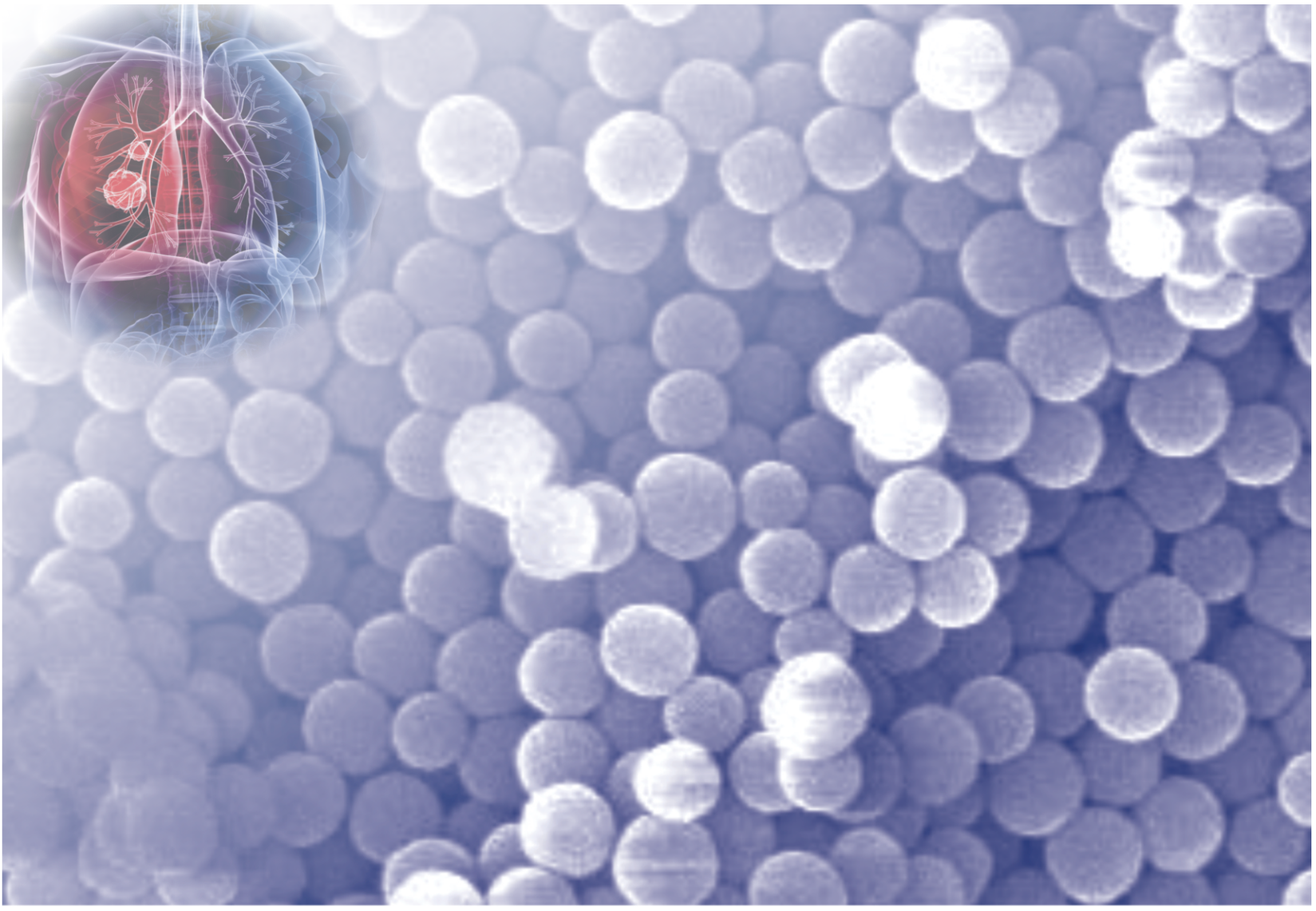

SURVEY ON SILICOSIS IN RELEVANT INDUSTRIES, PUNJAB 2018

Bureau of Statistics
Planning & Development Board
Government of the Punjab

Labour & Human Resource Department
Government of the Punjab

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Foreword

Protecting workers from work-related sickness and disease is one of the main elements of the Government's legal and regulatory functions not only because of its economic costs but also due to substantial human costs to workers' families, employers, and society. It is widely recognized that such costs cannot be avoided by actions of the Government only, employers as well as workers also have responsibilities in this regard. The International standards on occupational safety and health prepared under the tri-partite mechanism provide the required tools to governments, employers, and workers to establish safe practices for providing maximum safety at work.

There was no independent legislation on occupational safety and health issues in Pakistan. The main law governing these issues, was Chapter-III of Factories Act, 1934. All the provinces, under this Act, had framed Factories Rules. Labour Inspectors were appointed under the Law for effective implementation by the government (Federal or Provincial).

Due to lack of proper legislation and means to gather data on occupational safety and health in the past, the situation on ground in respect of OSH remained blur. "The Punjab Occupational Safety and Health Act, 2019" has recently been promulgated to develop a safety and health culture at the workplace in the province. In order to fill the gap regarding information on occupational diseases, the Labour and Human Resource Department took pride in conducting a joint survey on silicosis with Bureau of Statistics Punjab in relevant sectors in 2018. Recognizing the importance of worker's health and unsatisfactory conditions of occupational safety and health in Pakistan, the Honourable Supreme Court of Pakistan directed the provinces to submit a report on prevalence of occupational disease (silicosis). By conducting this Survey, Government of Punjab expresses its commitment and resolve to protect health of workers in the province.

I am sure that this effort of the Labour & HR Department in collaboration with the Bureau of Statistics, Punjab will go a long way in improving the situation of occupational safety and health in the province.

SECRETARY
Labour & Human Resource Department

Acknowledgement

The Survey on Silicosis in Relevant Sectors of Punjab was conducted across the province that covered very focused workplaces, involved in stone crushing, ceramics, cement, silica sand mining, marble, glass and furnace. The survey covered the persons employed in any manufacturing process in these industries, or in cleaning any part of machinery or in premises used for a manufacturing process.

The survey has been conducted with the aim to provide data to establish the ground situation in respect of prevalence of occupational diseases in general and silicosis in particular so that the Government may take appropriate measures to address various dimensions of the problem, monitor progress and devise programs where necessary.

Bureau of Statistics has covered 16 districts, 199 out of 211 work places and 1,220 out of 1251 workers to project a close to reality picture of the causes and problems faced by the workers involved in work that may cause a disease of the lungs. The sole purpose of this survey is to fine-tune policies and devise programs to address this problem in the Punjab province.

I would like to congratulate team of Bureau of Statistics for coordinating the field activities and providing the basic data analysis. I also appreciate the efforts of field services for the data collection and data processing team, for this valuable data.
I would also like to thank Dr. Lubna Shahnaz and her team for timely completion of the report. The report is also available on the website of Punjab Bureau of Statistics.

I particularly acknowledge support and facilitation from Labour & Human Resource Department, Government of Punjab, at all levels of the project activities i.e, providing financial support, updated sample frame for units regarding workplaces of seven sectors, feedback on survey tools, i.e. Survey Manuals, Questionnaires, Computer Assisted Personal Interviewing (CAPI) application and finalization of Survey Report.

DIRECTOR GENERAL
Bureau of Statistics, Punjab

Executive Summary

On the directives of the Honourable Supreme Court of Pakistan, the Bureau of Statistics Punjab and the Department of Labour and Human Resources jointly conducted a survey to collect information on prevalence of silicosis among workers involved in stone crushing units and other sector of economy where silica exposure is encountered with the objective to examine the magnitude and dimensions of this occupational disease. The sample size of the survey comprised of 1,251 production workers employed in 211 selected establishments across the province involved in cement, ceramics, furnace, glass, marble, mining of silica sand and stone crushing.

The results of the survey show that majority of the interviewed establishments (around 80 percent) were registered with relevant government departments and predominantly employed upto 10 production employees (more than 70 percent), while a quarter of establishments (around 25 percent) employed upto 60 employees. The overwhelming majority of the interviewed production workers employed in the surveyed establishments (close to 99.8 percent) were male, while only a fraction of them (38.4 percent) reported having prior information about silicosis. More than four-fifth of the workers who claimed having some information about the disease, reported that the source of information about the disease was their friends and family, with the highest number of such workers belonging to ceramics. Only a minor fraction of workers (around 2 percent) positively believed that they could catch silicosis at their work place.

A large proportion of the workers having some information about silicosis also expressed having knowledge of its symptoms (68 percent), with most of these interviewed workers being engaged in ceramics followed by stone crushing. An overwhelming majority of the interviewed workers (90 percent) reported that they did not face any of the symptoms of the disease while at work. One tenth of these workers reported feeling lethargic, around 8 percent felt having cough, 6 percent faced shortness of breath and around 4 percent felt chest pain, while at work.

In addition to symptoms of silicosis, the interviewed workers were also enquired about prevalence of other occupational diseases. Only 5 percent of them reported to having suffered from heart, kidney, liver or diabetes problems, with the highest number

of these workers involved in ceramics and cement. More than a quarter of the interviewed workers were found to be involved in smoking, with the highest number of such workers being engaged in ceramics and stone crushing. With regards to the availability of essential safety equipment at the work place, a majority of the employers (59 percent) acknowledged absence of such equipment, while just under four-tenths of the interviewed establishments did not have first aid facility at the work place. The survey found that none of the interviewed workers was suffering from silicosis, most probably due to the fact that once a worker catches silicosis, he leaves work due to his illness.

Based on the main findings of the survey, a number of recommendations are being offered for improving the occupational safety and health situation in the province of Punjab. Foremost among these is the strengthening and streamlining of the legal and regulatory framework relating to occupational diseases in general and silicosis in particular. In view of frequent migration of workers from one establishment to another, it is also necessary to develop an OSH MIS that should be able to track a worker across different establishment and keep a record of the worker's disease. A one-time universal health screening of all workers in the province is necessary for creating a base line while mandatory health screening for each new entrant is necessary to keep the system updated. This report also suggests designing and implementation of an effective awareness campaign, widening the scope of National TB Control Program to cover silicosis in it, capacity building of the concerned departments and implementation of laws and regulations.

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List of Abbreviations

ILO:	International Labor Organization
GDP:	Gross Domestic Product
CAPI:	Computer Assisted Personal Interviewing
OSH:	Occupational Safety and Health
BOS:	Bureau of Statistics
MICS:	Multiple Indicator Cluster Survey
SMEs:	Small & Medium Enterprises
SECP:	Securities and Exchange Commission of Pakistan
MIS:	Management Information System

Introduction

ILO's Occupational Safety and Health Convention, 1981 (No. 155), defines "occupational disease" as 'any disease contracted as a result of an exposure to risk factors arising from work activity', while ILO's Employment Injury Benefits Recommendation, 1964 (No. 121) requires that "Each Member should, under prescribed conditions, regard diseases known to arise out of the exposure to substances and dangerous conditions in processes, trades or occupations as occupational diseases."[1]

Silicosis, one of such recognized occupational diseases, is a condition caused by inhaling too much silica over a long period of time or by breathing in a very fine dust containing crystalline silica. Silicosis, an incurable lung disease, which gets worse overtime may lead to respiratory failure and death[2]. Its symptoms include intense cough, weakness, and shortness of breath, chest pain, fever, night sweats, weight loss and respiratory fever. The best way to prevent silicosis is to identify workplace activities that produce crystalline silica dust and to take steps to control exposure to the dust.[3] Mostly the workers engaged in mining, quarrying, sand-blasting, rock drilling, road construction and stone masonry activities are affected by symptoms of silicosis.

According to ILO, globally 2.2 million workers[4] die every year due to work related accidents or illnesses, more than 270 million workers get injured and about 160 million workers suffer work-related illnesses. These injuries, deaths and illnesses incur a cost of 4 percent loss in Global GDP[5], which is equal to 20 times the official development aid put together.

