

# Occupational Safety and Health in Bangladesh

## **Introduction**

The occupational health and safety service in Bangladesh is still in the developmental stage. Here the occupational health & safety refers mainly to needs of workers of industries or some manufacturing processes but does not completely cover all occupations of the country. The main laws related to occupational health & safety in this country is the Factory Act 1965 and the Factory Rule of 1979. There are a number of other laws and regulations that are also have some provisions related to occupational health and safety. These laws have provisions on occupational hygiene, occupational diseases, industrial accidents, protection of women and young persons in dangerous occupations and also cover conditions of work, working hours, welfare facilities, holidays, leave etc. But most of the laws are lacking in standard values and not specific rather general in nature.

For certain work environment factors, manufacturing process, machineries and toxic substances, certain levels or concentrations of substances in the air have been recommended by various international organization and agencies, which are considered to be safe, are implemented in the respective countries. In USA Occupational Safety and Health Administration (OSHA) are referred for the permissible levels or various standard limits for working environment. In Bangladesh no such organization or agencies have been developed which could be a referral center for different standard or occupational permissible limits. As such the prevalent rules and regulations in Bangladesh are insufficient or inadequate in terms of standards and permissible limits. Moreover, the enforcement department, the department of inspection, which is poor in quantity as well quality could not effectively enforce to improve the occupational safety and health in Bangladesh.

In Bangladesh, as in most countries in the west the responsibility for health and safety at work is placed on the employer, although the government has some kind of occupational health care services and safety standards. Occupational health services are provided as benefits by employers and generally are separate from other community health services. In the developing countries, many of which are undergoing rapid industrialization, the importance of occupational health is increasingly realized. It is of concern that in Bangladesh

like other developing countries pre-existing malnutrition and a high incidence of infectious disease, however, frequently compound the problems of exposure to occupational hazards.

The labour laws in Bangladesh have been framed which requires employers to undertake corrective measures on occupational safety and health. Lack of awareness, training, non-compliances of the OSH standards by the employers, the negative involvement of the workers could not achieve the goal of providing safety and health to the workers as intended by the laws.

In Bangladesh, as in other developing nations the major considerations in industries are higher production and greater economic returns. The main economics centered on the employer's benefit. Little importance is focused on the social costs in terms of impacts on workers, society, and the environment. The impacts are compounded by inappropriate value of life considerations, pain and suffering, opportunity costs and questions of equity. The estimates of direct economic costs and benefits are usually made keeping aside the ethical liabilities to the society as a whole. Entrepreneurs often consider the regulatory compliances and related administrative costs deterrent to productivity. As such occupational health & safety considerations remains ignored.

Time has come to consider the Occupational Health in its true spirit in a holistic way. The policy makers, legislators, employers, and all other members of the society require to understand the relationship of true social development with economic development through a system of good practices of occupational safety and health in work places so that the fruit of industrial development actuates the social goals. There should be awareness about consequences of not addressing and non-implementations of occupational safety and health standards.

### **Background of the study**

The International Labour Organization (ILO) and Asian Development Bank (ADB) signed a Regional Technical Assistance Agreement (RETA) during November 2000. The program included 4 Developing Member Countries (DMCs) namely Philippines, Thailand, Nepal and Bangladesh of Asia pacific region. The objectives of the RETA project are as follows:

- (i) Increase awareness of the key policy makers in the DMCs, NGOs, and the private sector regarding the economic and social implications of the non-implementation of labour standards.
- (ii) Improve the capacity of policy makers in the DMCs and ADB staff to prepare and implement projects that would (a) move children from the worst forms of employment and to school; (b) improve employment for women; and (c) reduce occupational safety and health hazards.
- (iii) Enable ADB staff at headquarters and country levels to address the issues of poverty reduction, child labour, gender discrimination in employment, and occupational safety and health issues by strengthening the implementation of relevant labour standards in ADB-assisted development interventions.

For the purpose of attainment of the above mentioned objectives the project focused its work mainly on collection and analysis of information in the DMCs on the three areas namely Child Labour, Gender Equity in employment, and Occupational Health & Safety.

It is expected that 4 sets of reports concerning three areas of interest will be generated for each of the member countries in the region. The information obtained from the reports hopefully will provide basis for required intervention to be undertaken in the member countries.

The present report was prepared concerning the issue of Occupational Safety & Health in Bangladesh. The component tried to identify the most pressing needs and issues; analyze the impact of lack of occupational safety and health; identify means to address this issues including national policy recommendations and action plans for implementation in the identified sectors; prepare reports for national policy makers and staff of executing agencies to address such concerns. This report would also provide basis for strategies and recommendations for the Regional Framework and Action Plan for use by the DMCs and ADB staffs.

## **Methodology**

To address the issue of occupational safety & health, the national consultant with discussion with the international consultant determined the methodology of the study.

It was decided to collect and analyze information on existing state of occupational safety & health in Bangladesh from secondary data sources as available from different reports, studies and other published documents. The information is placed in the Macro session of the report.

To understand the impact of non-implementation of labour standard, in this case the OSH standards, cross sectional study was undertaken in two sectors. As per discussion with the international consultant, tannery and bidi industries were selected for the purpose. The study report is placed in the Micro session.

Few case studies were also discussed as collected from secondary sources to present examples of good and bad practices of occupational safety and health.

# **MACRO SESSION**

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### **A. National Policy Framework**

**The constitution of Bangladesh** adapted on the November 4<sup>th</sup> 1972 recognizes productivity as a basic need for economic development and covers the right to work and reasonable wages, medicare and, disease and disablement. And thus it is assumed the health and safety of industrial workers has been taken care of.

The Occupational Health and Safety Services in Bangladesh, is still in the developmental stage. In Bangladesh Occupational Health and Safety generally refers mainly to needs of workers of industries or some manufacturing process but does not completely cover all recognized occupations of the country.

**In the Fifth Five Year Plan** (1997-2002) for the labour and manpower sector the objectives relatable to OSH are:

- a. "To ensure fair wages, welfare and social protection of workers under the structural adjustment programmes adopted by the government."
- b. "To initiate steps to protect children from economic exploitation. "

To achieve the objectives of the Fifth Five Year Plan (1997-2002) for the labour and manpower sector the strategies relatable to OSH that were to be pursued are:

- a. "Review of existing labour related laws, rules, regulations and directives and adoption of necessary modifications."
- b. "Stress on gradual elimination of child labour and protection of children from economic exploitation and hazardous work."

In the labour sector the OSH relatable programmes that were to be undertaken under the Fifth Five Year Plan included- Strengthening of Inspectorate of Factories and Establishments in terms of manpower and resources so as to enable them to "enforce various labour laws/rules concerning working hours, working condition, safety, and maternity benefits in different mills, shops and factories, etc. "

In the Fifth Five Year Plan (1997-2002) for the health population and family welfare sector some scope for further development in the sector against the background that 'with increased urbanization and industrialization, the number of burn and trauma cases due to traffic and industrial accidents, unsafe use of chemicals, fire, etc., has been increasing every year'. The following needs has been identified:

- a. Need to establish hospitals near major highways, traffic blackspots and industrial areas with trauma and burn units to treat burn and trauma cases in time.
- b. Promote industrial and occupational health through IEC activities so as to raise awareness of industrial workers and protect them from industrial hazards.

**Labour Policy:**

- Undertake effective new labour policy on the basis of tripartite negotiation
- Link wages with productivity
- Quick disposal of Industrial dispute
- Stop child labour and provide workers with education, healthcare, and better working facilities

**B: LEGISLATIONS RELATING TO OCCUPATIONAL HEALTH AND SAFETY**

The Department of Inspection for Factories and Establishments under the Ministry of Labour and Employment administers and enforces 42 labour laws. The following legislations have provisions relating to occupational health, hygiene of workers, occupational diseases, industrial accidents, protection of women and young persons in dangerous occupations, and also cover conditions of work, working hours, welfare facilities, holidays, leave, etc.

	<b>Legislation</b>	<b>Enforcing agency</b>
1.	The Factories Act, 1965 and the Factories Rules 1979	Department of Inspection for Factories and Establishment
2	Dock Labourers Act 1934	Department of Inspection for Factories and Establishment
3	Dock Labourers Regulations 1948,	Department of Inspection for Factories and Establishment
4	Tea Plantation Labourers Ordinance 1962 and the rules thereunder	Department of Inspection for Factories and Establishment
5	The Workmen's Compensation Act 1923 as amended in 1980 and 1983	Department of Inspection for Factories and Establishment
6	The Shops and Establishments Act 1965,	Department of Inspection for Factories and Establishment
7	Employment of Children Act 1938	Department of Inspection for Factories and Establishment
8	The Maternity Benefit Tea Estates Act 1950	Department of Inspection for Factories and Establishment
9	The Maternity Benefit Act 1939	Department of Inspection for Factories and Establishment
10	The Maternity Benefit Rules 1953.	Department of Inspection for Factories and Establishment
11	The Boilers Act 1923	Chief Inspector of Boilers under Ministry of Industry
12	Nuclear Safety and Radiation control Act 1993	Atomic Energy Commission. Bangladesh

It is obvious from the above table that almost all the labour legislation are enforced by Department of Inspection for Factories and Establishments. Therefore, there is little scope of overlapping responsibilities.

## **B .1 REVIEW OF LEGISLATIONS, LAWS AND REGULATIONS RELATING TO OSH.**

The laws that regulate the health, safety & welfare provisions and working conditions of the workers includes:

### **1. The Factories Act, 1965 and the Factories Rules 1979:**

This act is generally applicable to any `factory'. `Factory' means any premises including the precincts thereof whereon 10 or more workers are working or were working on any day of the preceding twelve months and in any part of which a manufacturing process is being carried on with or without the aid of power, but does not include a mine.

This act defines **worker** as "a person employed in any manufacturing process or in cleaning any part of the machinery or premises used for a manufacturing process, or in any other kind of work incidental to or connected with, the manufacturing process, but does not include any person solely employed in clerical capacity in any room or place where no manufacturing process is carried on".

**Manufacturing process** as defined by the act stands for any process for –

- i. making, altering, repairing, ornamenting, painting and washing, finishing, or packing, or otherwise treating any articles or substances with a view to its use, sale, transport, delivery, display or disposal. Or
- ii. pumping oil, gas, water, sewerage or other fluids or slurries. Or
- iii. generating, transforming or transmitting power or gas. Or
- iv. constructing, reconstructing, repairing, refitting, finishing or breaking up of ships or vessels. Or
- v. printing by letter press, lithography, photogravure or other similar work or book-binding which is carried on by way of trade or for purposes for gain or incidental to another business so carried on.

This act prescribes the requirements of safety and health to be maintained, and covers:

- a) Maintenance of standards of cleanliness.
- b) Adequate lighting, ventilation & temperature.



- c) Control of elements hazardous to health like dusts, gases, fumes, etc. associated with particular operations.
- d) Requirement of certificate of fitness for young persons from certifying surgeons.
- e) Requirement of periodical medical examination for persons engaged in hazardous operations.
- f) Requirement for making available adequate first-aid facilities.
- g) Requirement of a dispensary manned by a medical practitioner for units employing 500 or more workers.
- h) Length of working hours & night work for young persons and women, and prohibition of employment for operating dangerous machines
- i) Prohibition of employment of women and children near cotton openers
- j) Requirement of precaution against fire and explosions.
- k) Requirement of fencing and guarding of machinery, casing of new machinery
- l) Requirement for work on or near machinery in motion, striking gear and devices for cutting off power, self-acting machine
- m) Requirement for cranes and other lifting machinery, hoist and lift, revolving machinery, pressure plant
- n) Requirement of safety measures for buildings.
- o) Requirement of precautions against dangerous fumes.
- p) Maximum weight to be lifted carried or moved by adult men, women and young persons.
- q) Requirement for floors, stairs and means of access; pits, sumps, opening in floors, etc.
- r) Requirement for protection of eyes
- s) Requirement for explosive or inflammable dust, gas, etc.
- t) Reporting of accidents and occupational diseases.
- u) Sanitary conveniences- requirement of latrine, urinals, spittoons, drinking water
- v) Requirement of canteen, eating place, washing facilities, rest room, child room
- w) Requirement for appointment of welfare officer for units employing 500 or more workers.

Responsible authorities-

Department of Inspection for Factories and Establishment under the administrative control of the Ministry of Labour and Manpower is responsible for enforcement of the legislation. It is the responsibility of the employer to provide facilities to employees as

asked for by the law and it is the obligation of the workers to abide by the provisions of the Act.

### Comment-

Lack of work environment standards and exposure limits for different hazards and lack of requirement for periodic structured objective driven medical examination are the major deficiency of the legislations in terms of occupational health and safety. Moreover, there is no legal requirement for safety committees and employment of safety officers.

## **2. The Dock Labourers Act 1934 and the Dock Labourers Regulations 1948**

This legislation protects workers employed in loading and unloading ships against accidents.

- a) It outlines safety and protective measures to be taken against dangerous toxic fumes and other harmful agents, safe working loads, etc.
- b) It requires that workers be consulted on measures to be taken for the control of risks to health, and that appropriate measures be taken to ensure adequate protection of their health and safety.
- c) The law requires that any accident or dangerous occurrence, particularly as result of fire, and injuries causing death or 48 hours absence from work; and all cases of collapse or failure of lifting machinery be immediately reported.

### Responsible authorities-

- a. Department of Inspection for Factories and Establishment through Inspectors designated as Dock Labour Safety Officers (DLSO) is responsible for enforcing this piece of legislation.
- b. The general management of the dock is responsible for fencing of work places, proper lighting, life-saving appliances first aid, ambulance, washing facilities, etc.
- c. The owner, master or agent of a ship is responsible for accesses between shore and ship, from the ship to another vessel, between deck and hold, lighting, handling of dangerous or noxious substances.
- d. Workers and other persons are obliged to use the proper means of access and not to interfere with the removal of fencing or safety appliances.

