# ANNUAL REPORT ACTIVITIES -2008



Centre for the Improvement of Working Conditions & Environment Lahore

**Industrial Relations Institute Lahore** 

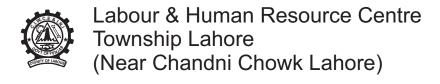


Labour & Human Resource Department Government of Punjab

# ANNUAL REPORT OF ACTIVITIES 2008

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**Industrial Relations Institute Lahore** 



### **CONTENTS**

DETAILS	Pages
An Introduction to the CIWCE	1
Sphere of Activities of the CIWCE	2
Work related Accidents during 2007-08	2
Activities-2008	9
CIWCE introduces low cost innovations to combat hazardous child labour in glass bangle manufacturing	11
Background and Introduction	11
Description of hazardous processes and the innovative improvements carried out to minimize or eliminate hazards.	12
National Award of Tamgha-e-Imtiaz conferred on Mr. Saeed Awan Director CIWCE	19
Construction of Auditorium/Conference Hall & Residential facilities at CIWC&E and IRI enters final stages	20
ISO 9000:2000 Certificate awarded to CIWCE/IRI	20
Major facilities for assessment of occupational and general environment added	21
Working environment and occupational health testing facilities now available at CIWCE	21
Atomic absorption spectrophotometer	27
Colour detection tubes for toxic gases/vapours	27
Pulmonary Function testing equipment	28
Water testing equipment	28
Stack gas analyzer	28
Training and Education-2008	28
Booklets	29
Safety Sign	31
Posters	37
Project launched for up gradation of human and material resources at CIWCE	42
Topics of training courses to be offered by CIWCE in the next years	43
Distribution of Training and Educational literature on occupational safety and health to the industry	44
Specialized Training Courses on OSHE	47
Risk Assessment Surveys of Working Environment in the Industry	48
Case studies of a few Industrial Accidents	49

1. Blast at a paper and Board factory	49				
Recommendations	51				
2. Fire and explosion at a pharmaceutical plant	52				
Recommendations:					
Website of CIWCE					
Child Labour Resource Centre (Building Networks to Combat Child Labour)	55				
Introduction	55				
One Day Seminar and Children's Event on World Day Against Child Labour June 12, 2008	56				
Major achievements of Pak Swedish Teachers Association which was the partner for the event:	56				
Mission	57				
Achievements of PSTA	57				
Highlights of the speeches made during the seminar	59				
Urdu Training Kit on Child Labour	60				
Activities of Legal Aid service Unit for the Bonded Labourers	60				
Up to date Progress Report of Legal Aid Service Unit	61				
Introduction	61				
Less wages/ deducted wages cases.	62				
Training workshops of District Vigilance Committee	63				
Training Material	65				
Video Film	65				
Visit Programme	65				
Database of registered Brick Kilns					
Communication with DBA's and Punjab Bar Council Lahore					
Complaint Tracking System					
ACTIVITIES OF INDUSTRIAL RELATIONS INSTITUTE					
Pocket Training Guide on Workers Rights and facilities under labour laws prepared	67				
The details of other training courses held at IRI during 2008	67				

The right to life is the fundamental human right. But the diseases and accidents at work remain one of the most appalling tragedies of modern industrial age and a shear form of economic waste. According to International Labour Organisation1, around the world, millions of men and women work in poor and hazardous conditions:

In 2005 it was estimated that, globally, about 2.2 million people die every year from occupational accidents and diseases, Some 270 million workers suffer serious non-fatal injuries and another 160 million workers suffer from short or long term illness from work-related causes. The total costs of such accidents and ill health have been estimated by the ILO to amount to approximately four per cent of the world's gross domestic product, an amount that is over 20 times greater than official development assistance. The mortality rate in developing countries is five to seven times higher than in industrialized nations. The poorest, least protected - often women, children and migrants - are also among the most affected. Micro- and small enterprises account for over 90 per cent of enterprises where conditions are often very poor and the workers in them are often excluded from all labour protection.

In many developing countries, death rates among workers are five to six times those in industrialized countries. Yet the phenomenon is still largely undocumented and there is insufficient political will to address the problem. Global competition, growing labour market fragmentation and rapid change in all aspects of work creates a mounting challenge for labour protection, especially in developing countries. Workers in rural areas and the urban informal sector are often ignored or difficult to reach.

Nearly two out of three workers or some two billion workers worldwide are exposed to one or more of the thousand of potentially hazardous chemicals and biological agents used at work. The situation in many developing countries like Pakistan is even graver owing to a number of factors like lack of reliable information and data of the deaths and injuries suffered by the workers every year. The country lags in the enabling legislation in the area of occupational safety and health, the infrastructure to promote and enforce occupational safety and health are inadequate. A large proportion of the workforce is illiterate (thus unaware of the dangers of processes and products with which they deal) and is employed in the informal and unregulated sectors of economy like construction, agriculture and small sized enterprises. Some segments of the workforce especially the women and children are even more vulnerable as they are largely employed in the informal and unregulated sectors, with little or no access to basic occupational health and safety services.

#### An Introduction to the CIWCE

The Centre for the Improvement of Working Conditions & Environment (CIWCE), was established in Lahore by the Directorate of Labour Welfare Punjab, assisted by ILO/UNDP, at a total cost of Rs.33.38 million including a foreign exchange component of Rs. 11.5 million (in the form of equipment, expert services and training of professional staff of the Centre). The construction of building started in 1985 and was completed in 1988, when the Centre became operational.

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Source: InFocus Programme on Safety and Health at Work and the Environment (SafeWork) of International Labour Office Geneva

It is a pioneering institution in Pakistan with professionally trained staff, modern laboratories and facilities for assisting the industry in combating safety, health and environmental problems at the workplaces. The total number of staff working at CIWC&E is 33, which include hygienists, safety, engineers, chemists, technicians and secretarial staff.

The principal aim of this Centre is to combat the safety, health and working environment hazards in the industries in Punjab, and to create awareness and change the attitudes of the employers/workers regarding safety, health and working environment.

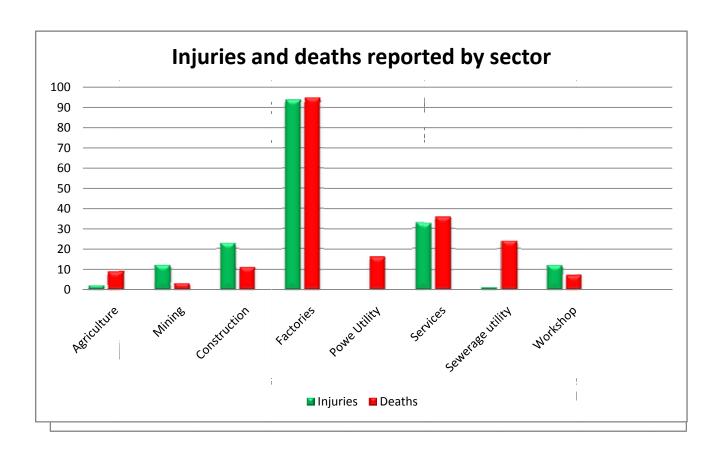
#### **Sphere of Activities of the CIWCE**

- Training & Education: Training courses on safety, health and environmental problems for workers, supervisors, managers, trade union representatives and safety & health professionals are arranged
- Research: Research into safety, health and environmental problems in the industry as well as non formal sectors is carried out.
- Information: Information services on request on problems of safety, health and environment are provided
- Monitoring: Monitoring and analysis of most chemical and physical health hazards in the workplace is carried out.
- Advisory Services: The professional staff of CIWC&E can carry out OSH audits and provide advisory services for the solution of the problems of safety, health and working environment.

#### Work related Accidents during 2007-08

From July 2007 onwards, the CIWCE started keeping newspaper clippings of the work related accidents reported in the 2 newspapers to which we subscribe. The purpose is mainly to document the injuries and accidents and to identify the sectors and activities where these accidents have been occurring. It may be remembered that this source is imperfect as lot of accidents are not reported. Also we have not included the traffic related accidents, in many of which the drivers transport workers are injured or lose their lives. Also the data mostly reflect the accidents occurring in or near Lahore, which are reported by the local newspapers. Only big accidents resulting on multiple fatalities from cities and regions outside Lahore are reported in the local newspapers. This data is indicative of the national trend. The data is presented below:

Total accidents reported = 102 Total number of deaths = 142 Total injured = 175



As can be seen the maximum number of accidents were reported in manufacturing sector. However the most severe accidents happened to the electrical and sewerage utility workers. All the accidents were fatal for the electrical utility (WAPDA and power supply companies) workers while one injury and 24 deaths were reported among the sewerage utility workers. We would like to emphasize again that this data is only indicative of trends of accidents, the actual number may be far too high as only a selected newspapers were examined. It may also be kept in mind that sectors like transport, services, agriculture, construction are not covered under the labour protection laws. So the victims donot receive any of the benefits like compensation, injury benefits, death grants and social security coverage available to workers in manufacturing sector.

#### Details of work related accidents and injuries reported Accidents

Sr. No.	Description of Accident	Sector	No. of Injuries	No. of Dead	Locatio n	Date reported	Newspap er
1.	Explosion of Boilers in a factory	Factory	2	-	Lahore	25-11-08	Jang
2.	Labour injured in a Roof Collapse	Constru ction	3	-	Ghazi Road Defence Lahore	24-11-08	Jang
3.	Roof Collapse	Constru ction	2	-	Lahore	11-11-08	Jang
4.	Many workers suffocated with Fire	factory	5	-	Lahore	07-11-08	Jang
5.	Principal electrocuted	Services	-	1	Gujranw ala	03-11-08	Jang
6.	Electrician electrocuted	Factory	-	1	sargoda	03-11-08	Jang
7.	Electrocution	Factory	-	1	Sargodh a	03-11-08	Jang
8.	Gas Cylinder Blast	Services	1	1	Lahore	25-10-08	Jang
9.	Workers buried alive	Constru ction	2	1	Rawalpi ndi	27-10-08	Dawn
10.	Cable operator electrocuted	Constru ction		1	Sargodh a	20-10-08	Jang
11.	A worker electrocuted	Constru ction	1	-	Sargodh a	12-10-08	Jang
12.	A worker electrocuted	Factory	1	-	Sargodh a	12-10-08	Jang
13.	Lintel Collapse Claims two lives	Constru ction	1	2	T.T.Sin gh	21-10-08	Dawn
14.	Roof Collapse	Constru ction	-	2	Gojra Faisalab ad	21-10-08	Jang
15.	Oven Blast	Factory	3	-	Lahore	18-10-08	Jang
16.	A worker electrocuted	Constru ction	-	1	Lahore	13-10-08	Jang
17.	Gas Cylinder blast	Services	05	-	Vehari	30-09-08	Dawn
18.	Three worker electrocuted	Services	01	-	Arif wala	06-10-08	Jang
19.	Lineman die with Electric Shock	Power Utility	-	01	Lahore	28-09-08	Dawn
20.	Line man electrocuted	Power Utility	-	01	Lahore	27-09-08	Dawn
21.	A men dead electrocuted	Agricult ure	-	01	Jacobab ad	26-09-08	Jang