In Pakistan, assessment of occupational safety and health environment including injuries and deaths is constrained by lack of systematically available administrative data across the four provinces[6].The Labour Force Survey, conducted regularly by Pakistan Bureau of Statistics, captures sketchy information on

[1] http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R121
[2] https://www.osha.gov/dsg/topics/silicacrystalline/
[3] www.who.int/
[4] http://www.ilo.org/islamabad/areasofwork/safety-and-health-at-work/lang--en/index.htm
[5] http://www.ilo.org/islamabad/areasofwork/safety-and-health-at-work/lang--en/index.htm
[6] http://www.ilo.org/islamabad/whatwedo/publications/WCMS_316668/lang--en/index.htm

occupational safety and health. Due to non-compliance of appropriate labour laws and weak supervision by the concerned authorities, especially in the informal sector there is a high prevalence of injuries and diseases in the country's workforce.

Although occupational safety and health of workers is a human right, reducing occupational injuries and diseases it is also important to enable in order to achieve higher productivity and to remain competitive in the industry. Labour Force Survey data shows that working conditions at work places in Pakistan are generally substandard with little preventive measures[7].

Labour inspectors in the provincial Labour Departments are responsible to ensure that occupational safety and health rules are implemented in the establishments. However, the number of labour inspectors is too small compared to the size of their responsibility and area they have to oversee and, a number of positions of labour inspectors are vacant in all provinces, including Punjab. This is one of the main reasons of weak compliance of labour laws. In addition, the informal work places, which employ bulk of the labour force are not covered by the labour laws and rules, as the laws related to safety and health are applicable to formal sectors' workers. Some sectors like agriculture, housing construction and transport do not come under the scope of labour laws and consequently occupational safety and health standards in these areas continues to remain weak

The provincial Labour Departments of the province have the legislative power to formulate laws for improving welfare of the labour that can lead to better working conditions at work places. Similarly, Labour Department is liable to ensure that appropriate preventive measures are taken to ensure that existing OSH standards are followed at all work places in the province. The laws related to occupational safety and health include; Mines Act 1923, Workmen Compensation Act 1923, Factories Act 1934, Dock Labourers Act 1934, Provincial Employees Social Security Ordinance 1965, West Pakistan Shop and Establishments Ordinance 1969, Boilers and Pressure Vessels Ordinance 2002, the Hazardous Occupations Rules 1963 and Punjab Hazardous Occupation (Silicosis) Rules 2015.

[7] http://labourwatchpakistan.com/safety-workplace/

Background

The Supreme Court of Pakistan adjudicated in a case related to workers' health and safety in industrial units in response to an application submitted under Article 184(3) of the Constitution with regard to the prevalence of silicosis and subsequent deaths of labourers working in stone crushing units. The Court ruled that the existing legislation was inadequate to address the issues of occupational hazards as it only covered workers employed in factories governed by Factories Act, mines covered under the Mines and Minerals Act and those covered under the environment protection regimes currently in force in the country.

The Supreme Court of Pakistan directed the relevant Federal and Provincial Government Departments to formulate comprehensive laws to strengthen the existing monitoring and evaluation framework[8]. The Court also directed the Provincial Government Departments to collect and submit data of patients affected by silicosis, as well as the number of unregistered stone crushing units. The honorable Court recognized that there is need to collect reliable data on prevalence of occupational diseases. The Court directed the Pakistan Bureau of Statistics to assist the Provincial Labour Department to review the Labour Force Survey questionnaire in order to ensure that necessary information on OSH is captured.

In this regard, the Labour Department of Punjab is conducting a series of surveys to capture the situation of OSH in the province. The results of the surveys would enable those involved in labour policy and planning in devising necessary steps to ensure that the Labour Department has the essential support and baseline information and dataset to effectively implement its statutory mandate. The baseline will cover information on number and types of employees, nature of employment, health risks profile related to different industries, shops and establishment, the number of retired and current workers affected by silicosis.

Survey Objectives

In order to better understand the issue of silicosis, Labour & Human Resource Department of the Government of Punjab, under 'Capacity Development of Industry to Promote Compliance with Labour Standards' program, fielded a survey in

[8] Human Rights Case No.16143-P of 2014, 14th July, 2015.

collaboration with the Punjab Bureau of Statistics. The workplace survey was designed to physically identify the silicosis in the sectors in which workers are engaged and exposed to silica dust particularly quartz dust and at the workplaces where they have been working for intervening the project activities in different districts of the province. The major objectives of the survey are as under:

i. The main purpose of the survey is to identify prevalence of respiratory disease particularly silicosis on the basis of its symptoms already laid down in the questionnaire and to explore its association with socio-demographic characteristics laid down in the revised questionnaire.
ii. The BOS will also carry out profiling of target workforce during the survey.
iii. Sector wise results will be taken during the survey for further analysis to project prevalence of silicosis in Punjab.

Methodology of the Survey

Sampling Methodology

Sector wise sampling frame with respect to 7 sectors namely cement, ceramics, furnace, glass, marble, mining of silica sand and stone crushing industrial units was provided by the Labour & Human Resource Department, Government of Punjab. After getting approval and vetting of the sampling frame of industrial units from the L&HR Department, Bureau of Statistics, Punjab further developed the sampling methodology to determine the sector wise sample. In this concern, 10% margin of error and probability of success (0.5) were taken. Chochran Formula with correction factor was used for determining the sample size for each sector. Overall sample size of 211 was determined. Sampling weights were applied to the data sets on the basis of sector wise frame. Sector-wise response rate details is as under:

Details of sectors by sampled units and total units

Sectors	Total Units	Sampled Units
	No.	No.
Furnace	12	11
Marble	22	18
Glass	16	14
Stone Crushing/ Grinding	207	66
Cement	12	11
Ceramics	68	40
Silica Sand Leases/ Mines	100	51
Total	437	211

Data Collection Methodology

Bureau of Statistics, Punjab has a great history to ensure the reliability and quality of data. Bureau of Statistics deputed Data Collection Officers of BS-17 (Statistical Officers & Assistant Directors) & BS-18 (Deputy Directors) from Bureau of Statistics, Offices for data collection for the survey. Computer Assisted Personal Interviewing (CAPI) was developed by Bureau of Statistics, Punjab and it was used during field work for data collection. Data was synchronized on daily basis to the server based at BoS, Punjab.

Data collection was carried out from the employer of the unit and after getting the permission from the owner, interviews from 10 employees were conducted within

each unit. All employees were interviewed where number of employees was fewer than 10. All the employees were systematically listed at each unit before selection. Sample of male and female employee was taken proportionally.

Limitations of the survey

The survey on Silicosis in relevant sectors of Punjab, 2018 is a work-place based survey. The survey has been conducted as sampled enumeration type exercise in the seven sectors as per the updated frame provided by the Labour & Human Resource Department, Government of Punjab. Seven Sectors are cement, ceramics, furnace, glass, marble, mining of silica sand and stone crushing. These sectors were selected keeping in view higher possibility of occurrence of silicosis among the workers due to dusty atmosphere. Although it is a sample survey, its findings will enable policy makers to focus on the selected sectors where workers are exposed to extreme dust and face the danger of silicosis.

To completely document the incidence silicosis in the province and to reach every industrial unit where such activities are being carried out which can harm the workers and can cause silicosis in the long run, is practically a gigantic exercise with massive financial burden for the Department.

Ethical consideration

Respondent's safety, privacy and anonymity were maintained during interviews of the respondents. After explaining the objectives of the study and rapport building, appropriate informed oral consent was taken before conducting the interview. The interviews with the participants were voluntary. During the interview, no personal family information was collected. For maintaining the record of the participants, a unique code was assigned to each participant. The same unique code was then used on respective interview guide. No financial compensation was provided to the respondents.

Introduction to the province - Punjab

Punjab is the largest province of Pakistan in terms of share in total population and second largest province in terms of its land mass. The province is home to more than 110 million people according to the 2017 Population Census, accounting for 53 percent of total population of the country. It is spread over an area of 205,344 sq. km. representing 25.8 percent of total land mass of the country. Lahore is the capital of the province.

The province of Punjab belongs to one of the oldest civilizations, as the ruins of 8,000 years old Harappa, symbol of the achievements in learning, arts and crafts, Taxila, Katas Raj temple, Salt Range temples and architectural wonders of Mughals including Badshahi Mosque and Shalimar gardens lie in this part of the region. Muhammad Bin Qasim brought the message of Islam to this region, which spread through the teachings of various Sufi saints. During the partition of India in 1947, most of the Muslim dominated areas of this region were combined together to form present day Punjab of Pakistan.

The province has been divided into nine administrative divisions, 36 districts, 143 tehsils and 4,015 union councils for the sake of administration and service delivery.[9] Punjab occupies 183 seats in National Assembly[10] of Pakistan while the Provincial Assembly comprises of 371 seats.[11] According to 1998 census, around 32 percent of the total population of the province lived in urban areas while the 68 percent is rural population[12]. Punjab is blessed with rich mineral resources, including world's biggest salt mine at Khewra, Brine, Gypsum, Coal, Bentonite, Silica Sand, Fireclay, Lime Stone and Marble. Punjab has the lowest prevalence of poverty compared to the other provinces in Pakistan, though some southern areas of the province are impoverished.

The literacy rate for population of age 10 years and above in the province (according to MICS 2014) was estimated to be 61 percent, with literacy of male (ages

[9] Punjab Development Statistics, 2017, pp 19
[10] http://na.gov.pk/en/composition.php
[11] http://pap.gov.pk/public/faqs
[12] Punjab Development Statistics 2017, pp 13

10+) being 69 percent compared to 52 percent for female[13]. The total number of Colleges of Technology/Polytechnic Institutes in the province was 31, having teaching staff of 1,185 in 2015-16. There are 118 Commercial Training Institutes with 1,515 teachers. The total number of Vocational Institutes was recorded at 130 with teaching staff of 513 while the number of Training Institutes/ Apprenticeship Training Centers in Punjab was 50 with total teaching staff of 843. There was a Vocational Teachers' Training Institute for Women and five Technical Teacher's Training Colleges having teaching staff of 75[14].

The total labour force of Punjab is estimated to be around 36.923 million (based on total population of the province according to 2017 Census). Labour force participation rate of the province Punjab is 48.5 percent with male labour force participation rate of 69.4 percent while female labour force participation rate is 27.8 percent.[15] Around 74.4 percent of employed labour force is in informal sector, who do not have any arrangement for work related security as occupational safety and health laws do not apply on such establishments. Total registered factories in the province are 15,040 with estimated employment of 1.096[16] million.

The industrial sector of Punjab employs 23 percent of the province's labour force and contributes up to 24 percent to the GDP of the province. Punjab has more than 48 thousand industrial units in addition to 39 thousand small and cottage industries. Almost 90 percent of the private enterprises are SMEs which employ 78 percent of non-agriculture labour force.[17]

Agriculture sector employs most of the labour force of the province providing jobs to almost 45 percent of labour force. Manufacturing and service sectors jointly provide employment to around 55 percent of the provincial labour force.

The laws related to labour and human resource in Punjab include West Pakistan Shops and Establishments Ordinance 1969, Factories Act 1934, Punjab Industrial Relations Act 2010, Workmen Compensation Act 1923, Punjab Employees Special Allowance (Payment) Act 1988, Provincial Employees' Social Security

[13] ibid, pp 172
[14] Punjab Development Statistics 2017, pp 147-152
[15] Pakistan LFS 2014-15, pp 23
[16] Punjab Development Statistics 2017, pp 270
[17] Punjab Growth Strategy 2018, pp 21

Ordinance 1965, Workers Welfare Fund Ordinance 1971, Payment Of Wages Act 1936, Minimum Wages Ordinance 1961, Industrial Statistics Act 1942 and Employees' Cost Of Living (Relief) Act, 1973.