### **3. Workmen's compensation Act, 1923, and rules thereunder :**

This act has been last amended in 1987 and applies to factories, docks, construction work, railways, transport workers, excavation, gas and electricity workers, etc.

It holds liable an employer to pay compensation for death and injury or disablement caused by accident arising out of and in the course of employment. And it considers contraction of occupational diseases peculiar to the nature of the work done as an injury like accident.

The act provides –

- A list of injuries that is considered to result in permanent partial disablement.
- A list of persons considered as workmen.
- A list of occupational diseases, and includes a list of employments for the purpose of such diseases.
- Means of calculating compensation payable for disablement or death.

#### Responsible authorities-

Department of Inspection for Factories and Establishment is responsible for enforcement of the legislation.

The Chairman of the Labour courts is also the Commissioner of Workers' Compensation.

#### Comment-

The act covers a wide range of workers spells that the employer is not liable for compensation if workers remove or disregard any safety guard or devices provided for securing safety.

### **4. The Tea Plantation Labourers Ordinance 1962 and the rules there under:**

This Ordinance applies to all tea plantations.

It gives wide coverage to the safety and health of workers in plantations by way of medical treatment, annual medical check-up, hospital facilities, housing facilities, drinking water, etc. And provides for the welfare of labour and regulates their conditions of work.

#### Responsible authorities-

Department of Inspection for Factories and Establishment is responsible for enforcement of the legislation.

## **5. The Employment of Children Act 1938, and the rules thereunder:**

This act prohibits the employment of children under the age of 15 years in occupations related to transport of passengers, goods or mail by railway and in occupations involving handling of goods within the limits of a port. It prohibits children aged 15-17 years in such occupations to work at night. And prohibits employment of children under the age of 12 in certain occupations.

### Responsible authorities-

Department of Inspection for Factories and Establishment is responsible for enforcement of the legislation.

## **B.2 DEFINITIONS OF WORKPLACE IN LEGISLATION**

### **The Factories Act, 1965 and the Factories Rules 1979:**

These legislations, considers workplace as places where a manufacturing process is carried out.

Manufacturing process as defined by the act stands for any process for

- making, altering, repairing, ornamenting, painting and washing, finishing, or packing, or otherwise treating any articles or substances with a view to its use, sale, transport, delivery, display or disposal. Or
- pumping oil, gas, water, sewerage or other fluids or slurries. Or
- generating, transforming or transmitting power or gas. Or
- constructing, reconstructing, repairing, refitting, finishing or breaking up of ships or vessels. Or
- printing by letter press, lithography, photogravure or other similar work or book-binding which is carried on by way of trade or for purposes for gain or incidental to another business so carried on.

### **Workmen's compensation Act, 1923, and rules thereunder:**

Though this act do not provide a clear cut definition of workplace it is implied that the places where the workers as described in Schedule 11 of Workmen's Compensation Act 1923 can be considered as workplace.

### **B.3 COVERAGE OF WORKERS AND WORKPLACES**

It is difficult to say that the issue of occupational health and safety of all workers or personnel of all occupations are covered by legislation.

The following legislations provide some degree of coverage to different sections of workers or persons employed in certain occupations.

The Workmen's Compensation Act 1923	This legislation relates to workmen compensation by certain classes of employers for injuries by accident as well as for diseases listed in schedule III of the act.	Schedule 11 of Workmen's Compensation Act 1923 provides a list of persons covered by the act.
The Factories Act, 1965	Relates to factories Factory refers to any premises where 10 or more workers are involved in a manufacturing process that is carried out with or without the aid of power.	Have provisions for health, hygiene and safety of factory workers. Schedule referred to in section 90 and 91 of the act provides a list of notifiable diseases.
The Factories Rules 1979	Relates to factories and workers/employees involved in the process in any way.	Has provisions for health, hygiene and safety of factory workers Has special provisions that describes certain activities as dangerous operations Requires accidents and injuries to be reported. Requires certain occupational diseases and cases of poisonings in workplaces to be reported. Employees not involved in the manufacturing process in any way, are not covered by the rules.
The Shops and Establishments Act 1965 The Shops and Establishments Rules 1965	Relates to establishments employing five or more workers but not applicable for establishments specified in section 6 of the act. Applies for workers as defined in section 2(p) of the act.	Has provisions for hygiene
The Maternity Benefit Act 1939 (Modified by Act LIII of 1974)	Relates to any woman worker /employee employed for a period not less than 9 months immediately preceding the day of the delivery.	Has provisions that allow women workers/employees to refrain from work for a specified period before and after childbirth and to continue receiving wages for the period, at the rate of average daily earnings from the employer.

Agricultural Workers, Fisheries, Poultry, Transport and Construction workers, are not directly and specifically covered by legislation.

#### **B4. ILO Convention regarding OSH:**

Until now 31 ILO conventions have been ratified by Bangladesh. The ILO convention C 155 and C161 are concerned with the Occupational Safety and Health and the Occupational Health Services respectively. The aim of the policy of the convention C155 is to prevent occupational accidents and injury to health, and illnesses by identification and minimising the causes of hazards in the working environment. The aim of the convention C161 is to establish and maintain a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work. Although these convention are not yet ratified in Bangladesh but many of the recommendations of these conventions have been practised to some extent through the implementations of existing various laws and regulations. In the Factory Act 1965 and Factory Rules 1979 and in some other laws and regulations there are various chapters that are relatable to OSH. But by the existing laws and regulations qualitative inspections regarding safety and health in the working is possible but could not be monitored in terms of quantitative standard values and permissible limits.

For ratification of ILO convention No. C 155 and C161 the motivation of all the parties-policymakers, employers and employees is required.

#### **C. FACTORY INSPECTORATE**

Department of Inspection for Factories and Establishments under the administrative control of the Ministry of Labour and Employment is responsible for enforcement of the legislation is empowered by law to oversee the enforcement of almost all legislation relating to welfare safety and health of workers.

The Chief Inspector of Factories and Establishments heads the department who is assisted by 7 Deputy Chief Inspector of Factories and Establishments.

The setup of the Department of Inspection for Factories and Establishment has 3 sections- Engineering, Medical and General.

- The Engineering section is responsible for occupational safety, accident investigations, workmen's compensation etc.
- The General section deals with general welfare measures, payment of wages, working hours, conditions of employment, etc.

- The Medical section is responsible for occupational health and hygiene, maternal benefit, working environment, etc.

At the headquarters located in Dhaka Chief Inspector of Factories is assisted by 3 Deputy Chief Inspector of Factories.

At the headquarters, a Deputy Chief Inspector of Factories is in charge of one of the 3 sections - Engineering, Medical and General.

- Assistant Chief Inspector of Factories (General) and Inspector of Standing Orders assists Deputy Chief Inspector of Factories of General section.
- Deputy Chief Inspector of Factories of engineering section is assisted by an Inspector of Factories (Eng).
- An Inspector of Factories (medical) assists Deputy Chief Inspector of Factories of Medical section.

The department operates through 4 Divisional Headquarters located at the administrative divisions of Dhaka (17 districts), Chittagong (15 districts), Khulna (16 districts) and Rajshahi (16 districts); 4 Regional Offices located in the industrial zones of Narayanganj, Comilla, Sreemangal and Rangpur; and 29 branch offices.

Each divisional setup is headed by a Deputy Chief Inspector of Factories (General), and also consists of 3 sections - Engineering, Medical and General.

- The General section has Assistant Chief Inspector of Factories, and Labour Inspectors.
- The Engineering section is headed by an Inspector of Factories and is assisted by Assistant Inspectors of Factories.
- The Medical section is headed by an Inspector of Factories and is assisted by Assistant Inspector of Factories.

The Chittagong and Mongla (Khulna) sea-ports each has a Dock Labour Safety Officer responsible for the enforcement of the Dock Labour Act and Regulations.

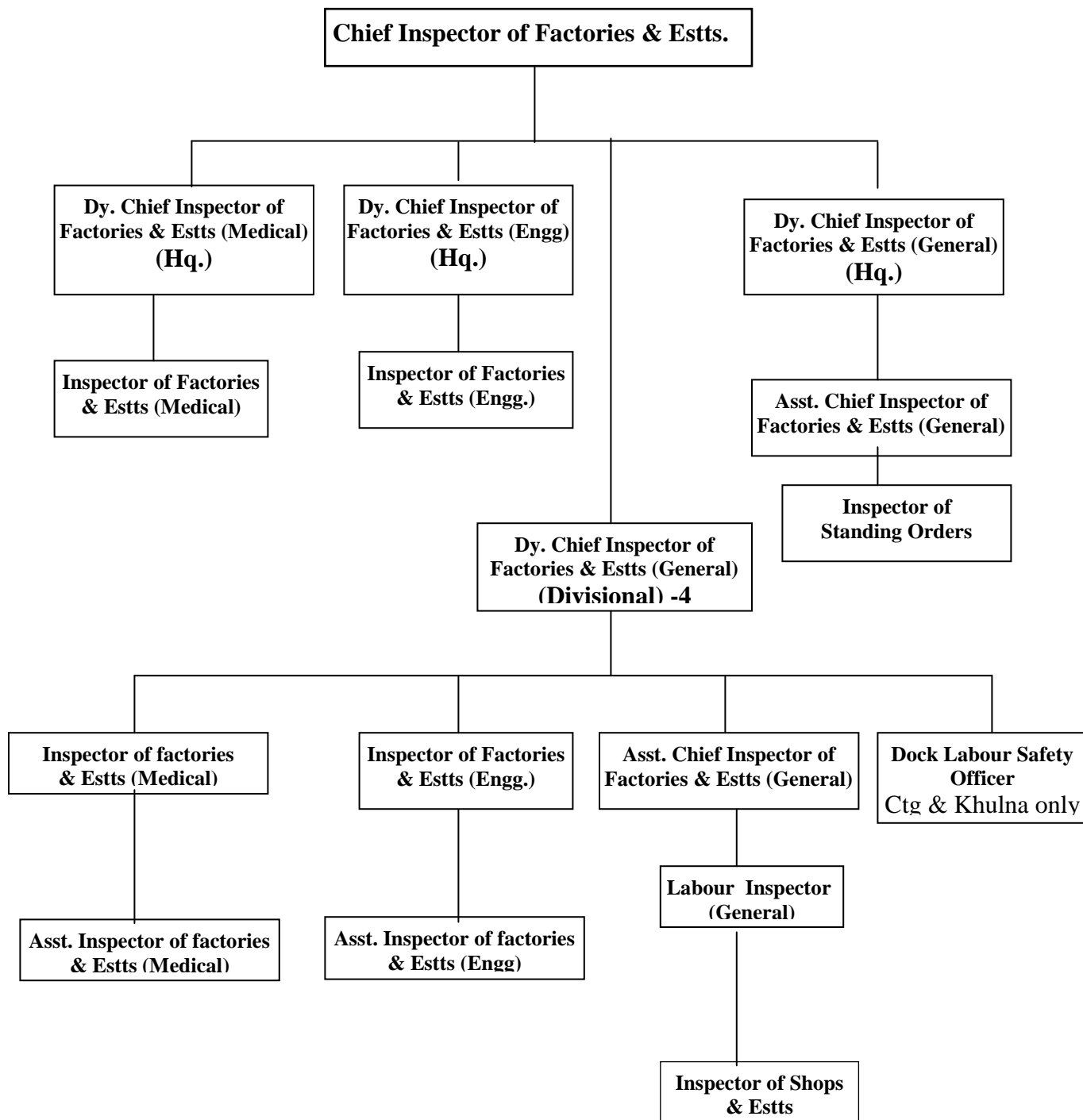
In the district headquarters there are Inspectors exclusively for shops and establishments

### **Number of inspectors and types**

Administrative and supervisory head	Chief Inspector of Factories & Establishments	1
Top line inspection and supervisory officers	Deputy Chief Inspectors of Factories & Establishments.	7
Mid-level supervisory and inspection officers	Assistant Chief Inspectors of Factories & Establishments	10
	Inspectors of Factories & Establishments.	17
	Dock Labour Safety Officers	2
First line inspecting staff	Assistant Inspectors of Factories & Establishments	8
	Labour Inspectors	17
	Inspector of Standing Orders	1
	Inspector of Shops and Establishments	48
Total		111



## Organogram of Inspectorate of factories and Establishments.



### **Policy of Inspectors Recruitment:**

- The recruitment of Inspectors of Factories (medical) is made by direct recruitment through Public Service Commission (PSC) or by promotion from Assistant Inspector of Factories (medical).
- The basic qualifications for recruitment of Inspectors (medical) are graduation in medical science.
- For the post of Assistant Inspectors minimum qualification is higher secondary level of education with biology.
- The minimum educational qualification for Inspectors of Factories (Engineering) is graduation in engineering and assistant inspectors (Engineering) requires minimum education of diploma in engineering.
- The Inspectors of Factories (Medical) and Medical Officers of Labor Welfare Centers are promoted to the posts of deputy chief inspector of factories (medical).
- The deputy chief inspector of factories (Engineering) is promoted from posts of inspector of factories (Engineering) and Dock labor Safety Officers.
- Assistant Chief Inspector of factories (General) requires minimum qualification of master degree and is recruited directly by PSC and also by promotion from Labour Inspector (general) and labour Officer
- Labor inspector (General) and labor officers requires a qualification of minimum higher secondary level of education
- The Deputy Chief Inspector of factories (General) gets promotion from posts of assistant chief inspectors of factories (General), assistant director of labor, or from Inspector of Factories (Engineering)

### **Activities of a Factory Inspector:**

- a) Inspection of factories, shops, commercial establishment, tea plantations, ports, docs, railways, roads transport etc, under relevant labour laws for enforcement of the provisions relating to safety, health, labour welfare, payment, payment of wages, regulations of hours of work, conditions and terms of employment, social security etc. of workers.
- b) Prosecution against the violations of labour laws in different courts,
- c) Approval of construction and extension of factories.
- d) Approval of layout plans of factories.

