting hides and shaping causes cutting of fingers or limbs of the labour.

Shrimp

Working environment of shrimp sector is mainly cool, moist and damp. Even though owners of shrimp processing industries take some precautionary measures, the effect of adverse environment is high among the workers of shrimp sector. Workers, of this sector are mostly affected by frozen section. In the shrimp factory, shrimp is processed in several steps. These are receiving, de-heading, production, packing, freezing, supply. Full processes are done under a cool, moist and damp weather. Therefore, Skin diseases are frequently occurring due to damp and moist working condition. Many shrimp farm workers spend hours in the water of shrimp ponds. This can lead to skin disease/rashes, respiratory illnesses, fever, urinary tract infections, and diarrhea. Musculoskeletal stress also occurs while working in quick frozen section.

The participants of the FDG said that sneezing, cough, breathing problem are the common diseases for them. They wear a thin woolen sweater provided by owner, but it is not capable to making their body warm and it is not water proofed. However, this sweater is not provided to temporary workers. According to them, they wear factory

provided surgical gloves that does not work properly to protect their hand from freezing. These gloves are provided mainly to ensure the safety for shrimp not for the workers. As a result hands skins get swelling up with pain. They also reported about the suffering from diarrhea and abdominal discomfort.

It is also found that most of the workers of shrimp industries are female. Their working duration is 8 hours. They work in two shifts. First shift is from 6 am to 2 pm then next shift from 2 pm to 10 pm. The whole time they work in standing position and get only 20 minutes break. Even they are hardly allowed to go toilet. This is why most of the female workers suffer from UTI (urinary tract infection) with low-grade fever, complained the female participants of FGD.

There are many type of hazard present in shrimp industry. Physical and chemical hazard are more commonly seen. Physical hazard like deafness occur due to loud sound from compressors, automatic packing machinery, condensers, ventilation units, and pressurized air. Fish processing activities may lead to lifting, carrying, repetitive work, which posture injuries. Repetitive strain injuries may result from manual filleting, beheading, deveining and trimming operations (Mostofa, 2014). Frequently use of harsh chemical and ammonia gas causes skin burn and respiratory illness. The FGD participants reported the common health hazards due to working in shrimp factory like breathing problem, headache, skins of hand shrinkage, leg numbness, back pain and burn.

Re-rolling

Most of the re-rolling workers suffer from occupationally induced long term and short term hearing loss (Palmer et al., 2002). Along with they often suffer from heat stroke and eye problem. In steel re-rolling mills, heat is generated and used on high levels. Hot rolling furnace has a temperature of 1000-13000C, which is quite a high temperature. Area surround in the furnace contains very high temperature. No insulating material exists around the furnace and in the working shed to reduce heat. The Workers who work near the furnace and on rolling machines can suffer from heat stroke and eye problem i.e. inflammation of conjunctiva, itching of the eye, corneal inflammation, opacity of the cornea, and hazy cornea.

The FGD participants also complained about coughing, breathing difficulty. It is due to smoky environment. The working environment is so hot that their body gets dehydrated while they work. Body temperature and pressure get raised. They got no defined break time. Their sanitation system is very poor. Most of the participants reported that they have suffered from jaundice more than a time.

Heavy lifting, prolonged standing, and repetitive motions are considered to be the main cause of work-related health hazards like musculoskeletal disorders in re-rolling sectors (WMSDs). These musculoskeletal disorders may affect both upper and lower limbs. Along with low back -pain, shoulder and neck pain, tendonitis, bursitis and carpal tunnel syndrome are also include in this category (Moreau and Neis, 2009).

Heating furnace creates high degrees of heat. The temperature of heating furnace is ranges from 1000-13000C which causes extreme heat hazards. One of the FGD participants says "Work in the re-rolling mill is so painful. No air available in workplace. High temperature is everywhere. As a result my body becomes dehydrated. I get fever in almost every night."

Common risk/accident face by re-rolling workers is slip, trips and fall. Potential sources of slip trip and fall in steel industry include greasy and slippery surfaces and in some cases messy walkways are also become a source of fall. Different machinery

like overhead cranes, rotating machine are used in rerolling mills. Many accidents are associated with their use. Electrical and fire risk is available in this sector but a few factors are still that can boost the hazards regarding electrical and fire appliances.

Jute

The occupational health and safety situation of private jute sector is not different from others sector. Various occupational diseases are persistent in this sector due to unhealthy environment, lack of awareness and reluctance in improving the OHS standard. Flying dust, fiber and very low humidity are common phenomenon of many of the jute mills of Bangladesh. As a result various type of disease like cough, allergic rhinitis, asthma, chronic bronchitis in the respiratory tract are prevalent in this industry (Singh SB et al,2012).

FDG participants narrated that they do not have specific break time. As a result their food habit becomes irregular. This Irregular food habit that is associated with long working time causes gastric problem and constipation to majority of the workers. It came out from the FGD discussion that sanitation facility in the factory for worker is very poor and inadequate. This poor sanitation causes diarrhea, dysentery and some other problem among workers.

Generally weaknesses, fever, pain in the shoulder, hand and leg joints are very common diseases among the worker as it appeared from the FGD. One of the FGD participants further mentioned that, 3 to 4 workers die each year due to stroke in jute mills.

Accidents in the jute mills are limited but if it happens make great hazards to worker. Most common accidents in this sector reported by FGD participants include stuck by falling materials and entanglement of body parts in rotating heavy machinery. These cause loss or breaking of body parts.

Small Chemical Industry

The risk of burning, cutting hand and leg, respiratory diseases and skin diseases prevails in the small chemical industry. Burn accident, respiratory diseases and skin disease occurs from unsafe use of acid gas and phosphorus. Incidence of cutting hand or leg happens due to breakage of glass tools, and carrying, lifting, grinding materials. Table 5.27 reveals the occupational risk at small chemical industry.

Ship Breaking

In Bangladesh, ship dismantling is a matter of environmental, health and safety concern. Workers break the obsolete vessels with no protection from explosions, infiltration of asbestos, heavy metals, oil residues, TBT, PCBs, or a cocktail of toxic chemicals contained in the ship. Most of the workers are not aware of the ship borne poisons and their impacts on health. Therefore they continue work without any protective measures. As a result most of the workers of these sectors suffer from multiple diseases and health hazards.

As a heat insulator asbestos has been used in old ships. Though it is called that no asbestos is used in disposal procedure, but during the scarping workers are surrounded by asbestos fibers. Exposure of this fiber is very harmful and even it may causes death through cancer. It is true that asbestos fly around the ship breaking beaches and workers take out this chemical with bare hands. In addition, it has proven to be one of the large amounts lethal, as inhaling asbestos fibers can guide to a wide variety of

pulmonary troubles such as asthma and asbestosis and can also be the straight cause of mesothelioma (Jobaid et al, 2014).

Ship breaking workers mainly suffer from physical and mechanical hazards. Workers of ship breaking industry are generally unskilled and even they do not have proper training to handling the equipment used in ship recycling which lead to mechanical hazard like accident. Noncompliance of the safety issues during cutting operation is also causes various accidents. Plates are carried away by group of workers without knowing the weight of the plate. Sometime heavy plate weight as well as very sloppy and muddy ground makes the plate-carrying job very risky.

The risks or accidents in ship breaking sectors include cutting, burning, explosion, and falling from high place, staffs/goods falling from the vessels. The workers of this sectors are also always under risk of suffering from different types of diseases such as lung problem, asphyxiation, mesothelioma asbestosis (Jobaid et al, 2014).

Small Chemical Industry

Chemical are used and produced in a way that leads to the significant adverse effects on human health and environment. Some chemicals are inherently dangerous and that easily contract to human body may appear harmless. It can cause illness almost immediately upon contract.