To implement the Supreme Court of Pakistan's decision in the human rights case relating incidence of silicosis, the Government of Punjab has formulated an action plan for control, rescue and treatment of victims of silicosis which include the introduction of new law on Occupational Safety and Health, ensuring the installation of Cyclone Dust Collector & Bag filters in the Chimneys of the stone crushing and marble grinding units[18], provision of high standard masks to the labourers working in vulnerable conditions, health screening of the industrial workers of stone crushers, ceramics industry and marble grinding units and nomination of certified surgeons to treat workers suffering from silicosis.

Silicosis has been added in the check list of occupational hazards in Punjab. The Government of Punjab has provided Occupational Safety & Health kits to inspecting staff of provincial Labour & Human Resource Department in 36 districts of the province where stone crushing and marble grinding units are in operation. Based on a schedule, Labour inspectors have been trained in the province and Punjab Bureau of Statistics has initiated steps for systematic data collection related to silicosis.

[18] https://www.punjab.gov.pk/node/2268

A stone crushing unit in Punjab

A cement factory

Findings of the survey on silicosis in relevant sectors of Punjab 2018

Information about the Wok Place

For the survey on silicosis in relevant sectors of Punjab 2018, the work places where workers of ages 14 years and above were found to be working which had presence of silica particles were termed as eligible work places. This section provides information related to work places obtained from survey, which was conducted through a structured questionnaire (Annex-II). The survey identified 211 eligible workplaces throughout the province, of which interviews could be completed in 199 establishments or eligible work places. Interviews could not be initiated at 12 establishments as 11 of them were permanently closed while one questionnaire could not be completed due to other reasons. Definitions of main terms used in the report are given in Annex: I.

Employer's Information

Table 1 shows percentage distribution of eligible work places where interviews were completed in the province. The interviews were completed at 199 of the total 211 identified eligible work places that were included in the sample. Thus interviews were completed at 94.3 percent of the eligible work places. Questionnaires from 11 establishments (accounting for 5.2 percent of eligible work places) could not be completed as they were found to be closed. None of the running establishments refused to give interview. Of the total of 199 establishments interviewed, a majority of establishments (33 percent) were involved in stone crushing followed by those involved in mining of silica sand (24 percent). Around 20 percent of interviewed establishments (39) were involved in ceramics work.

Table 1: Response of the Establishments, by Type				
Establishment type	Interview Completed	Establishment Closed	Other	Total
Cement	11 (100)	0 (0)	0 (0)	11 (100)
Ceramics	39 (97.5)	1 (2.5)	0 (0)	40 (100)
Furnace	9 (81.8)	2 (18.2)	0 (0)	11 (100)
Glass	10 (71.4)	4 (28.6)	0 (0)	14 (100)
Marble	18 (100)	0 (0)	0 (0)	18 (100)
Silica-sand mining	47 (92.2)	4 (7.8)	0 (0)	51 (100)
Stone crushing	65 (98.5)	0 (0)	1 (1.5)	66 (100)
Total	199 (94.3)	11 (5.2)	1 (0.5)	211 (100)

(Figures in parenthesis represent row percentages)

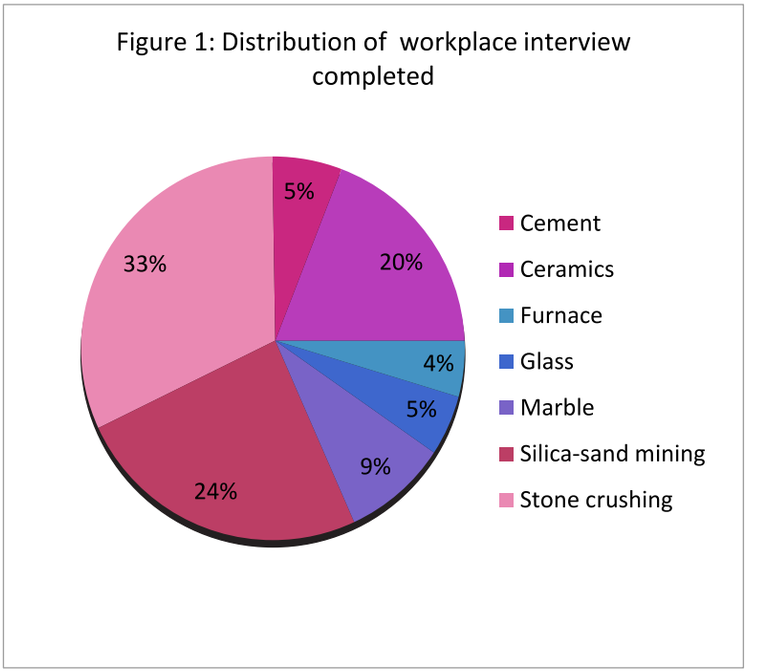

Figure 1 shows the percentage distribution of the completed interviews by type of establishment. It shows that one third of the interviewed establishments were involved in stone crushing, followed by around one quarter (24 percent) being involved in mining of silica sand, one fifth (20 percent) engaged in ceramics and around one tenth (9 percent) of the interviewed establishments were involved in marble.

Table 2 presents the distribution of establishments by type of their work/ activities. The data shows that out of a total of 65 stone crushing establishments, 60 (92.3 percent) were engaged in stone crushing activities, while 5 (7.5 percent) were involved in furnace/ steel work, while all 47 establishments in Silica-sand were involved in mining activities. All the establishments in marble, glass and furnace were engaged, respectively in marble, glass and furnace related activities. Out of the 11 cement establishments, 10 were engaged in cement making, while one was involved in furnace/ steel work.

Table 2: Distribution of Establishments, by type of work

Establishment Type	Furnace/ Steel	Marble	Glass	Stone Crushing	Cement	Ceramics	Mining	Establishments Interviewed
Cement	1 (9.1)	0 (0)	0 (0)	0 (0)	10 (90.9)	0 (0)	0 (0)	11 (100)
Ceramics	1 (2.6)	2 (5.1)	0 (0)	1 (2.6)	0 (0)	35 (89.7)	0 (0)	39 (100)
Furnace	9 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	9 (100)
Glass	0 (0)	0 (0)	10 (100)	0 (0)	0 (0)	0 (0)	0 (0)	10 (100)
Marble	0 (0)	18 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	18 (100)
Silica-sand	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	47 (100)	47 (100)
Stone crush	0 (0)	5 (7.7)	0 (0)	60 (92.3)	0 (0)	0 (0)	0 (0)	65 (100)
Total	11 (5.5)	25 (12.6)	10 (5)	61 (30.7)	10 (5)	35 (17.6)	47 (23.6)	199 (100)

(Figures in parenthesis represent row percentages)

Table 3 contains information on the registration status of the interviewed establishments. Out of the total interviewed establishments, around 79 percent (157) establishments declared that they were registered, while 21.1 percent (42) were not registered with any organization in the province of Punjab. All the 11 interviewed establishments involved in cement as well as 9 establishments involved in furnace reported to be registered. Of the 39 interviewed establishments involved in ceramics, 35 (89.7 percent) were registered, while 9 of the total 10 interviewed establishments (90 percent) engaged in glass, 6 out of total 18 interviewed establishments (33.3 percent) engaged in marble 43 of the total 47 establishments engaged (91.5 percent) in mining of silica sand and 44 of the total 65 interviewed establishments (67.7 percent) involved in stone crushing were found to be registered.

Table 3: Distribution of Establishments, by Registration					
Establishment type	Yes		No		Establishments Interviewed
	No.	%age	No.	%age	No.
Cement	11	100.0	0	0.0	11
Ceramics	35	89.7	4	10.3	39
Furnace	9	100	0	0.0	9
Glass	9	90.0	1	10.0	10
Marble	6	33.3	12	66.7	18
Silica sand	43	91.5	4	8.5	47
Stone crush	44	67.7	21	32.3	65
Total	157	78.9	42	21.1	199

Table 4 provides information on percentage distribution of the registration of 199 interviewed establishments with various government departments. The data shows that 7.5 percent (15 establishments) were listed with the Securities and Exchange Commission of Pakistan (SECP), 59.3 percent (118 establishments) with Labour Department, Punjab, 10.6 percent (21) with Industries Department, Punjab and 19.6 percent (39 establishments) were affiliated with other departments.

Table 4: Distribution of Establishments, by Registration Organization					
Establishment type	SECP	Labour Department	Industries Department	Other	Establishments Interviewed
Cement	7 (63.6)	11 (100)	9 (81.8)	0 (0)	11
Ceramics	1 (2.6)	33 (84.6)	3 (7.7)	0 (0)	39
Furnace	0 (0)	9 (100)	2 (22.2)	0 (0)	9
Glass	5 (50)	8 (80)	5 (50)	0 (0)	10
Marble	0 (0)	6 (33.3)	0 (0)	2 (11.1)	18
Silica sand	0 (0)	8 (17)	0 (0)	35 (74.5)	47
Stone crush	2 (3.1)	43 (66.2)	2 (3.1)	2 (3.1)	65
Total	15 (7.5)	118 (59.3)	21 (10.6)	39 (19.6)	199

(Figures in parenthesis represent row percentages)

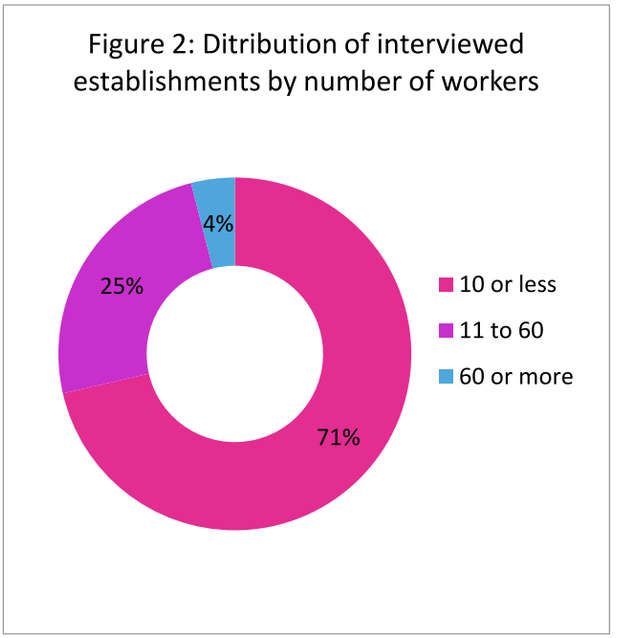

Figure 2 shows the distribution of interviewed establishments by number of workers employed. The figures indicate that the share of establishments having up to 10 employees was the highest, at 71.4 percent (142) of total interviewed establishments. The percentage share of establishments having 11-60 workers in their production process was 24.6 percent (49), while share of the establishments which had more than 60 workers was only 4 percent (8) of total establishments.

Industry wise, 54 establishments (83 percent) involved in stone crushing employed up to 10 workers, followed by all 47 establishments (100 percent) involved in mining of silica sand as well as all 18 establishments (100 percent) involved in marble. A total of 13 establishments (33.3 percent) involved in ceramics, 54 establishments (83 percent) involved in stone crushing and 3 establishments (27 percent) engaged in cement and glass each employed up to 10 employees (Table 5).

Of the total 49 establishments employing 11-60 workers, highest number and share of belonged to ceramics (25 establishments) while highest number of establishments hiring more than 60 employees were engaged in cement.

Table 5: Size of Establishments, by Number of Employees

Establishment type	No of Establishments having Employees			Establishments Interviewed
	10 or less	11 - 60	60 or more	
Cement	3 (27.3)	3 (27.3)	5 (45.4)	11
Ceramics	13 (33.3)	25 (64.1)	1 (2.6)	39
Furnace	4 (44.4)	4 (44.4)	1 (11.1)	9
Glass	3 (30)	6 (60)	1 (10)	10
Marble	18 (100)	0 (0)	0 (0)	18
Silica sand	47 (100)	0 (0)	0 (0)	47
Stone crush	54 (83.1)	11 (16.9)	0 (0)	65
Total	142 (71.4)	49 (24.6)	8 (4)	199

(Figures in parenthesis represent row percentages)

Worker's Information

This section comprises of the information gathered from the interviewed workers during the survey. A total of 1,220 employees were interviewed completely out of 1251 in 199 establishments (Table 6) of which 32.8 percent (400 employees)

were working in ceramics, followed by 29 percent (354) engaged in stone crushing, 18.5 percent (226) in cement and 7 percent (85) in furnace. The proportion of the interviewed workers, 1.6 percent (20) were engaged in marble sector.