- e) Issue of registrations and license of factories and realization of fees for the purpose
- f) Maintenance of liaison with different government departments, employers' organisation and trade unions on enforcement of labour laws.
- g) Collection of the data for preparation of annual and other periodical reports under labour laws.
- h) Assistance to the government in formulation of policies about enforcement of labour laws and framing labour laws including amendment of various Acts and Rules
- i) Preparation of replies to the ILO questionnaire to ratification of IL conventions
- j) Assistance to other international agencies in preparing survey reports relating to labour inspection, wages, administration, productivity etc.
- k) Representing the government in national and international seminars, meetings, forums etc. on labour inspection, labour administration productivity etc.
- l) Approval of service rules of the workers as and when applied for by the management of different establishments.
- m) Examination and checking of the certificates issued by the competent authority relating to safe operations of gears, derricks, winches and other accessories of ports ensuring safety, and inspection of ships touching the port for enforcement of safety and welfare provisions of relevant laws.

During inspection, an Inspector usually perform following tasks:

- Advices the management concered on the spot to rectify the defects/infringements observed
- Subsequently he issues a notice to the management with an advice to rectify the defects/infringement within the specified time
- During the follow up inspection if the action for defects/ infringement. if not taken, the inspector files a lawsuit in the competent court.

### **Training of Inspectors**

After recruitment the inspectors do not get any formal pre-placement or in-service training. However occasionally the training program organized by local or international agencies (e.g. ILO, JICA, WHO etc.), the inspectors get the opportunity to participate in the training. Some of the inspectors also participated in academic courses on OSH in home or abroad through nomination. At home 'The National Institute of Preventive & Social Medicine (NIPSOM)' conducts a postgraduate degree course on occupational health for the medical graduates, the Medical Inspectors who are medical graduates have the opportunity to participate in the course through competitive admission examination. Four of the medical inspectors have

obtained the degree from NIPSOM. This training are not obligatory for promotion or other service benefits

#### **D. TRADE UNION (LABOUR UNION )**

Trade Union (Labour union) is allowed in almost all sectors in accordance to **Industrial Relations Ordinance 1969**, except in export processing zones. A trade union to be recognized has to be registered. To be registered a union has to have at list support of 30% of the workers or employees of the enterprise in the form of formal membership. No worker is allowed to be a member of two trade unions at the same time. The registered trade unions are allowed to form federation of trade unions, which again has to be registered.

The functions that can be carried out by trade unions, as laid down by legislations of the country includes-

- To promote mutual trust, understanding and cooperation between the employer and the workers.
- To ensure application of labour laws.
- To foster a sense of discipline and to improve and maintain safety, occupational health and working conditions.
- To encourage vocational training, workers education and family welfare training.
- To adopt measures for improvement of welfare services for the workers and their families.
- To fulfill production target, reduce production cost and wastage, and raise quality of products.

In Bangladesh, there are **5450 trade unions and 25 federations** of trade unions.

The trade unions have currently focused their activities on the sectors listed below.

1. Female workers.
2. Child workers.
3. Part-time, temporary and casual workers.
4. Informal sectors.
5. Migrant workers.

Trade unions mainly focuses on issues of workers rights and functions as collective bargaining agents and OSH activities in comparison do not get emphasis. This is true for biggest, medium and smallest unions.

In hazardous industries like tannery, metal, petroleum, jute and textile industry, the trade unions mainly concentrate their activities related to wages and other issues concerned with

monitory benefit. Thus effective OSH functions in respect to Health & Safety in labor unions are lacking, including the training programmes to its members.

#### **Registered Trade unions By Divisions (1999)**

Sl. No.	Name of Office	Number of Unions	Number of Members
1.	Head Quarter	17	3250
2.	Dhaka Division	89	18835
3.	Chittagong Division	63	11101
4.	Rajshahi Division	97	10716
5.	Khulna Division	71	6287
Total		337	50144

(Department of Labour, Bangladesh Labour Journal: 19,1999)

#### **Registered Trade Union By Industrial Sector (1999)**

Sl.No	Sectoral Industry	No of Unions	Number of Members
1.	Jute (Jetty)	2	575
2.	Jute Press& Baling (JPB)	1	101
3.	Tobacco (TO)	2	484
4.	Engineering Works (Eng)	7	757
5.	Transport (Tpt)	93	16187
6.	Shops & Commercial Installation (SCI)	68	13006
7.	Hotel Restaurant & Food Products (HRF)	9	959
8.	Printing Press (PP)	1	174
9.	Cotton Textile Hosiery & Yarn (CT)	4	803
10.	Dock & Port	7	1533
11.	Aluminum Enamel Ceramic & Glass (AECG)	1	51
12.	SB (Except Autonomous & Semi Govt.	9	604
13.	Workshop)	2	44
14.	Food	131	14866
	Miscellaneous		
		337	50144

(Department of Labour, Bangladesh Labour Journal: 19,1999)

#### **Classification of Trade Union By Number of Members**

Sl. No.	Range	Number	Members
1.	1-50	112	2749
2.	51-100	84	6445
3.	101-200	68	12301
4.	201-300	31	7098
5.	301-400	08	2609
6.	401-500	11	4806
7.	501-600	05	2731
8.	601-1000	06	4094
9.	1001-2000	09	1198
10.	Above 2000	03	6113
		337	50144

(Department of Labour, Bangladesh Labour Journal: 19,1999)

### Training courses conducted by Industrial Relations Institute (IRI) in the year1999.

Name of IRI	Industrial Relations Course		Trade Union & Labour Law Course	
IRI, Tangi	4	202	9	277
IRI, Chittagong	3	96	9	265
IRI, Khulna	3	102	11	364
IRI, Rajshahi	1	22	6	212
Total	11	422	35	1118

(Department of Labour, Bangladesh Labour Journal: 19,1999)

### **E. EMPLOYER'S ORGANIZATION**

The employer's organizations can be grouped as **non sectorial** and **sectorial** organizations. The non sectorial organizations -

Chamber of commerce and industries- there is such organization in Divisional as well as in district level.

- a. Bangladesh Employers Federation.
- b Federation of Bangladesh Chamber of Commerce and Industries.
- c. Chambers of Commerce and Industries

Sector based organizations- these organizations are sector specific, and are listed below.

- a. Bangladesh Garments Manufacturers Association.
- b. Bangladesh Textile Industries Owners Association.
- c. Bangladesh Jute Mills Owners Association.
- d. Bangladesh Jute Spinners Association.
- e. Female Entrepreneurs Association
- f. Bangladesh Shop Owners Association.
- g. Bangladesh Leather and Leather Goods Manufacturers Association.
- h. Bangladesh Small and Cottage Industries Owners Association.
- i. Bangladesh Rickshaw Owners Association.
- j. Bangladesh Tea Association.
- k. Bangladesh Fisheries Owners Association.
- l. Bangladesh Poultry Owners Association.
- m. Bangladesh Dairy Owners Association.
- n. Bangladesh Hotel Owners Association.
- o. Bangladesh Truck Owners Association.

- p. Bangladesh Transport Owners Association.
- q. Bangladesh Water Transport Owners Association.

Some of the Employers organization provides OSH information to their members through organizing workshop/ seminars.

#### Bangladesh Employers Federation

- Bangladesh Employers Federation organizes discussion meeting on laws, management taxation, compensation etc. in every month with the members in which OSH is also discussed
- They do not run any specific training program on OSH but time-to-time organizes seminar, workshops for members and management on industrial laws, compensation and includes OSH as a component.

#### Bangladesh Garments Manufacturers and Exporters Association (BGMEA)

Bangladesh Garments Manufacturers and Exporters Association organizes and conducts training programs on health and safety for workers and managers of member garments factories with particular emphasis on fire safety.

### **F. NGO ACTIVITIES ON OSH**

#### Muktijodhya Kalyan Trust

Muktijodya Kalyan Trust a body under the Ministry of Defense runs short course on safety, health and labour laws for officers and employees of enterprises/industries under their management.

#### Centre for Development Services (CDS)

Centre for Development Services a NGO has conducted activities related to health, family planning, and child labour among industrial workers. Recently they have undertaken awareness building activities related to occupational health and workplace safety.

#### Bangladesh Institute of Labor Studies (BILS)

BILS working on OSH since its inception during 1995. They undertake awareness, training, research activities concerning OSH. They also provide institutional support to 'International

Confederation of Free Trade Union-Bangladesh Council'. The main activities of BILS related to OSH are as follows:

- Strengthening the democratic functioning of the trade union
- Assists trade unions through education training, research, campaign and communication
- Improve occupational health and safety, and welfare of the workers.

## **G. TRAINING –EDUCATION IN OSH**

### Industrial Relations Institute (IRI)

Industrial Relations Institute under the Department of Labour (under Ministry of Labour and Manpower) conducts courses encompassing labour laws and safety and health issues as embodied in the labour laws. These courses are conducted for middle level officers of industries, workers & trade unions through four IRIs (Dhaka, Chittagong, Khulna & Rajshahi).

### Bangladesh Institute of Management (BIM)

Bangladesh Institute of Management, a semiautonomous organization under the Ministry of Industries conducts a diploma course in Personnel Management and Industrial Management and short courses on labour laws. Health and Safety provisions as embodied in the labour laws are covered in these training courses.

### Occupational Health Unit of Directorate General of Health Services

The Occupational Health Unit of Directorate General of Health Services organizes and conducts training courses on occupational health and safety for workers in liaison with different industries.

### Bangladesh Chemical Industries Corporation (BCIC)

Bangladesh Chemical Industries Corporation organizes training programme on fire hazards, safety, safety devices and personal protective equipment for workers of industries under their management.

### Bangladesh Garments Manufacturers and Exporters Association (BGMEA)

Bangladesh Garments Manufacturers and Exporters Association organizes and conducts training programmes on health and safety for workers and managers of member garments factories with particular emphasis on fire safety.



### Muktijodhya Kalyan Trust

Muktijodhya Kalyan Trust a body under the Ministry of Defense runs short course on safety, health and labour laws for officers and employees of enterprises/industries under their management.

### National Institute of Preventive and Social Medicine (NIPSOM)

National Institute of Preventive and Social Medicine under the Ministry of Health and Family Welfare runs a regular Occupational and Environmental Health Masters course (MPH-OEH) for health personnel from both government and private sectors. Currently NIPSOM is conducting a series of formal 8-week training program on occupational health and safety course for managers, supervisors and personnel entrusted with workplace safety, and also physicians rendering services to industries.

### Engineers Institute of Bangladesh

As a professional institute of engineers, the EIB since 1995 conducts regular 'Safety Management' training course for its members who are employed in different public and private organizations. 10 (ten) such courses has been conducted so far

### Centre for Development Services (CDS)

Centre for Development Services a NGO has conducted activities related to health, family planning, and child labour among industrial workers. Recently they have undertaken awareness building activities related to occupational health and workplace safety.

### Bangladesh Institute of Labor Studies (BILS)

BILS is an NGO working on OSH since 1997. In addition to other labor related activities they undertake, OSH related training for workers and employers.

### Training programs by International agencies and international cooperation projects

The international organizations and cooperation projects like WHO, JICA, ILO, USDOL etc. provides funds to local institute and organizations for training programs on OSH but not regularly. They also occasionally provide funds for foreign training.

## **H. Occupational Health and Safety Services in Bangladesh**

In Bangladesh the occupational health & safety services is not well organized. Different ministries such as railway, port and shipping, jute, textile etc. operate the occupational health care program through various departments and directorates. It is the legal obligation of the employers to provide medicare in case deterioration of health or injuries result in from exposure to agents related to work situation. Medical officers have been employed by various agencies in accordance with section 44 of Factories Act 1965, which is obligatory for those factories having 500 or more workers. Different Govt. and Non-Govt Occupational Health Services are as follows

### **Department of Labour (Ministry of Labour & Employment)**

Deals mainly with Industrial Relations Ordinance. In addition, at present it runs 22 dispensaries (Labour welfare centers) established in various industrial & tea plantation areas of the country for the benefit of workers and include facilities for emergency treatment of casualties and family planning. A medical graduate operates each of the dispensaries (Labour welfare centers).

7 (seven) new Labour Welfare Centers are now under construction and are situated in tea estates. Under this department there are 4 Industrial Relation Institutes (IRI).

### **Ministry of Textile/Jute/Agriculture/Energy and Mineral Resources**

Industries under different sector/corporations have provisions of individual OSH services, which also include;

- (1) Employment of full-time or part time Medical Officers;
- (2) Labour Welfare Officers.

National Safety Committee was formed under Ministry of Industries on 1992 to look after issues on OSH.

### **Ministry of Transport & Communication/shipping/aviation**

The services provided include;

- (a) Railway-hospitals, health units, clinics and large stations health inspectors for sanitation;
- (b) Shipping- individual medical services, affiliated hospitals, dock labour welfare hospital;
- (c) Aviation- individual medical services affiliated hospital.

### Ministry of Home Affairs

Under which Directorate of Fire service & Civil Defense provide OSH services in case of emergency & also training programs for industrial workers against fire protection.