Workers in the chemical industry who are exposed to substances like ammonia and develop symptoms of asthma as the result of an irritant effect, not an allergic reaction. Indications of occupational asthma include general symptoms such as coughing, wheezing, chest tightness, shortness of breath, and breathing difficulty. Eye irritation, nasal congestion, and/or running nose may also be present. This can be allergy-related or an irritant reaction from exposure to in the workplace. Dermatitis like skin disease, hepatic impairment, nephritis and anemia can be caused by intensive hazardous gas exposure. Lung cancer, thyroid cancer, bladder cancer etc. may occur due to exposure to carcinogenic chemical agent (Nulhakeim H,2010).

Physical hazards like cut or fracture of different part of body occur frequently in the small chemical industries. It happens mainly due to use of unsafe equipment (sharp and rotating tools) and slippery floor. Burn or fatal Injury results from fire and explosions due to flammable gas or pressurized gas. Asphyxia may occur due to extreme cold temperature or equipment's in chemical plants operate at high temperature. Mechanical hazard like cut or laceration occurs due to use of old equipment's. Toxic gas leak causes poisoning to workers' health. Presence of radioactive materials in the chemical industry also causes Carcinogenic effect on the workers (Nulhakeim, 2010).

Precautionary Efforts and Monitoring of Exposure

Taking precautions is necessary to avoid injury and accident at workplace. The precautionary efforts include— a) providing personal protective equipment (PPE) such as, protective cloths, gloves, mask, working environment friendly footwear, and helmet to workers; b) realizing the hazardous substances form workplace; c) providing training to workers and management personal about use of PPE and machinery, as well as about their roles and responsibilities at workplace; and d) giving information about occupational risks and hazards. Monitoring as well as workplace investigation is also significant to ensure the maintenance of the plant and eliminate work related hazards or accident. If necessary precautions are not taken, the possible accidents may have

irremediable consequences. It is found that the maximum of the precautionary mechanisms are also almost absent in most of the sectors.

Employers of agriculture sector do not take any initiative to prevent risk and hazards at workplace. They neither provide any personal protective equipment nor any information about workplace risk and hazards to the workers. Workers of FGD claimed that they never receive any personal protective equipment like, gloves, boot, and mask from any of their employers. Employers do not provide them safe drinking water and sanitation facility.

Authorities of the garments workers usually do not provide information on occupational risks to the workers, but sometimes they aware workers orally about the risks and accidents, said by the FGD participants. In a study about 43 percent garments workers told that the authority never provides information on occupational risks and 27 percent workers told the authorities seldom provide these information to the workers. Information on occupational risks is provided always claimed only in about 9 percent cases (Hossain, Ahmed and Akter, 2010). About safety equipment and facilities at workplace it is found that availability of safety related facilities e.g. firefighting instrument, spacious entrance and exits, emergency stairs, first aid and accident protection kits varied across factories. While the provisions of firefighting instruments, spacious entrance and emergency exits are widely (around 96 percent) available, the availability and effectiveness of the accident protection kits are perceived to be low (Hossain, 2012).

Training regarding risk and hazards at workplace, and use of PPE and machineries only includes fire mock training. All the FGD participant reported that they are provided fire training after every two or three months at workplace, but hardly provided training about use of PPE and machineries. The monitoring and inspection is sometimes observed at workplace (Hossain, Ahmed and akter 2010, and from FGD of present study)

It is a grim reality that in spite of various provisions, severe negligence has always been seen in the field of safety of the construction workers. Effectiveness of the provisions is not satisfactory and application of these provisions is rarely observed at the construction sites. The finding of a study showed that in 12 construction sites out of 15, no workers were wearing helmet, one in four sites, all of the drilling workers were using goggles, in five sites welders were found working without wearing gloves, safety boot or apron, and in only two sites they were observed using hand shield with filter glass and goggles. In the four sites, workers were found involving in removing formwork where none was found wearing gloves or heavy soled safety shoes (OSHE, 2009). Another study presents a more miserable picture in this regard – only 2.8 percent workers seldom use safety tools or personal protective equipment during construction work (Hossain, Ahmed and Akter, 2010). Workers of FGD also claimed that they never use any PPE and even they do not know who is responsible to provide it.

About 40 heavy metals and acids are used for processing raw hides in tannery industry. It has adverse effect on not only the workers but also on the society and environment (Sarker, 2014). But the authority of this industry hardly takes any precautionary effort for workers wellbeing though it is their both moral and legal duties to look after worker's well-being. It is found from the FGD that few industries supply personal protective equipment to the worker. It is not enough to prevent the hazards. Quality of PPE is very poor and also very uncomfortable to worker. As a result workers are reluctant to use PPE.

Monitoring mechanism is also absent in tannery industry. Workers of FGD mentioned that some of them are working long time in this industry, still did not meet any government inspector in the factory site. Industries also do not maintain any record of exposure of the worker to hazardous environment. None of the industries have health care representative in the factory site.

The authorities of shrimp industry have taken a few initiatives to protect workers from the hostile working environment. They provide some PPE like sweater, hand gloves and boots. The quality of the equipment is also poor to serve the purpose. For example; the sweater is very thin which could not make the body warm. The Hand gloves, they are provided with are mainly the surgical gloves. It does not able to protect their hand from cold. This is basically for the safety of shrimp, not for the worker. Like Tannery workers, workers of shrimp industry also mentioned about the absent of monitoring mechanism. A few workers reported having namely medical facilities inside the factory.

Most of the workers of re-rolling industries do not use any PPE. Some industries supply PPE, but it is not enough to prevent exposure to the hazards. They don't know how toxic gas entering into the respiratory system. Some workers in FGD mentioned that they are working long time in this industry but still they did not meet any inspector in the factory site. They do not receive any health services in the industry. Even they are not provided any formal training for operating machinery.

Workers of this sector do not receive any training on machinery use and PPE. Even they do not know about this. Management also does not provide any PPE to them. No worker were found using mask to prevent dust and small fiber. They don't wear apron or gloves. FGD participants mentioned that they are working for long time in this industry, still did not meet any government inspector in the factory site. Industries are maintaining record in the register book. None of the industries have health care representative in the factory site. There is a doctor only for prescription.

Employers of ship breaking sectors take namely precautions for ensuring workplace safety. Only about 6 percent workers said in a study that they receive medical facilities at their workplace and only 4 percent reported that they got medical facilities, but in a nominal way (only first aid treatment), while 86 percent workers stated that they do not receive any type of health care services from the ship yard owners. The arrangement of pure drinking water, healthy food and hygienic toilets are also absent in most of the site. In case of accident the workers are deprived of proper compensation due to lack of a valid contract (YPSA).

In the year 2011-2012 Bangladesh Ship breakers Association (BSBA) conducted some professional training programs with the help of government for shipyard workers in Chittagong City and Sitakunda area. Currently, no orientation or training program is run by any organization. Some employers or contractors provide short-term orientation training that is of irregular basis. Inspection too is carried out on an irregular basis (Bhattacharya, 2014).

Action after detection of Diseases/Hazards/ Risks

Necessary steps after detection of risk, hazards and disease at workplace helps to reduce occupational accident and hazards. The FGD findings reveal that employers hardly take any initiative to prevent them from further accident or hazards. Only in case of severe accident and disease they, receive a little amount of money from their employers for treatment.

Concerning the action of authority after detection of diseases and risk, in a study around 62 percent respondents stated that the authority does not take any steps to prevent further accident or hazards. In the FGD of current study, some participants reported that the authority increased safety tools and provided workers with some sorts of training particularly after Rana Plaza disaster, but these are not sufficient. The workers of FGD again informed that many times accident prevention measures are subject to buyers' presence. "Whether the inspector took any steps after detection risk or hazard at workplace, we do not know," also claimed FGD participants.