22.	Fire in textile mill	Factory	-	01	Nankan a Sb	18-09-08	Jang
23.	Woman worker electrocuted in Textile Mill	Factory	-	01	Faisalab ad	19-09-08	Jang
24.	Workers dead with Roof Collapse	Constru ction	04	01	Lahore	20-09-08	Jang
25.	Two killed in scrap bomb explosion	Factory	03	02	Gujranw ala	05-09-08	Jang
26.	Suffocated with Fire during making fire work	Worksh op	2	-	Saray Alamgir	05-02-08	Nawa-I- waqat
27.	Electrocution	Factory	2	-	Sheikhu pura	08-06-08	Jang
28.	Gas cylinder Blast	Services	1	-	Lahore	08-06-08	Jang
29.	Blast in a firework Material	Factory	6	04	Kahna	24-06-08	Jang
30.	Worker fell down in a sewerage	Sewerag e utility	-	01	Green town	25-06-08	Jang
31.	Electrocution	Services	-	01	Shafiqa bad	25-06-08	Jang
32.	Worker dead	Factory	-	01	faisalab ad	09-05-08	Jang
33.	Worker electrocuted	Services	-	01	Sheikhu pura	03-05-08	Jang
34.	Fire in a factory	Factory	06	02	Kasur	25-04-08	Nawa-I- waqat
35.	Electrocution	Services	-	02	Lahore	14-07-08	Jang
36.	Worker Electrocuted	Power utility	-	01	Defance lahore	13-06-08	Nawa-I- waqat
37.	Roof collapse	Constru ction	08	-	Arif wala	26-05-08	Jang
38.	A person electrocuted	Factory	-	01	Kasowal	06-05-08	Jang
39.	A worker dies when stock of wood fell on him	Services		01	Boray wala	01-06-08	Jang
40.	Electrocution	Constru ction		01	Sargoda	28-05-08	Jang
41.	Blast in a factory	Factory	03	01	Sharq pur	13-05-08	Jang
42.	Injured with a fire	Services	01		Ferozwa la	02-06-08	Jang
43.	Hotel waiter electrocuted	Services		01	Iqbal town	02-06-08	Jang
44.	Two men dead doing a transmission	Services	02	02	Lalian	02-06-08	Jang
45.	Two linemen dead doing field work	Power utility		02	Lahore	29-05-08	Express
46.	Blast in a factory with fire work material	Factory	01	01	Sialkot	24-03-08	Nawa-I- waqat

47.	Leak of gas in a ice factory	Factory	07	01	Sargodh a	08-05-08	Jang
48.	A worker dead when hit by truck	Factory		01	Kahana	24-05-08	Jang
49.	Electrocution	Power utility		01	Lahore	13-06-08	Express
50.	Gas cylinder blast	Factory	02	01	Ferozwa la sheikhp ura	05-05- 2008	Jang
51.	Electrocuted	Factory		01	Ferozwa la Shahdra	05-05- 2008	Jang
52.	A men dead with machine clash	factory	-	01	Faisalab ad	07-06-08	Jang
53.	A worker dead with beat	worksho p	01	01	Gujranw ala	06-05-08	Express
54.	Fire with short circuit	Services	-	-	Lahore	06-05-08	Express
55.	Four worker die in fireworks explosion	Worksh op	03	04	Lahore	24-06-08	Dawn
56.	Fire from short circuit	Factory	-	-	Lahore	15-07-08	Jang
57.	Fire in a factory	factory	01	-	Faizaba d	26-04-08	Jang
58.	Brick worker dies for heat	Factory		02	Lahore	23-06-08	Express
59.	Electrician dead from electrocution	Services		01	Arif wala	23-01-08	Nawa-I - waqat
60.	Worker falls down from the roof	Constru ction		01	Sargoda	0207-08	Jang
61.	Two men electrocuted	Factory		02	Sargoda	02-07-08	Jang
62.	A Man electrocuted	Power utility		01	Gujranw ala	02-07-07	Jang
63.	A men dead for gas cylinder explosion	Factory	05	01	Lahore	14-04-07	Jang
64.	Two paramedics killed in gas leak blast	Services	09	02	Sialkot	18-04-07	dawn
65.	A person suffocates doing cleaning of sewerage	Sewerag e Utility	01	-	Lahore	25-04-07	Jang
66.	A worker electrocuted	Power utility	-	01	Ghazi road Lahore	14-06-07	Jang
67.	House maid dies	Services	-	01-	Lahore	07-06-07	Jang
68.	Two sewer men suffocated to death	Sewerag e Utility	-	02	Lahore	25-05-07	dawn
69.	18 fire tenders injured in blaze	Sewer service	-	18	Lahore	25-05-07	dawn

70.	Sanitary workers killed	Sewerag e water Utility		02	Islamab ad	19-05-07	Dawn
71.	Worker injured	construc	01		Rawalpi ndi	16-05-07	Dawn
72.	Man dies fighting fire	Factory	01	01	Faisalab ad	09-05-07	Dawn
73.	A worker dead for explosion of gas cylinder	Factory	01	01	Gujranw ala	07-02-08	Nawa-I - waqat
74.	Lineman dead doing field work	Power utility	-	02	Lahore	13-06-08	Jang
75.	Seven killed in cylinder explosion	Services	12	07	Lahore	11-04-07	Dawn
76.	Fire with Fire works material in a factory	Factory	08	-	Kasur	14-05-07	Jang
77.	Four men dead for poisoning of gas in the well	Agricult ure	02	04	Haroon abad	07-07-07	Express
78.	Fire in a factory with short circuit	Factory	01	-	Lahore	13-06-07	Al- Akhbar
79.	Blast in a coal mines	Mining	06	03	Quetta	06-06-07	Jang
80.	Roof collapse in a paper factory	Factory	02	02	Feroz wala	06-06-07	Jang
81.	Two killed in scrap bomb explosion	Worksh ops	04	02	Gujranw ala	05-09-08	Dawn
82.	A worker suffocated with electric shock	Constru ction	1	-	Sargodh a	12-10-08	Jang
83.	Explosion of Boilers	Factory	2	-	Kot Abdul Malik	25-11-08	Jang
84.	A men dead with poisoning	Sewerag e utility	-	1	Sahiwal	21-07-08	Jang
85.	Gas cylinder explosion in a workshop	Worksh op	02	-	Lahore	23-07-08	Express
86.	Six suffocated by gas in coalmines	Coalmin es	06	-	Quetta	13-07-08	Jang
87.	Two suffocated in factory fire	Factory	02	-	Lahore	09-10-08	Jang
88.	A worker electrocuted	Services	-	01	Kamalia	17-10-08	Jang
89.	Three worker dead with fire work material	factory	8	03	Faisalab ad	29-07-08	Jang
90.	Electrocution	Power utility		03	Lahore	18-07-07	Dawn
91.	Electrocution	Services		02	Lahore	27-07-07	Jang
92.	Seven killed as cement factory lift fall	Factory	-	07	Jhelam	05-11-08	News
93.	Seven factory workers killed 20 injured	Factory	20	07	Gujranw ala	19-08-08	News

94.	Conductors electrocuted	Transpo rt		1	Chung	23-06-08	Express
95.	A worker electrocution	Constru ction		01	Lahore	19-07-08	Jang
96.	Three worker dead with poisoning	Agricult ure	-	3	Kamalia	3-07-08	Jang
97.	Electrocution	Power utility	-	01	Okara	3-07-08	Jang
98.	Electrocution	Agricult ure		01	Kasur	08-08-08	Jang
99.	Electrocution	Power utility		01	Gujranw ala	18-08-08	Jang
100.	Elect ruction	Services	01	-	Lahore	04-09-08	Jang
101.	Electrocution	Power utility		01	Gujranw ala	09-09-08	Jang
102.	Gas cylinder ballast	Factory	2	01	Sheikhu pura	05-07-08	Jang

#### **Activities-2008**

#### Special campaign to promote compliance with labour standards and safety, health and environment among the industries and businesses in Punjab

During 2008, the CIWCE was invited by the Punjab Resource Management Programme (PRMP) for collaboration in a special campaign launched to promote compliances particularly with the international labour standards, occupational safety and health, quality, WTO and environment. The CIWCE provided expertise in the area of labour and OSH standards. PRMP has been initiated by the Government of Punjab with the collaboration of Asian Development Bank in order to help the Government in implementing the development agenda as enunciated in the Punjab Poverty Reduction Strategy (PPRSP. The immediate objectives of PRMP are to assist Punjab through reforms in systems, processes and governance structures to (i) strengthen provincial finances, (ii) realign provincial institutions for pro-poor service delivery, and (iii) create opportunities for growth and income generation in the private sector. As part of its strategy to facilitate the private sector, a series of workshops were held with the collaboration of various chambers of commerce in Punjab. CIWCE played key role in preparing the resource materials and presentations during these workshops. Each workshop was participated by 80-100 businesses and industries from the local areas. The schedule of workshops held so far is given below:

S. No.	Cities	Dates	Major Local Industries
1	Sialkot	12-02-2008	Sports goods, Leather, Surgical instruments, Cutlery
2	Rawalpindi	18-03-2008	Marble, Construction, Flour Mills, Brick Kiln
3	R. Y. Khan	01-04-2008	Cotton, Ginning, Textile
4	Multan	03-04-2008	Power / Hand Looms, Cotton, Mango
5	Sargodha	08-04-2008	Citrus

The recommendations from these workshops based on the Q&A during the presentations and group work are presented below:

#### **Recommendations of the Chambers of Commerce and Business Community**

1. In order to cope with the challenges of globalization, modern technical safety and health standards should be adopted including limits for airborne contaminants in workplaces, and these standards should be periodically reviewed for updating. The present laws are outmoded they have to be brought in conformity with the modern OSH and environmental standards.

- 2. Industry specific technical standards and voluntary codes of practice specially for textile industry, tanneries, power plants, should be adopted.
- 3. The government agencies including the inspection agencies have to play the role of facilitator instead of policing the work and their capacity has to be enhanced to meet the new challenges.
- 4. The workers in those sectors which due to some reason are not covered by laws (home based and small workshops) should also be provided information and training through a focal institution and media to protect themselves from accidents and diseases at work. Also legal cover of social security, compensation and other labour protection and welfare schemes should be extended to such workers through innovative mechanisms like registration of all workers.
- 5. The government should encourage establishment of consultancy businesses in OSH area and criteria should set in the laws for regulating these agencies. The evaluations of OSH in enterprises carried out by the accredited consultancy companies should be approved by the government. These consultancy companies can support the enforcement of technical OSH standards.
- 6. Each Chambers of Commerce and Industry in large cities as well as federation of chambers of commerce and industry should establish safety, health and environment cells. Where environment cells already exist, their mandate should be enhanced to cover OSH area as well. These cells should be stuffed with qualified EH&S Professionals.
- 7. Model workshops complying with EHS standards as established in other sectors (like surgical instruments etc) need to be established in each sector in order to provide hands on experience to local entrepreneurs on the practical aspects of implementation and benefits of these standards.
- 8. Awareness and capacity building campaigns need to be launched specifically targeted at the major economic activities of different geographical zones to prepare the industry for globalization challenges particularly the compliance with EHS standards.
- 9. The experience of CIWCE in improving the working conditions and productivity of carpet weavers by designing the ergonomic looms was greatly appreciated. The participants requested that such low cost improvements need also be introduced in other informal and home based sectors.
- 10. The present ginning technology being used in R Y Khan and elsewhere is based on saw gin, has been abandoned the world over due to high energy costs and other considerations. The participants desired that they be facilitated through soft loans, demonstration industrial units and other methods so the industry can upgrade to modern standards of EHS.
- 11. The government should help the citrus producers and exporters in complying with food safety standards like HACCP. Easy to use awareness materials like videos, pamphlets and short training courses should be held for mango orchard owners and exporters.

# CIWCE introduces low cost innovations to combat hazardous child labour in glass bangle manufacturing

#### **Background and Introduction**

Glass bangles of different types – are popular fashion accessories in Pakistan and South Asia region. Manufacturing of glass bangle is carried out mainly in Firozabad district of India and Hyderabad in Pakistan. Much of the work in this sector is home-based, with the involvement of all members of a household including children. Approximately 9800-10000 children<sup>2</sup> are engaged in Glass bangle Industry in Hyderabad in Southern Pakistan. The total number of workers engaged in this sector has been estimated to be 30000<sup>3</sup>. Hyderabad (approx. 100 km from Karachi) is the hub of this industry in Pakistan, as the traditionally bangle making families have migrated from India and settled here. The processes of glass bangle industry are described at the end of this article.