### Ministry of Local Government

Every Deputy Commissioner is declared as Factory Inspector (General) for that district as per provision of Factory Act of 1965.

### Private Sector

Services provided generally include medical services through clinics and medical centers , first aid , medical examination, determination of losses, medical benefits , appointing full time or part time Medical Officers in enterprises etc.

### Ministry of Health & Family Welfare

- a) Health care as part of national health services is provided through hospitals, dispensaries, clinics, etc., but does not have any special role in terms of occupational health services viz. in industries, factories and agriculture, etc.
- b) Civil Surgeon acts as factory inspector (Medical) for the district.
- c) One Assistant Director, Industrial Hygiene is posted in the office of the Director General of Health Services,
- d) Department of Occupational & Environmental Health (DOEH) of National Institute of Preventive & Social Medicine (NIPSOM) conducts a course on Master of Public Health in Industrial Health i.e. MPH (IH) where in each year about 15-20 doctors are enrolled for one year postgraduate study program on Occupational & Environmental Health. This department also conducts workshops, seminars and short trainings.

## I. NATIONAL STATISTICS FOR OCCUPATIONAL INJURIES AND OCCUPATIONAL DISEASES

All accidents and occupational diseases are legally reportable as per provisions of The Factory Act 1965 and Rules made there under and there are standardized national reporting form. But all accidents are not generally reported to the Department of Inspection so, under reporting is usual. On the other hand no occupational diseases and poisoning out of the processes of manufacturing has ever been reported which is thought to be due lack of knowledge and awareness on the part of the medical personnel and management.

**I.1 Occupational Injuries** : In the Factories Rules, 1979, the Fatal, Serious and Minor accidents are described as follows:

**Fatal and Serious accidents-** When there occurs in any factory an accident to any person which results in death or such injury that there is no reasonable prospect that he will be able to resume his employment in the factory within 20 days, such accidents shall be called as **Fatal** or **Serious** as the case may be.

**Minor Accidents-** When there occurs in any factory an accident to any person less serious than those described as above but which prevents or is likely to prevent him from resuming the employment in the factory within 48 hours after the accident occurred, such accidents shall be called as **Minor Accidents**.

If any Fatal or Serious accident occurs the manager of the factory shall give notice of the occurrence forthwith by telephone, telegram, or special messenger to a) the Chief Inspector b) the Deputy Commissioner c) Inspector d) the Commissioner for Workmen's Compensation and e) and in the case of fatal accident only, the Officer-in-Charge of the police station. If any Minor accidents occurs the manager of the factory within 7 days of occurrence shall report to authorities mentioned in a), b) and c).

Following tables shows the report regarding occupational accidents and injuries as reported to the chief Inspector of Factories:.

Number of industrial accidents/injuries by severity in Bangladesh during the period 1990 to 1999.

Year	Minor	Serious	Fatal	Total
1990	6287(75%)	2052(24%)	36(0.43%)	8375
1991	6951(83%)	1306(16%)	30(0.36%)	8287
1992	6828(81%)	1501(18%)	20(0.23%)	8349
1993	5507(78%)	1476(21%)	11(0.15%)	6994
1994	3510(87%)	487(12%)	13(0.32%)	4010
1995	3703(90%)	352(8%)	32(0.78%)	4087
1996	2529(83%)	481(15%)	26(0.85%)	3036
1997	2581(83%)	472(15%)	15(1.64%)	3104
1999	1918 (85%)	329 (14.6%)	8 (0.4%)	2255

(Ref- Annual reports 1990-1999 The Department of Inspection for Factories and Establishments.)

Though the total number of accidents/injuries has decreased over the years the number of fatalities have fluctuated over the years. The fatalities constituted 0.4% to 1.64% of the reported injuries. While serious injuries constituted 8% to 24% of the reported injury. The problem of under reporting cannot be ruled out.

Number of accidents/ injuries & their severity in major industry categories in the year 1999.

Class of Industries	Minor	Serious	Fatal	Total
1. Jute (Including Jute Press)	1600	201	-	1801
2. Textile (Cotton)	113	24	4	141
4. Steel and Engineering	52	21	0	73
5. Sugar & Food	16	2	1	19
6. Chemical, Fertilizer & Cement	120	78	0	198
7. Miscellaneous	17	3	3	23

(Ref- Annual report-1999 The Department of Inspection for Factories and Establishments.)

In the year 1999, a large proportion (79.9%) of the occupational accidents/injuries had occurred in Jute (including jute press) industries. 50% of the deaths had occurred in the textile (cotton) industries. Jute; steel & engineering and chemical & fertilizer industries were the sectors in which most of the serious injuries had occurred.

Number of accidents in factories since 1995 to 1999(industry wise)

Class of Industries	Year	Minor	Serious	Fatal	Total
1. Jute (Including Jute Press)	1999	1600	201	0	1801
	1997	1943	345	-	2288
	1996	1950	296	-	2246
	1995	2756	187	2	2945
2. Textile (Cotton Garments)	1999	113	24	4	141
	1997	218	42	43	303
	1996	213	61	3	277
	1995	320	42	12	374
3. Steel and Engineering	1999	52	21	0	73
	1997	144	23	6	173
	1996	47	45	2	94
	1995	205	30	11	246
4. Sugar & Food	1999	16	2	1	19
	1997	26	2	1	29
	1996	56	22	-	78
	1995	72	12	3	87
5. Chemical, Fertilizer & Cement	1999	120	78	0	198
	1997	166	44	1	211
	1996	234	42	2	278
	1995	315	62	3	380
6. Miscellaneous	1999	17	3	3	23
	1997	84	16	-	100
	1996	29	15	19	63
	1995	35	19	1	55

Ref- Annual report-1999 The Department of Inspection for Factories and Establishments.)

Number of accidents in 1999 showing causes and nature:

Sl. No.	Causes	Minor	Serious	Fatal	Total
1.	Prime Movers	13	10	-	23
2.	Lifting machinery	10	6	-	16
3.	Working machinery	1556	147	-	1703
4.	Falling objects	125	53	1	179
5.	Persons falling	89	33	1	123
6.	Rolling stock	5	3	-	8
7.	Hand tools	9	38	-	47
8.	Electricity	5	2	5	12
9.	Poison, corrosive substances and occupational diseases	15	-	1	16
10.	Explosive & Fires	6	16	0	22
11.	Miscellaneous	28	16	-	44
12.	Unclassified	57	5	0	62
	Total	1918	329	8	2255

(Ref- Annual report-1999 The Department of Inspection for Factories and Establishments.)

In case of 75.5% of the accidents that had occurred it was the working machinery which was the cause of the accident. Electricity was the cause of death in 62.5% of the cases. Working machinery, hand tools and falling objects was responsible for 72.4% of the serious injuries.

Cases of injuries registered under Workmen's Compensation (1990-1999)

Year	Death	Permanent disablement	Temporary disablement	Total
1990	43	594	4124	4761
1991	23	328	5755	6106
1992	17	645	7162	782
1993	28	688	7434	8150
1994	22	710	4465	5207
1995	13	286	3587	3886
1996	11	276	2600	2887
1997	13	639	3539	4191
1999	11	458	1761	2230

Ref- Annual report-1999 The Department of Inspection for Factories and Establishments.)

Over the year fatal injuries resulting in death was found to be reduced, the permanent disablement and temporary disablement though reduced but the trend, as a whole appears not to be significant

Maternity Benefit (1990-1999)

Year	Maternity Benefit Act, 1939 (General)		Maternity Benefit Act, 1950 (Tea Estate)	
	No. of Women claimed maternity benefit	Amount paid in Taka	No. of Women claimed maternity benefit	Amount paid in Taka
1990	110	448174	7149	9026439
1991	159	596442	7238	9540213
1992	445	1018987	3453	5421416
1993	290	825246	1216	1853069
1994	229	715014	668	1123887
1995	205	674280	427	803750
1996	380	1319610	615	931315
1997	1666	559471	805	907264
1999	194	657538	309	107554

Ref- (Annual report-1999 The Department of Inspection for Factories and Establishments.)



The number of claim for maternity benefit was higher among the tea estate workers whereas the claim among general workers was found to be lower. The amount of payment however received by general worker was found to be higher proportional to the tea estate workers.

Statistics of inspection under the factories act, 1965  
(Upto December 1999)

Number of registered factories	18455
Number of workers	1487271
Number of factories inspected	2754
Number of factories not inspected due to shortage of inspector.	15701
No. of violations detected during inspection.	20053
No. of pending cases in the courts at the beginning of the year	537
No. of cases filed in the year 1999	47
Successful	11
Unsuccessful	-
Withdraw by the Chief Inspector of Factories and Establishments	-
Fine realized by the courts (in taka)	5200/-
No. of pending cases in the courts at the end of the year.	573

N.B. : CIF & E- Chief Inspector of Factories and Establishments.

Of the registered factories only 14.92% had been inspected in the year 1999.

Accident in the docks for the year 1999 (the Dock Labourers Act, 1934 )

Sl. No.	Name of the port	Minor	Serious	Fatal	Total	Amount compensation in taka	of paid	Man-days lost (Hours)
1.	Chittagong	78	38	-	112	5,38,282		1510
2.	Mongla	390	100	1	491	8,52,600		5175
	Total (17,000 Workers)	468	138	1	607	13,90,882		6685

Ref- Annual report-1999 The Department of Inspection for Factories and Establishments.)

Fatal accidents are negligible in ports. Though the Mongla port is smaller in comparison to the Chittagong port all types of accidents was found to be higher.

## I.2 Occupational diseases

Over the years no occupational diseases has been reported to the Inspectorate of Factories & Establishments, even those declared as to be notifiable by the **Factories Act 1965 and Factory Rules 1979**. Lack of Knowledge and skill of Inspectors, Medical officers and management for identification of diseases could be the main cause of non-reporting.

On the contrary studies carried out from DOEH (NIPSOM) indicates the very existence of occupational diseases in several industries.

Case-1. A study carried out to assess the extent of chronic obstructive lung disease among workers of a jute mill revealed that a prevalence rate of 12.7%. Of the study sample 66.7% were categorized as having exposure to jute dust/fibers. The prevalence to exposed workers was found to be 19% and that for non-exposed was 6%. Moreover the prevalence tended to increase with the number of years on the job.

Case-2. A study to assess prevalence of occupational diseases among textile mill workers revealed that byssinosis, bronchitis, Monday fever, heat cramps and low back pain was prevalent among 12.2%, 4.2% 2.2%, 1.1% and 3.9% of the workers respectively. Amongst the respiratory symptoms cough, 30.5%, 16.1% and 18.6% of the workers complained chest tightness and breathlessness respectively.

Case-3. A study on bidi factory workers revealed that 19% of the workers had some form of respiratory problem. Amongst them 79% had bronchitis, 26.5% had asthma, and the remaining 10.5% had tuberculosis.

Case-4. A study on tannery industry revealed a number of health problem among the workers, which includes occupational dermatosis (39.5%), accident/ injuries (19.3%), heat cramps(11.5%), low back pain (14%), bronchitis( 3%),smell disorders (4.5%).Amongst those having dermatosis, callosities was highly prevalent (65%),followed by contact dermatitis (41.4%),fungal infection (37%), chrome ulcer (28.3%) and nail erosion with folliculitis (13%).

Case-5 One study among garments industry worker found that 51.9% had some form of health problem. Of those having health problem 37.3% had eyestrain. Low back pain was the second commonest health problem (24.1%), followed by shoulder pain (20.5%), impairment of hearing(10.8%) and numbness of finger (7.2%).

## J. Distribution of Industries

The information regarding the distribution of enterprises by size is not available. The following tables provide an idea of employment by major occupational groups and industrial sectors.

Distribution of employed persons by major occupations

Major Occupational Group	Percent
Agriculture, Forestry and Fishery	63.2
Manufacturing	7.5
Construction	1.9
Trade, Hotels and Restaurant	11.1
Community and Personal service	9.3
Transport and Communication	4.2
Finance and Business	0.4
Electricity, water and gas	0.2
Mining and Quarrying	0.1
Household sector and not reported	2.1

Source: BBS 1999

Distribution of Industries by Number of Workers and Employees

Name of Industries	Number
Jute	127364
Cotton	48509
Paper	6101
Steel	2015
Cement	1850
Fertilizer	7178
Petroleum	727
Print and Varnish	553
Garment	1500000

Source: BBS 1999

## K. Socio-Economic Condition

Bangladesh is in the process of rapid industrialization. Most of the industrial workers come from rural areas but maintain contact with their villages. The workers themselves live and work in congested and unhealthy environments. The contact between them, their families

and relatives in rural areas tend to increase the spread of infectious diseases to the general population.

According to the report of Bangladesh Bureau of statistics the number of active people in Bangladesh was nearly 50 million in 1995-96. Of them 82% live in rural areas. As there is no formal industrial units in rural areas, most of the workers are informal and largely agricultural workers. The agricultural workers are not organized and do not have any trade union. They deprived of minimum wages and other legitimate facilities.

In the urban areas also most of the working people are engaged in the informal sector. Due to structural adjustment policy implementations, the number of people working in the informal sector has risen at a higher rate. At the same time the number of formal workers has decreased significantly. This resulted in the rise of jobless people. About 95% of the working people presently working in the informal sector. A major portion (35%) of this sector does not get work throughout the year.

### **Effects of Globalization:**

Like all other country Bangladesh has also been in the grip of free market economy and structural adjustment in the name of economic globalization. Large or small industries are not getting Government support and incentives. Everybody has to compete in the profit making process and to survive with own capacity. Industries are facing uneven competition in the global market with old machines, traditional technology and less skill and efficiency. The privatization of public industries is not bringing the expected results. The formal sector is squeezing and the informal sector is also having the pressure. Many of the industries are facing closure due to this intense competition.