Table 6: Distribution of Interviewed Workers, by Establishment Type

Establishments Type	Interview Completed	
	No.	%age
Cement	226	18.5
Ceramics	400	32.8
Furnace	85	7.0
Glass	80	6.6
Marble	20	1.6
Silica sand	55	4.5
Stone crush	354	29.0
Total	1,220	100.0

The data shows that an overwhelming majority of the interviewed workers, at 99.8 percent, were male (Table 7). Only 3 female workers were found to be working in 199 interviewed establishments, who were working in ceramics.

Table 7: Distribution of Interviewed Workers by Sex and Establishment Type

Establishment Type	Male		Female		Total
	No.	%age	No.	%age	No.
Cement	226	100.0	0	0.0	226
Ceramics	397	99.4	3	0.6	400
Furnace	85	100.0	0	0.0	85
Glass	80	100.0	0	0.0	80
Marble	20	100.0	0	0.0	20
Silica sand	55	100.0	0	0.0	55
Stone crush	354	100.0	0	0.0	354
Total	1,217	99.8	3	0.2	1,220

Information on distribution of workers by type of employment is given in Table 8. Of the total 1,220 interviewed workers, 67.2 percent (820) were employed on a permanent basis in the establishments, followed by those employed on temporary basis /daily wagers at 20.6 percent (251) while 11.7 percent (143) were employed on contract. The highest number of workers employed on permanent basis was in ceramics (316), followed by stone crushing (182) and cement (161).

Table 8: Type of Employment, by establishment type					
Establishment Type	Permanent	Contract	Temporary/ Daily Wage	Other	Total
Cement	161 (71.2)	40 (17.7)	25 (11.1)	0 (0)	226
Ceramics	316 (79.0)	7 (1.8)	77 (19.2)	0 (0)	400
Furnace	54 (63.5)	0 (0)	31 (36.5)	0 (0)	85
Glass	80 (100.0)	0 (0)	0 (0)	0 (0)	80
Marble	6 (30.0)	1 (5.0)	13 (65.0)	0 (0)	20
Silica sand	21 (38.2)	13 (23.6)	16 (29.1)	5 (9.1)	55
Stone crush	182 (51.4)	82 (23.2)	89 (25.1)	1 (0.3)	354
Total	820 (67.2)	143 (11.7)	251 (20.6)	6 (0.5)	1220

(Figures in parenthesis represent row percentages)

Table 9 shows percentage distribution of the interviewed workers by type of work. Data shows that share of workers involved in operating stone crushing machinery is the highest, at 17.1 percent (208 workers), followed by those engaged in stone loading at 13.3 percent (162 workers). Another 12.9 percent of workers (157) is engaged in stone crushing, 8.6 percent (104) workers were working in furnace, 4.3 percent (52) were engaged in frits (rait) loading, 1.6 percent (19) in stone polishing, while only 0.1 percent (1) worker was responsible for inserting explosives in stones. The nature of work of a large number of workers, at 67 percent (819) is recorded as 'others'.

Industry wise, the largest number of workers engaged in stone crushing industry were working on operating stone crushing machine, at 39.6 percent (140 workers) followed by 34.5 percent (122 workers) engaged in stone loading while another 28.6 percent (101) of workers in stone crushing were engaged in stone crushing within the establishments.

On the other hand, 13.5 percent of workers in ceramics establishments (54 workers) were working in furnace followed by 22.6 percent of workers (51 workers) in cement industry who reported to be operating stone crushing machines. The employers reported that an overwhelming majority of workers (90 percent) work for 8-12 hours, followed by those who work for 4-7 hours (10 percent). Only a small number of workers were engaged to work for more than 12 hours (0.2 percent).

Table 9: Nature of Work, by Establishment Type									
Establishment Type	Stone Loading	Stone Crushing	Inserting Explosives in Stones	Working in Furnace	Frits Loading.	Stone Polishing	Operating Stone Crushing Machine	Others	Total
Cement	0 (0)	21 (9.3)	0 (0)	7 (2.9)	0 (0)	0 (0)	51 (22.6)	189 (83.7)	226
Ceramics	5 (1.2)	4 (1.1)	0 (0)	54 (13.5)	13 (3.2)	0 (0)	6 (1.4)	335 (83.7)	400
Furnace	0 (0)	0 (0)	0 (0)	41 (48.9)	2 (2.1)	0 (0)	0 (0)	56 (66.2)	85
Glass	0 (0)	0 (0)	1 (0.8)	1 (1.3)	1 (0.8)	0 (0)	0 (0)	79 (98.7)	80
Marble	7 (36.3)	0 (0)	0 (0)	0 (0)	0 (0)	13 (67)	1 (4.9)	3 (14.6)	20
Silica-sand	28 (50.4)	30 (55)	0 (0)	0 (0)	35 (63.4)	0 (0)	11 (19.1)	13 (23.7)	55
Stone crushing	122 (34.5)	101 (28.6)	0 (0)	1 (0.4)	2 (0.6)	5 (1.5)	140 (39.6)	143 (40.4)	354
Total	162 (13.3)	157 (12.9)	1 (0.1)	104 (8.6)	52 (4.3)	19 (1.6)	208 (17.1)	819 (67.1)	1,220

(Figures in parenthesis represent row percentages)

Information about silicosis

This section presents information about knowledge/ awareness of silicosis amongst the interviewed workers in eligible work places. Questions are asked from the employers and employees and their responses were recorded accordingly. The following tables show results of data analysis based on information gathered from the interviewed workers.

Table 10 presents distribution of workers who reported having some information about silicosis. Of the total of 1,220 interviewed workers, 38.4 percent (468) workers reported to have knowledge about the disease, while majority (66.5 percent) did not have any information about this disease. Industry wise, the highest number of such workers having knowledge of silicosis was in ceramics, at 245 (61 percent of total workers in ceramics). On the other hand, the highest share of the workers who had the knowledge of silicosis was in furnace, at 78 percent (66 workers). In establishments involved in cement, 33.5 percent (76) workers had information about silicosis while in stone crushing establishments, only 15 percent of workers (53) workers reported to have information about the disease.

The percentage share of workers who reported having no information about silicosis was the highest, at 97.7 percent (54) in mining Silica sand followed by 85 percent (301) in stone crushing establishments.

Table 10: Information about silicosis, by establishment type

Establishment Type	Yes		No		Total
	No.	%age	No.	%age	No.
Cement	76	33.5	150	66.5	226
Ceramics	245	61.1	155	38.9	400
Furnace	66	78.0	19	22.0	85
Glass	21	26.3	59	73.8	80
Marble	6	30.0	14	70.0	20
Silica sand	1	2.3	54	97.7	55
Stone crush	53	15.0	301	85.0	354
Total	468	38.4	752	61.6	1,220

Table 11 depicts distribution of workers having information about silicosis, by source of information. Of the total 468 workers who reported to have information about silicosis, the substantial majority 82.9 percent (388) workers indicated that their source of information was 'friends and family', followed by 8.8 percent (41) workers who

reported that their source of information was a doctor. Another 15.2 percent of workers having information about silicosis reported some other sources of their information.

Industry wise, the highest proportion of workers who reported to have gained information about the disease through ‘family and friends’ was in furnace establishments, at 100 percent (66 workers) followed by 97 percent (238) in ceramics, 87.5 percent (47) in stone crushing, 66.7 percent (4) in establishments engaged in marble. On the other hand, share of workers who reported ‘doctor’ as their source of information was the highest establishments engaged in glass work, at 48 percent (10) while the number of workers who reported that ‘media’ is their source of information was the highest in cement and stone crushing, at 9 workers each.

Table 11: Source of the knowledge of silicosis, by establishment type						
Establishment Type	Media	Doctor	Friends/ Family	Internet	Others	Interviewed employees knowing about silicosis
Cement	9 (12.2)	16 (21.1)	25 (33.4)	1 (1)	45 (58.9)	76
Ceramics	0 (0)	4 (1.8)	238 (97.3)	0 (0)	6 (2.3)	245
Furnace	0 (0)	0 (0)	66 (100)	0 (0)	0 (0)	66
Glass	1 (6.2)	10 (48)	7 (34.8)	0 (0)	14 (65.9)	21
Marble	2 (33.3)	0 (0)	4 (66.7)	0 (0)	0 (0)	6
Silica sand	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	1
Stone crush	9 (16.6)	11 (21.2)	47 (87.5)	3 (5.1)	6 (10.6)	53
Total	21 (4.5)	41 (8.8)	388 (82.9)	4 (0.9)	71 (15.2)	468

(Figures in parenthesis represent row percentages)

Table 12 represents the distribution of perceptions of workers about the causes of silicosis. Data shows that of the total 468 workers having information about silicosis, 38.1 percent (178) workers were of the view that 'working in furnace' is an important cause of silicosis. This was followed by 30.4 percent (142) workers who believed that operating 'stone crushing machine' was an important cause of catching the disease and another 28.2 percent (132) responses identified 'frits (*rait*) loading' as an important cause of silicosis. Overall, an overwhelming majority of workers considered 'stone loading' as least responsible for silicosis, with only 7.3 percent of workers (34) in all types of establishments reporting it as a main cause of the disease.

Industry wise, the highest number of workers, 103 (42 percent in ceramics) opined that 'working in furnace' is an important cause of silicosis, followed by 62 workers (25.3 percent) in ceramics who reported that 'operating stone crushing machine' is an important cause of the disease, and 61 workers (92.4 percent) in furnace stating that 'working in furnace' is an important cause of silicosis.

Table 12: Perceptions about causes of silicosis, by establishment type									
Establishment type	Stone loading	Stone crushing	Inserting explosives in stones	Working in furnace	Frits (Rait) loading	Stone polishing	Operating stone crushing Machine	Others	Interviewed employees knowing about silicosis
Cement	17 (22.4)	13 (17.1)	1 (1.3)	0 (0)	18 (23.7)	0 (0)	6 (7.9)	23 (30.3)	76
Ceramics	2 (0.8)	16 (6.5)	22 (9.0)	103 (42.0)	52 (21.2)	47 (19.2)	62 (25.3)	13 (5.3)	245
Furnace	0 (0)	12 (18.2)	7 (10.6)	61 (92.4)	39 (59.1)	15 (22.7)	35 (53.0)	0 (0)	66
Glass	1 (4.8)	4 (19.0)	5 (23.8)	9 (42.9)	8 (38.1)	11 (52.4)	11 (52.4)	3 (14.3)	21
Marble	6 (100)	2 (33.3)	0 (0)	1 (16.7)	2 (33.3)	6 (100)	0 (0)	6 (100)	6
Silica sand	0 (0)	1 (100)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	1 (100)	1
Stone crush	7 (13.2)	13 (24.5)	4 (7.5)	4 (7.5)	10 (18.9)	5 (9.4)	28 (52.8)	25 (47.2)	53
Total	34 (7.3)	61 (13.0)	39 (8.3)	178 (38.1)	132 (28.2)	84 (18)	142 (30.4)	75 (16.0)	468

(Figures in parenthesis represent row percentages)

Table 13 shows distribution of knowledge of symptoms of the disease amongst the interviewed workers who reported to having some information about silicosis. Of the total 468 workers who had information about the disease, a large proportion 68.0 percent (318) workers also reported having knowledge of the symptoms of silicosis while 32.2 percent of them (150) stated that they did not have this information.

Industry wise, the highest number of workers (181) in ceramics claimed to have knowledge of symptoms of silicosis, followed by 44 in stone crushing. The share of workers who claimed to have information about symptoms of the disease was significantly highest in glass (100 percent).