The CIWCE on the request of Ministry of Labour, Government of Pakistan had provided its expertise to carry out an occupational safety and health assessment of the work in glass bangle industry. Keeping in view the findings of the research, in 2008 the CIWCE provided further expertise to NRSP and ILO to improve the health and safety conditions in glass bangle sector. For this purpose, a number of interventions were carried out. This article describes these interventions and illustrates how these interventions may lead to remarkable improvement in the safety and health of workers and elimination of hazardous child labour from this sector.)

<sup>2</sup> Baseline survey of Child Labour in Glass Bangle Industry Hyderabad (for ILO by Akida Associates), 2003

11

<sup>&</sup>lt;sup>3</sup> A Rapid Assessment of Bonded Labour In Diverse Sectors: Glass Bangles, (Collective for Social Science Research, Karachi), 2003

Description of hazardous processes and the innovative improvements carried out to

minimize or eliminate hazards.

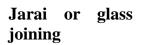
#### Sadhaai (leveling)

#### Traditional method

During this process, the workers sit on their feet and, and place the bangles on a flame, as soon as the glass becomes soft, they press the other side to level the bangle, which was cut from a glass spring. The awkward posture causes musculoskeletal problems. There are also flame related burns. The bangles are places on the floors and sometimes the edges may poke into bare feet

#### **Improvements**

A modified work station has been developed, which is suitable only for the height of adult and young workers. They now sit on chairs and can relax their legs and backs while working. The finished bangles are placed in trays placed at both ends of the work station. A plastic matt on the floor ensures that the workplace remains clean as it can be wiped with a wet cloth. A major advantage of this design is that one flame can be used to heat two bangles at the same time. This reduces the fuel consumption by one half. Thus it is a green job initiative as well. The workers who have been provided have told that their aches and pains have reduced or completely vanished thus they can











#### **Improvements**

Improvements are still being tested in this process. One major improvement being tried is a raised work station which is suitable only for the height of adult and young workers. Special finger protecting gloves have been developed for this process, which protect the exposed side of finger of the worker from possible burns of blown flame. The finished bangles are placed in trays placed at both ends of the work station. A plastic matt on the floor ensures that the workplace remains clean as it can be wiped with a wet cloth. CIWCE is developing a plexiglass shied for protecting the face of workers.

#### Traditional method

During this process, the workers sit on their feet and ,weld the open ends of the glass bangle together on a flame blown with the help of a blower fan. The sitting posture is highly uncomfortable causing pains and aches and there is a chance of severe burns. Some other changes are also being tested for this process.

#### Tinsel coating (maarvi)









#### Traditional method

During this process, glass bangles placed on a roller are applied with wet paint and rolled on a heated rubber mat covered with a metal foil. The worker has to stop during rolling and put all his strength,. The process is highly cumbersome and leads to cumulative trauma disorders and wrist and back problems.



#### **Improvements**

While improved work stations have been designed for applying paint. A major breakthrough is the development of a tinsel coating machine developed by CIWCE which makes the work very easy and fast. The worker does not need to bend and apply manual force. In stead, the roller of bangles is rolled on a heated rubber mat covered with tinsel. A handle bar has to be pulled by one person, while another person maintains the required pressure on the tinsel. This innovation has been highly appreciated by the bangle making families





#### Moulded bangle making (aari process)

#### Traditional method

Special moulded bangles are made by melting the round glass bangles in metal dies on which a gas flame is blown. This process generates intense heat and worker has to operate the handle to rotate the dies thus exposing him to flames and heat.







#### **Improvements**

The molding process has been modified and now a modified machine has been developed in which all the process has been enclosed protecting the worker from the direct exposure to flame. Efforts are also underway to develop another machine for this process, on which the worker does not need to work close to the flame, in stead he/she will have to roll a moving conveyor and the flame will be totally out of way.

#### Grinding

#### Traditional method

In this process, patters are engraved on the bangle surface by grinding it on a wheel grinded. The posture of workers is very uncomfortable causing backache and shoulder pains and frequent cuts.



#### **Improvements**

The grinding platform has been raised and the workers have been provided with stools. Lighting has been improved. This has resulted in better posture and less mistakes improving the productivity and comfort of workers.



#### Paint spray process

#### Traditional method

Some bangles are painted by spraying paints. The process is done in open air or in closed rooms. The toxic paint and solvent vapors spread all around. The sprayed bangles placed on rollers are also placed in the same areas.



#### **Improvements**

Special frames have been developed to dry the sprayed bangle preventing widespread evaporation of the solvents. Spray booth has been designed to eliminate spread of solvents and spray vapors in the work environment



#### Other interventions

A number of other innovations and interventions have been carried out to make the work safer and productive for adult and young workers and to reduce and eliminate hazards. The specific interventions are:

- Whitewashing of the premises to improve lighting
- Provision of exhaust fans and if necessary improvement of natural ventilation to improve thermal conditions.
- Improvement of wiring to prevent electrocution hazards.
- Provision of work dresses to the workers
- Provision and training on the use of first aid boxes.
- Posters, booklets and videos have been developed to promote the health and safety interventions

#### Impact and future possible actions

These interventions have been carried out mostly in during March-July, 2008. The initial response to some of the interventions like improved work stations for levelling and joining and tinsel coating and moulding machines has been very positive and encouraging, it will take some time to know how much these interventions are resulting in reduction of hazards and combating hazardous child labour from this sector. However major effort has gone into "engineering out" child labour from key glass bangle manufacturing processes. The size of the intervention is also limited (1-2 of sites have been improved for each of the process described here). We are expecting that some of the improved processes will become sustainable as local expertise is was involved in implementing these solutions. it is expected these will be copied and adopted by others.

### National Award of Tamgha-e-Imtiaz conferred on Mr. Saeed Awan Director CIWCE

On 23<sup>rd</sup> March 2008, the Governor of Punjab presented the national award of Tamgha-e-Imtiaz of to Mr. Saeed Awan, Director Centre for the Improvement of Working Conditions and Environment (CIWCE). Tamgha-e-Imtiaz, is one of the highest civil awards in Pakistan and was given to Mr. Awan for his services in the field of occupational safety and health. This is also a

great honour for the CIWCE, which has been striving for promotion of occupational safety and health for last 22 years

During 2005, the CIWCE was awarded the highly prestigious Tech Award for Innovations benefiting Humanity by the Tech Museum of Innovations based in San Jose California USA. An international panel of judges from Santa Clara University California in carefully reviewed nominations from 80 countries for over 560 innovations and selected the work of Mr. Saeed Awan Director CIWCE.

Mr. Awan was invited to speak at prestigious American public policy and academic forums like Stanford University, Berkeley, World Affairs Council, Google Foundation and the US National Institute of Occupational Safety and Health.

This Award is given to innovators and visionaries from around the world who are applying





Mr. Saeed Awan receiving the Tamgha-e-Imtiaz and the Citation from Governor of Punjab in the investiture ceremony held on Pakistan Day

technology to profoundly improve the human conditions in the categories of education, equality, environment, health, and economic development. Mr. Awan has won the Equality Award.

Mr. Saeed Awan and his team from CIWCE designed a model loom, which was extensively

tested to see its acceptability by poor and illiterate families. After repeated trials, the 30 model looms and working environment controls were installed in thirty workplaces in the districts of Sheikhupura, Gujranwala and Hafizabad. The Government of Punjab has already adopted this loom as a tool to tackle rural poverty, eliminate debt bondage in carpet production and to empower the poor rural women.

### Construction of Auditorium/Conference Hall & Residential facilities at CIWC&E and IRI enters final stages

After the hostel two other major infrastructure facilities are being added at CIWCE and IRI. Conference Hall/auditorium is essential for CIWCE & IRI to hold large scale events like provincial, national and even international conferences, seminars, training courses, exhibitions etc. The facility once built can also hold events with the collaboration of other organizations specially trade unions, industrial enterprises, NGOs, line govt. departments and international agencies like ILO. This will be the first such facility in the Labour Department Punjab.

The residential facilities for the essential staff of CIWCE & IRI will provide much needed impetus and value addition to the services and facilities provided by these institutions. These facilities will help in using the full potential of existing facilities by operating them on a sustainable basis. In the long term these facilities will make the CIWCE & IRI self-sustaining institutions. The government of Punjab has provided Rs. 73.48 million for construction of these facilities.

#### ISO 9000:2000 Certificate awarded to CIWCE/IRI



The Centre for Improvement of Working Conditions & Environment and Industrial Relations Institute have been awarded the ISO 9000:2000 certificate for implementing quality management system. The third party audit for the certification was carried out by Bureau Veritas. This is a landmark achievement for the institution and it has become one of the few institutions and agencies within public sector, who have achieved certification for quality management system. It shows the commitment of the professional and support staff toward quality in all its services and facilities and to care for the satisfaction of its stakeholders. During 2008, surveillance audit for the compliance with ISO 9000:2000 was carried out by Bureau Veritas of France and the certification of CIWCE/IRI was renewed

### Major facilities for assessment of occupational and general environment added

During the last four years the Government funds to the CIWCE for a major project to procure new equipment and upgradation of existing training, information, advisory and other services of CIWCE. The amount is to be spent in two years. It is for the first time since its establishment in 80s that CIWCE has received such an influx of funds for its activities and facilities. As a result of this addition our capacity to undertake occupational hygiene and environmental assessment has been enhanced remarkably. An overview of the specific tests we are now capable of performing is given next:

## Working environment and occupational health testing facilities now available at CIWCE

S. #	Type of Hazard	Tests Available
1.	Noise	Noise level survey
		Noise dosimetry
		Octave band analysis
2.	Heat Stress	Heat exposure surveys
		Humidity surveys
3.	Lighting	Lighting survey
		UV light survey
4.	Ventilation	All ventilation related parameters pertaining to general ventilation and local exhaust testing:  - air velocity  - temperature  - volumetric  - flowrate  - static pressure  - Pitot tube readings  - Humidity  - dew point  - wet bulb temperature  - heat flow
5.	Dust exposure	Personal dust exposure monitoring (gravimetric) Real time aerosol concentration for dust, fumes and mists including max, min, average, elapsed time, PM-2.5-10, and TWA
6.	Chemicals in workplace	Fumes and metal dust in air

air	Toxic gases & vapours through colour detection tubes. Following gases/vapours can be detected:
	tubes. Following gases/vapours can be detected.
	1. Acetaldehyde
	1
	2. Acetic acid
	3. Acetone
	4. acid mist
	5. Acrylonitrile
	6. Alcohol
	7. Amines
	8. Ammonia
	9. Benzene
	10. carbon dioxide
	11. carbon monoxide
	12. carbon tetrachloride
	13. chlorine,
	14. Cyclohexane
	15. Ethyl acetate
	16. Ethylene
	17. ethylene glycol
	18. Formaldehyde
	19. formic acid
	20. Hydrocarbons
	21. hydrochloric acid
	22. hydrogen sulfide
	23. Nitrous fumes
	24. Oil mist
	25. Ozone
	26. Phenol
	27. sulfur dioxide
	28. sulfuric acid
	29. Toluene
	30. Trichloroethylene
	30. Themorounyiene
	Toxic chemicals and gases with facility to measure in
	confined spaces. Following parameters can be
	measured:
	measured.
	1. Oxygen
	2. Flammable gas/methane
	3. Nitric Oxide
	4. Nitrogen Dioxide
	<ul><li>5. Hydrogen Sulphide</li><li>6. Ammonia</li></ul>
	7. Flammable Gases LEL (0 – 100%)
	8. Chlorine

- 9. Carbon Monoxide
- 10. Carbon Dioxide
- 11. Formaldehyde

Toxic gases/vapours though ambient air analyzer. Following parameters can be monitored in the workplace air:

- 1. ACETALDEHYDE
- 2. ACETIC ACID
- 3. ACETONE
- 4. ACETONITRILE
- 5. ACETOPHENONE
- 6. ACETYLENE
- 7. ACRYLONITRILE
- 8. AMMONIA
- 9. ANILINE
- 10. BENZALDEHYDE
- 11. BENZENE
- **12. 1,3 BUTADIENE**
- **13. 1,3 BUTADIENE**
- 14. BUTANE
- 15. BUTYL ALCOHOL
- 16. BUTYL CELLOSOLVE 1-BUTYL METHYL ETHER
- 17. CARBON DIOXIDE,
- 18. CARBON DISULFIDE
- 19. CARBON MONOXIDE
- 20. CARBON TETRACHLORIDE
- 21. CELLOSOLVE
- 22. CELLOSOLVE ACETATE
- 23. CHLOROBENZENE
- 24. CHLOROBROMOMETHANE
- 25. CHLOROFORM
- 26. M-CRESOL
- 27. CUMENE
- 28. CYCLOHEXANE
- 29. CYCLOHEXANE
- 30. CYCLOPENTANE
- 31. DESFLURANE
- 32. DWAFLURANE
- 33. DESFLURANE
- 34. DESFLURANE
- 35. M-DICHLOROBENZENE -DICHLOROBENZENE
- 36. P-DICHLOROBENZENE
- 37. 1,1-DICHLOROETHANE

- 39. DICHLOROETHYLETHER
- 40. DIETHYLAMINE
- 41. DIMETHYLACETAMIDE
- 42. DIMETHYLAMINE
- 43. N,N-DIMETHYFORMAMIDE
- 44. DIOXANE
- 45. ENFLURANE
- 46. ETHANE
- 47. ETHANOLAMINE
- 48. ETHYLACETATE
- 49. ETHYL ALCOHOL
- 50. ETHYL BENZENE
- 51. ETHYL CHLORIDE
- 52. ETHYL ETHER
- 53. ETHYLENE
- 54. ETHYLE LACTATE
- 55. ETHYLENE
- 56. ETHYLENE DICHLORIDE
- 57. ETHYLENE OXIDE
- 58. FORMALDEHYDE
- 59. FORMIC ACID
- 60. HALOCARBONS (CHLOROFORM)
- 61. HYDROCARBONS (HEXANE)
- 62. HYDROCARBONS (METHANE)
- 63. Halothane
- 64. Heptane
- 65. n-Hexane
- 66. Hydrazine
- 67. Isobutene
- 68. Isopropyl alcohol
- 69. Isopropyl ether
- 70. Methane
- 71. Methyl acetate
- 72. Methyl acrylate
- 73. Methyl alcohol
- 74. Methyl cellosolve
- 75. Methyl cellosolve acetate
- 76. Methyl chloride
- 77. Methyl chloroform
- 78. Methyl ethyl ketone
- 79. Methyl ethyl ketone
- 80. Methyl isobutyl ketons
- 81. Methyl methacrylate
- 82. Methyl methacrylate
- 83. Methylacetylene

84. Methylamine 85. Methylene chloride 86. Nitrogen trifluoride 87. Nitrous oxide 88. Octane 89. Pentane 90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 88. Trichlorotrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfur fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2-t-trichlorothane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinyl chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment: • BOD • COD • pH • Conductivity			
86. Nitrogen trifluoride 87. Nitrous oxide 88. Octane 89. Pentane 90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodiffluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-tetrachloroethane 116. 1,1,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis Following parameters can be measured with state of the art equipment:  BOD COD pH			84. Methylamine
87. Nitrous oxide 88. Octane 89. Pentane 90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur dioxide 111. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2-trichlorethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 121. Vinylidene chloride 122. Xylene  Following parameters can be measured with state of the art equipment: BOD COD pH			85. Methylene chloride
88. Octane 89. Pentane 90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 100. 1,2-dichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-tetrachloroethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis Following parameters can be measured with state of the art equipment: BOD COD pH			86. Nitrogen trifluoride
89. Pentane 90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  Following parameters can be measured with state of the art equipment: BOD COD pH			87. Nitrous oxide
90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD PH			88. Octane
90. Perchloroethylene 91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD PH			89. Pentane
91. Pgmea 92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD pH			
92. Phosgene 93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorottrifluoroethane 100. 1,2-dichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD pH			•
93. Propane 94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-teichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD pH			
94. n-propanol 95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotrifluoroethane 99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD pH			1
95. Propylene oxide 96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotrifluoroethane 99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  BOD COD PH			<u> </u>
96. Pyridine 97. Trichloromonofluoromethane 98. Trichlorotrifluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichlorofluoromethane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur dioxide 111. Sulfur dioxide 111. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  • BOD • COD • pH			
97. Trichloromonofluoromethane 98. Trichlorotrifluoroethane 99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane1,1-dichloro-1- fluoroethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  • BOD • COD • pH			± *
98. Trichlorotrifluoroethane 99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane1,1-dichloro-1- fluoroethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Suffuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2-trichlorethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment: • BOD • COD • pH			
99. 1,2-dichlorotetrafluoroethane 100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  • BOD • COD • pH			
100. 1,2-ichlorotetrafluoroethane 101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane1,1-dichloro-1- fluoroethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment: • BOD • COD • pH			
101. Dichlorodifluoromethane 102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane1,1-dichloro-1- fluoroethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2-trichloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment: • BOD • COD • pH			
102. 1,1,1,2-tetrafluoroethane 103. Bromotrifluoromethane1,1-dichloro-1- fluoroethane 104. 1,1,1-trifluoroethane 105. 1,1-difluoroethane 106. Dichlorofluoromethane 107. Dichloropentafluoropropane 108. Sevoflurane 109. Styrene 110. Sulfur dioxide 111. Sulfur hexafluoride (c) 112. Sulfuryl fluoride 113. Tetrahydrofuran 114. Toluene 115. 1,1,2-trichlorethane 116. 1,1,2,2-tetrachloroethane 117. Trichloroethylene 118. Trichloroethylene 119. Vinyl actate 120. Vinyl chloride 121. Vinylidene chloride 122. Xylene  7 Waste water analysis  Following parameters can be measured with state of the art equipment:  • BOD • COD • pH			
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BOD COD pH	7	Waste water analysis	
• COD • pH			
<b>■</b> pH			• BOD
			• COD
■ Conductivity			• pH
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			<ul> <li>Conductivity</li> </ul>

	<ul><li>Nickel</li><li>Potassium</li><li>Sodium</li><li>Zinc</li></ul>
	Mercury     Nickel
	Manganese
	<ul> <li>Magnesium</li> </ul>
	• Lead
	• Iron
	Copper
	<ul> <li>Cobalt</li> </ul>
	Chromium
	Cadmium
	Calcium
	<b>D</b> .
	Arsenic
	• TOC
	<ul> <li>Sulfite</li> </ul>
	<ul> <li>Sulfate</li> </ul>
	<ul> <li>Hardness</li> </ul>
	<ul><li>Phosphate</li></ul>
	• Nitrite
	• Fluoride
	• Cyanide
	• Chromium
	• Chloride
	• AOX
	• Toxic metals
	Turbidity  Taria matala
	• TDS

			Pure tone, warble and speech by AC, BC and free field
10	Pulmonary testing	function	Onsite facility to conduct pulmonary function test (recommended for workers potentially exposed to dust and chemical agents in workplace which may harm the lungs. Parameters computed include:  FVC, FIVC, RV, TLC, RV/TLC, FRC, FEV1/FVC, FEF 25/50/75%)

A description of the major equipment used for these tests is given below:

#### **Atomic absorption spectrophotometer**

This instrument is used for the analysis of working environment and other samples for heavy metals. This instrument bought for CIWCE comes with a graphite furnace, which enhances the detection limit of this instrument by a factor of several thousand. At present hollow cathode lamps for copper, chromium, cadmium, lead, iron, cobalt, nickel, barium, magnesium, calcium,

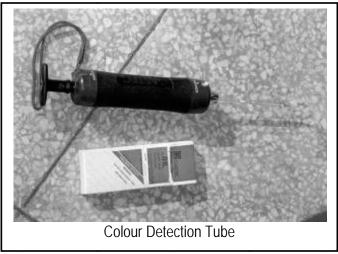


Atomic absorption spectrophotometer

potassium, sodium, zinc, manganese, mercury and arsenic have been acquired.

#### Colour detection tubes for toxic gases/vapours

Colour detection tubes are workhorse accessories in the industrial hygiene measurements. These provide real time estimation of the dangerous substances in the air. The tubes for a large number of chemicals have been bought which include: acetaldehyde, acetic acid acetone acid mist. acrylonitrile, alcohol, amines, ammonia, benzene, carbon dioxide, carbon monoxide, carbon tetrachloride, chlorine, chloroform, cyclohexane, ethyl acetate, ethylene, ethylene glycol,. formaldehyde, formic acid.



hydrocarbons, hydrochloric acid, hydrogen sulphide, mercaptans, mercury vapors, natural gas, nitrous fumes, oil mist, ozone, petroleum hydrocarbons, phenol, phosgene, styrene, sulfur dioxide, sulfuric acid, toluene, trichloroethylene, vinyl chloride.

#### **Pulmonary Function testing equipment**

This device is extensively used to assess the lung function of workers specially those who have been exposed to dusts and different forms of aerosols and particulates and are at risk to develop occupational lung diseases. It is portable and can be used for on-site monitoring of workers'

pulmonary health. The data is store din computer, which can be

later analysed.

#### Water testing equipment

A number of water testing equipment were procured, which provide an assessment of pollution criteria including pH, conductivity, biological oxygen demand, chemical oxygen demand and other parameters.

#### Stack gas analyzer

This instrument was purchased to assess the air pollutant emissions from stacks in the industrial enterprises. Important air pollution

parameters like NOx, SOx, CO, CO<sub>2</sub>, SO<sub>2</sub>. It also computes combustion efficiency and related parameters.

PH Meter

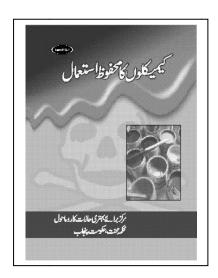


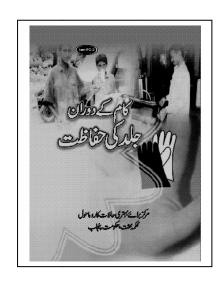
## Training and Educational literature on occupational safety and health developed

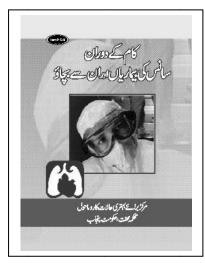
A hallmark of CIWCE's activities has always been the expertise to develop user friendly training and awareness materials. As the literacy level of workers in Pakistan is low, it is important to prepare training materials which suit to the needs of most workers. Keeping this in view a series of pocket books on different aspects of safety and health were prepared. Also a catalogue of materials available at CIWCE was developed.