## **MICRO SESSION**

## **MICRO SESSION**

### **1. SURVEY ON THE OCCUPATIONAL HEALTH AND SAFETY**

#### 1.1. OBJECTIVES

- To examine the overall situation of occupational health and safety (OSH) problems in medium sized enterprises in Bangladesh.
- To examine the productivities and working environment indicators other than those covered in OSH survey.

#### 1.2. METHODOLOGY OF SURVEY

The survey was carried out in of two sectors- Tannery and Bidi. From the tannery sector a large, a medium sized factory and a best practices factory was surveyed. Similarly, from the Bidi sector, a formal, an informal factory and a best practices factory was surveyed. Along with the survey case studies, related OSH was conducted.

Initially a list of industries / factories in Tannery and Bidi sector was prepared and categorized into large, medium and small sized factories, and formal and an informal factories. Though it was planned that a small and a medium sized tannery would be included in the study, in the process of listing the mentioned industry in accordance to their size it was observed that there was no industry that would match the definition of small sized factory (<50 workers). Under such circumstances, it was decided to carry out the planned survey in medium and large-scale tanneries.

From the list thus produced 6 industries in each sector was selected, the selected factories was approached, and the purpose of the survey was explained to the management and were invited to participate in the survey.

From amongst the factories willing to participate, 6 factories (3 from each sector) as per requirement of the study were selected for the survey. Best practice factory

from both the sectors were decided by a preliminary fact finding survey conducted in these 6 factories.

### 1.3 SURVEY TOOLS

Bangladesh version of occupational health and safety questionnaire, and productivity performance assessment checklist was developed and used in the survey.

The survey instrument consisted of 4 parts –

Part A: Working environment

Part B: Worker survey

Part C: Employer Survey

Part D: Productivity performance assessment

Each part of the survey tools consisted of components as listed below. Again, each component had two or more factors. Each factor was assessed by the use of a rating scale ranging from 1 to 5, where 1 stood for very unsatisfactory and 5 stood for excellent.

#### Part A: Working environment

This part was designed to assess the working environment and was administered by a walk-through survey. This part was used to cover the factory as a whole. The OSH aspects in relation to working environment covered included

- Emergency exits.
- Machine guards.
- Ventilation (thermal conditions)
- Noise.
- Handling of hazardous substances.
- Housekeeping
- Electrical safety.
- Lighting.
- Hazardous substances.
- Signage.

#### Part B: Worker survey

This part of the tool was designed to assess hazards encountered by workers at and existing OHS measures in their workplace. The aspects covered by this part included

- Exposure to noise.
- Exposure to hazardous substances.
- Occupational health and safety information.
- First aid promptness.

This part was administered by interviewing 2-3 workers from each section of the factory.

### Part C: Employer Survey

This part was designed to elicit information as regards to OSH policy of the enterprise; OSH knowledge and understanding of the management and OSH encouragement in workplaces. This part was administered on the chief executive of each factory.

### Part D: Productivity survey.

The Productivity survey relates to enterprise performance based on information provided by the management. This part of the tool consisted of the following components.

- Production indicators.
- Worker-related indicators.
- Working environment indicators
- General management indicators.

This part was administered on a senior management executive/ the chief executive of each enterprise.

### 1.3. DATA ANALYSIS

After all parts of the survey tool were administered, the total score for each part and for each component of individual parts were determined by adding the rating for individual factor. Then the average rating was obtained by dividing the total score by the number of factors assessed.

### 1.4. RESULTS OF SURVEY

From the tannery sector a best practice, a large and a medium sized industry; on the other hand, from the bidi sector one best practice, one formal and one informal enterprises were surveyed. The numbers of workers of the industries are shown in the following tables.

Surveyed Tannery industries and their number of workers

	Enterprises	Workers
Medium	T <sub>1</sub>	200
Large	T <sub>m</sub>	342
Best practice	T <sub>bp</sub>	504



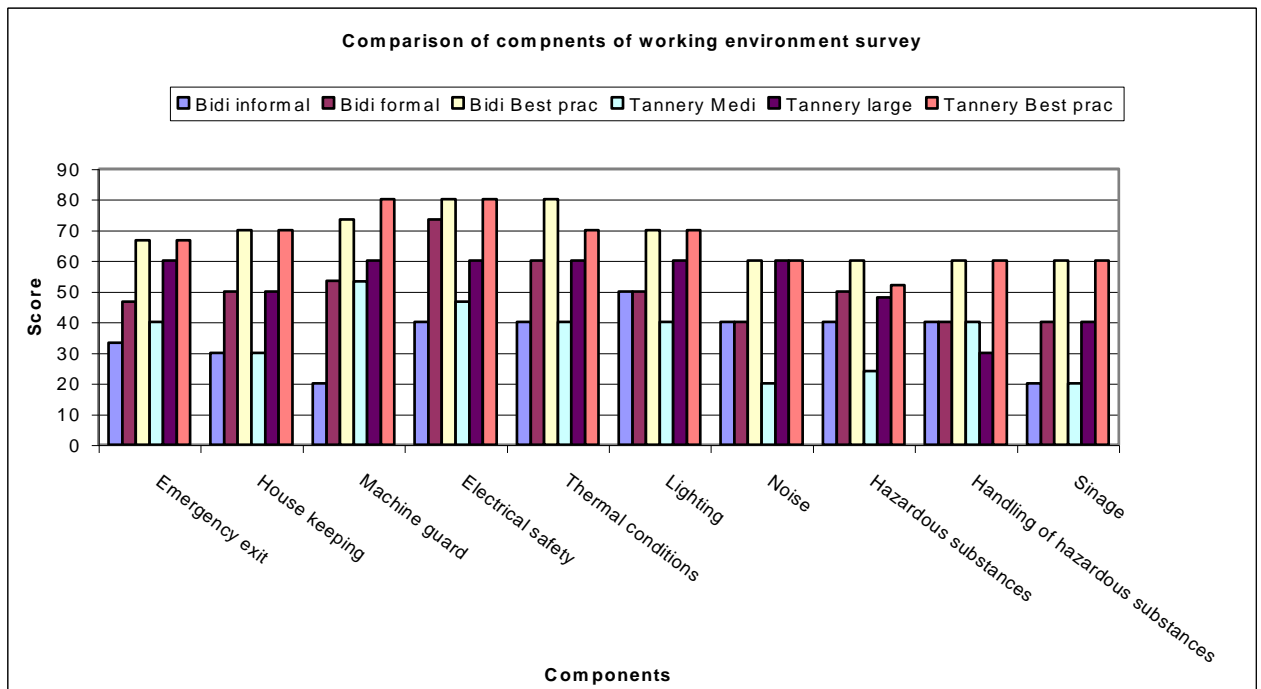
The number of workers in the medium, large and Best practice Tannery Industry were 200, 342 and 504 respectively.

### Surveyed Bidi industries and their number of workers

	Enterprises	Workers
Formal	B <sub>f</sub>	1200
Informal	B <sub>if</sub>	40+1100
Best practice	B <sub>bp</sub>	1500

In Bidi industries the number of workers in the formal, informal and best practice industries were 1200, 40 and 1500 respectively. In informal bidi industries 1100 workers were casual who work to make bidi on contract basis.

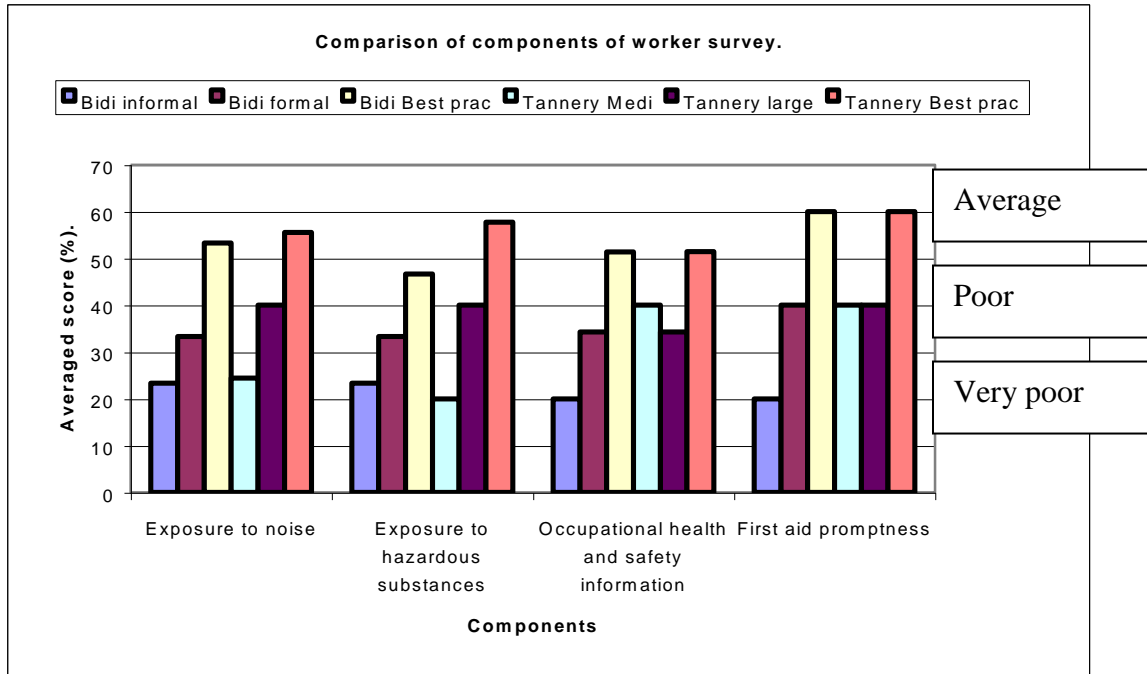
### PART A: WORKING ENVIRONMENT



Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	35.33	53.0	70.0	36.60	52.5	66.6
Level	Poor	Average	Good	Poor	Average	Good

- The walk-through survey to evaluate the state of working environment revealed that the scores for house keeping and emergency exits were poor in the informal bidi factory it hold true for the medium sized tannery as well. Scores for house keeping and emergency was average for bidi formal and large tannery industry. The state of house keeping and emergency exits was good for both the best practices industries.
- The scores for machine guarding were good for the best practices industries, average for formal bidi factory and medium sized and large tanneries, but was very poor in informal bidi factory.
- The score for electrical safety and thermal conditions were good in case of best practices factories of both the sectors. The scores for electrical safety and thermal conditions were good and average respectively for formal bidi factory. The scores were average for electrical safety and thermal conditions in the large tannery. The scores were poor for both the issues in informal bidi factory. While in the medium sized tannery the score for electrical safety was average and that for thermal conditions was poor.
- The scores for lighting were good for the best practices industries. And was average for bidi informal, bidi formal, medium sized and large tannery.
- The scores for noise were good for the best practices industries. And was average for bidi informal, bidi formal and large tannery. But was poor in medium sized tannery.
- The score for hazardous substances was good for the best practices bidi industry. And was average for bidi informal, bidi formal, and best practices tannery. But was poor in medium sized and large tanneries.
- The scores for handling of hazardous substances were good for the best practices industries. The score was of average level for the other industries.
- The score signage was good for both the best practices industries, was average for formal bidi industry but was of poor level in informal bidi industry, medium sized and large tanneries.
- Based on averaged scores it was found that the working environment was good in best practices bidi factory and in best practices tannery; was average in formal bidi factory and in large tannery; but was poor for informal bidi factory and medium sized tannery.

## PART B: WORKER'S SURVEY



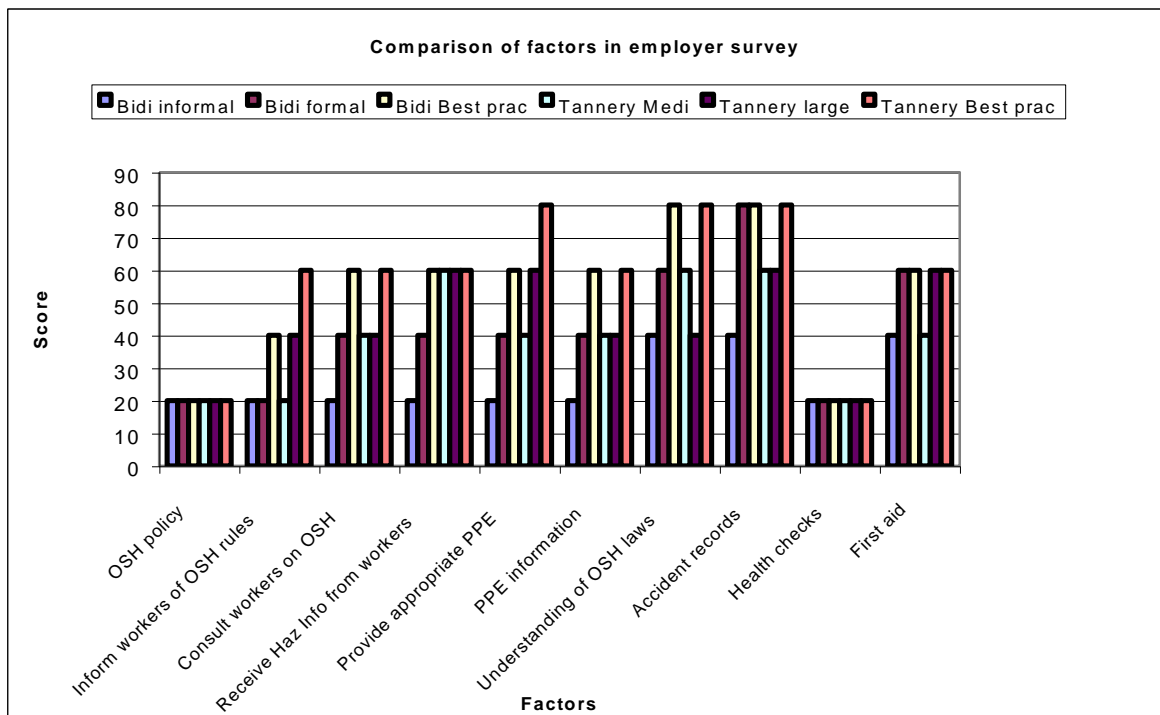
Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	21.65	35.24	52.85	31.1	38.57	56.19
Level	Poor	Poor	Average	Poor	Poor	Average

The worker's survey revealed that

- State of protective measures for noise exposure in places where noise level exceeded 85dB(A) was either poor or very poor in the bidi informal, bidi formal, medium and large tannery. While in the best practice enterprises the state was average. It was also observed that audiometric test for workers placed in environment where noise exceeded greater than 85dB(A) was not undertaken by employers of any of the enterprises surveyed.
- As for the issue of exposure of workers to hazardous substances, the state was either poor or very poor in the bidi informal, bidi formal, medium and large tannery. While in the best practice bidi factory the state was barely average but was average in the best practices tannery. It may be noted that lung function tests for workers in dusty environment was not undertaken by any of the enterprises.