The role of construction employer in case of taking initiatives after detection of risk and hazard in the construction site is not remarkable. Though few employers take some steps after accidents, these are generally limited to sending the worker to the nearest doctor/medicine-shops/hospital and giving only some money that meets a very small portion of the total medical cost, said a FGD participant. It is observed in a study that in 12 percent cases the authority provides medicine, in 5 percent cases injured workers are sent to the doctor or nearest medicine shop, and in 16 percent cases a little amount of money is given to by the authority/employer. Only 16 percent workers report that authority provides money to the workers as compensation (Hossain, Ahmed and Akter, 2010).

According to worker (from FGD), accident or health hazard is common in this industry, but they do not find any change made in the factory after the occurrence of accident. In few cases the authority bears the expenditure of minor injuries if it occurs at work place. If the injuries are major in nature or required long time treatment, workers get little help from the authority. Some of them complained that in maximum cases worker do not get compensation for accident.

Like Tannery workers, workers of shrimp sector also receive little help from the authority in case of major injury and it require long time treatment. But, if the injury is minor in nature they receive nothing. In this case, they receive only advice "shabdthane kaj koro" (work carefully). The authority does not take any step to improve the workplace safety after detection of disease, risk or hazards.

The workers of re-rolling sectors claimed in FGD that if the injuries are major in nature or required long time treatment, workers get little help from the authority. They however complain that they do not get compensation for diseases like skin disease, eye disease, asthma, back pain, fever, jaundice, hypertension etc.

According to worker participated in FGD, authorities bear a little amount of the expenditure such as, 1000 or 2000 taka in case of major injuries and if it occurs at work place. Presence of management is hardly seen when any accident occur at workplace and no change has made at workplace to prevent future accident and hazard.

Conclusion

This chapter draws specific loopholes and challenges and articulate recommendations in promoting occupational health and safety in Bangladesh. This is presented in four core sections—(a) OSH related policy landscape and regulatory frames; (b) OSH related institutions, and collaborative mechanisms; (c) state of OSH inspection; and (d) occupational diseases, hazards and risks for workers. A general recommendation is drawn at the end of this section.

OSH related policy landscape and regulatory frames

The discussion in Chapter 2 has created a scope to analyze the major loopholes in different acts and policies. The loopholes and the required changes are too presented in three consecutive sections—occupational accidents, hazards and diseases; safety equipment, tools and facilities; and workplace environment. The following are the loopholes in view of the policy and legal framework related to OSH.

All the acts and provisions related to the preventions of workplace hazards deal with physical hazards and chemical hazards to a great extent. No instruments have any specific provisions regarding biological hazards and psychosocial hazards. There is also lacking provisions regarding harmful noise and vibrations at the workplace in any national acts, rules and policies. Also lacking is the provision to design an up to date planning to keep records of the OSH related accidents, diseases and injuries and of public reporting. Furthermore, the rehabilitation process of the severely injured and disabled workers have not made mandatory through any act/rule for the employers.

OSH related Institutions, and Collaborative Mechanisms

The institutional and collaborative initiatives on OSH in Bangladesh are generally concentrated in the formal Sector. There is no systematic documentation and databases of the concerned and potential department and institutions that can act jointly toward the development of OSH situation of the country. The research, training, education, disesteem management, civil defense, medical institutes, rehabilitation centers, laboratories and testing institutes are scattered and act individually. These is also evidence of organizations not working pro-actively, rather the approach had been curative as follow up after accidents/ incidents.

Research, training and educational conducts by the capacity building institutions are not sufficient. Only few academic institutions that offer full phased higher education on OSH. The training facilities are also not adequate and accessible for all due to limited scope and opportunities. There is no specialized training institute on OSH and the existing IRIs covers a very few issues of OSH. The number of research conducted on OSH issues is also not sufficient. Bangladesh has no separate laboratories and testing institutions for the occupational hazards and risk. It is associated with various institutions that in general conducts test on chemical, biological and physical elements.

It is important that the capacity building scope and opportunities must be increased and made available to develop skilled manpower and sufficient intellectual resources. The public universities may consider introducing separate OSH faculty. The Private University must have considered the quality of OSH education and availability with affordability.

The safety committee for the industrial establishment is a major contribution of the labour law amendment 2013 that is still not constituted due to lack of guidelines according to labour rules.

The government and non-government organizations both suffer with limitation of resources and supports. The government institutions, DIFE the only government body responsible for inspection and monitoring of workplace are not adequately equipped with human resources and logistic supports. The strength of concerned bodies is not at pace with the rapidly growing size of labour market.

OSH Inspection

ILO's Labour Convention, 1947 (Con. 81) urges the need of a strong and credible labour inspection service in order to ensure an effective application of OSH and other labour related provisions for workers' overall protection and decent works. Article 9 of the said convention urges for a technically sound, efficient and qualified inspection machinery having academic background either on medical, engineering, electrical or chemical discipline. But recent disaster and tragic accidents especially in the RMG sector indicate a great lacking remaining in the labour inspection system since long, which needs to be addressed urgently. Indeed, Also, the effectiveness of labour law enforcement is hampered the lack of resources to adequately inspect and carry out labour law enforcement. In this respect the figure of technical or OSH Inspectors seems not reasonable to mitigate the needs of time.

Only inspection or enforcement seems not enough to address the substantial challenges remaining in the labour inspection system. But both inspection and research activities on different identified & non identified issues arising from OSH related matters are also essential to find out the causes & potentialities of the problems and at the same time to indicate the remedies. So an OSH research Institute or a Research Cell may urgently be considered in the National Labour Inspection Policy.

Achieved knowledge of the training programmes must be applied by the Inspectors in their daily inspection activities. Proper monitoring & evaluation system regarding its practical application should be in DIFE's agenda. Moreover findings and recommendations that are given by the Inspectors after training should also be examined carefully.

In the DIFE's system there are multifarious statistical gaps. But a credible data base on different issues, like information on the figure of inspection, detection of infringements & discrepancies, progress or rectification, court cases & its disposal report, figure of accidents & occupational diseases, complaints and enquiries are very much essential for an effective evaluation on total achievement of the inspection service. So the statistical cell of the DIFE deserves more attention to overcome the shortfall.

The other core reason of weak enforcement is that the labour administration has ample of scope of discretion in carrying out the departmental work. There is lack of accountability of the inspectors entrusted to monitor compliance of labour laws and resolute disputes. Investigation into any complaint and action against it largely depends upon the discretion of the Chief Inspector or the concerned inspector due to lacking detailed rules on what and how to inspect factories and to resolute disputes. Thus, an elaborated rules need to be established.

Furthermore, the effectiveness of the department has been weakened due to lacking mechanisms to take stakeholders interests into account. There is no mechanism in built to listen to voices of the workers in cases of work and workplace labour law violations. Workers hardly have seen the inspectors carrying out inspection activities. Hossain, Ahmed and Akter (2010) reveal that almost over two thirds of the respondents in their sample survey never found any government officials to come and inspect their workplaces. Many of focus group participants allege that the officers on duty for inspection of factories after incidences often go back without talking to workers; they take information from the employers only. The current inspection process has been termed as “fire brigade approach”. This is because there is widespread allegation that inspectors only inspect factories/ workplaces only after some sort of accidents/ occurrences happen. Reacting to complaints rather than pro-active investigation driven enforcement is the norm for our labour department. This needs to be changed towards pro-active inspection activities, and partnering with the trade unions along with enhancement of resources, power and coverage of inspections could be good vehicle for increasing the reach and effectiveness of enforcement.

Occupational Diseases, Hazards and Risks for Workers

The overall discussion on the occupational diseases, hazards and risks for workers reveals that the occupational diseases like headache, fever, asthma, diarrhea, allergy, gastric, back pain, skin diseases, malnutrition is common among the workers of different sectors. The causes of these diseases are mainly exposure to dust, long working hour, poor quality food consumption and adverse work environment. Though the likelihood occurrence of these diseases is high among the workers, the severity of consequence is almost low. The workers of tannery, rerolling and ship breaking sectors mainly suffer from skin diseases such as skin burn, dermatitis, scabies and fungal infection.