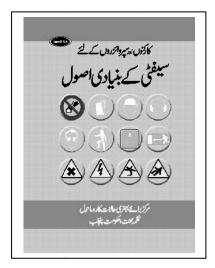
A photo gallery of training and awareness materials developed is presented below:

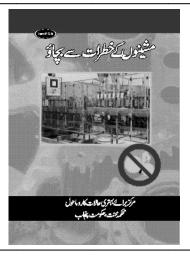
#### Booklets

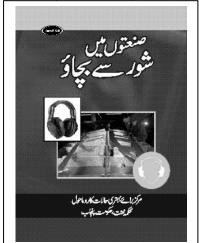




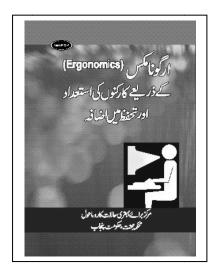


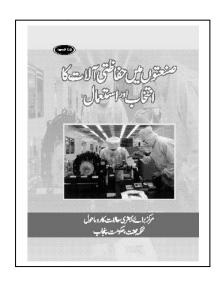


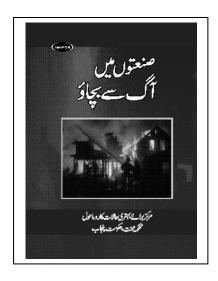


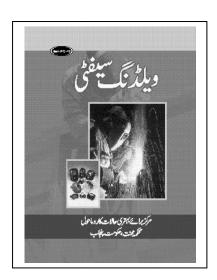


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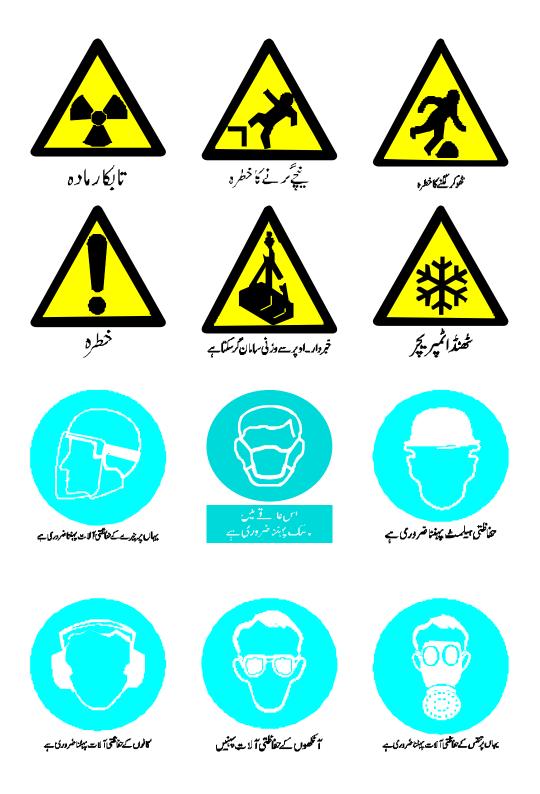




#### Safety Sign















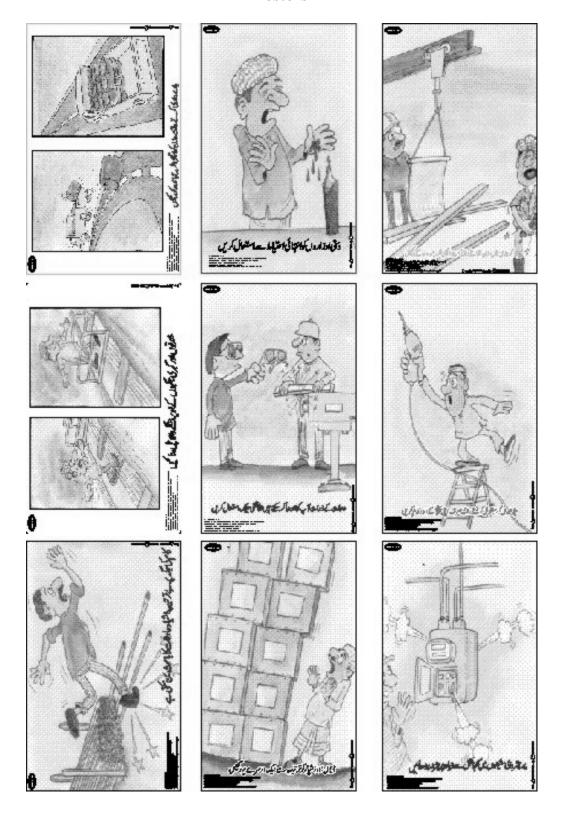




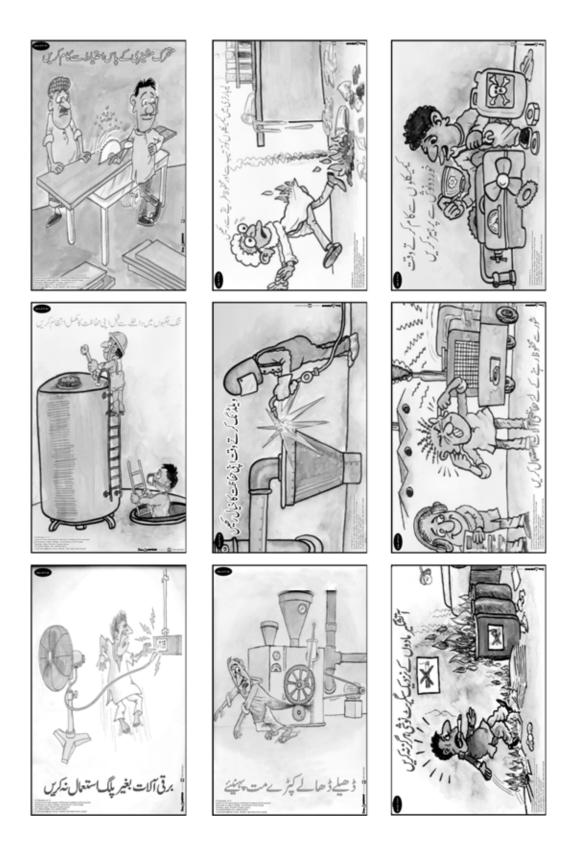


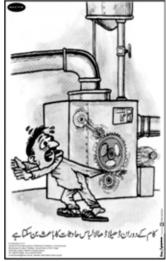


# **Posters**















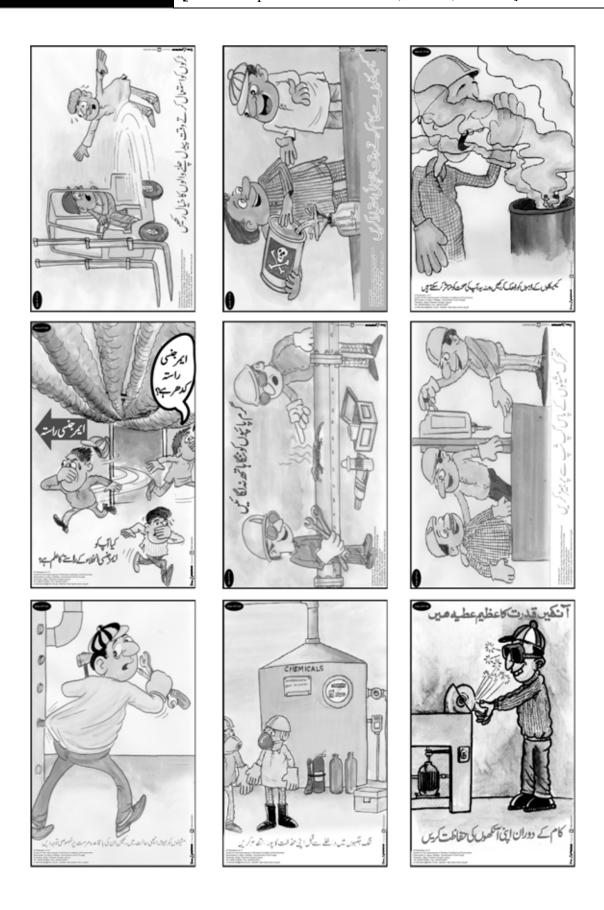












# Project launched for up gradation of human and material resources at CIWCE

The Government of Punjab through its Annual development Programme (ADP) has approved a project at a cost of Rs. 29.496 million to strengthen the human and material resources of CIWCE.

The broader aim of the project is to provide quality facilities and services to industry, workers and other stakeholders to help them comply with international social compliance and related standards as well as other trade regimes and help the local industry meet globalization challenges while minimising burden on government exchequer for provision of services to the industry and stakeholders. The project is justified due to a number of reasons:

- a. The auditorium/conference hall the construction of which is likely to be completed in June 2008 is to be made functional and operational by provision of necessary equipment and furniture.
- b. The training and occupational safety and health testing facilities of CIWCE already accredited to international standards (ISO 9001:2000 and ISO 17025) now need to be made fully operational by having necessary professional and other staff in order to run these on sustainable basis in the long term.
- c. The existing mobile training unit is based in a van which is over 20 years old, originally provided by ILO and has become unserviceable, it needs to be replaced. Additional facilities like mobile training and testing unit on safety, health and environment accessories and equipment for laboratories, hostel, training rooms and library needs to be procured in order to maximize the impact and outreach of the CIWCE-IRI.

The immediate objectives of the project though which this broader aim will be achieved are:

- Equipping the auditorium/conference hall (under construction) to make it operational
- To enhance the scope and quantum of activities and services of CIWCE-IRI by provision of additional facilities including essential professional and other staff.
- Facilitating the industry to meet OSH and social compliance and related international standards as well as globalization challenges by providing quality training and testing facilities on cost basis.
- Offering joint trainings/events with other service providers

• An effort for making the training and lab testing self sustainable.

# Topics of training courses to be offered by CIWCE in the next years

- Defensive Driving
- Electrical Safety
- Work permit system
- Occupational diseases and their prevention
- Confines spaces
- Machine Guarding
- Respiratory Protection
- Slips, Trips, & Falls, New Employee Safety Orientation
- Ergonomics
- Hazardous Material Transportation and disposal
- Construction safety
- Noise & Hearing Conservation
- Chemical Safety at workplace
- Machine-guarding
- Fire prevention and fire fighting
- Basic emergency first aid and CPR
- Accident investigation
- Selection and use of personal protective equipment
- Compliance with national and international health safety and environmental laws and standards
- Implementing social compliance standards
- Meeting customer's social codes of conduct
- Introduction to labour laws.
- Implementing ISO 9001
- Implementing ISO 14001

- Implementing OHSAS 18001
- Effective Communication Skills
- Time management
- Stress management
- Negotiation skills
- Effective team building in organizations
- Empowerment building a committed workforce
- Mentoring in organization (for managers specifically)
- Awareness and tackling Harassment and Bullying at workplace
- Selection and Recruitment (selection procedures, interviews, employee assessment test and their use)

# Distribution of Training and Educational literature on occupational safety and health to the industry

A hallmark of CIWCE's activities has always been the expertise to develop user friendly training and awareness materials. As the literacy level of workers in Pakistan is low, it is important to prepare training materials which suit to the needs of most workers. Keeping this in view, a number of training targeted materials have been prepared. These include posters, safety warning signs and pocket guides on specific OSH issues. Most of these materials are in Urdu. The industries and businesses as well as workers, government agencies and other key stakeholders in Punjab are provided these materials free of cost. The list of orgnisations which benefitted from this service during 2008 is given below:

#### List of organizations provided with OSH literature during 2008

Sr. No.	Name of Person/Organization	Type of Material	Quantity provided
1.	Indus Home Limited (Manga	Posters	295
	Raiwind Road)	Safety Warning sings	325
		Pocket Guides	50
		Urdu Training Booklets	50
2.	ARC Knitwear, Lahore	Posters	295
		Safety warning Signs	325
		Urdu Training Booklets	10
3.	Digital World Pakistan (35 km	Posters	140
	Multan Road, Lahore)	Safety Warning sings	40
		Pocket Guides	50
		Urdu Training Booklets	50
4.	Capital Sports Group (Pvt.) Ltd.	Pocket Guides	48

	Sialkot.	Training Booklets	24
		Posters	252
		Safety warning Signs	258
5.	Standard Hosiery (Pvt.) Ltd. 135-	Posters	60
	Kotlakhpat Lahore.	Safety Warning sings	116
		Pocket Guides	29
		Urdu Training Booklets	20
6.	Livestock & Dairy Development	Posters	590
	Department Govt. of Punjab,	Safety Warning sings	650
	Lahore.	Pocket Guides	100
		Urdu Training Booklets	100
7.	A-G Hs Legal Aid Cell	Posters	295
	131-E Gullberg-III Lahore.	Safety Warning sings	325
		Pocket Guides	1
		Urdu Training Booklets	100
8.	Mughal Steel 17 KM	Posters	295
	Sheikhupura Road, Lahore	Safety Warning Signing	325
9.	Pakistan Workers Federation	Posters	590
		Safety Warning sings	975
		Pocket Guides	150
		Urdu Training Booklets	150
10.	GREE SAMSUNG conditioning	Posters	885
	Factory Manager, 35 km Multan	Safety Warning sings	975
	Road, Lahore.	Pocket Guides	30
		Urdu Training Booklets	30
11.	Documentary Technology Centre	Posters	177
		Safety Warning sings	189
		Pocket Guides	30
		Urdu Training Booklets	30
12.	Govt. College of Technology Sahiwal	OSH Kit	1
13.	Quality Management System	Posters	100
	9000	Safety Warning sings	118
	House # 210 street # 52, 10 <sup>th</sup>	Pocket Guides	20
	Avenue G, 3 Lahore.	Urdu Training Booklets	20 (2)
14.	Planning and Development Department Lahore.	Pocket Guides	1
	_	Urdu Training Booklets	10
15.	Pakistan Workers Federation	Posters	59
		Safety Warning sings	65
16.	Bureau Veritas	Posters	540
		Safety Warning sings	650
		Pocket Guides	100
		Urdu Training Booklets	100
17.	PEL Lahore	Posters	40