Table 13: Knowledge of the symptoms of silicosis, by establishment type

Establishment Type	Yes		No		Employees with knowledge of Symptoms
	No.	%age	No.	%age	No.
Cement	29	37.9	47	62.1	76
Ceramics	181	73.8	64	26.2	245
Furnace	40	60.7	26	39.3	66
Glass	21	100.0	0	0.0	21
Marble	2	33.3	4	66.7	6
Silica sand	1	100.0	0	0.0	1
Stone crushing	44	82.7	9	17.3	53
Total	318	68.0	150	32.2	468

Table 14 presents distribution of perceptions of those interviewed workers who expressed having knowledge about silicosis, about chances of getting the disease at work place. When asked about their chances of getting silicosis at their work place, around 44 percent (206) of such workers responded in positive, while 45 percent (210) responded negatively. Around 11 percent of such workers (52) did not express their perception in this regard. The highest share of workers who expressed that there is a possibility of catching the disease at their work place was amongst those who worked in ceramics, at 58 percent (142) followed by those working in furnace, at 45 percent (30) and 39.6 percent (21) in stone crushing. All workers involved in mining of silica sand stated that in their opinion, there were no chances of catching silicosis at their work place. The highest number of workers who opined that they had no chance of catching the disease at their work place was working in ceramics (80 workers), though their share was almost one third (32.7 percent) of such workers. Around 90 percent (19) of workers in glass and 78.3 percent (59) of workers engaged in cement felt that there were no chances of getting the disease at their work place.

Table 14: Perceptions of workers about the chance of getting silicosis at Work Place				
Establishment Type	Yes	No	Don't know	Chance of catching silicosis
Cement	10 (13.1)	59 (78.3)	7 (8.6)	76
Ceramics	142 (58.0)	80 (32.7)	23 (9.3)	245
Furnace	30 (44.9)	19 (28.8)	17 (26.3)	66
Glass	1 (4.8)	19 (90.4)	1 (4.8)	21
Marble	2 (33.3)	4 (66.7)	0 (0)	6
Silica sand	0 (0)	1 (100)	0 (0)	1
Stone crush	21 (39.6)	28 (52.8)	4 (7.5)	53
Total	206 (44)	210 (44.9)	52 (11.1)	468

(Figures in parenthesis represent row percentages)

Table 15 depicts distribution of perception of the interviewed workers who, in their response to the previous question, expressed possibility of catching silicosis at their work place. When asked to share their opinion about extent of the possibility, a majority (54.6 percent or 112 workers) opined that chances of catching the disease were somewhat low, compared to 24 percent (49) of such workers who expressed that such chances were high, while 40 percent of such workers thought that chances were very low. Only 1.7 percent (4) workers believed that chances of catching silicosis at their work place were very high.

Table 15: Perceptions about the Chances of Catching silicosis at Work Place						
Establishment Type	Very low	Somewhat low	High	Very high	Don't know	Perception about catching silicosis at work place
Cement	6 (61.9)	0 (0)	4 (38.1)	0 (0)	0 (0)	10
Ceramics	24 (17)	90 (63.1)	28 (19.7)	0 (0)	0 (0)	142
Furnace	2 (7.2)	9 (31.4)	15 (51.9)	4 (11.8)	0 (0)	30
Glass	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	1
Marble	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2
Silica sand	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0
Stone crush	6 (28.1)	12 (58.8)	2 (9.8)	0 (0)	1 (3.3)	21
Total	40 (19.4)	112 (54.6)	49 (24)	4 (1.7)	1 (0.3)	206

(Figures in parenthesis represent row percentages)

Industry wise, the highest number of workers who perceived that they had a high chance of catching the disease were in ceramics, at 28 workers which accounted for around 20 percent of all the workers involved in ceramics, while almost half of the workers working on furnace (52 percent) considered that there was a high chance of getting the disease.

Incidence of Silicosis

The survey also gathered information about incidence of symptoms of silicosis as felt and reported by the interviewed workers in each of establishments included in the sample. Table 16 presents the distribution of incidence of various symptoms while on work including (a) shortness of breath, (b) chest pain, (c) cough, (d) weight loss and (e) lethargy as reported by the interviewed workers, by type of the establishments.

The data shows that an overwhelming majority of workers (90 percent or more) reported that they did not face any of the symptoms of silicosis while at work. Only 5.8 percent (71) of the interviewed workers reported to have faced shortness of breath while at work, compared to 94.2 percent (1,149) who reported that they did not face the problem during work. The number of workers reporting shortness of breath was the highest in stone crushing (36) which accounted for 10 percent of all the workers

involved in that activity. This was followed by 21 workers engaged in ceramics, accounting for 5.3 percent of workers engaged in ceramics.

Table 16 (B) shows that only 4.0 percent (49) of the interviewed workers felt chest pain during work, compared to 96 percent (1,171) who reported that they did not feel chest pain during work. The highest number and share of such workers in stone crushing, and the least (0.4 percent) being workers employed in cement.

Around 8 percent (97) of the interviewed workers reported to have felt cough during work. Its disaggregation by type of establishment shows the share and number of workers who had cough during work was the highest in case of stone crushing, at 12.8 percent (45) followed by 9.8 percent (39) of the workers involved in ceramics. No worker interviewed in establishments relating to cement reported having this symptom while only one worker each amongst those involved in glass and marble reported to have had cough during work (Table 16 C).

Table 16 (D) provides distribution of the of interviewed workers who reported to have lost their weight due to work. An overwhelming majority of the workers reported that they have lost no weight due to work, at 98.2 percent (1,198) while only 1.8 percent (22) of the interviewed workers reported to have lost their weight due to work. The largest number of such workers belong to stone crushing establishments (12) who reported that they lost weight during their work.

Table 16 (E) showing distribution of interviewed workers who felt lethargy during work, shows that overall, 10 percent (123) workers reported feeling lethargic during work. By nature of job, the highest number of interviewed workers who reported feeling lethargic were engaged in ceramics (60) accounting for around 15 percent of all workers involved in ceramics, followed by 31 workers (8.8 percent) involved in stone crushing. On the other hand, the highest share of such workers was in marble, at 20.0 percent (4 workers).

Table 16: Prevalence of symptoms of silicosis[19], by establishment type					
Establishment Type	Yes		No		Total
	No.	%age	No.	%age	No.
A. Shortness of Breath					
Cement	1	0.4	225	99.6	226
Ceramics	21	5.3	379	94.7	400
Furnace	8	9.7	77	90.3	85
Glass	1	1.2	79	98.8	80
Marble	0	0.0	20	100	20
Silica sand	4	7.6	51	92.4	55
Stone crush	36	10.0	318	90.0	354
Total	71	5.8	1,149	94.2	1,220
B. Chest pain					
Cement	1	0.4	225	99.6	226
Ceramics	18	4.5	382	95.5	400
Furnace	5	5.9	80	94.1	85
Glass	0	0.0	80	100.0	80
Marble	1	5.0	19	95.0	20
Silica sand	2	3.6	53	96.4	55
Stone crush	22	6.2	332	93.8	354
Total	49	4.0	1,171	96.0	1,220
C. Cough					
Cement	0	0.0	226	100.0	226
Ceramics	39	9.8	361	90.2	400
Furnace	8	9.2	77	90.8	85
Glass	1	1.8	79	98.2	80
Marble	1	5.0	19	95.0	20
Silica sand	2	3.8	53	96.2	55
Stone crush	45	12.8	309	87.2	354
Total	97	7.9	1,123	92.1	1,220
D. Weight loss					
Cement	2	0.8	224	99.2	226
Ceramics	4	0.9	396	99.1	400
Furnace	1	1.0	84	99.0	85
Glass	0	0.0	80	100.0	80
Marble	1	5.0	19	95.0	20
Silica sand	2	3.1	53	96.9	55
Stone crush	12	3.4	342	96.6	354
Total	22	1.8	1,198	98.2	1,220
E. Lethargy					
Cement	6	2.7	220	97.3	226
Ceramics	60	15.0	340	85.0	400
Furnace	3	3.5	82	96.5	85
Glass	14	17.5	66	82.5	80
Marble	4	20.0	16	80.0	20
Silica sand	5	9.1	50	90.9	55
Stone crush	31	8.8	323	91.2	354
Total	123	10.1	1,097	89.9	1,220

[19] One worker engaged in silica sand mining reported to have caught silicosis in the past. However, in the analysis, its weight (in percentage) becomes negligible. Hence, the weighted average of the analysis does not show any worker who had suffered from silicosis.

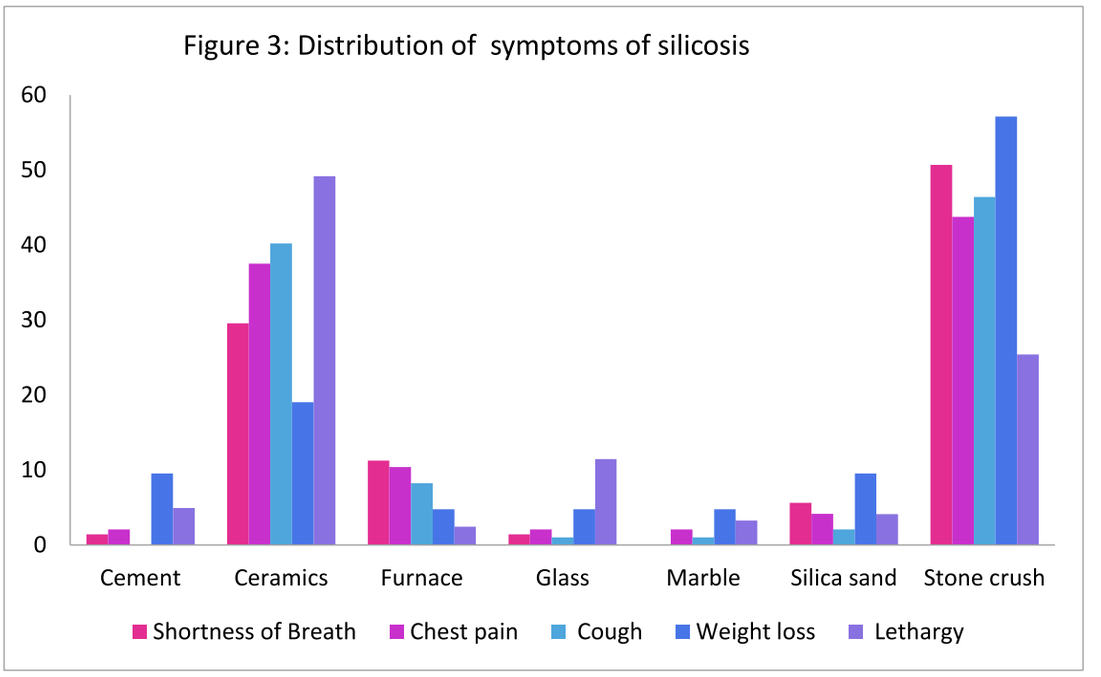

Figure 3 shows percentage distribution of workers who reported to have suffered from one of the symptoms of silicosis by type of symptom and industry. Figure shows that most of the interviewed workers who reported to have suffered from one of the symptoms of Silicosis were engaged in stone crushing and ceramics while the least proportion of such workers were engaged in marble and cement.

In addition to silicosis, the interviewed workers were also asked to report about other occupational diseases and health conditions including (i) frequent fever, (ii) tuberculosis, (iii) loss of appetite, (iv) swelling around nails and (v) cardiac, diabetes, kidney or liver problems. The data shows that a small fraction of the interviewed workers reported to have suffered from the above stated diseases and health conditions.

Table 17 (i) represents the prevalence of frequent fever amongst the interviewed workers. Only 1.5 percent (18) of the interviewed workers reported to have suffered from this condition, with the highest incidence of this health condition amongst the workers involved in stone crushing, at 11 workers (3.1 percent) followed by 3 workers each in the workers involved in ceramics and furnace.