- As regards to dissemination of hazard information to workers, the state was either poor or very poor for all enterprises surveyed.
- As for first aid promptness it was either poor or very poor for all enterprises surveyed except for the best practice enterprises where it was average. It was also noted that first aid facilities was barely available with the informal bidi factory.
- The overall scores for the enterprises surveyed was poor in all the enterprises surveyed except for best practices industries in which cases it was in the average category.

### PART C: EMPLOYER'S SURVEY

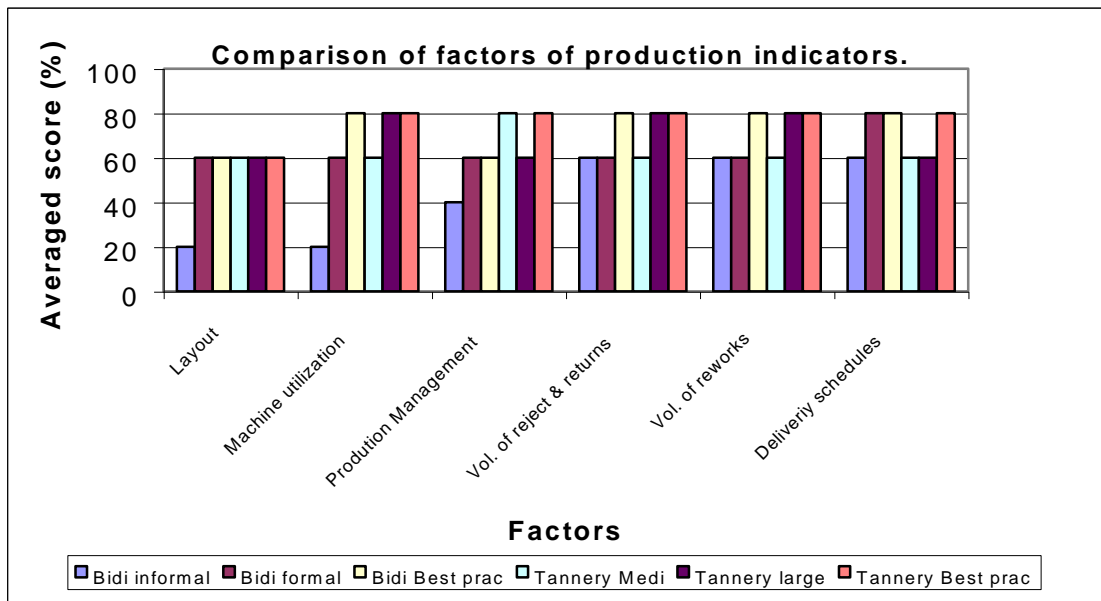


Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	26.0	42.0	54.0	40.0	44.0	58.0
Level	Poor	Average	Average	Poor	Average	Average

- The survey revealed that none of the enterprises had OSH policy. Only the best practices industries and the large tannery informed their workers on the health and safety rules in carrying out their work. And all the employers with the exception of informal bidi factory consulted with their workers on health and safety issues.
- Employers understanding of OSH laws were lowest in the informal bidi factory and the medium sized tannery. And average to good for the other enterprises. The employers of informal bidi factory rarely received information about hazards to workers in their enterprises while employers of other industries received information about hazards to workers in their enterprises to a variable extent.
- With the exception of informal bidi factory, employers of other enterprises provided their workers with PPE. Dissemination of information to workers as regards to PPE use and care varied for industries that provided workers with PPE.
- Accident records were available with all the industries, but were less complete with the informal bidi industry.
- Health checks rarely existed in the industries surveyed but first aid facilities were available to a variable extent in all the industries surveyed.
- As reflected by employer's survey, averaged scores were poor for informal bidi factory and medium sized tannery; and was average for the other enterprises surveyed.

## PART D: PRODUCTIVITY

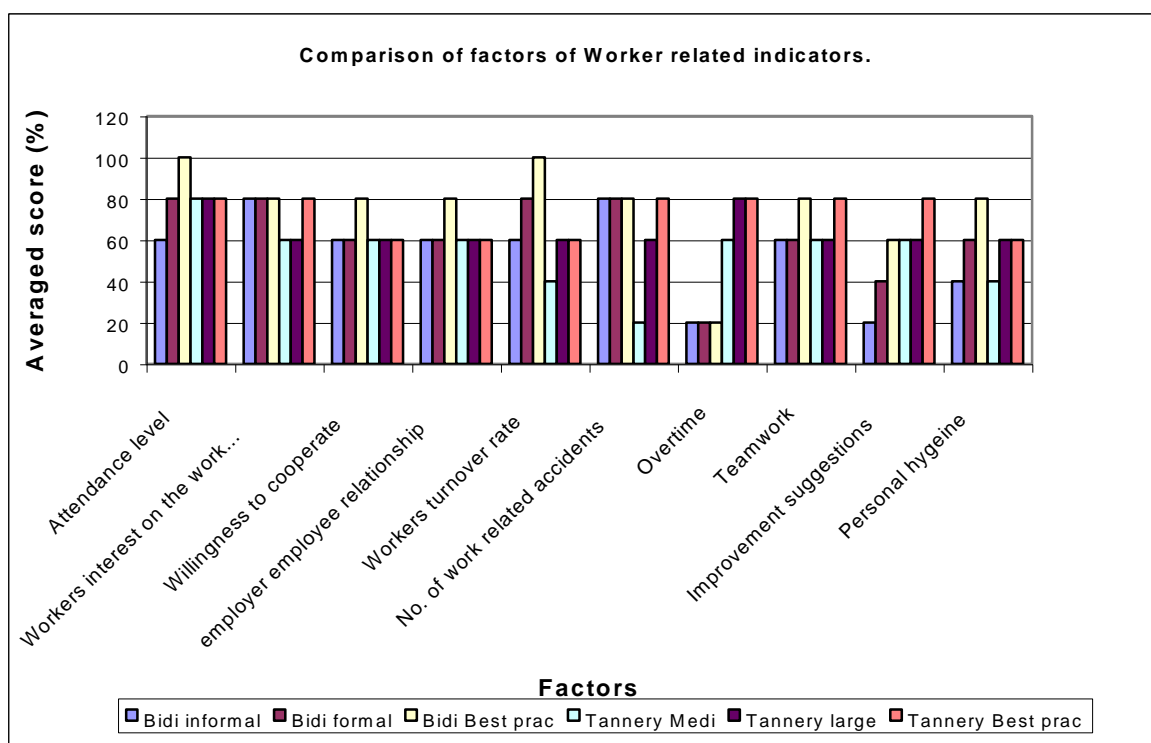
### I: Production indicators



Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	43.3	63.4	73.3	63.4	70.0	77.0
Level	Satisfactory	Very good	Very good	Very good	Very good	Very good

- The scores of factory layout, machine utilization and production management were at a satisfactory or very good level in most of the factories. Bidi informal enterprise being an exception; where the factors layout, and machine utilization was very unsatisfactory but the production management was fairly satisfactory. These indicated that the general production management was quite good.
- Volume of rejects/ returns/ reworks was low in all the factories. This is indicative that the production efficiency was either satisfactory or very good.
- The scores for delivery schedule of the industries were satisfactory to very good.
- On basis of averaged scores of the production indicator, it was found that the production efficiency of all the industries with the exception of the informal bidi factory was very good. The best practices industries had almost similar score.

## II. Worker-related indicators

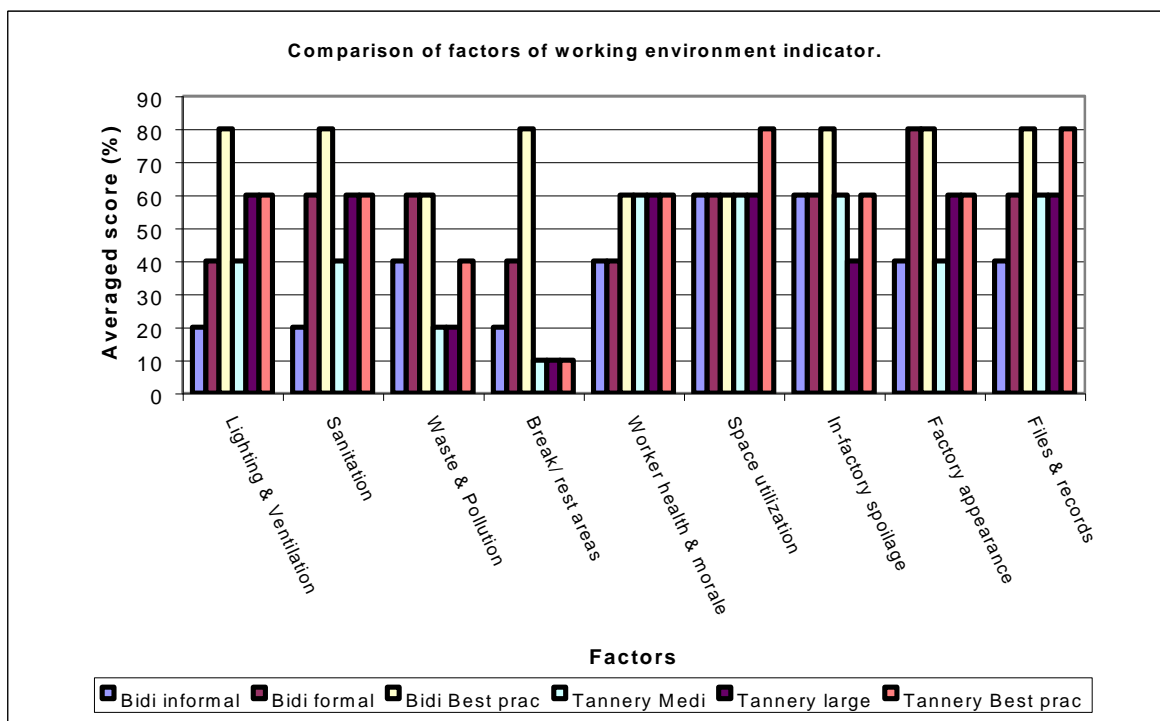


Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	54.0	62.0	76.0	56.0	64.0	72.0
Level	Satisfactory	Very good	Very good	Satisfactory	Very good	Very good

- The survey revealed that the workers were working with high attendance and they also willing to cooperate with others. The teamwork scores were at satisfactory or very good level.
- Work related accidents were low in all the industries except in the medium sized tannery industry.
- Turnover rates were low in formal and best practices bidi factory. In informal bidi factory and the tanneries had higher worker turnover rates with the exception of the medium sized tanning industry, which had the highest turnover.

- Overtime was found to be low in bidi factories.
- Worker's interest in work output, employer-employee relationship and teamwork were satisfactory to very good levels in all the industries.
- The personal hygiene and discipline of workers were fairly satisfactory in almost all the industries.
- The worker related indicator was satisfactory for informal bidi factory and medium sized tannery and was very good for the other industries.