		Safety Warning sings	650
		Pocket Guides	25
18.	Quality Helpline	Pocket Guides	20 (2kit)
Lahore.		Urdu Training Booklets	16
19.	BHP Islamabad	Posters	36
		Safety Warning sings	65
		Pocket Guides	1 kit
20.	Govt. of Punjab Govt. College of	Urdu training Booklets	3
	Technology Sahiwal	Posters	80
		Safety warning sings	150
21.	HNR Company (Pvt.) Ltd 195	Posters	155
	Km Raiwind Road, Lahore.	Safety Warning sings	95
		Pocket Guides	3 (kit)
22.	P.P.P Shere Rahman	Posters	50
23.	PEL Lahore	Posters	165
		Safety Warning sings	60
		Pocket Guides	5 kit
		Urdu Training Booklets	15
24.	Science Tech. Org. Rawalpindi	Posters	One set
		Safety Warning sings	One set
		Pocket Guides	3 kit
		Urdu Training Booklets	One set
25.	Mobile Training Unit	Posters	One set
	_	Safety Warning sings	One set
		Pocket Guides	One set
		Urdu Training Booklets	One set
26.	Shaheen Associates	Posters	50
	3 <sup>rd</sup> Floor Lahore Tower	Safety Warning sings	40
		Pocket Guides	48
		Urdu Training Booklets	12
		OSH	One kit
27.	International Tubular Services	Pocket Guides	172
	Islamabad	Posters	295
		Safety warning Signs	205
28.	Mobile Training Unit	Pocket Guide	One Kit
29.	Fine Gas Company Lahore	Posters	295
		Safety Warning sings	60
		Pocket Guides	4 kit
		Urdu Training Booklets	16
30.	Bismillah Textiles Limited	Posters	177
	1 km Jaranwala Road,	Safety Warning sings	260
		Pocket Guides	2 kit
		Urdu Training Booklets	2 set
31.	Mughal Steal 17 km Sheikhpura	Posters	295

	Road, Lahore.	Safety Warning sings	315
		Pocket Guides	5 kit
		Urdu Training Booklets	5 set
32.	5 kb Construction & Engineering	Posters	38
	Multan Road- 10 A3 Gulberg-3	Safety Warning sings	24
	Lahore.	Pocket Guides	3 kit
		Urdu Training Booklets	2 set
33.	Fine Gas Ltd	Posters	44
	130 Ind. Estate KLp Lahore.	Safety Warning Sings	28
		Urdu Training Booklets	2 set
34.	Fauji Fertilizer Company Limited	Posters	295
		Safety Warning Sings	305
		Pocket Guides	5 kit
		Urdu Training Booklets	1 set
35.	Govt. Vocational Training	Posters	59
	Institute, Lodhran.	Safety Warning Sings	64
		Pocket Guides	1
		Urdu Training Booklets	07
36.	Muree Brewery Co. Ltd.	Posters	30
		Safety Warning Sings	26
		Pocket Guides	2 kits
37.	Style Textile (Pvt.) Ltd.	Posters	325
38.	Indus Fan	Posters	177
	S.L.E No.1 Gujranwala	Safety Warning Sings	130
		Pocket Guides	5 kit
		Urdu Training Booklets	5 set

# **Specialized Training Courses on OSHE**

Like the past years, the CIWCE continued to hold specialized training on issues of paramount importance for the industry on topics related to occupational safety and health. Top notch managers, professionals, CEOs from the industrial sector as well as from the government agencies and trade unions participated in these training workshops. These workshops also provided a great opportunity to the OSHE professionals from different sectors to socialize and network with each other, to learn from each other's experiences and to call each other in case a particular skill is available somewhere.

The topics for the specialized training workshops are always based on the feedback from the industry and other trainees of CIWCE. The organizations where specialized training workshops were held in the year 2008 is given below:

# Details of OSH specialized courses held in 2008

Sr No.	Date	Venue	No. of Participants
1	6/02/2008	Sui Northern Gas Pipe lines Lahore	30
2	7/02/2008	Sui Northern Gas Pipe lines Lahore	28
3	16/04/2008	Mughal Steel Sheikhupura Road Lahore	19
4	24/04/2008	Unilever Rahim Yar Khan	80
5	25/04/2008	Unilever Rahim Yar Khan	91
6	29/04/2008	US Apparel Ferozepur Road Lahore	12
7	07/05/2008	US Apparel Ferozepur Road Lahore	16
8	07/06/2008	Style Textile Kot Lakhpat Lahore	41
9	27/06/2008	Pak Electron Limited Ferozepur Road Lahore	25
10	09/07/2008	Pak Electron Limited Ferozepur Road Lahore	34
11	06/08/2008	Pak Electron Limited Ferozepur Road Lahore	29
12	18/08/2008	International Tubular Services Islamabad	19
13	09/10/2008	Pak Electron Limited Ferozepur Road Lahore	31
14	17/10/2008	Saphire dyeing Raiwind-Manga Road Raiwind	50
15	22/10/2008	Rustam and Soharb Bicycle (Pvt) Ltd.	38
16	29/10/2008	Bata Pakistan (Pvt) Ltd.	42
17	11/11/2008	Technical and Vocational Training Institute	29
		Kotlakhpat Lahore.	
18	20/11/2008	Training Centre IRI/CIWCE Lahore	15
19	21/11/2008	Fine Gas Limited Kotlakhpat Lahore	22
20	25/11/2008	Atlas Honda Sheikhupura road Lahore	29
21	4/12/2008	Chunian Textile Mills Chunian	35
22	18/12/2008	Lahore University of Management Sciences	30
		Lahore	
23	20/12/2008	Training Room of CIWCE (by Dr. Khalid)	22
Total			767

# Risk Assessment Surveys of Working Environment in the Industry

Like the preceding years, the industry approached the CIWCE to carry out risk assessment surveys of various occupational health, safety and environmental hazards in their premises. These surveys were intended to provide useful data essential for controlling these hazards. Following surveys need special mention:

# Details of Risk Assessment Surveys on Safety, Health and Environment in the Industry Carried Out by CIWCE in 2008

Sr. No.	Date	Venue
1.	April, 2008	Dust Level survey of US Apparel Lahore

2.	May, 2008	Noise Level survey of US Apparel Lahore	
3.	May, 2008	Light Level survey of US Apparel Lahore	
4.	June, 2008	Dust Level Survey of Style Textile Kot Lakhpat Lahore.	
5.	July, 2008	Dust Level Survey of Style Textile Kot Lakhpat Lahore.	
6.	August, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
0.	714gust, 2000	safety index) Rustam Sohrab Cycle Factory Shahdara Lahore	
7.	August, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
		safety index) Shezan International Ltd. Lahore	
8.	August, 2008	Risk assessment at 6 Metal Presses Units at Shahdara, Lahore	
9.	August, 2008	Risk Assessment of International Tubular System Islamabad	
10.	October, 2008	Chemical testing of Packages Ltd Lahore.	
11.	October, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
	,	safety index) Z. Cap Textile Ltd. Kot Lakhpat Lahore	
12.	October, 2008	Risk Assessment of Ad Sell (Pvt) Ltd. Kot Lakhpat Lahore.	
13.	October, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
		safety index) Bata Pakistan Ltd. Batapur Lahore	
14.	November, 2008	Dust level testing of Style Textile Ltd Bagrian Pind Lahore	
15.	November, 2008	Noise and Illumination testing of International Tubular	
		System Islamabad	
16.	Nov, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
		safety index) Falcon Bicycle Industry, Kot Lakhpat, Lahore	
17.	Nov, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
_	- · · · · · · · · · · · · · · · · · · ·	safety index) Service Industries Gujrat	
18.	December, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
10	D 1 2000	safety index) Atlas Honda M/cycles Ltd. Sheikhupura	
19.	December, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
20	Dagamhan 2000	safety index) US Apparel Ltd. Lahore	
20.	December, 2008	OSH risk assessment survey (noise, illumination, heat stress,	
21.	December, 2008	safety index) Ittehad Chemicals Ltd. Kala Shah Kaku OSH risk assessment survey (noise, illumination, heat stress,	
21.	December, 2006	safety index) Pak China Chemicals Ltd. Defence Road,	
		Lahore	
		Lanore	

#### Case studies of a few Industrial Accidents

Below are given case studies of two accidents, which were investigated by the professional staff of CIWCE during 2008.

### 1. Blast at a paper and Board factory

The accident (explosion) took place in the Dryer Section at 1:15 A.M on 18-09-2008 in which five workers died on the spot. Eight were injured out of which four seriously injured workers died later on in various hospitals, four injured workers were hospitalized

out of which two workers have been discharged from the hospital while remaining two workers were still in the hospital at the time of inquiry.





The production hall and the external walls were blown away by the forc eof blast

The probable causes of the accident indicated by the inquiry include: -

- 1. The inlet valve of the steam leading to the dryer was open to build required pressure of the steam for the process while the exhaust outlet valve was not open which resulted in the buildup of the steam pressure into six dryers which were separated from the other eight dryers. As a result, one of the six dryers exploded which resulted in further explosions of the remaining five dryers. The explosions were so violent that the building of the factory also collapsed with a big bang.
- 2. An automatic safety valve was seen in the supply line of the steam which seemed to have failed in releasing the pressure.

On asking about the purchase of machinery of the plant whether it was new one or second hand, the management was reluctant to disclose. There seemed to be a general neglect and failure on part of the management to look after maintenance of the critical plant and processes. A set of recommendations for similar plants was prepared on the basis of inquiry into this accident.

## Recommendations

- 1. All the pressure gauges of boiler and dyers in the main production hall must be checked periodically and records be maintained.
- 2. Effecting training to the workers and the management is a key component of any OH&S programme. So the workers as well as the managers concerned must be properly trained on the subject of occupational health and safety including fire safety on regular basis. It should be done in the true sense.
- 3. All electrical cables and their joints must be checked regularly, and the defects, if found, should be removed immediately.
- 4. There should be emergency exits in different sections/departments of the factory which were nonexistent. For example, main production hall, which is also a requirement of Factories Act, 1934.
- 5. Automatic detection and alarming bells/siren system involving steam pressure valves and detectors must be checked on periodic basis. Special training to this effect must be arranged periodically in order to check the efficiency of the system installed.
- 6. Monitoring of work environment is necessary for various processes to keep smooth processing. The management of the factory should arrange monitoring of work environment and testing of boilers and steam pressure vessels at regular intervals especially during peak production season. This will help to control the working conditions and environment and happening of accidents in future.
- 7. Health surveillance of workers is another important issue for highly hazardous working environment such as paper and board manufacturing units.
- 8. At night shift, properly trained staff is required to handle the processes in normal flow and to avoid any potential accidental hazards in the near future.

9. Since inspection of factories under Factories Act 1934 is banned by the Government of the Punjab, it is proposed that proper inspection of boilers and other pressure vessels/plants may be carried out by a team comprising technical experts.