Table 17: Prevalence of self-reported diseases amongst interviewed workers, by establishment type					
Establishment Type	Yes		No		Total
	No.	%age	No.	%age	No.
i. Frequent fever					
Cement	0	0.0	226	100.0	226
Ceramics	3	0.8	397	99.2	400
Furnace	3	3.5	82	96.5	85
Glass	0	0.0	80	100.0	80
Marble	1	5.0	19	95.0	20
Silica Sand	0	0.0	55	100.0	55
Stone crush	11	3.1	343	96.9	354
Total	18	1.5	1,202	98.5	1,220
ii. Tuberculosis					
Cement	0	0.0	226	100.0	226
Ceramics	0	0.0	400	100.0	400
Furnace	0	0.0	85	100.0	85
Glass	0	0.0	80	100.0	80
Marble	0	0.0	20	100.0	20
Silica Sand	0	0.0	55	100.0	55
Stone crush	4	1.0	350	99.0	354
Total	4	0.3	1,216	99.7	1,220
iii. Loss of appetite					
Cement	0	0.0	226	100.0	226
Ceramics	2	0.4	398	99.6	400
Furnace	1	1.0	84	99.0	85
Glass	0	0.0	80	100.0	80
Marble	0	0.0	20	100.0	20
Silica sand	1	1.5	54	98.5	55
Stone crush	9	2.5	345	97.5	354
Total	13	1.1	1,207	98.9	1,220
iv. Swelling of nails (Clubbing)					
Cement	0	0.0	226	100.0	226
Ceramics	1	0.4	399	99.6	400
Furnace	2	2.0	83	98.0	85
Glass	0	0.0	80	100.0	80
Marble	0	0.0	20	100.0	20
Silica Sand	0	0.0	55	100.0	55
Stone crush	1	0.2	353	99.8	354
Total	4	0.3	1,216	99.7	1,220
v. Cardiac/ diabetes/ kidneys / liver problems					
Cement	15	6.6	211	93.4	226
Ceramics	35	8.6	365	91.4	400
Furnace	0	0.0	85	100.0	85
Glass	0	0.0	80	100.0	80
Marble	0	0.0	20	100.0	20
Silica sand	1	2.3	54	97.7	55
Stone crush	7	2.0	347	98.0	354
Total	58	4.8	1,162	95.2	1,220

Table 17 (ii) on the prevalence of self-reported tuberculosis amongst the interviewed workers shows that only four workers reported to have suffered from the disease. All of them were involved in stone crushing, accounting for just one percent of workers involved in the activity.

When asked about health condition of loss of appetite, around one percent (13) of all interviewed workers reported to have suffered from this condition (Table 17 iii). The highest number of workers who reported to have experienced loss of appetite was amongst those involved in stone crushing, at 9 accounting for 2.5 percent of all workers involved in stone crushing. Another 2 workers (0.4 percent) involved in ceramics and one each involved in furnace (1 percent) and mining of Silica sand (1.5 percent) reported to have suffered from loss of appetite.

Table 17(iv) depicts prevalence of swelling of nails amongst the interviewed workers. This condition was reported by only 4 of all the interviewed workers accounting for a mere 0.3 percent. The condition was reported by 2 workers (2 percent) engaged in furnace and one worker each engaged in ceramics (0.4 percent) and stone crushing (0.2 percent).

Comparatively a higher share of workers reported to have suffered from cardiac/ diabetes/ kidney or liver problems (Table 17 v). The data shows that prevalence of cardiac/ diabetes/ kidney or liver problems was reported by 4.8 percent (58) of the interviewed workers, with the highest number of such workers belonging to ceramics, at 35 (8.6 percent) followed by 15 workers (6.6 percent) involved in cement, 7 (2 percent) in stone crushing and one worker (2.3 percent) involved in mining of Silica sand.

A question was asked about the prevalence of smoking habit amongst interviewed workers, which may cause silicosis like symptoms or aggravate severity of silicosis amongst the workers in eligible work places. Based on response of interviewed workers, data shows that 27 percent (329) of the interviewed workers were smoking at the time when interviews were conducted. Distribution of the workers who smoked, by type of establishment given in Table 18 shows that the highest number of smokers amongst the interviewed workers was found to be engaged in ceramics, at 125, accounting for 31.3 percent of all workers engaged in ceramics. This was followed by workers engaged in stone crushing, at 119 (33.6 percent) and those engaged in

cement, at 49 workers (21.7 percent). The workers having the least share of smokers, belonged to mining of silica sand, at around 9 percent (5 workers).

Table 18: Smoking habits of workers, by establishment type

Establishment Type	Yes		No		Total
	No.	%age	No.	%age	No.
Cement	49	21.7	177	78.3	226
Ceramics	125	31.3	275	68.7	400
Furnace	15	17.6	70	82.4	85
Glass	11	13.8	69	86.2	80
Marble	5	25.0	15	75.0	20
Silica sand	5	9.1	50	90.9	55
Stone crush	119	33.6	235	66.4	354
Total	329	27.0	891	73.0	1,220

Safety at Work Place

The survey also included a section on safety at work place. Questions relating to safety at work place were asked from the employers. When asked about availability of essential safety equipment in the establishments a majority of the employers, at 58.8 percent (117) reported that they did not have necessary safety equipment at their workplace.

The employers of around 40 percent (80) of total surveyed eligible establishments (199) confirmed having such equipment in the establishment while a fraction of them (1 percent or 2 establishments) reported to have no knowledge about this (Figure 4).

The data shows that all 11 establishments (100 percent) involved in cement production had necessary safety equipment for protection of accidents available with them, followed by 90 percent of establishments (9) involved in glass, 77.8 percent establishments (7) engaged in furnace, 74.4 percent of establishments (29) involved in ceramics had necessary safety equipment for protection of accidents. On the contrary, 93.6 percent (44) of establishments engaged in mining of Silica sand, 73.8 percent of establishments (48) engaged in stone crushing and 66.7 percent of eligible establishments (12) engaged in marble did not have the required safety equipment for personal protection of the workers (Table 19).

Table 19: Availability of Essential Safety Equipment, by Establishment Type

Type of Establishment	Yes		No		Don't know		Interviewed Establishments
	No.	%age	No.	%age	No.	%age	No.
Cement	11	100.0	0	0	0	0.0	11
Ceramics	29	74.4	10	25.6	0	0.0	39
Furnace	7	77.8	2	22.2	0	0.0	9
Glass	9	90.0	1	10.0	0	0.0	10
Marble	6	33.3	12	66.7	0	0.0	18
Silica sand	3	6.4	44	93.6	0	0.0	47
Stone crush	15	23.1	48	73.8	2	3.1	65
Total	80	40.2	117	58.8	2	1.0	199

FIGURE 5: AVAILABILITY OF FIRST AID FACILITY

When the employers were asked about availability of first aid facility in their establishment, 61.8 percent of the interviewed establishments (123) replied in affirmative manner (Figure 5).

All the interviewed establishments involved in production of cement (11) and those involved in furnace (9) had first aid facility available in the establishment. A majority of the interviewed establishments involved in ceramics (36) and glass (9) also had this facility at work place and almost half of the establishments involved in stone crushing (52 percent) had first aid facility. On the other hand, majority of establishments engaged in mining of silica sand (66 percent) and marble (55.6 percent) did not have first aid equipment within their establishments.

Table 20: Availability of First Aid Equipment at Work Place, by Establishment Type

Type of Establishment	Yes		No		Establishments Interviewed
	No.	%age	No.	%age	No.
Cement	11	100.0	0	0.0	11
Ceramics	36	92.3	3	7.7	39
Furnace	9	100.0	0	0.0	9
Glass	9	90.0	1	10.0	10
Marble	8	44.4	10	55.6	18
Silica sand	16	34.0	31	66.0	47
Stone crush	34	52.3	31	47.7	65
Total	123	61.8	76	38.2	199

Legal Requirements

The Government of Pakistan has ratified a total of 34 ILO Conventions, including all eight fundamental conventions as given in the ILO Declaration on Fundamental Principles and Rights at Work. The Punjab Government is making continued efforts in collaboration with the employers and workers towards achieving decent work objectives in line with the principles of the international labour standards. The ILO's Occupational Safety and Health Convention (2006) promotes a systematic approach to safety and health at work. It calls for promoting political commitment for developing strategies to promote continuous improvement of occupational safety and health with a view to prevent occupational injuries, diseases and deaths.

After devolution in 2010, the responsibility of legislating on labour related issues rests with the respective provincial governments. In this regard, attention now needs to be focused upon formulating rules under various laws, finding out inconsistencies and gaps in existing laws and rules, formulating an agreed regulatory regime and building capacity of labour inspectors. The Labour Department is taking steps to

strengthen the regulatory framework to authorize Labour Inspectors to ensure conformity with Labour laws.

The Factories Act, 1934 and the Punjab Factories Rules, 1978 provide a strategy for fighting industrial hazards, including prohibition of dangerous manufacturing processes detrimental to health and safety. However, all such provisions can only be approved and implemented with the consent of the workers, employers as well as the regulators. The Hazardous Occupations Rules, 1963 authorize the Chief Inspector of Factories to prohibit all hazardous processes. The Workmen's Compensation Act, 1923 identifies occupational diseases arising during the course of employment and offers compensation for workers affected due to these occupational diseases. There is, however, need that the Shops and Establishments Ordinance,1969 and the Rules also cover 'occupational safety and health' aspects so that commercial establishments prone to accidents and health hazards also take steps necessary to ensure workers' health.

In the post devolution scenario, there is also need to harmonize the legislation and regulation at provincial as well as at national level. There is no agreed official national policy framework which could offer guidance to the provinces in undertaking their responsibility in this regard. Similarly, the provincial governments lack agreed strategies to gradually improve regulation and monitoring of labour laws, which is possible only thorough revitalizing the tripartite mechanisms.

Several laws and regulations within provinces have varying definitions and conflicting provisions, which need to be addressed after thorough examination and meaningful consultations with the stakeholders. Further, a large number of workers falling in the informal sector lack appropriate coverage of protection against the relevant laws from occupational safety and health provisions.

Conclusion

The key findings of the survey on in Relevant Sectors of Punjab 2018 are outlined below:

i. A total of 199 eligible establishments were interviewed across the province. This included 65 stone crushing units, 47 establishments involved in mining of silica sand, 39 establishments involved in ceramics. The sample also included 18 establishments engaged in marble work, 11 establishments involved in production of cement and 10 firms making glass, and 9 establishments engaged in furnace.

ii. Around 157 of the interviewed establishments were registered, 118 with the provincial Labour Department, 21 with Industries Department and 15 with Securities & Exchange Commission of Pakistan. This indicates that some of the establishments were registered at more than one department.

iii. Almost 70 percent of these establishments employed upto 10 workers while only 4 percent establishments employed more than 60 workers.

iv. A total of 1,220 workers employed in the 199 establishments were interviewed, with overwhelming majority (99.8 percent) of them being male. Around 17 percent of workers were involved in operating stone crushing machines, 13 percent in stone loading and 12 percent in stone crushing. Around 67 percent of interviewed workers were engaged in 'other' work.

v. Only 38 percent (468) of the interviewed workers reported having some knowledge about silicosis, while only 68 percent of them (317) were aware of the symptoms of the disease. In majority of cases (85 percent), their source of information was friends/family.

vi. Around 44 percent (205) of the workers who expressed having some knowledge of silicosis, thought that they might catch silicosis at their work place, implying that they perceived their work places to be unsafe.

vii. A fraction of the 1,220 interviewed workers, ranging from 1.8 percent (weight loss) to 10 percent (lethargy) reported having felt some of the symptoms of

silicosis. A smaller proportion of workers reported having other diseases (ranging from 0.3 percent for TB to 4.8 percent for cardiac/ diabetes/ kidney/ liver problems) which can be a cause of symptoms similar to those of silicosis. Around 27 percent of workers reported being involved in smoking.

viii. The survey findings reveal that none of the interviewed worker was suffering from silicosis. Only a few workers expressed about having lungs (or other diseases) in the past. This might be due to the fact that once a worker caught silicosis, he would have left his work due to illness.

ix. A majority of employers in the 199 interviewed establishments (around 59 percent) did not have essential safety equipment in work place, while 38 percent of employers reported that they do not have any arrangement for providing first aid to their workers in case of any accident.

x. A large number of establishments were found to be in operation without necessary safety equipment and arrangements for providing first aid to the workers in case of accidents. This state of affairs is reflective of the fact that regulation and monitoring of labour laws and rules is very weak in the province due to capacity constraints of the government machinery.

xi. The conflicting provisions in the legal and regulatory regime makes it difficult for those responsible for monitoring implementation of laws. There is need to bring the existing regulatory framework upto the challenges of the present day modern era.

xii. The employers informed that number of workers who ever fell ill during their work in the previous six months (from the date interview) was 189 in all interviewed establishments. This number was 189 for the period of one year preceding the date of interview, 327 during previous 5 years and 579 in previous ten years.

xiii. No female worker was reported to have fallen ill during the work in previous seven years. The employers reported that only 5 female workers fell ill during the last 10 years.