Asthma, allergy, and bronchitis caused by high dust and use of hazardous chemical/pesticide is available among the workers employed in agriculture and ship breaking and small chemical industry. Bothe the probability of occurrence and severity of consequence is high in this regard. Female workers of agriculture and construction sectors also frequently suffer from gynecological complexity due to lack of sanitary facilities, control of urine pass and use of unsafe water, though the severity of consequence is low of such diseases. Cold problem is high among the shrimp workers due to work in damp and moist working condition and severity of consequence is also high in this case. The diseases like mesothelioma, lung cancer, asbestosis is available among the ship breaking workers. The main reason of these diseases is inhalation and retention of asbestos fiber.

Occupational hazards include risk of accident and diseases influenced by chemicals biological, physical, environmental and adverse ergonomic conditions. Physical hazards like hearing loss frequently occur among the garments, construction, rerolling ship breaking and jute sector workers, though the severity of consequence is low in this regard. The main reason of suffering from this disease is exposure to noise from machinery. Musculoskeletal disorders caused by heavy lifting and prolong standing is high among the workers of small chemical, rerolling, agriculture and ship breaking sectors. The workers of agriculture, small chemical, jute, re-rolling and shrimp sectors highly suffer from chemical hazards e.g. respiratory tract infection, skin diseases, asthma, and asphyxia. The severity of this hazard is high or medium. The environment hazards include sunburn, cold allergy, and respiratory tract infection. The probability of

occurrence of these diseases is high among the workers of agriculture, construction, and shrimp workers, while the severity of consequence is low in these cases. Workers of selected sectors also suffer from various mechanical hazards that mainly caused by unsafe use of tools/machinery and lack of awareness. The workers of ship breaking, rerolling and agriculture sometime suffered from such hazard. The severity of consequence is medium or high in this regard.

Workers of different sectors do their job under the risk of different accidents and occupational diseases. The risk is associated with mainly three causes such as; a) human nature which refers to individual behavior in performing work, b) technical nature like working environment, equipment, tools, machines and materials, and c) causes outside the workplace such as; adverse weather conditions or others caused by third parties. It is found that the risk of cutting hand or leg caused by spade, plough is high among the agriculture workers, though the severity of consequence is low in this regard. The risk of falling down from high places is observed more in case of construction work and ship breaking work. Though likelihood of occurrence is low and medium respectively in construction and ship breaking sectors, the severity of consequence is respectively high and low in the construction and ship-breaking sector. The risk of burn is high in the tannery, rerolling, and small chemical industry is high, while severity of consequence is high or medium in these sectors. The risk of diseases like respiratory infection, skin disease, hearing loss is high almost all the sectors, but the severity of consequence is low in these case.

The Needed Change and Recommendations

Mechanisms should be developed in each sector for providing information about health and safety hazards to workers. Initiative should be taken to identify risk /hazards at workplace and if there is a possibility of workers being affected by it, must be assessed and controlled. Necessary steps after detection of risk, hazards and disease at workplace helps to reduce occupational accident and hazards.

Wherever there is health risk and that cannot be adequately controlled in other ways, Personal Protective Equipment should be provided to the workers.

Instruction/training should be provided to workers on safe handling procedures of chemicals and proper personal hygiene techniques to minimize contact with chemical or biological hazards. Ensuring training for workers and management about use of PPE and safe handling procedure of tools and machinery used at work is important.

Health and Safety committees should be formed in accordance with Bangladesh Labour Law 2006. For ensuring proper inspection the factory inspectorate to be equipped with the necessary testing equipment to conduct regular inspections for adherence to workplace safety and labour legislation, including Bangladesh Labour Law 2006, and Bangladesh's National Building Code and Factory Act. Regular inspection by government inspection department should be ensured in all sectors to review the safety situation at workplaces, and if any risk or safety issue identified at workplace, should be remedied timely.

Accepting that workers have full rights to their life and livelihoods, pro-active advocacy for changes in workers' occupational safety and health situation should be brought about through promotion of decent work and ensuring workers' protection. The following are the pointers of recommendations.

- Bangladesh is obliged to align labour law with internationally recognized workers' rights. Ratification of the OSH related ILO conventions are required.
- Bringing all workers within the purview of Bangladesh's regulatory framework is important. OSH for all workers can not be ensured keeping large numbers of workers (both formal and informal) unprotected from the coverage of the labour law.
- Strengthen Enforcement of Labour Law is important in its own right. Risk assessment needs to be integral part of approval of factory and establishments. Pro-active "investigation driven" enforcement rather than reacting to complaints should be introduced. Enhancement of resource, power and coverage is also necessary for effective enforcement.
- Ensuring common understanding of occupational safety standards through a national standard is necessary. Ensuring diagnosis of occupational diseases, and ensuring treatment through establishment of trained pool of OSH professionals needs to be done. A regularly updated database of the inspection activities needs to be ensured.
- There are no notable initiatives for the development of workplace safety for a large workforce involved in informal sector. The informal sector's need to be considered as an important target field of OSH initiatives.
- The challenges of promoting OSH rights are too hinge on the accessibility to legal process. The number of labour court is highly insufficient considering the size of the labour forces of the country. Initiatives can be taken to include the provision of speedy trial for the case regarding the workplace accidents and compensation.
- There is a need to strengthen penalties for OSH violations. It is necessary to establish balance between savings accrued by violating labour law provisions and cost of compliance.
- It is important to install collaboration amongst the stakeholders. The inspection and monitoring scope might be broadened with participation of trade unions, employers' representatives and civil society organizations.

Bibliography

- Accord (2014), *Home and FAQs*. Retrieved from <http://bangladeshaccord.org> (Accessed on 13 December 2014)
- Alliance for Bangladesh Workers Safety (2014), *Training: The Alliance's Commitment*. Retrieved from (<http://www.bangladeshworkersafety.org/programs/training> (Accessed on 10 December 2014)
- Ahmed, Mostafiz and Akter, Afroza, (2011), *Construction Workers in BANGLADESH: Situation Analysis of their Work, Living Conditions and Rights*, Dhaka: Bangladesh Institute of Labour Studies (BILS),
- Akram Owasim, (2014), "Ensuring Occupational Health, Safety of Workers", *The Financial Express*, 18 Jan, 2014.
- Bangladesh Bureau of Statistics (2011), '*Report on Bangladesh Labour Force Survey 2010*', <http://203.112.218.66/WebTestApplication/userfiles/Image/Latest%20Statistics%20Release/LFS%20Report%202010.pdf> (Accessed on 06/10/2014)
- Bangladesh Bureau of Statistics, Retrieved from http://bbs.gov.bd/WebTestApplication/userfiles/Image/GDP/GDP_2013-14.pdf (Accessed on 06/10/2014)
- Bangladesh Bank Monetary Policy Department (2014), '*Major Economic Indicators, Monthly Update: December 2014*', Retrieved from <http://www.bangladesh-bank.org/pub/monthly/selectedecoind/magecoind.pdf> (Accessed on 10/10/2014)
- BLA (2006), '*Bangladesh Labour Act 2006*', Ministry of Labour and Employment, Government of Bangladesh
- BLA Amendment (2013), '*Bangladesh Labour Act Amendment 2013*', Ministry of Labour and Employment, Government of Bangladesh
- Bangladesh Factory Rules 1979, Government of Bangladesh
- Bangladesh National Building Code 2006, Government of Bangladesh
- Bangladesh Labour Welfare Foundation Act 2006, Government of Bangladesh
- BILS (2007), *Status Report: Workers Human Rights in the Construction Sector of Bangladesh*, Bangladesh Institute of Labour Studies, Dhaka.
- Bhattacharya, Pahari, (2013), *Survey Report on Ship Breaking Sector: A Study on Workers Employment*, Bangladesh Institute of Labour Studies (BILS), Dhaka.
- BUET (2014), '*BUET-Japan Institute of Disaster Prevention and Urban Safety*' Retrieved from <http://www.buet.ac.bd/jidpus/> (Accessed on 8 December 2014)
- BUET (2014), *Accident Research Institute (ARI)*. Retrieved from <http://www.buet.ac.bd/ari/index.php> <http://tici-bcic.org/> (Accessed on 7 December 2014)
- BUHS (2014), *Department of Occupational and Environmental Health (DOEH)*. Retrieved from <http://www.buhs-edu.org/index.php/academics/faculties/faculty-of-public-health/department-of-oeh> (Accessed on 13 December 2014)
- Constitution of Bangladesh (1972)*, Government of Bangladesh
- Department of Inspection for Factories and Establishments, Retrieved from <http://www.dife.gov.bd/> (Accessed on 22/10/2014)
- Department of Inspection for Factories and Establishments, Retrieved from http://dife.gov.bd/images/files/Organogram/Organogram_img_0.jpg (Accessed on 13/10/2014)
- DIFE (2014), *Citizen Charter*. Retrieved from <http://dife.gov.bd/citizen-charter> (Accessed on 3 December 2014)
- DPHE (2014), *About Department of Public Health Engineering*. Retrieved from <http://www.dphe.gov.bd> (Accessed on 10 December 2014)