### III. Working Environment Indicators

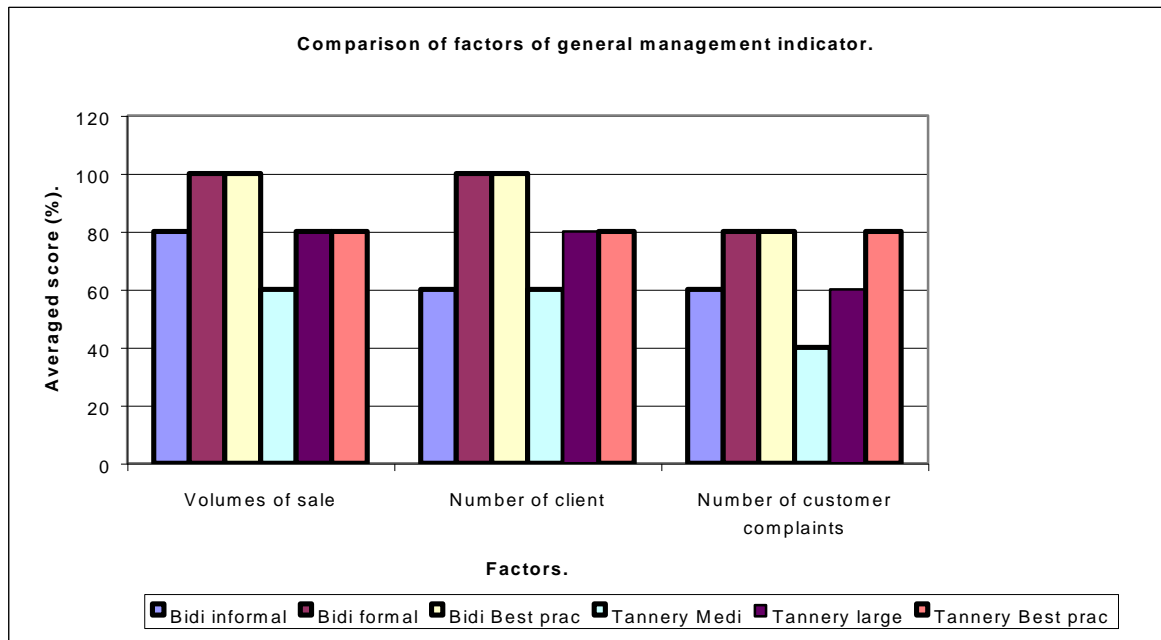


Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	35.60	63.4	72.0	44.44	48.9	62.2
Level	Fairly satisfactory	Very good	Very good	Satisfactory	Satisfactory	Very good



- The factory appearances were very good in the formal and best practices bidi factories and were satisfactory in large and best practices tanneries. The appearance was at a fairly satisfactory level in informal bidi and medium sized tannery industries.
- Space utilization was found to be satisfactory to very good in the factories surveyed.
- Lighting and ventilation were at satisfactory in large and best practices tanneries, fairly satisfactory in medium sized tannery and formal bidi factory. It was very good and fairly satisfactory in best practices and informal bidi factories respectively.
- State of sanitation was satisfactory to very good in all the factories except for the informal bidi factory and the medium sized tannery where it was very unsatisfactory and fairly satisfactory respectively.
- Break or rest areas were almost non-existent in the tanneries, very good in best practices bidi factory and fairly satisfactory in formal bidi factory.
- The health and morale of the workers of factories surveyed varied from fairly satisfactory to satisfactory levels.
- In-factory spoilage was low in all in the factories except for the large sized tannery.
- Files and records were kept in a very good state in best practices industries in both the sectors. Which were fairly satisfactory in informal bidi factory and satisfactory in the other factories surveyed.
- There were differences in averaged scores amongst the factories. The score indicated a very good level of working environment in the best practices bidi and tanning enterprises, and in formal bidi factory. The environment in the other tanneries were satisfactory but was fairly satisfactory in the informal bidi factory.

#### IV. General Management Indicator.

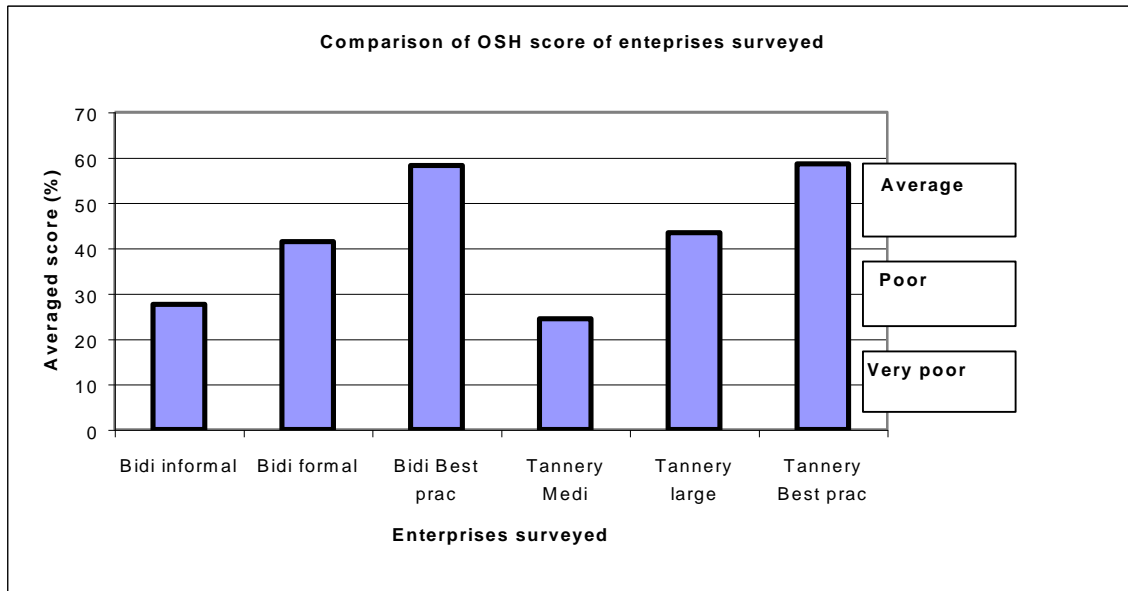


Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	66.6	93.3	93.3	53.33	73.4	80.0
Level	Very good	Excellent	Excellent	Satisfactory	Very good	Very good

- The industries were satisfied with their volume of sales and number of clients.
- The volume of customer complaints were considered low in all the industries except for the medium sized tannery industry.
- The overall general management can be considered to be excellent or very good in all the factories with the exception of the medium sized tannery in which it was satisfactory.

## OVERALL SITUATION

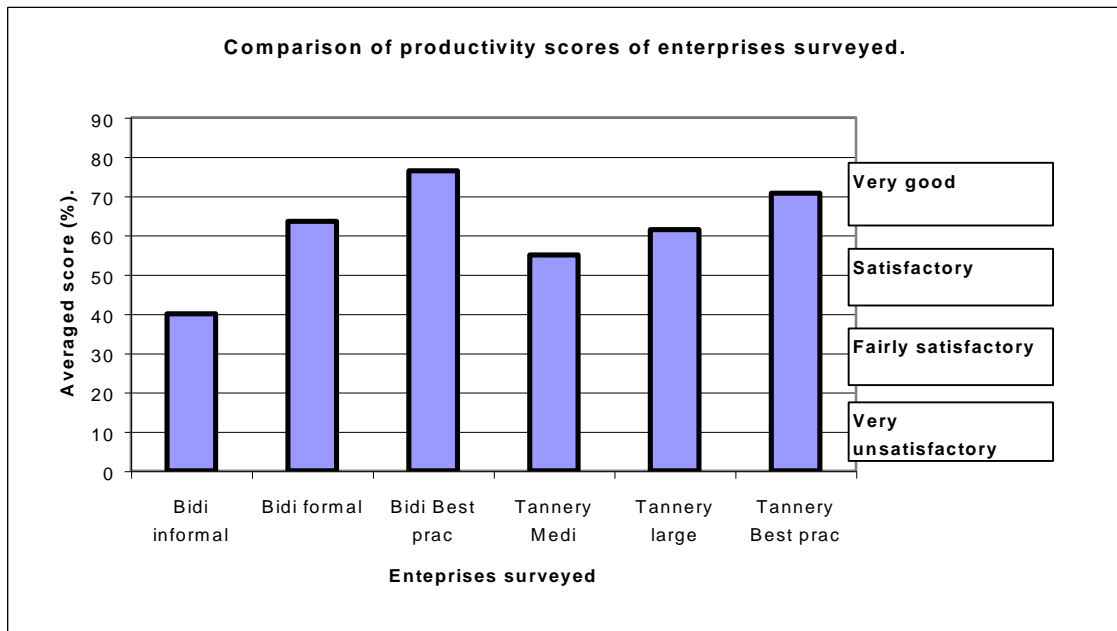
### OSH survey



Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	27.6	41.4	58.2	24.4	43.4	58.6
Level	Poor	Average	Average	Poor	Average	Average

- In the current, survey the questionnaire employed to assess the state of OSH consisted of three parts: working environment, employee and employer survey. The combined total score of all the parts was assumed to reflect the state of OSH in the enterprises surveyed and has been presented in the above table and figure.
- The survey revealed that the state of OSH was poor in the informal bidi and medium sized tannery, barely average in formal bidi and large tannery. On the other hand, the state was average in the best practice enterprises of both the sectors.

## Productivity survey (Overall)



Enterprise	Bidi informal	Bidi formal	Bidi Best practices	Tannery (medium)	Tannery (large)	Tannery Best practices
Average Score (%)	40.0	63.57	76.42	55.0	61.42	70.71
Level	Fairly satisfactory	Very good	Very good	Satisfactory	Very good	Very good

- The productivity survey questionnaire used in the survey comprised of four parts : production indicators, employee related indicators, working environment indicators and general management indicators. The combined total score of all the parts was assumed to reflect the state of OSH in the enterprises surveyed and has been presented in the above table and figure.
- The scores for productivity survey was fairly satisfactory for the informal bidi factory, satisfactory for medium sized tannery, barely very good for large tannery and formal bidi factory, and very good for best practices bidi and tannery industries.

## CASE STUDIES

## CASE STUDIES

### **A: Fire in Garment Factory**

51 workers including 10 children were killed and over 100 injured when a fire broke out in a garments factory. The factory is situated 40 km Northwest of the capital city of Bangladesh. The factory is housed in a 4-storied rented house. The only staircase is narrow and the ground floor exit remains closed by a collapsible gate as a regular procedure for security reason. The building was not designed for a factory. All the working sections are situated in the 4 floors are stuffy with packed production materials. About 800 workers are working in a congested environment. The floor space for the workers is very little. The passages are almost obstructed due to scattered materials. The passages are not marked for evacuation in emergencies. The ventilation is inadequate, only natural ventilation through windows and ceiling fan exits. Though the illumination in the factory is adequate but the electrical panels and fitting did not follow the standard procedure. There were overhung light points and in the calendaring room, which is situated in the 2<sup>nd</sup> floor, the electrical wiring and the stream flowing pipes are passed side by side. The factory is situated 3 km away from the nearest fire service station.

The vast majority of the workers are young women, were being working overtime. The women regularly worked from 8 AM to 8 PM or sometimes later up-to 2 AM. Often they are required to do work 7 days a week. Some women reported being forced to work over 360 days a year. It is typical for sewing operators to be paid about 1200 Taka per month, no matter how many overtime hours they work. The workers have no trade union and they do not have any opportunity to undertake training for occupational health and safety including fire hazard.

On the day of the incident, the fire broke out at 7.30 pm in the finishing section on the second floor of the building due to an alleged electric short circuit. The light immediately went off. It was pitch dark inside and outside of the factory. The fire spread quickly with bellowing smoke. About 650 workers were on the second and third floor of the factory at the time of the incident. The thick smoke engulfed the inmates inside the building

In the darkness suffocated with smoke the women screamed and ran for the exit and crowded into the stairs desperately pushing and shoving but at the bottom the exit was locked. All the workers were locked in with panic they clawed at the door and tried to break through the locked gate but they could not get out. As the heat, intensity raised some of the women jumped from the 4<sup>th</sup> floor only and impaled on the spike of metal fence surrounding the factory. Twenty minutes later, the fire fighter with the help of local people broke open the collapsible gate. They recovered 51 dead bodies of which most of them were teenaged girls. Most of the victims died due to stampede and suffocation while some others died while jumping from the building. Four of the victims were roasted. Hundreds were injured and taken to local ill equipped and unprepared hospital to tackle such a disaster. Though most of the workers managed to get out of the building, some 250 workers were trapped inside the burning factory when fire fighters were frantically fighting to put out them.

## **B: False Alarm**

During October 2001, a false fire alarm in a garment factory complex triggered a stampede causing crushing to death of 23 workers and 50 more were injured. The complex is situated in the northern part of the Dhaka city. The building houses four separate garment factories, employing 2500 workers are mostly women. A short circuit triggered the alarm. Hearing the fire alarm all the workers rushed to the gates and forced themselves to get out of the factory but the final exit with collapsible gates were locked. The workers started screaming for help but there was no body to help. Due to heavy pressure, some of the workers fall down, could not protect themselves from crushing, and died. The guard who were responsible for the security was found absent during the accident. The lucky workers, who were saved, later described that electric wiring of the factory where the electric spark initiated was faulty. Many repaired and faulty wiring were hanging in different places. The workers reported about this faulty electric wiring to the authority but no action was taken.

The factory building is 8 storied and originally built as a residential house. In which 4 separate garment factories were in operation. The gates at the entrance to each of the eight floors had been kept locked, while workers worked inside the factories. The factory was overcrowded. There was inadequate space for the easy movement of the workers. The

passages were obstructed by different packages. The exit ways were not marked and there was no emergency exit. The workers and the supervisor had no training on health and safety hazard. Safety drill was never organized for the workers. The workers did not know how to protect themselves during emergency.

## **C: Best Practice Industry**

A knitting factory situated in the industrial area of Tongi. It is a private enterprise and running with good profit and earning substantial amount of foreign exchange. The owners of the factory are well informed regarding their industry and having a good technical knowledge. Occupational safety rules are usually practiced in the factory. Most of the managers and supervisors have training on safety. The workers in this factory are aware about the hazards and safeties and are provided with appropriate protective devices. Sometimes the fire and evacuation drills are organized. The factory consists of knitting and dyeing section. The dyeing section is situated in the ground floor while knitting section is on the first floor.

**Knitting Section:** In this section there are circular and flat knitting machines. The machines are fitted with machine guard. There is noise during operation of the machines, but the nature of the machines are such that no sound proof device could be applied. But to protect the workers from noise, the workers use personal protective devices. Overhead vacuum exhausts remove dusts, which are produced during operation of the machines. The chains and belts of the knitting machine are guarded by metallic net and covering.