Recommendations

In order to safeguard workers from various occupational diseases and hazards including silicosis, there is a need to take a series of concerted efforts and measures to prevent/ minimize occurrence of such diseases. Based on analysis of data obtained from the survey, some of proposed measures in this regard, are outlined below:

i. In absence of universal health coverage for workers, the Provincial Government may initiate health surveillance and monitoring of workers in formal as well as in the informal sector, in order to track occupational health problems in particular. In this regard, registration of informal work places in a gradual and phased manner, needs to be undertaken, so that the health situation of such workers can be regularly monitored. An Occupational Health MIS can be established for regular health surveillance of workers to get greater insights into emerging occupational safety and health issues.

ii. Occupational diseases record of all workers including those suffering from lung diseases and silicosis may be appropriately maintained. An appropriate system of health monitoring of those workers should be devised who lose job because of catching an occupational disease. There is need to ensure that health monitoring of such worker is continued even after they stop working.

iii. Effective programs for general awareness of workers as well as employers specifically on causes, symptoms, precautions, management and treatment of occupational lung diseases need to be designed and launched. Such programs need to specifically target workers in rural areas, who are at a greater risk of falling prey to occupational disease and hazards.

iv. Labour department needs to hire services of occupational health physician for designing and implementing awareness sessions for workers as well as employers. Both Labour and Mines & Minerals departments need to take initiatives for improving knowledge and awareness of workers in their relevant establishments.

v. Monitoring, management and treatment of lungs diseases including silicosis may be included as part of National TB Control Program.

vi. Occupational Safety and health is a new and specialized field in which the traditional labour officers/ inspectors are not well trained. They need to be given proper training and equipped with appropriate devices/ equipment to monitor presence of respirable dust particles at work places. The level of precautionary and safety measures should be adopted according to the requirement of specific work places. It is proposed that a new regime of inspectors on OSH in the light of recently promulgated law on OSH may be introduced in compliance to the national and international commitments.

vii. In order to ensure that work places are safe for workers and specific personal protective equipment is provided to them, there is need to establish threshold limit values for workplace hazards in all sectors of economy.

viii. Bulk of the factories in the selected sectors are small in size as they employee upto 10 workers. The profitability of such factories is not likely to be high enough and owners are seldom inclined to procure and provide safety equipment. Generally, the labour employed in such factories is prone to silicosis more. Labour inspectors need to focus more on inspection of smaller units.

ix. In order to ensure that work places are safe for workers or specific safety equipment is provided to the workers, there is need to establish standards and limits for respirable Silica at different types of work places where suspended Silica particles are present.

x. The sub-offices of the Labour Department pertaining to work place safety and health in the province should be strengthened and powers of inspectors may be delegated to them to enhance their scope of work to mitigate workplace illness.

xi. An effective institutional structure for better coordination between concerned departments (Labour Department, Industries Department, Health Department, etc.) is necessary in order to improve the working conditions through proper implementation of laws and regulations.

Annex: I Definitions

a) **Worker:** means a person employed directly or through an agency whether for wages or not in any manufacturing process, or in cleaning any part of the machinery or premises used for a manufacturing process, or in any other kind of work whatsoever, incidental to or connected with the subject of the manufacturing process, but does not include any person solely employed in a clerical capacity in any room or place where no manufacturing process is being carried on.

b) **Employer:** means a person, establishment or organization that employs people to carry out some specified work on specified terms and conditions.

c) **Workplace:** The workplace is the physical location in public space where someone works other than home.

d) **Occupational lung disease:** Occupational lung disease is an occupational disease affecting the respiratory system.

e) **Silicosis:** This is a form of occupational lung disease caused by inhalation of crystalline silica dust.

f) **Silica (Silicon dioxide):** This is a chemical compound of oxide of silicon.

g) **Eligible Workplace:** The workplace where worker of age 14 to 60 year and above are found working.

h) **Ineligible Workplace:** The workplace where worker of age 14 to 60 year are not found working.

i) **Physical Identification of Worker:** Recording complete profile of the worker, his/her employer and workplace including their telephonic contact numbers enabling to physically identify, locate and contact the worker, his/her employer reported in this survey.

j) **Mine:** means any excavation where any operation for the purpose of searching for or obtaining minerals has been or is being carried on, and includes all works, machinery, tramways and sidings, whether above or below ground, in or adjacent to or belonging to a mine: provided that it shall not include any part of such premises on which a manufacturing process is being carried on unless such process is a process for coke making or the dressing of minerals.

Annex: II Survey Questionnaires

اسٹیبلشمنٹ/کارخانے کا سروے 2018
آجر کا سوالنامہ

EMPLOYER'S INFORMTION			EI
یونٹ/اسٹیبلشمنٹ نمبر ..... ___ ___ ___ ___	EI2	سوال کنندہ کا نام اور کوڈ نمبر: نام _____ __ __	EI1
تاریخ: ..... 2018 / __ __ / __ __ سال مہینہ دن	EI4	ضلع کا کوڈ ..... __ __	EI3
وقت ریکارڈ کریں: ___ ___ : ___ ___ گھنٹے منٹ	EI6	جی پی ایس ڈیٹا: (Location) Latitude: __ __ . __ __ __ __ Longitude: __ __ . __ __ __ __	EI5
اسلام علیکم! میرا نام ---------- ہے۔ میں ادارہ شماریات، پلاننگ اینڈ ڈیولپمنٹ ڈیپارٹمنٹ حکومتِ پنجاب، لاہور میں آفیسر ہوں۔ ہمارا ادارہ سپریم کورٹ آف پاکستان کے حکم کے مطابق ملازمین کی پیشہ وارانہ بیماریوں کے متعلق سروے کر رہا ہے۔ میں آپ سے اس حوالہ سے بات کرنا چاہوں گا۔ یہ انٹرویو تقریباً 15 منٹ کا ہوگا۔ اس کے بعد میں آپ کے ملازمین سے اضافی انٹرویوز بھی کروں گا۔ آپ سے لی گئی تمام معلومات مکمل طور پر صیغہ راز میں رہیں گی تاہم اس کی رپورٹ سپریم کورٹ آف پاکستان میں جمع کروائی جائے گی۔ کیا اب میں شروع کروں؟ ہاں ..... 1 ⇦ E19 ماڈیول پر جائیں نہیں ..... 2 ⇦ EI8			EI7
آجر کے سوالنامہ کے انٹرویو کا نتیجہ:		مکمل انٹرویو ..... 1 انکار کر دیا ..... 2 اسٹیبلشمنٹ کی قسم تبدیل ہو گئی ..... 3 اسٹیبلشمنٹ عارضی طور پر بند ہے ..... 4 اسٹیبلشمنٹ مستقل طور پر بند ہے ..... 5 دیگر (وضاحت کریں) 6	EI8
جواب دہندہ کا نام: _____	EI10	جواب دہندہ کا عہدہ: _____	EI9
جواب دہندہ کا موبائل نمبر _____			EI11
ESTABLISHMENT PROFILE			**EP**
اسٹیبلشمنٹ کا نام و پتہ: _____ _____	EP2	اسٹیبلشمنٹ کی قسم: فرنس/سٹیل ..... A ماربل ..... B گلاس ..... C سٹون کرشنگ ..... D سیمنٹ ..... E سرامکس ..... F	EP1
ٹیلیفون نمبر _____			EP3
فیکس نمبر _____			EP4

EP5	ای میل _____		مائننگ ..... G
EP6	ویب ایڈریس _____	EP7	آپ کی اس فرم (فیکٹری) میں زیادہ تر کیا بنتا (Produce) ہے؟ _____
EP8	کیا آپ کی فرم کسی ادارہ سے رجسٹرڈ ہے؟ ہاں .....1 نہیں.....2 ⇦ EO1	EP9	متعلقہ ادارہ کا نام: (ایک سے زائد ممکن ہیں) سیکیورٹی ایکسچینج کمیشن آف پاکستان (SECP) .....A لیبر ڈیپارٹمنٹ .....B انڈسٹری ڈیپارٹمنٹ .....C دیگر (وضاحت کریں)_____ X .
EP10	رجسٹریشن نمبر..... _____	EP11	رجسٹریشن کا سال ..... _____
EP12	کیا اسٹیبلشمنٹ اسٹاک ایکسچینج سے منسلک ہے: ہاں ..... 1 نہیں..... 2	EP13	کیا اسٹیبلشمنٹ کا ان کے ساتھ الحاق ہوا ہے؟ سوشل سیکیورٹی (PESSI).....A ای او بی آئی (EOBI).....B دیگر (وضاحت کریں) .....X کوئی نہیں .....Y

EO	**اسٹیبلشمنٹ کی ملکیت**		
EO1	اسٹیبلشمنٹ کی ملکیت؟	پبلک سیکٹر ..... 1 نجی سیکٹر ..... 2 فارن کنٹرولڈ اسٹیبلشمنٹ ..... 3 پبلک پرائیویٹ پارٹنرشپ ..... 4 دیگر (وضاحت کریں) 6	EQ ⇦
EO2	سٹیبلشمنٹ کی نوعیت؟	ذاتی ملکیت ..... 1 شراکت داری ..... 2 پبلک لمیٹڈ کمپنی ..... 3 پرائیویٹ لمیٹڈ کمپنی ..... 4 کوآپریٹو سوسائٹی ..... 5 دیگر (وضاحت کریں) 6	

EQ	**ملازمین کی تعداد**	
EQ1	غیر پیداواری عمل میں شامل ملازمین کی کل تعداد	__ __ __ __
EQ1_ Pro._ work	پیداواری عمل میں شامل موجودہ ملازمین کی کل تعداد	__ __ __ __
EQ2	پیداواری عمل میں شامل موجودہ ملازمین	مرد..... __ __ __ __ عورت ..... __ __ __ __ کل ..... __ __ __ __

آئندہ آنے والے سوالات/ماڈیول میں صرف پیداواری عمل میں شامل ملازمین کا اندراج کیا جائے۔

	پیداواری عمل میں شامل ملازمین کی نوعیت	تربیت یافتہ		غیر تربیت یافتہ		کل تعداد
		مرد	عورت	مرد	عورت	
EQ3	مستقل ملازمین					
EQ4	کنٹریکٹ ملازمین					
EQ5	عارضی ملازمین/روزانہ کی بنیاد پر اُجرت					
EQ6	دیگر					
EQ7	کل تعداد					

EA	**عمر کے تناسب سے کام کرنے والے**		
EA1	14 سال سے کم عمر کے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
EA2	14 سے 40 سال کے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
EA3	41 سے 60 سال کے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
EA4	60 سال سے زائد عمر کے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
ED	**عمر کے تناسب سے معذور کام کرنے والے**		
ED1	کیا اس فرم میں کوئی معذور مزدور کام کرتا/کرتی ہے؟	ہاں..... 1 نہیں..... 2	⇦ WP1
ED2	14 سال سے کم عمر کے معذور مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
ED3	14 سے 40 سال کے معذور مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
ED4	41 سے 60 سال کے معذور مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	
ED5	60 سال سے زائد عمر کے معذور مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل..... __ __ __ __	