# 2 Fire and explosion at a pharmaceutical plant

On 03.07.2008 at around 12:35 pm huge gas pressure was accumulated in the granulation room of at a pharmaceutical factory near Lahore, which resulted a fire and explosion damaging the structure of the factory. A wall dividing granulation room and packing room of the factory collapsed and a worker died on the spot (in packing room) under the debris, and 17 workers sustained injuries. Roof and walls of the granulation room were badly damaged. The pressure build up in granulation room was so huge that it damaged almost all glass windows of the factory. The factory employed 60 workers among which 10 are women. The factory runs a



general shift from 8:00 am to 5:00 pm with one-hour lunch break.

The plant is basically a pharmaceutical unit and manufacture different tablets, suspensions and capsules. The plant contains three main sections:

- 1. Tablet Section
- 2. Dry Powder Section
- 3. Capsule Section



The **fire and explosion hazards** of some important chemicals/ingredients being used in the plant at the time of explosion are as follows:

**Isopropyl Alcohol (IPA):** IPA has severe fire hazard. The vapour is heavier than air. Above flash point, vapor-air mixtures are explosive within flammable limits. Contact with strong oxidizers may cause fire or explosion. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

**Polyvinylpyrrolidone** (**PVP**): <u>Fire hazard</u>: As with most organic solids, fire is possible at elevated temperatures. <u>Explosion hazard</u>: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

According to the production manager of the factory, a pressure built up in the granulation room as a result fire broke out in the drier cabinet where tablets are dried. Though the management emphasized that there was no explosion, but the evidence indicated that an explosion did take place. All raw materials have to be mixed in a machine involving hazardous chemicals such as IPA and PVP. After this the tablets are dried in the dryer cabinet. While going through the details it was found that the dryer cabinet did not explode. Isopropyl Alcohol (IPA) is extensively used in pharmaceutical industry, which has severe fire hazard, and its vapours/air mixtures are explosives. It seems that the ventilation system such as HVAC (Heating Ventilation and Air Conditioning system)/ air handling system was

not working at the time of accident. This resulted a huge pressure build up of flammable vapors in the granulation room while mixing various raw materials, and an explosion occurred. As a result wall between granulation room and packing room fell down on the packing room



killing one worker on the spot and injuring 17 workers. The conditions of damage to the structure of the building clearly shows that an explosion took place, which damaged the entire factory, and various glass windows were also broken.

#### **Recommendations:**

- 1. HVAC or AHU systems, which were installed in this and similar factories have to be properly checked and maintained.
- 2. Effective training to the workers and managers is a key component of occupational health and safety programme. So the mangers and workers must be trained on the subjects of occupational health and safety including fire safety on regular basis. This training should be in the true sense as the **undersigned was surprised** while discussing MSDS with the production manager the factory. He did not know about MSDS (Material Safety Data Sheets). So if the production incharge of a factory is ignorant about MSDS, how come a worker know about various hazards associated with hazardous chemicals he is handling? So training is an important tool in recognizing, evaluating and controlling hazards at the workplaces.
- 3. The management should be well versed with MSDS of hazardous chemicals they are using.
- 4. All electrical cables and their joints must be checked regularly and the defects, if found, should be removed immediately.
- 5. Another method of control is substitution of hazardous chemicals with less hazardous one. Keeping in view of this control, it is suggested that Isopropyl Alcohol (IPA), if possible, should be replaced with some less hazardous chemical.
- 6. Automatic detection and alarming system should be installed at appropriate locations and special drills to this effect should be arranged periodically in order to check the efficiency of the system installed.
- 7. Ministry of Health, Government of Pakistan is responsible to issue licenses for the manufacture of medicines in the country. The Ministry of Health should be approached and communicated about the accident/explosion so that precautionary measures could be taken at their end as well.

#### **Website of CIWCE**

Major changes are being made in the outlook and content of the website of **CIWCE** available at www.ciwce.org.pk will be It updated more frequently in future. An interactive forum is also being launched to post your inquiries. You will soon notice the changes. Please keep in touch with us through our site and suggest how we can make it even more useful.



## **Child Labour Resource Centre**

Building Networks to Combat Child Labour

#### Introduction

Child labour is not an isolated phenomenon. It is an outcome of a multitude of socio-economic factors and has roots in poverty, lack of opportunities, explosive rate of population growth, growing unemployment, uneven distribution of wealth and resources, outdated social customs and norms and a plethora of other factors. Elimination of child labour is one of the top priorities of present government. Keeping this in view a National Policy and Plan of Action to eliminate child labour has been announced by Government of Pakistan. The Labour and Human Resource Department is the main agency spearheading the government efforts for combating child labour in Punjab. A Child Labour Resource Centre (CLRC) has been established at CIWCE Lahore by the Labour Department.

# **Objective**

The main objective of CLRC is to provide a platform to the stakeholders for networking and sharing their experiences and launching joint efforts to combat child labour.

#### **Activities**

- Networking of the stakeholders particularly the NGOs, trade unions, students/teachers, employers, government agencies, journalists, local councillors, political leaders and academia for joint action to combat child labour.
- Establishment of reference centre having publications on child labour issue from all over the world and encourage research by universities and other institutions on different aspects of child labour.
- Preparation of training materials for the government inspectors, social workers, and other stakeholders.
- Holding of regular training sessions for all the stakeholders focusing mainly on identification of "worst forms of child labour" and direct and indirect interventions for elimination of such child labour.
- Holding of consultative meetings, workshops and seminars for planning joint action on child labour issue by all social partners.
- Interaction with international donor agencies for mobilizing support to the initiatives by different partners.

# One Day Seminar and Children's Event on World Day Against Child Labour June 12, 2008

seminar Α and children's event were organised by the Child Labour Resource centre on the occasion World day Against Child Labour on 12 June. 2008. The theme for this year was "Education: the right response to child labour". **Approximately** 1500 participants joined the event including working children enrolled at schools opened at brick kilns, their

teachers, parent, prominent employers supporting educational initiatives, high level government officers from Labour Department, Education Department, Health Department, diplomats lawyers, media personalities





# Major achievements of Pak Swedish Teachers Association which was the partner for the event:

The Pak Swedish Teachers Association (PSTA) (web address: (<u>www.psta.org.pk</u>) is non-profit making non-governmental organization registered under Societies Act. It was founded in 1965

by Prof. Rodney Asberg, of Education and Pedagogy at Gothenburg University Sweden. Prof. Asberg has deep dedication to the cause of downtrodden specially the children of Pakistan.

#### Mission

To bring about a change in the lives of brick kiln workers through education, health, community mobilization and other social services. PSTA is involved in developmental programs in Pakistan, aiming at fighting poverty and promoting basic rights of citizens. PSTA does so through supporting education programs, female co-operatives and health care programs. Our aim is to eradicate illiteracy from the society & make every child a useful educated citizen of Pakistan.

#### **Achievements of PSTA**

- Since its inception PSTA has provided education to approximately 25000 children have cleared the primary school.
- At present 22000 children are enrolled at 370 education centers established in 9 districts of Punjab.
- The education model evolved by PSTA is highly cost effective. Cost of educating a child comes to approx. Rs. 160/- per month per child including all administrative and overhead costs. Wastage is not tolerated.
- The parents contribute 50% of the salaries of teachers. The annual contribution of parents for education is approximately Rs. 13 million.
- The buildings for schools are provided by the parents.
- A teacher's training center has been established near Lahore where all the teachers are trained regularly on the PSTA methodology of teaching. Comprehensive trainings and refresher courses are held for teachers through visiting local and foreign consultants.
- Computer training is provided to teachers who then impart computer training to the children at PSTA schools
- PSTA also tests the students by taking their exams after every 6 months to check the efforts and the teaching of the teacher.
- PSTA is pioneer in a quick learning methodology originated in Sweden.
- A lunch program has been initiated at the brick kilns whereby PSTA provides dry ration to the parents committees who then provide food to the children.
- Cloth is given to the parents and they are trained to stitch uniforms for the children. This year alone *i.e.* (2008), 20000 meters of cloth have been given to the parents in the brick kilns so that they may have the uniform stitched for their children.
- Training for making handicrafts are given to the women in brick making families. The proceeds from sale of their products are used for running PSTA schools and other

activities. So far 900 women from brick kiln families are earning a livelihood by making and selling their handicrafts through PSTA network.

- Health care facilities are being provided to the approximately 40000 families. The women living at the brick kilns, are provided preventive and curative care regarding family planning and vaccination as well as general hygiene. The children are being vaccinated by PSTA or in collaboration with Rural Health Centers in the areas where PSTA schools are operating.
- Adult education is being provided to approximately 2500 adults in the brick kilns, mainly to the females.
- PSTA has started a unique and revolutionary teacher's progress monitoring and tracking system through SMS, whereby the teachers send the progress report on regular basis on the progress on the issues like class attendance and academic progress.

# Highlights of the speeches made during the seminar

Mr. Muhammad Ashraf Khan Sohna, Minister for Labour Punjab: announced the launch of a major drive to enroll all children in Punjab Province by 2010, which was also the commitment of new Chief Minister of Punjab in his first speech after being elected. The Minister also announced that a major project would be launched in the brick kilns through which all children at brick kilns in Lahore and Kasur districts will be enrolled in schools to be established with the support of Pak Swedish teachers' Association a reputed non profit organization dedicated top the education of children. This project will also combine provision of micro credit services to brick kiln workers, adult literacy, women empowerment, application of labour laws and extension of social security facilities of the workers in brick kiln sector. The Minister appreciated the role ILO IPEC is playing in combating child labour in Pakistan and assured his full support for complete elimination of child labour.

Mr. Nazir Ahmad Additional Secretary Labour & Human Resource Department Punjab: welcomed the participants and gave an overview of the efforts of Government to combat child labour. He stated that

- Government of Pakistan had ratified ILO Conventions 138 and 182
- The Government had announced a National Policy and Plan of Action
- Processes and occupations hazardous for children had been included in the Employment of Children Act 1991.
- The Punjanb government had launched a project based on award winning ergonomic loom which helps improve adult productivity and health and reduced hazardous aspects of child labour. Through this project 3000 looms will be provided to carpet weaving families at 50% cost in 12 district of Punjab.
- A Timebound programme (2008-16) is s being launched by the Government of Pakistan for eliminating hazardous child labour

Mr. Taseer Alizai Project manager ILO IPEC Carpet Project: highlighted the global dimensions of the child labour problem. He read the speech of ILO Director General. He also highlighted the role of ILO IPEC in combating child labour. He gave a an overview of major ILO projects their strategies and achievements specially the Carpet project, TBP project, Surgical project and soccer ball project.

Mr. Usama Tariq Deputy General Secretary Pakistan Workers Federation assured full support of his federation for the government's resolve to place all children in schools

by the year 2010. He highlighted the role his organization is playing in mobilizing the workers against child labour.

Mr. Iftikhar Randhawa of Employers Federation of Pakistan appreciated the brick kiln employers who had helped establish the schools at brick kilns and pledged full support of Employers federation in combating child labour

# **Urdu Training Kit on Child Labour**

An Urdu Training Kit was developed as a tool for building capacity of stakeholders to play effective role in combating child labour. As very little capacity building material is available in Urdu so the training efforts o all our partners were hampered as most important trainees specially Labour Inspectors, trade union officials, community leaders, and common public do not understand English. This Kit was welcomed by all stakeholders and is being used extensively for holding training not only of CLRC but by other organizations.

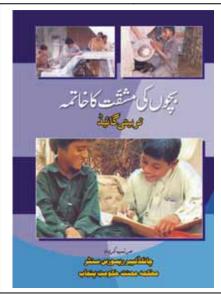
# **Activities of Legal Aid service Unit for the Bonded Labourers**

In Punjab bonded labour in different forms is found especially in the rural areas and in certain geographic regions. Most of the reported cases pertain to the brick kilns where traditional forms of manufacturing arrangements and low wages lead to abusive conditions.