- DOL (2014), *Citizen Charter*. Retrieved from <http://dol.gov.bd/citizen-charter/> (Accessed on 3 November 2014)
- EPB (2014), Compliance Monitoring Cell (CMC). Retrieved from <http://www.epb.gov.bd/details.php?page=12> (Accessed on 13 December 2014)
- Fire Prevention and Extinguishing Act 2003, Government of Bangladesh
- FSCD (2014), *Training*. Retrieved from <http://www.fireservice.gov.bd> (Accessed on 11 December 2014)
- GIZ (2014), *The Role of Workplace Health and Safety to Gain Access to Global Markets, Fact Sheet*. Retrieved from http://www.giz.de/de/downloads/Factsheet_WMSHL_FINAL.pdf. (Accessed on 14 December 2014)
- Haq, Emdad. (2014), *Presentation on BGMEA Hospital, Dhaka*. Retrieved from prezi.com/cno3t86w1h18/presentation-on-bgmea-hospital (Accessed on 13 December 2014)
- Hossain, J., Ahmed, M. and Akter, A. (2010), 'Decent Work and Bangladesh Labour Law: Provisions, Status and Future Directions', Bangladesh Institute of Labour Studies, Dhaka, Bangladesh
- International Labour Organization (2014), 'Decent Work Country Profile 2013', Retrieved from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_216901.pdf (Accessed on 15/10/2014)
- ILO (2014), 'Guide to International Labour Standards', http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_246944.pdf (Accessed on 12/10/2014)
- ILO (2009). Agriculture: a hazardous work, retrieved from http://www.ilo.org/safework/areasofwork/hazardous-work/WCMS_110188/lang-en/index.htm
- Industrial Policy 2010, Ministry of Industry, Government of Bangladesh
- Jakir Hossain, (2012) *Economic Security for Working Poor? Trade Linked Labor Standards, Workers' Rights, and the Politics of Representation of Bangladesh's Garment Workers*, PhD Dissertation, University of Trento.
- Jobaid, Md. Imrul, Khan, Md. Moniruzzaman, Haque, A.K.M Kamrul, and Shawon, Istiaque Ahmed, (2014), "Ship Recycling and Its Environmental Impact: A Brief Overview of Bangladesh" *IOSR Journal of Business and Management (IOSR-JBM)* Volume 16, Issue 10.Ver. I, PP 31-37
- Kwame, Ochire-Boadu, Kusi, E. and Lawer, E.A, (2014). "Occupational Hazards and Safety Practices: A Concern among Small Scale Sawmilling Industries in Tamale Metropolis, Ghana", *International Journal of Scientific & Technology research*, Volume 3, Issue 10, 2014. Retrieved from <http://www.ijstr.org/final-print/oct2014/Occupational-Hazards-And-Safety-Practices-A-Concern-Among-Small-Scale-Sawmilling-Industries-In-Tamale-Metropolis-Ghana.pdf>
- Lukman Nulhakiem, (2010). "Top 13 Potential Hazards in Chemical Industries", retrieved from http://EzineArticles.com/?expert=Lukman_Nulhakiem
- Mohanta, M.K., Saha, A.K., and Hasan, M. A., (2012). "Prevalence and determination of occupational diseases of leather tannery workers" *University Journal of Zoology*, Rajshahi University. Vol. 31, 2012 pp. 79-82
- Mostafa, Mohd.Golam, (2014) "Handling Occupational Hazards in Fish Processing Industry" *Fish Inspection & Quality Control*, Khulna
- Moreau, D., T., R. and Neis, B. (2009). "Occupational health and safety hazards in Atlantic Canadian aquaculture: Laying the groundwork for prevention", *Marine Policy*. Volume 33, Issue 2, pp 401-411, retrieved from <http://www.sciencedirect.com/science/article/pii/S0308597X08001462>

- Ministry of Finance, Government of Bangladesh, Retrieved from http://www.mof.gov.bd/en/budget/14_15/ber/bn/Index_&_Indicators_bn_2014.pdf (Accessed on 05/10/2014)
- Ministry of Commerce, Government of Bangladesh, Retrieved from http://www.mincom.gov.bd/export_info.php (Accessed on 07/10/2014)
- National Occupational Safety and Health Policy 2013, Ministry of Labour and Employment, Government of Bangladesh
- National Labor Policy 2012, Government of Bangladesh
- National Child Labour Elimination Policy 2010, Ministry of Labour and Employment, Government of Bangladesh
- National Children Policy 1994, Ministry of Women and Children Affairs, Government of Bangladesh
- Nahar, N. (2009), "Occupational Health Hazards in Garments Sector: A Study in Gazipur District." Unpublished MS Thesis submitted to the Department of Rural Sociology, Mymensingh: Bangladesh Agricultural University.
- NIPSOM (2014), *Academic Activities*. Retrieved from www.nipsom.org/ (Accessed on 6 December 2014)
- OSHE (2009), *Occupational Safety and Health in the Construction Sector in Bangladesh*, Dhaka: Bangladesh Occupational Safety, Health and Environment Foundation
- Palmer, K., T., Griffin, M., J., Syddall, H., E., Davis, A., Pannett, B., and Coggon, D. (2002), *Occupational exposure to noise and the attributable burden of hearing difficulties in Great Britain*. *Occupational and Environmental Medicine*. 59(9):634–9.
- Sarker, MD Atiqur Rahaman, (2014) "Occupational Health and Safety (OHAS) crisis in tanneries of Bangladesh: Is this the Violation of labour rights," *European Journal of Business and Management*, Vol. 6, No. 16, pp 165-169.
- SEHD, (1998). "Bangladesh Environment. Facing 21 Century", Society for Environment and Human development (SHED) publications, Dhaka, Bangladesh.
- Singh, S. B., Bhatta, N., Jha, N., Pokharel, PK, 2012. "Respiratory morbidities of jute mill workers in Nepal" Vol 10 (No.3); *Nepal Journals OnLine*, Vol 10, No 3, pp 181-186, retrieved from <http://www.nepjol.info/index.php/HREN/article/view/7132>
- Ship Building and Ship Recycling Rules 2011, Government of Bangladesh
- Sarker, Rahman, Md. Atiqur, (2014). "Occupational Health and Safety (OHAS) crisis in tanneries of Bangladesh: Is this the violation of labor rights?," *European Journal of Business and Management*, Vol.6, No.16, retrieved from www.iiste.org
- Solidarity Center. (2014). *what we do*. Retrieved from <http://www.solidaritycenter.org/content.asp?> (Accessed on 12 December 2014)
- TICI (2014), *Central Training Institute of Bangladesh Chemical Industries Corporation; Training Information*. Retrieved from <http://www.tici-bcic.org/index.php/training-information/training-departments.html> (Accessed on 12 December 2014)
- The Daily Star, Retrieved from http://www.thedailystar.net/print_post/reflections-on-gdp-growth-trend-and-investment-rate-20754 (Accessed on 08/10/2014)
- Ulandssekretariatet (2014), 'Bangladesh Lbaour Market Profile 2013', Retrieved from http://www.ulandssekretariatet.dk/sites/default/files/uploads/public/PDF/LMP/bangladesh_2013_final_web.pdf (Accessed on 9/10/2014)
- UNHR, International Covenant on Economic, Social and Cultural Rights 1976, Retrieved from <http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx> (Accessed On 14/10/2014)
- Usha (1989), "Impact of Industries in Sanganer". P.G. Diploma Field Study Report, Indira Gandhi Centre for HEEPS, India: University of Rajstan.