**Dyeing Section:** In this section the chemicals are the main raw materials. Most of the chemicals are used without manual handling. In the platform of the dyeing winch, railing and fences are provided to prevent accidental fall of the worker. Where manual handling of chemicals are essential the workers are using personal protective devices like gloves, apron, safety goggles etc. On site, washing and bathing facilities are available to washout the chemicals spillage. For the drying of the fabric a gas, heated chamber dryer is used. In this area, the high temperature is controlled by mechanical cross ventilation system. The chemical containers are adequately labeled.



The housekeeping practices in all the sections are regular. In the dying section all the floors are mostly dry and clean and specious. The knitting section also has a working environment with proper lighting and ventilation. The passageways are all clearly marked for emergency evacuation. Electric wiring and fittings are of concealed type and switch box and panel boards are appropriately covered. The aisle and passage are clear of obstacles and stumbling hazard. There is sufficient number of first aid boxes placed in the approachable areas. Sufficient numbers of fire extinguisher are mounted in different places with instruction and date of expiry.

The turn over rate of the workers is low. The factory is running with no loss. The targeted productions are mostly achieved. The factory products are easily exported to European countries because the buyers require good OSH practices in the factories to comply their countries regulations.

#### **D: Best Practice -OSH**

A multinational leading Tobacco Manufacturing Factory situated in the Capital Dhaka is regarded internationally as one of the best practice industry because it applies the best international standards of practice in all aspect of its operations. It ensures the health and safety of the workers, and conservation of physical environment of factory premises by providing and maintaining safe systems of work for all its employees.

Company has published Environmental Health and Safety (EH&S) Policy and Management system. They have separate EH&S department. Several posts are created to perform the safety jobs perfectly. The department comprises of head of EH&S, regional co-coordinators, safety manager and other subordinates. Safety manuals have been compiled by EH&S manager with other integrated environmental Health and Safety Expertise, which comprise policy organization and best practice solution. It also contain detail guideline parameters and standards on EH&S.

Management took the responsibility to ensure the safe workplace by maintaining safe exit and entrance during normal and daily works as well as in emergency, by installing safe plant and equipments and by ensuring there maintenance by informing the people about possible

environmental hazards and their preventions, by ensuring proper arrangement of employee welfare and by maintaining safe and ergonomically sound work environment.

Measures taken are as follows:

- ❑ Appointment of EH&S Manager With specific guidelines of his responsibilities.
- ❑ To obtain involvement of employees of all sector EH&S committees are formed with members from all sectors. Which is supported by technical committee. Under the supervision of management these committees meet once in a month to review the hygiene and safety situation and to decide necessary actions through departmental sub committees.
- ❑ Regular inspection of factory premises plant and machinery under direct supervision of safety manager. There is provision of effective and active surveillance system for detection of occupational illness.
- ❑ There is provision of proper accident recording and investigating system. There is effective system of registration and notification of safety violation. Near miss incidents, minor accidents and risks are recorded, investigated and analyzed by proper authorities.
- ❑ Arrangement of regular programs on health education, education about safety through different publication, demonstration & appraisal.
- ❑ In each section there are clear and visible warning signs about possible hazard and necessary brief instructions regarding safety and operation manuals.
- ❑ Potentially dangerous equipments are guarded by automatic safety lock to prevent untoward human error. Moving parts of machinery and sharp edges are guarded by safety interlock. In some places like motor, prime mover, shaft, chain, gear, conveyer belt any unauthorized or faulty operation will lead to lock the machine. Only selective and authorized personal can open it.
- ❑ Working environment is made worker friendly by providing adequate and sufficient lighting facilities. Glares are prevented by modernized technology. Standard illumination is maintained at the work place.
- ❑ General dilution ventilation and local exhaust ventilation are maintained at the work place. Bio-filter is used to control tobacco and other dust at the point of generation to prevent escape to the ambient air.
- ❑ Electric hazards are safeguarded by electronic and computerized surveillance system to prevent serious electrical hazard, fire and accident.

- ❑ Effective fire protection and prevention system with sufficient number of extinguishers and auxiliary equipments. All fire- fighting equipments are kept in appropriate positions. Clear marking is present and workers are well informed and trained about their use.
- ❑ Almost all hazardous operations are done without manual handling and with necessary precaution. In most of areas of potential risk remote control are used.
- ❑ Hazardous chemicals and other wastes are stored and disposed according to the standard guidelines.
- ❑ Vibration is minimized by rational installation of machinery followed by necessary housekeeping practice. Proper maintenance and servicing of machinery and tools are done frequently.
- ❑ Cleanliness is remarkable all over the factory premises. Workers are encouraged to keep the workplace tidy. They are strictly instructed to clean there work area themselves after each days work.
- ❑ Personal protective devices are provided to the worker according to the site and pattern of work. Earplugs are provided to all personnel entering the premises. Harness or fall arrests are provided to all workers working at height. Crush hamlets and dust masks are provided where they are necessary.
- ❑ Personals are informed about the necessity of personal protective devices and they are properly trained about there use.
- ❑ The following Programs are undertaken by the management on regular basis to create awareness among the Worker through their full participation. Routine briefing, special briefing on specific issue or topic. Training on safe operation of machinery as well as personal safety. Safety week observation. Safety slogans. Publishing booklet, leaflet, poster etc. in simple language and with clear pictorial presentation are produced. Cap, key ring, T-shirt, etc are provided to the workers with safety slogans printed on it. There is provision of reward for safety among the departments.
- ❑ Initiatives are taken to ensure the hygiene of the worker, and general sanitary awareness at or off the job. Health education and education regarding personnel hygiene is also provided by the authority by arranging session with medical personnel or other resource person. Necessary steps are taken to maintain the health and sound nutritional condition of workers.

- ❑ Appointed doctors provide medical facilities. There is adequate facility of first aid. Workers are provided with advices as well as medicines. Affiliated specialist treats difficult conditions.
- ❑ Workers are paid according to the ILO guideline with all benefits, bonus, and incentives.
- ❑ There is provision of compensation for any damage and are executed accordingly.

The Tobacco Company is one of the largest tax-paying organizations of Bangladesh. They are one of the best practice industries regarded globally. Despite of there huge expenditure on Environment & safety issue they make substantial profit.

**Conclusion**  
and  
**Recommendations**

## **Conclusion**

The present report consists of Macro, Micro sessions and Case Study section. The Macro session intended to accumulate information related to existing state of Occupational Safety and Health in Bangladesh from different sources. The Micro session is the product of cross sectional study conducted in two selected sectors with the aim to demonstrate the status of OSH and the relationship between the level of OSH practice and production output. The Case Studies wanted to bring in examples of the consequences of bad and good practices of OSH.

The Macro session of the study revealed some of the aspects of existing situation of occupational safety and health in Bangladesh. The constitution of Bangladesh recognizes productivity as basic need for development and covers right to work and reasonable wages, medicare and, disease and disablement. This constitutional policy direction did not turn into a formal national occupational health and safety policy. However different Five Year Plan documents provided governments policy directions regarding the importance of OSH. The legislations related to Occupational Safety & Health particularly the Factories Act 1965 and Factories Rules of 1979 are old for date and is inadequate in terms of perspective, provision, specificity and coverage to cope with newer production technology and materials involved in the production process. Lack of work environment standard and exposure limits for different hazards are the major deficiencies of the legislation. Moreover, there is no legal requirement for safety committee and employment of safety officers. The provisions of medical care are nonspecific and vague. The Workmen's Compensation Act of 1923 is limited and does not cover all occupations. The inspectorate of factories and establishment, the enforcing agency for different legislation are under-staffed and unequipped both in terms of training and technology and unable to execute adequately the enforcing activities. Labour unions are allowed in almost all occupations except in export processing zones. The trade unions mainly focus on issues of workers right, although OSH issues are also considered but obtaining secondary importance. There are several employer organizations, which could be grouped as sectoral and non-sectoral. The OSH activity of the employers are not sufficient. The NGO activities on OSH are limited, few conduct awareness, training and research activities regarding OSH issues. Training and education facilities on OSH are inadequate and limited mainly in governmental undertakings. National Statistics concerning

OSH is inadequate and gather information mainly from secondary sources and there is no proper primary data collection system in place. So, the problem of under reporting and miss reporting cannot be ruled out. The occupational accident and injury statistics are available with the Department of Inspection. No occupational illness has ever been reported to the department of inspectorate, though in the studies conducted by NIPSOM, a number of occupational diseases have been found to be prevailing in various industries.

The Micro session of the present study was conducted in Bidi and Tannery sectors to assess the state of OSH through surveys on working environment, employee and employer. The survey revealed that the state of OSH was poor in both the formal bidi and medium sized tannery factories, barely average in formal bidi and large tannery. On the other hand, the state was average in the best practice enterprises of both the sectors. The score for productivity survey was barely satisfactory for the informal bidi factory, satisfactory for medium sized tannery; barely very good for large tannery and formal bidi factory and both the best practices industries. Although in both the sectors the OSH scores were low but the productivity scores were found to be good in its scores which is contrary to the expected finding. This indicates that the production in these factories is good resulting profit to the employers. But the employers are not concerned with the working environment as well as the workers health of the studied industries. The profitability is probably due to the very nature of the bidi factory where the product bidi is it self a very demanding and affordable smoking commodity for the poor general mass and that the employers in these industries exploit the poor laborers particularly employing large numbers of women and child labour in the production process, paying lower wages. Similarly, in the tannery factory the productivity and profitability is high but the owners ignore the workers health and environment. The profitability is because this is an export-oriented industry. They also have the benefit of having cheaper raw materials and cheaper labour. So, the study findings on OSH and productivity as conducted only in these two sectors cannot be generalized because of the limitations stated above. Further studies with inclusion of other sectors may overcome the limitations and identify the actual relationship between inadequate practice of OSH standard and productivity.

In the case studies, it was found that due to inadequate OSH practice, many industries are prone to accidents and casualties and many of the accidents occurred due to gross negligence and awareness regarding fair OSH practice. There are some examples of good

OSH practices in industries, enjoying the benefits through not only with increased production but also national and international reputation.

However, the study report as a whole could surface the existing situation prevailing in Bangladesh due to inadequate implementation of related legislation and practice of Occupational Safety & Health.

The non-compliance of the labour legislations relates to non-compliances of the ILO conventions. Because the labour legislations in Bangladesh were prepared in-conformity with the ratified conventions, country's constitution and in considering the socio-economic conditions. Therefore, non-compliances or non-implementations of labour laws have short-term and long-term effect on the economy of Bangladesh. However, certain adverse effects for non-compliances of conventions and legislation may be estimated in the following:

- a) the work place environment in factories and mills will turn into hazardous which may cause accidents and incidents.
- b) all accidents and incidents create human sufferings, having direct or indirect costs on the productivity and profits
- c) The hazards which are prevailing in the industries e.g electric short circuit in the garment industry, fire in the garment industries are responsible for the occurrence of accidents and diseases, are mostly the outcome of the absence of good working conditions, absence of protective and preventive measures, poor house keeping etc.
- d) The direct cost of preventing hazards is much smaller than the indirect costs of accidents and illnesses. Cost benefit analysis of an accident may give a clear picture of various items of loss. The productivity as well as the profitability of any industry largely depends upon how far the measures have been taken to prevent accident and illnesses in the industry.
- e) Therefore, the lack of implementations of legal provision i.e. the non-compliances of the ILO conventions in the work places not only cause loss of the workers, it causes a huge loss to the employers and the nation as a whole



# **Recommendations**

## **National policy**

1. OHS management should be encouraged.
2. Rapid reassessment and re-addressing of legislations.
3. Steps in ratifying OSH related ILO conventions.
4. Frame National Occupational Safety & Health Policy.

## **Governmental Organizations**

### Short term (1-5 years)

1. Establish autonomous OSH institute for services.
2. Establish National Occupational Safety & Health Council.

### Mid term (5-10 years)

1. Expand OSH programs to all occupations
2. Unify OSH related organizations

## **Employers Organization:**

1. Training, awareness and motivation of employers regarding work place safety and health
1. Develop the employer's association as prominent agencies in training and disseminating information.

## **Labour Union & Organization**

1. Training, awareness and motivation of workers regarding safety and health in their workplace
2. Encourage more bipartite approach.
3. Develop the union association as prominent agencies in training and disseminating information.
4. Expand union activities to all occupational sectors including EPZs.

## **Legislation**

1. Update the laws and reduce inconsistencies.
2. Broaden coverage of OSH to cover all occupations.
3. Increase effectiveness of the laws focusing on small and medium sized enterprises (SMEs).
4. Formulate and promulgate OSH act.

5. Incorporate workplace environment standards, biological monitoring and formative medical examination scheme.
6. Incorporation of the provisions in the legislations for safety committees and safety officers.
7. Encourage employment of occupational health specialists in industries.
8. Introduce Safety Audit.

### **Training Organizations**

1. Develop and strengthen institutional capacity to provide education and training related to OSH.
2. Produce qualified OSH personnel- Occupational physicians, Occupational nurse, and Industrial hygienist, Safety Officers etc.

### **National Statistics**

1. Develop active data collection system.
2. Establish occupational disease surveillance.
3. Establish national and regional accident and occupational disease database.

### **Inspectorate**

1. Increase number of inspectors.
2. Organize formal training program for all categories of inspectors for proper enforcement of laws.
3. Increase frequency of inspections and ensure proper inspection, monitoring and vigilance in workplaces.
4. Expand inspections to all occupations and enterprises.
6. Arrange training in abroad to develop up to date knowledge and skills.

### **For SMEs**

1. Disseminate more OSH information and training.
2. Reduce OSH equipment taxation.
3. Introduce SME support fund.
4. Introduce interim incentives for adopting and implementing OSH programs.

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