Government of Pakistan is fully committed to eradicate the problem of Bonded Labour from Pakistan. The present government is committed at the highest level to eliminate this problem. Pakistan has ratified ILO's Convention 29 and 105 on Forced Labour These conventions are amongst the core 8 conventions of ILO and are universally recognized as fund basic rights of workers.

The Labour and Human Resource Department Punjab has set up a "Legal Aid Service for Assistance of Bonded Labourers" (LASU) through funding from the Bonded Labour Fund. (BLF). established in the Labour Division, Government of Pakistan. The main focal areas of LASU are:

• Establishment of a toll free helpline for documenting calls from the province on the bonded labour issue.





- To work as focal point for addressing the complaints of bonded labour throughout the province through informal inquiries as well as through formal legal assistance.
- Assistance with Publication of materials for raising awareness on bonded labour.
- Holding of training activities for capacity building of relevant stakeholders

# **Up to date Progress Report of Legal Aid Service Unit**

#### Introduction

Legal Aid Service Unit has been working since 29, April 2006 and provided the legal and moral assistance to 200 brick kiln workers. Law Officer has conducted five enquiries and submitted the detailed reports to higher authorities. This office has also prepared material including video film, brochure and booklet on the issue of Bonded Labour which is being used for training purpose. Now this office has started a programme to arrange the training workshops for the capacity building of the members of District Vigilance Committee (DVC) in which 143 persons in different districts working on Bonded Labour have been trained. This office has been proved very helpful for the elimination of Bonded Labour in Punjab.

Moreover this office has communicated to all DOLs in Punjab and Authorities under Payment of Wages Act 1936 to display the notice on the main gate in such manner that the workers who are entangled in Bonder Labour situation and wants to seek legal assistance, may apply to this office. In this regard DOL Faisalabad has referred so many cases of Brick Kiln Workers about less wages in lieu of advances/peshgis. The Law Officer has pursued more than twenty cases of workers before Authority under Payment of Wages Act, Faisalabad. Resultantly **6 cases** of Brick Kiln Workers have been decreed in favour of workers, seven cases are withdrawn by the workers and some cases are pending for adjudication. An NGOs had also referred a case of Bonded Labour in which this office, with best efforts, Lasu released **51** workers including 23 minors from the detained of Brick Kiln Owners. This office has also provided Free Legal Aid to husband of a women worker for liberty of her husband by filing Habeas Petition in Lahore High Court Lahore and released him from a brick kiln.

One hundred and twenty four complaints were received by Legal Aid Service Unit(LASU) from different resources. From which one hundred and thirteen complaints were disposed off and all the information about disposal of complaints also included in this report. The status of complaints in tabular form is also included.

### **District wise complaints**

One hundred and twenty eight(128) complaints were received by Legal Aid Service Unit (LASU) from different sources till now, from which one hundred and seventeen (117) complaints have been disposed off.

# Main issues in the complaints

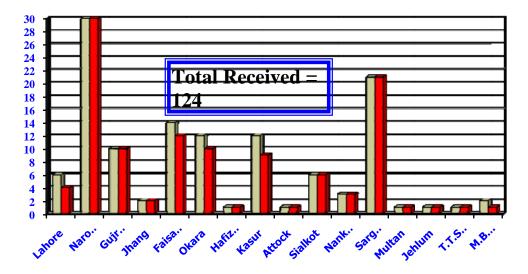
■ Number of complaints regarding:

Low Wages/Bounded Labour/ Deduction/Threatened = 107

■ Number of complaints regarding:



■ Number of complaints regarding:



Illegal Cases	= 04
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■ Number of complaints regarding:

Return of Articles = 03

■ Number of complaints regarding:

Medical Treatment = 01

■ Number of complaints regarding:

General Allegation of Bonded Labour = 12

Low Wages/ Bounded Labour/ Deduction/ Threatened	Fund for rehabilitati on	Illegal Cases	Return of Articles	Medical Treatment	General Allegation of Bonded Labour
105	1	3	3	1	11

## Less wages/ deducted wages cases.

This unit has communicated to all DOLs and Authority under Payment of Wages Act 1936 through Senior Law Officer to disseminate the purpose and provision of Legal Aid Service Unit in their respective districts. Resultantly DOL Faisalabad has referred so many cases for legal assistance. Law Officer appeared in **seven cases** and proceeded which are pending before Authority Faisalabad and instituted **eleven fresh cases** in the Court of Authority under Payment of Wages Act. Beside this so many workers through their unions and NGOs have requested for

legal assistance to get their rights in respect of less wages and other remedies. The Law Officer has regularly followed the cases of workers in District Faisalabad as desired by the Director Labour Welfare and resultantly **6 cases** of workers were decreed in favour of the workers.

# **Training workshops of District Vigilance Committee**

## Training Workshops of District Vigilance Committee (DVC).

The training was provided to the members of District Vigilance Committee (DVC) and other stakeholders working on Bonded Labour in the identified districts of Punjab. A training video and leaflet (attached) have already been produced, which are being used as the training module.

# i. Workshop held at Kasur.

A one day training workshop on Capacity Building of Stakeholders on Bonded Labour was held at the Office of District Coordination Officer (DCO) Kasur, in which Law Officer of Legal Aid Service Unit delivered a lecture on Bonded Labour. A documentary film on bonded labour for enhancement of capacity of members of DVC and other stakeholder was shown and training material for eradication of bonded labour prepared by the Legal Aid Service Unit was distributed to the participants. Seventeen (17) participants had participated this workshop.





## ii. Workshop held at Okara.

A one day training workshop on Capacity Building of Stakeholders on Bonded Labour was held at the Zila Council Hall Okara, in which Law Officer of Legal Aid Service Unit delivered a lecture on Bonded Labour. A documentary film on bonded labour for enhancement of capacity of members of DVC and other stakeholder was shown and training material for eradication of Bonded Labour prepared by the Legal Aid Service Unit was also distributed to the participants. In this workshop there were twenty two (22) participants.





### iii. Workshop held at IRI, Lahore.

A workshop on the capacity building of stakeholders was held on 16-01-2008 at Industrial Relations Institute, Labour and Human Resource Department Township, Lahore. Law Officer of Legal Aid Service Unit (LASU) delivered the lecture to build the capacity of members of District Vigilance Committee (DVC) and other stakeholders related to bonded labour. There were also twenty two (22) participants.





iv. <u>Workshop</u> <u>held at</u> <u>Sialkot</u>.

A one day training workshop on Capacity Building of Stakeholders on Bonded Labour was held on 13-02-2008 at the Office of Executive District Officer (CD) Sialkot, in which Law Officer of Legal Aid Service Unit delivered a lecture on Bonded Labour. A documentary film on bonded labour for enhancement of capacity of members of DVC and other stakeholder was shown and training material for elimination of Bonded Labour prepared by the Legal Aid Service Unit was also distributed to the participants. Twenty eight (28) participants participated in the workshop.

## V. Workshop held at Narowal.



A one day training workshop on Capacity Building of Stakeholders on Bonded Labour was held on 10-03-2008 at District Nazim Committee Hall Narowal, in which Law Officer of Legal Aid Service Unit delivered a lecture on Bonded Labour and activation of DVC for the elimination of Bonded Labour. A documentary film on bonded labour for enhancement of capacity of members of DVC and other stakeholder was shown and training material for elimination of Bonded

Labour prepared by the Legal Aid Service Unit was also distributed to the participants. Forty four (44) participants participated in the workshop.





## **Training Material**

The Training Kit (booklet) for the awareness about the bonded labour for the members of DVC and others has been prepared and a brochure for the introduction about the LASU has been composed and published in Urdu. The brochure contained the establishment of LASU, objectives, working procedure of LASU, mode of payment to Advocates working on Bonded Labour cases. It creates the awareness about the working condition of LASU.

#### Video Film

A video Film has been prepared for the training of DVCs members to combat the Bonded Labour. The video film contains all aspects for eliminating the Bonded Labour and will be used as training tool of the DVCs members.

### **Visit Programme**

LASU has visited districts Nankana Sahib, Lahore, Narowal, Gujranwala, Faisalabad, Okara, Kasur, Attock and Sialkot, in connection with complaints. He recorded the statements of the workers/complainants and suggested the appropriate action against violators of law.







### **Database of registered Brick Kilns**

LASU has been computerizing the data of District wise registered Brick Kilns along with cooperation of office of the Deputy Director Inspection.

## Communication with DBA's and Punjab Bar Council Lahore

The president of all District Bar Associations in Punjab including vice chairman of Free Legal Aid Cell Punjab Bar Council Lahore have been sent request letters for provision of free legal assistance to help Bonded Labour in Punjab in respective Districts. The Law Officer personally contacted Bar Council on telephone and talked to Secretary free Legal Aid Cell, who assured of their fullest co-operation in this regard when required.

In response of the request letters, the District bar associations BAHAWALPUR, FAISALABAD, VEHARI have sent the list of the members of learned lawyers who provide the pro bono legal assistance to the victims of bonded labour identified by the LASU.

## **Complaint Tracking System**

Software of compliant tracking system has been developed and all the complaints received by LASU were entered. The status report of compliant through this software was also sent to Joint Secretary Labour Welfare Government of Pakistan, Secretary Labour Punjab and Director Labour Welfare Punjab.



#### **ACTIVITIES OF INDUSTRIAL RELATIONS INSTITUTE**

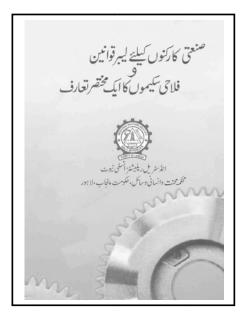
# Pocket Training Guide on Workers Rights and facilities under labour laws prepared

A pocket Urdu training guide was developed in order to create awareness among workers and employers on the rights and duties of workers as well as the facilities available to the worker sunder the labour welfare and related laws. It explains in layman's terms the rights, privileges and duties of workers and employers under the labour laws. This pocket book became very popular amongst the workers and was extensively used as a training tool during the training courses held at enterprises as well as the premises of IRI. The contents of this guide are given below:

- Payment of wages Act 1936
- Standing Orders Ordinance 1968
- Workmen's Compensation Act 1923
- Factories Act 1934
- Minimum Wages ordinance 1961
- Industrial relations Ordinance 1962
- Introduction to welfare schemes for workers
- Social Security ordinance 1965
- Special provisions for women workers in labour laws
- Employment of Children Act 1991
- Bonded Labour (Systems) Abolition Act 1992
- Employees Old Age benefits Institution (EOBI)
- Responsibilities of employers and workers in labour laws.



Sr.	Date	Title	No. of
No.			Participants
1.	24-03-2008	One Day Course on Introduction to Labour Laws	14
2.	26-03-2008	One Day Course on Introduction to Labour Laws	14
3.	27-03-2008	One Day Course on Child Labour	14
4.	22-04-2008	One Day Course on Health & Safety on Work Place	15



5.	23-04-2008	Health & Safety on Work Place	15
6.	24-04-2008	One Day Course on Bonded Labour	15
7.	26-05-2008	One Day Course on Introduction to Labour Laws	10
8.	27-05-2008	One Day Course on Child Labour	10
9.	28-05-2008	One Day Course on Health & Safety on Work Place	10
10.	28-29-05-2008	Two Days Course on Women Workers Rights the Collaboration of PWF	21
11.	2,3-06-2008	Two Days Course on Women Workers Rights the Collaboration of PWF	20
12.	23-06-2008	One Days Course on Workers Right under factories act 1934	10
13.	24-06-2008	Workers, Monitory Benefits Under Labour Laws	10
14.	28-07-2008	One Days Course on Verification/Re-verification and inspection of CNG dispensing Units	10
15.	29-07-2008	One Days Course on Weights and Measures Act 1975	10
16.	11,12,13-08- 2008	Three Days Course on Women's Rights	36
17.	22,23-08-2008	Two Days Course on Women's Rights	25
18.	17-11-2008 to 22-11-2008	One Week Capacity Building	15
19.	15-12-2008 to 20-12-2008	One Week Capacity Building	15



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