ANNEXES

Annex 1: Study Design

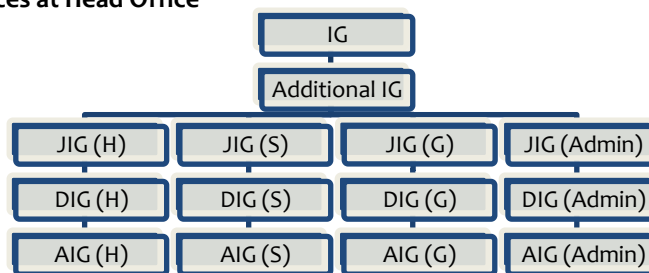
Study Sector (9)	RMG, Construction, ship-breaking, tannery, chemical, agriculture, re-rolling, Shrimp	
Study Area	Sector	Area
	RMG	Dhaka,
	Construction	Dhaka
	Ship-Breaking	Chittagong
	Tannery	Dhaka
	Small Chemical	Dhaka
	Agriculture	Rajshahi
	Re-rolling	Dhaka (Naraynganj)
	Shrimp	Khulna
Jute	Jessore	
Type of Study	Qualitative and Quantitative	
Data Source	Primary and Secondary	
Data Collection methods and Techniques	Content Analysis	Secondary Literature review and Analysis
	KIIs	22 in 9 sectors
	FGD	9 FGDs in nine sectors
	Multi-stakeholder consultation/workshop (1)	Participants: Policy-makers, Government officials, trade unions leaders, employers, worker, development partners.

Annex Table 1.1: State of Bangladesh's Labour Rights Conventions Ratification

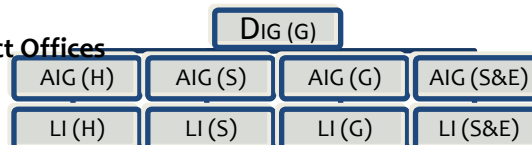
Subject/Rights	Conventions	Status
Fundamental Conventions		
Collective bargaining and freedom of association	C87: Freedom of Association and Protection of the Right to Organize, 1948	Ratified 1972
	C98 - Right to Organize and Collective Bargaining Convention, 1949	Ratified 1972
Elimination of all forms of Forced Labour	C29: Forced Labour Convention, 1930	Ratified 1972
	C105: Abolition of Forced Labour Convention, 1957	Ratified 1972
Effective abolition of child labour	C138: Minimum Age Convention, 1973	Not ratified
	C182: Worst Forms of Child Labour Convention, 1999	Ratified 2001
Elimination of discrimination of employment	C100: Equal Remuneration Convention, 1951	Ratified 1998
	C111: Discrimination (Employment and Occupation) Convention, 1958	Ratified 1972
Governance Conventions		
Labour inspection	Co81: Labour Inspection Convention, 1947	Ratified 1972
	C129: Labour Inspection (Agriculture) Convention, 1969	Not ratified
Employment Policy	C122: Employment Policy Convention, 1964	Not ratified
Tripartism	C144: Tripartite Consultation (International Labour Standards) Convention, 1976	Ratified 1979
Up-to-date Conventions		
Working time	Co14: Weekly Rest (Industry) Convention, 1921	Ratified 1972
	C106: Weekly Rest (Commerce and Offices) Convention, 1957	Ratified 1972
Social security	C118: Equality of Treatment (Social Security) Convention, 1962	Ratified 1972
Specific workers' categories	C149: Nursing Personnel Convention, 1977	Ratified 1972

Source: ILO

Annex Figure 4.1: Human Resources at Head Office



Annex Figure 4.2: Human Resources at District Offices



Annex Table 2: DIFE Human Resources and OSH Inspectors

Name of Divisions	Name of Districts	Sanctioned Man Power	Distribution of Man Power			
			OSH Inspector	Non-OSH Inspector	Total Inspector	No of Staffs
Dhaka	1. Dhaka District Office	99	20	51	71	28
	2. Narayangonj District Office	69	20	24	44	25
	3. Gazipur District Office	69	20	24	44	25
	4. Mymensingh District Office	31	6	12	18	13
	5. Tangail District Office	31	6	12	18	13
	6. Manikgonj District Office	31	6	12	18	13
	7. Munshigonj District Office	31	6	12	18	13
	8. Narsingdhi District Office	31	6	12	18	13
	9. Kishorgonj District Office	31	6	12	18	13
	Total	423	96	171	267	156
Chittagong	1. Chittagong District Office	83	20	36	56	27
	2. Comilla District office	31	6	12	18	13
	Total	114	26	48	74	40
Khulna	1. Khulna District Office	31	6	12	18	13
	2. Jessor District Office	31	6	12	18	13
	3. Kushtia District Office	31	6	12	18	13
	Total	93	18	36	54	39
Rajshahi	1. Rajshahi District Office	31	6	12	18	13
	2. Sirajgonj District Office	31	6	12	18	13
	3. Bogra District Office	31	6	12	18	13
	4. Pabna District Office	31	6	12	18	13
	Total	124	24	48	72	52
Sylhet	1. Sylhet District Office	31	6	12	18	13
	2. Moulavi Bazar District Office	31	6	12	18	13
	Total	62	12	24	36	26
Barisal	1. Barisal District Office	31	6	12	18	13
	Total	31	6	12	18	13
Rangpur	1. Rangpur District Office	31	6	12	18	13
	2. Dinajpur District Office	31	6	12	18	13
	Total	62	12	24	36	26
Total Divisional Offices		909	194	363	557	352
Head Office		84	8	10	18	66
Total		993	202	373	575	418

Source: DIFE

Annex Table 3: Budget: Department of Inspection for Factories and Establishments (Thousand BDT)