WP	کام کرنے کا دورانیہ		
WP1	4 گھنٹے سے کم کام کرنے والے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
WP2	4 سے 7 گھنٹے تک کام کرنے والے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
WP3	8 سے 12 گھنٹے تک کام کرنے والے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
WP4	12 گھنٹے زائد کام کرنے والے مرد اور عورت (اگر کوئی نہیں تو '0000' ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
SW	**کام کے دوران حادثات اور تحفظات**		
SW1	کیا آپ کی فرم میں حادثات سے بچاؤ کے لیے ضروری آلات موجود ہیں؟	ہاں..... 1 نہیں..... 2	
SW2	کیا آپ کی فرم میں حادثات کی صورت میں زخمی ہونے والوں کے لیے ابتدائی طبّی امداد کی سہولت موجود ہے؟	ہاں..... 1 نہیں..... 2	
SW3	کام کے دوران کبھی بیمار ہونے والے مزدوروں کی تعداد۔ [A] گزشتہ چھ ماہ میں (اگر کوئی نہیں تو "0000" ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
	[B] گزشتہ ایک سال میں (اگر کوئی نہیں تو "0000" ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
	[C] گزشتہ پانچ سال میں (اگر کوئی نہیں تو "0000" ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
	[D] گزشتہ سات سال میں (اگر کوئی نہیں تو "0000" ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	
	[E] گزشتہ دس سال میں (اگر کوئی نہیں تو "0000" ریکارڈ کریں)	مرد..... __ __ __ __ عورت..... __ __ __ __ کل ..... __ __ __ __	

SW4	چیک SW4: کل تعداد = 0000	ہاں ..... 1 نہیں 2	End ⇦
SW5	کیا بیماری کی صورت میں ڈاکٹر سے رابطہ کیا گیا؟	ہاں ..... 1 نہیں 2	
SW6	کیا مزدوروں کو ہسپتال میں داخل کیا گیا؟	ہاں ..... 1 نہیں 2	
EA	سیلیکا کی بیماری (Silicosis) کے بارے آگاہی		
EA1	کیا آپ کی فرم/ فیکٹری میں سیلیکا کی بیماری سے متعلق آگاہی دی جاتی ہے؟	ہاں ..... 1 نہیں ..... 2 معلوم نہیں 8	

اسٹیبلشمنٹ/کارخانے کا سروے 2018

مزدور کا سوالنامہ

EMPLOYEE'S PROFILE			EM
یونٹ/اسٹیبلشمنٹ نمبر..... ___ ___ ___ ___	EM2	سوال کنندہ کا نام اور کوڈ نمبر: نام _____ __ __	EM1
تاریخ:..... __ __ / __ __ / 2 0 18 دن مہینہ سال	EM4	ضلع کا کوڈ..... __ __	EM3
وقت درج کریں ___ ___ : ___ ___ گھنٹے منٹ	EM6	جی پی ایس ڈیٹا: (Location) Latitude: __ __ . __ __ __ __ Longitude: __ __ . __ __ __ __	EM5
اسلام علیکم! میرا نام۔۔۔۔۔۔۔۔۔۔ ہے۔ میں ادارہ شماریات، پلاننگ اینڈ ڈیولپمنٹ ڈیپارٹمنٹ حکومتِ پنجاب، لاہور میں آفیسر ہوں۔ ہمارا ادارہ سپریم کورٹ آف پاکستان کے حکم کے مطابق ملازمین کی پیشہ وارانہ بیماریوں کے متعلق سروے کر رہا ہے۔ میں آپ سے اس حوالہ سے بات کرنا چاہوں گا۔ یہ انٹرویو تقریباً 15 منٹ کا ہوگا۔ آپ سے لی گئی تمام معلومات مکمل طور پر صیغہ راز میں رہیں گی تاہم اس کی رپورٹ بحکم سپریم کورٹ آف پاکستان میں جمع کروائی جائے گی۔ کیا اب میں شروع کروں؟ ہاں ..... 1 ⇦EM9 نہیں ..... 2 ⇦EM8			EM7
مزدور کے سوالنامہ کے انٹرویو کا نتیجہ:		مکمل انٹرویو ..... 1 انکار کر دیا..... 2 نامکمل/کچھ حصہ مکمل کیا..... 3 دیگر (وضاحت کریں)..... 6	EM8
مزدور کا نام اور پتہ: _____ _____	EM10	عمر.....__ __ (عمر مکمل سالوں میں ریکارڈ کریں)	EM9
جنس مرد ..... 1 عورت..... 2	EM12	فون/موبائل نمبر:_____	EM11
	EM13	شناختی کارڈ نمبر _____	
آپ کے کام کی نوعیت کیا ہے؟		پتھر اُٹھانا ..... A پتھر توڑنا..... B پتھروں میں بارود لگانا ..... C بھٹی پر کام کرنا ..... D ریت اٹھانا وغیرہ ..... E پتھر پالش کرنا/رگڑنا/کاٹنا ..... F پتھر توڑنے والی مشین چلانا ..... G دیگر (وضاحت کریں)_____ X	EM14

EM15	آپ کتنا عرصہ سے اس پیشہ سے منسلک ہیں؟	مہینہ: .....2 سال 3	__ __ __ __
EM16	آپ کتنے عرصے سے یہاں پر ملازمت کر رہے ہیں؟ (اگر ایک ماہ سے کم ہو تو '00' ریکارڈ کریں)	مہینہ: .....2 سال 3	__ __ __ __
EM17	آپ کی ملازمت کی نوعیت کیا ہے؟	مستقل.....1 کنٹریکٹ.....2 عارضی/روزانہ کی بنیاد پر اُجرت .....3 دیگر (وضاحت کریں) 6	
EM18	آپ کی ماہانہ اجرت کتنی ہے؟	_____روپے	
SA	سیلیکا کی بیماری (Silicosis) کے بارے آگاہی		
SA1	کیا آپ سیلیکا کی بیماری (Silicosis) کے بارے میں جانتے ہیں؟	ہاں.....1 نہیں 2	 SS1 ⇦
SA2	آپ کو اس مرض سے آگاہی کیسے ہوئی؟	میڈیا .....A ڈاکٹر.....B دوست/رشتہ دار .....C انٹرنیٹ/سوشل میڈیا.....D دیگر (وضاحت کریں)_____ X	
SA3	آپ کے خیال میں سیلیکا کی بیماری (Silicosis) کی اہم وجوہات کیا ہیں؟	پتھر اُٹھانا.....A پتھر توڑنا.....B پتھروں میں بارود لگانا.....C بھٹی پر کام کرنا .....D ریت اٹھانا وغیرہ .....E پتھر پالش کرنا/رگڑنا/کاٹنا.....F پتھر توڑنے والی مشین چلانا .....G دیگر (وضاحت کریں)_____ X	
SA4	کیا آپ کو سیلیکا کی بیماری (Silicosis) کی علامات کے بارے میں آگاہی ہے؟	ہاں.....1 نہیں 2	
SA5	کیا آپ کے خیال میں سیلیکا کی بیماری (Silicosis) قابل علاج ہے؟	ہاں.....1 نہیں .....2 معلوم نہیں.....8	
SA6	آپ کی رائے میں جہاں آپ کام کرتے ہیں کیا وہاں سیلیکا کی بیماری (Silicosis) لاحق ہونے کا خدشہ ہے؟	ہاں.....1 نہیں .....2 معلوم نہیں.....8	 SA8⇦ SA8⇦
SA7	آپ کی رائے میں کیا جہاں آپ کام کرتے ہیں وہاں سیلیکا کی بیماری (Silicosis) لاحق ہونے کا کس حد تک خدشہ ہے؟	بہت کم .....1 کسی حد تک کم .....2 زیادہ.....3 بہت زیادہ 4	
SA8	آپ کے خیال میں اس ادارے میں کتنے افراد کو یہ مرض لاحق ہے؟ (اگر کسی کو نہ ہو تو '000' ریکارڈ کریں)	تعداد ..... __ __ __	

SS	Silicosis کی علامات		
SS1	کیا کام کے دوران:	ہاں	نہیں
	[A] آپ کا سانس پھولتا ہے؟	1	2
	[B] آپ کی چھاتی میں درد ہوتا ہے؟	1	2
	[C] آپ کو کھانسی آتی ہے؟	1	2
	[D] آپ کے وزن میں کمی آئی ہے؟	1	2
	[E] آپ کو تھکن ہوتی ہے؟	1	2
SS2	کیا آپ کو بخار رہتا ہے؟	ہاں ..... 1 نہیں 2	
SS3	کیا آپ کو کبھی ٹی بی/تپ دق کا مرض لاحق ہوا؟	ہاں ..... 1 نہیں 2	
SS4	کیا آپ کی بھوک میں کوئی کمی واقع ہوئی؟	ہاں ..... 1 نہیں 2	
SS5	کیا آپ کے ناخنوں میں کسی قسم کی سوجن ہوتی ہے؟	ہاں ..... 1 نہیں 2	
SS6	کیا آپ کو دل/شوگر/گردوں/جگر کا کوئی مسئلہ ہے؟	ہاں ..... 1 نہیں 2	
SS7	کیا آپ سگریٹ نوشی کرتے ہیں؟	ہاں ..... 1 نہیں 2	

TE	Treatment		
TE1	کیا آپ کو کبھی سیلیکا کی بیماری (Silicosis) لاحق ہوئی؟	ہاں ..... 1 نہیں 2	EM8 ⇦
TE2	کیا آپ نے اس کا علاج کروایا؟	ہاں ..... 1 نہیں 2	EM8 ⇦
TE3	آپ کے علاج کا دورانیہ کیا تھا؟	دن: ..... 1 __ __ مہینہ: ..... 2 __ __ سال: ..... 3 __ __	
TE4	کیا آپ علاج کے بعد مکمل صحت یاب ہو گئے؟	ہاں ..... 1 نہیں 2	
TE5	کیا آپ نے اپنے علاج کا خرچ خود ادا کیا؟	ہاں ..... 1 نہیں 2	EM8 ⇦
TE6	آپ کے علاج پر کل کتنی رقم خرچ ہوئی؟	کل خرچ (روپوں میں) _____	

TE7	آپ کے علاج کا خرچ کس نے برداشت کیا؟	ادارہ جس میں آپ کام کرتے ہیں ..... A خیراتی تنظیم..... B دیگر پبلک..... C (PESSI)سوشل سیکیورٹی ..... D دیگر پرائیویٹ ..... E دیگر(وضاحت کریں)_____ X	

List of Personnel Involved in the Survey

Labour & Human Resource Department
Ms. Sarah Aslam, Secretary
Mr. Muhammad Suhail Shahzad, Additional Secretary

Directorate General of Labour Welfare Punjab
Mr. Farook Hameed Sheikh, Director General Labour Welfare
Mr. Daud Abdullah, Director (HQ)

Capacity Development of Industry to Promote Compliance with Labour Standards, SAA Center for the Improvement of Working Conditions and Environment
Mr. Arshad Mahmood, Project Director
Mr. Amjad Ali, Assistant Director

Mines & Mineral Department
Mr. Riaz Ahmed Chaudhry, Labour Welfare Commissioner Punjab

Bureau of Statistics, Punjab
Ch. Sajid Rasul, Director General
Syed Waqar-ul-Hassan, Director
Mr. Ali Amir Raza Bukhari, Deputy Director
Mr. Muhammad Farooq, Statistical Officer
Mr. Isaac Shahzad, Statistical Officer
Mr. Rohail Amjad Mughal, System Analyst/Programmer

Field Formation, Bureau of Statistics, Punjab
Mr. Muhammad Tanveer, Deputy Director
Mr. Ghulam Yasin, Deputy Director
Sheikh Perveiz Iqbal, Deputy Director
Mr. Muhammad Hussain, Deputy Director
Mr. Muhammad Qamar Virk, Assistant Director
Mr. Azhar Saleem, Assistant Director
Mr. Abdul Basit, Statistical Officer

Bureau of Statistics
65-Trade Center Block,
MA Johar Town, Lahore
Tel: (042) 99232917-19
Fax: (042) 99232903
bureau.info@bos.gop.pk