Code	Description	Budget 2014-15	Revised 2013-14	Budget 2013-14
Unproductive Revenue Cost				
4501	Total Salary of Officers	5,19,00	1,73,00	1,18,00
4600	Salary of Institutional employees			
4601	Salary of Institutional employees	1,85,00	1,44,00	1,30,00
	Total Salary	1,85,00	1,44,00	1,30,00
4700	Allowances			
4701	Dearness allowances	1,25,00	46,00	0
4705	House rent	3,12,00	1,52,00	1,25,00
4709	Entertainment allowances	6,00	6,50	5,00
4713	Festival Bonus	60,00	40,00	42,00
4717	Medical treatment	58,00	25,00	21,00
4725	Laundry allowances	60	60	60
4755	Tiffin allowances	7,00	3,60	3,60
4765	Transportation allowances	5,00	2,50	2,50
4773	Education allowances	4,00	4,50	3,50
4795	Others	5,00	2,50	1,70
	Total	5,82,60	2,83,20	2,04,90
4800	Supply and Services			
4801	Travel Cost	60,00	30,00	22,00
4805	Overtime	30,00	5,00	5,00
4806	Office rent	1,37,00	37,60	22,00
4815	Post	5,00	2,00	1,50
4816	Telephone/Telegram/Tele printer	20,00	4,00	4,00
4819	Water	5,00	1,80	1,50
4821	Electricity	20,00	4,40	4,00
4823	Petrol & lubricant	70,00	12,00	12,00
4824	Bank/Bank charges	1,50	20	20
4831	Books & magazines	10,00	1,50	1,50
*4833	Advertisement	15,00	2,00	1,00
4836	Uniforms	6,00	2,50	2,50
4840	Training cost	15,00	2,00	1,00
4845	Entertainment cost	4,00	2,00	1,00
4882	Law related cost	2,00	1,00	1,00
4883	Honorary/Fee/Remuneration	3,00	50	50
4884	Exam related fee	15,00	3,50	3,00
4899	Other costs	70,00	21,00	11,00
	Total	5,03,50	1,39,25	94,70
4900	Maintenance & conservation			
4901	Motor traffics	15,00	5,00	5,00
4911	Computer & office accessories	5,00	3,00	3,00
	Maintenance, consv. & rehabilitation	20,00	8,00	8,00
	Total- Underdeveloped Revenue Cost	18,10,10	7,47,45	5,55,60
Unproductive Capital Cost				
6800	Resource collection/ buy			
6807	Motor traffic	4,50,00	0	65,00
**6813	Instruments & other accessories	10,50	0	0
*6815	Computer & accessories	19,00	3,00	3,00
*6821	Decorations	35,00	45,70	5,77
*6823	Telecommunication accessories	4,00	0	0
*6827	Electronics accessories	1,00	0	0
6853	Fire extinguishing instruments	50	0	0
	Subtotal- Resource collection/buy	5,20,00	48,70	73,77
	Subtotal- unproductive capital cost	5,20,00	48,70	73,77
	Total- DIFE	23,30,10	7,96,15	6,29,37

Table 4.1: DIFE Human Resources Distribution against Approved Posts

Distribution of manpower	Administrators		Employees		Total
	1 st Class	2 nd class	3 rd Class	4 th Class	
Approved	215	281	290	207	993
Current	36	20	239	59	354
Male	35	18	229	54	336
Female	1	2	10	5	18

Source: Department for Inspection of Factories and Establishment

Table 4.2 DIFE Post wise Human Resources

Names of the posts	Head office				Sanctioned	Dhaka			Sanctioned	Districts other than Dhaka		
	Sanctioned	Present				M	F	T		M	F	T
		M	F	T								
IG	1	1		1					0	0	0	0
Add. IG	1	1		1					0	0	0	0
JIG (H)	1	1		1					0	0	0	0
JIG(S)	1	1		1					0	0	0	0
JIG(G)	1	1		1					0	0	0	0
JIG(Ad.&D)	1	1		1					0	0	0	0
DIG(H)	1	1		1					0	0	0	0
DIG((S)	1								0	0	0	0
DIG(G)	1		1	1	1	1		1	22	22	0	22
DIC(Add.&D)	1	1		1					0	0	0	0
AIG(H)	2	1		1	5		1	1	34	1	0	1
AIG(S)	2				5	1		1	34	1	1	2
AIG(G)	4	1	2	3	5		1	1	34	7	0	7
AIG(S&E)					5				48	0	0	0
Lo	1								0	0	0	0
SRO	1								0	0	0	0
IPO	1								0	0	0	0
Libr	1								0	0	0	0
A.O	1		1	1					0	0	0	0
LIG(H)					5				53	3	1	4
LI(S)					5	1		1	53	1	0	1
LI(G)					5	24	3	27	53	55	6	61
LI(S&E)					35	24	3	27	155	55	6	61
Staff.Cl(III)	37	14	6	20	15	2		2	154	22	1	23
StaffCl (iv)	24	7	3	10	13	4	1	5	170	25	1	26
Total	84	31	13	44	99	33	6	39	810	137	11	148

Source: Department for Inspection of Factories and Establishment

Annex Table 4.3: Training for DIFE

Name of the Training and Subjects		Provider	Duration	Participants
Regular	Basic Training About MOLE & DIFE, Relevant labour laws, inspection method, office Administration, court procedure	DIFE	One Week	Exclusively for the new recruited Inspector
	Tripartite Training course Labour laws, industrial relation, Trade union activities, formation of CBA general & OSH provision of labour laws	IRI/ DOL	4 Weeks	Mid level management, trade unions, inspectors
Occasional	Institutional capacity building for DIFE Mode of Inspection, Knowledge sharing & Facilitation Market (TOT), OSH Training for Trainers, Labour Inspection management.... workshop	ILO/ RMG program (2014-2016)	One week	136 Inspector
	OSH & inspection techniques Bangladesh Labour laws and inspection techniques for Labour inspectors	GIZ and ILO	2/3 days	Inspectors
	Fire safety FSCD Training Agenda	Fire Service & Civil Defense Authority	3 days	Inspector of DIFE & officers of FSCD
	Occupational Health & Safety	NIPSOM/ DG- Health	3 days	DIFE Inspectors & Thana Family Planning Officers & Civil surgeons

Annex Table 4.3: Training for DIFEAbroad

Name, Subject and Status of Training		Provider	Duration	Participant
Regular	National Framework for OSH programme	ILO/ Korea Fellowship Training KOSHA, Korea	One week/ year	OSH Inspectors of Asian Countries
	OSH in SMEs (discontinued)	JICA and Govt. of Philippine	4 weeks	OSH Inspector
	Labour Employment Relation in a global economy, Gender Equity, and Comparative Labour Law (Discontinued)	Indian Government/ V.V.Giri National Labour Institute	3 weeks	Inspector
Occasional	Road map on Labour Inspection	ILO/ITC Turin/ RMG project) 2014-2016	One Week	Selected Inspector of TOT
	OSH Training (Discontinued)	Japan	6 week	1 Inspector
	OSH Matters (Discontinued)	Netherland Govt.	3 month	1 Inspector
	OSH Issues (Discontinued)	UK British Council	9 Month	1 Inspector

Source: Department for Inspection of Factories and Establishment

Annex Table 4: Summary of the activities of DIFE from January, 2005 to December,2013

Year	Total Inspection	Total law violation events	Primary Case	Case in processing	Total cases	Dismissed case	Pending case
1	2	3	4	5	6	7	8
2005	42,930	46,006	16,426	10,053	26,479	8,267	18,212
2006	35,950	37,033	18,212	5,684	23,896	7,685	16,211
2007	39,002	48,291	16,211	428	16,639	4,234	12,405
2008	39,123	52,423	12,405	910	13,315	3,191	10,124
2009	51,337	55,816	10,124	777	10,901	3,111	7,790
2010	65,778	70,308	7,790	1,425	9,215	4,074	5,141
2011	61,184	69,539	5,141	1,096	6,237	2,205	4,032
2012	57,259	65,895	4,032	1,605	5,637	1,502	4,135
2013	21,785	46,136	4,135	960	5,095	898	4,197

Year	Fine	Complaints	New license approved	License fee gained	Number of License renew	License renew fee	Total of license issue and renewal fee (12+14)	Total revenue (9+12+14)
1	9	10	11	12	13	14	15	16
2005	21,09,822	110	987	3,68,155	4,763	74,120	11,08,275	32,18,097
2006	20,21,700	89	783	3,93,030	5,586	11,29,297	15,22,317	35,44,017
2007	9,74,825	58	1,007	50,45,780	5,071	10,88,534	15,93,314	25,68,139
2008	12,14,704	130	640	15,17,789	4,882	13,20,145	18,37,934	30,52,638
2009	10,39,590	230	758	6,84,250	6,289	27,16,976	34,11,226	44,50,816
2010	13,11,300	336	632	8,33,300	4,657	21,59,666	29,92,966	46,04,266
2011	15,58,200	910	1,257	12,13,580	10,299	33,69,323	54,82,903	61,41,123
2012	17,72,673	380	1,633	15,69,083	6,351	30,79,308	46,38,391	64,11,064
2013	1,99,430	381	1,084	21,55,120	6,715	1,38,17,670	1,59,72,844	1,79,72,274

Source: Department of Inspections for Factories and Establishments

FGD participant List

Sector: Re-Rolling

Date: 20 December 2014

Place: Shyampur, Dhaka

SL	Name of Participant	Position/Grade/	Name of Industry
1.	Nurunnabi	Hook man	Rahima Ispat Mill
2.	Badal	No. 1 Standing position	Do
3.	Mohammad Ali	No.1 Standing Position	Kamal Steel Mill
4.	Md. Ali Akbar	Foreman	Rahima Ispat Mill
5.	Kaji Md. Alam	Foreman	A K Re-rolling Mill
6.	Md. Momtaj	No. 5 Standing	A K Re-rolling Mill
7.	Md. Sohag	No. 3 Standing	Rahman Re-rolling Mill
8.	Md. Babul Hossain	No. 3 Standing	A K re-rolling Mill
9.	Md. Swapan	No. 1 Standing	Do
10.	Md. Rasel	No.3 Standing	Do
11.	Ohidul Islam	No.5 Standing	Akbar Re-rolling Mill
12.	Anwar Hossain	No. 3 Standing	Rahman Re-rolling
13.	Md. Mainuddin	Platman	Shahjalal Re-rolling Mill
14.	Md. Ismail	No. 1 Standing (upper)	Nekles Re-rolling Mill
15.	Md. Jakir	No. 1 Standing (Upper)	Do
16.	Md. Tajimul	No. 1 Standing (Upper)	Kadamtoli Re-rolling
17.	Omar Faruk	Pusher Man	N. Islam Re-rolling Mill
18.	Md. Abdul Kadir	No. 3 Standing	Rahman Re-rolling
19.	Md. Ranju	No. 5 Standing	N. Islam Re-rolling Mill
20.	Marfat Ali	Foreman	Diamond Steel Mill
21.	Nure Alam	Tota	Do
22.	Akter Ali	Tanner	Do

Sector: Agriculture Sector

Date: 4 December 2014

Place: Poba, Rajshahi Dhaka

SL	Name of Participant	Village	Upazilla	Position/Grade/Types of Work
1.	Md. Abu Bakar	Belpara, Haripur	Poba, Rajshahi	Agriculture Day Labour
2.	Akbar Ali	Gopalpur Adarsha Gram		
3.	Rezaul Karim	Do		
4.	Rahima Begum	Kasba		
5.	Morsheda Khatun	Moddha Belpara		
6.	Anjara Begum	Do		
7.	Kajal Rekha	Do		
8.	Jakia Begum	Do		
9.	Anwara Begum	Do		
10.	Tumajjina AB	Do		
11.	Momena Begum	Purba Belpara		
12.	Aklima	Moddha Belpara		
13.	Rekha Begum	Center Para		

Sector: Jute
Date: 13 December 2014
Place: Demra, Dhaka

SI	Name of Participant	Address /Name of Industry
1.	Belayet Hossain	Latif Bawani Jute Mill
2.	Asad Mia	
3.	Abdul Latif	
4.	Osman Gani	
5.	Nur Nabi	
6.	Abul Kashem	
7.	Abul Kalam	
8.	Suja Mia	
9.	Gazi Mia	
10.	Motaleb Hossain	
11.	Hanif	
12.	Niamat Ali	
13.	Md. Abul Kalam	
14.	Md. Suman	
15.	Jashim Uddin	
16.	Bakul Mia	
17.	Hazera Begum	
18.	Nur Jahan Begum	
19.	Latifa Begum	
20.	Sahabuddin Mia	
21.	Moinuddin Mia	
22.	Mojibur Rahman	
23.	Ratan Ali	
24.	Abdul Ajj	

Sector: Shrimp
Date: 9 December 2014
Place: RupshaGhat, Khulna

SL	Name of Participant	Address/ Factory
1.	Babul Hawlader	Apollo Seaport
2.	Md. Moazzem	Do
3.	Kamrul Islam	Do
4.	Arif Islam	Do
5.	Hira Begum	Modern
6.	Khadiza Begum	Do
7.	Monira Sultana	Rozemco
8.	Runa Begum	Do
9.	Anwara Begum	Do
10.	Farid Mia	Atlas
11.	Ainul	Do

Sector: Ternary**Date: 13 November 2014 Place: Tannery Workers Union Office**

SL	Name of Participant	Address/ Factory
1.	Mamtaj Begum	Apex Ternary Ltd.
2.	Selina Begum	Do
3.	Ajmal	Do
4.	Abdur Rahim	Do
5.	Nab Islam	Do
6.	Morjina	Karim Lethers Ltd.
7.	Aleya	Ruma Lether Ltd.
8.	Mosharaf	Do
9.	Abdur Rahim	Finix Lether Complex Ltd.
10.	Jahangir Alam	Do
11.	Kamal Uddin	Lexco Ltd
12.	Helal Uddin	Karim Lether

Sector: RMG**Date: 23 October 2014 Place: Rowfabad, Baijid Rajshai**

SL	Name of Participant	Factory	Adress
1.	Nazma Begum	Shirina Garment ,	Rowfabad, Baizid, Rajshahi
2.	Salma Begum	Do	
3.	Nasima Begum	Adila Garment,	
4.	Monwara	Do	
5.	Rahima	Gilani Garment	
6.	Kali	Do	
7.	Moni Begum	Tika Fasshion	
8.	Monwara Begum	Shirina Garments	
9.	Ruma Begum	Ipsita Garments	
10.	Parvin Begum	Shiraina garments	

Sector: Construction**Date: 27 September 2014 Place: Shyampur, Dhaka**

Sl	Name	Types of Work /Sector	Address
1.	Shafiqul Islam	Electric	Shyampur, Kadamtoli, Dhaka ,
2.	Md. Rezaul	Rod Binding	
3.	Md. Shahin Miya	Rod Binding	
4.	Md.Ohab Ali	Excavate Base	
5.	Babul Miya	Excavate Base	
6.	Md. Hanif Mollik	Excavate Base	
7.	Md. Hasan Miya	Sanitary	
8.	Abdur Razzak Sarkar	Excavate Base	
9.	Jafor	Mason	
10.	Abdul Alim Hawladar	Excavate Base	
11.	Monir Miya	Excavate Base	
12.	Md.Kalu Miya	Mason	
13.	Md. Hadis Miya	Mason	
14.	Md. Jafor	Mason and Rod binding	
15.	Md. Faruq	Mason	
16.	Md. Yunus Midi	Mason	

Participants List of Validation Workshop

Date 17 May, 2015 at Bangladesh Institute of Labour Studies

1.	MD. ZafrulHasan	BILS
2.	KaziSaifuddin Ahmed	BEF
3.	Dr. Wajedul Islam Khan	BTUC/BILS
4.	WG CDR M Z Hayder (Rtd)	BGMEA
5.	Dr. Farhana Islam	BGMEA
6.	Dr. MustafizurRahman	DIFE
7.	Dr. SalamatKhandker	DIU
8.	Dr. Mamunur Rashid	BIM/AUST
9.	Dr. SarwarMorshed	AUST/IPE
10.	AKM Nasim	Solidarity Centre
11.	Farida Yeasmin	LRDC
12.	Shamal Chandra Barman	BILS
13.	Dr. FaijunNahar	BILS
14.	UmmaHasanJhalmal	BILS
15.	AKM Masum-Ul-Azam	ILO
16.	Tauvik Muhammad	ILO
17.	Sultan Uddin Ahmed	BILS
18.	Nazma Yasmin	BILS
19.	Jakir Hossain	OSH Research Team
20.	Afroza Akter	OSH Research Team