

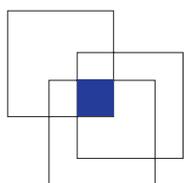


International
Labour
Organization



The effect of work on CHILDREN'S HEALTH

REPORT OF RESEARCH ON TEN OCCUPATIONAL SECTORS IN PAKISTAN



International
Programme on
the Elimination
of Child Labour
(IPEC)



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Acknowledgments

This Report is based on the research work carried out by a team of experts from the Centre for the Improvement of Working Conditions and Environment (CIWCE), Pakistan. The team was headed by Mr. Saeed A Awan Director of CIWCE and included Mr. Arshad Mehmood, Occupational Hygienist, Mr. Javaid Iqbal Field Coordinator Mr. Muhammad Naeem statistician Dr. Abdul Aziz Sheikh and Dr. Rehan the physicians. The study also had strong input from international experts and resource persons, whose efforts are also acknowledged.

Susan Gunn, ILO-IPEC Senior Technical Specialist on hazardous child labour, provided guidance and support at each stage of the research. She compiled this report by consolidating the findings from 10 sector-specific reports. She provided highly valuable suggestions during research planning and compilation of the report.

Mark J.D. Jordans Senior Research & Technical Advisor at HealthNet TPO, Netherlands, which specializes in research and health care in war disrupted areas, designed the PVAT (Psychosocial Vulnerability Assessment Tool) which was used to assess the impact of work on the psychosocial well-being of the children. This is an important area of concern for the researchers on hazardous child labour and very little technical guidance is available. Mark Jordans helped in interpreting the results of findings and provided strong inputs in writing the report on the psychosocial aspects of work in 10 sectors studied.

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Foreword



With the basic aim of promoting social justice in the world, the International Labour Organization (ILO) lays special emphasis on elimination of child labour particularly its worst forms. The elimination of child labour is one of the

core areas of activities of ILO and a number of Conventions and Recommendations have been adopted in this area. The most important Conventions are ILO Convention No. 138 on the Minimum Age and ILO Convention No. 182 on the Worst Forms of Child Labour. These Conventions are considered the main global standards defining the principles for elimination of child labour and form part of the Fundamental Conventions of ILO. The ILO's International Programme on the Elimination of Child Labour (IPEC) is the functional arm of ILO dealing with the issue of child labour at global level. IPEC's aim is to work towards the progressive elimination of child labour by strengthening national capacities to address child labour problems, and by creating a worldwide movement to combat it. IPEC's priority target groups are bonded child workers, children in hazardous working conditions and occupations and

children who are particularly vulnerable, i.e. very young working children (below 12 years of age), and working girls.

This report presents the results of research studies to assess health and safety hazards and risks faced by children in ten sectors of economy in two districts of Pakistan namely Sahiwal in Punjab and Sukkur in Sindh province. ILO-IPEC, with the support of the European Union, is implementing the Phase II of the Combating Abusive Child Labour Project (CACL-II) in Pakistan. These studies were conducted by the Centre for the Improvement of Working Conditions and Environment (CIWCE).

The findings of these studies provide details of specific risks faced by children in diverse occupations like agriculture, stone-crushing, workshops, restaurants and livestock farming. These findings will help lay foundation for launching actions by the stakeholders to address hazardous forms of child labour. These studies will also provide the facts and data for launching awareness campaigns for the communities for recognizing and addressing hazardous forms of child labour

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Executive summary

This report presents the results of research into the impact of work on children's physical and mental health and development. The study was carried out by the Centre for the Improvement of Working Conditions and Environment (CIWCE), based in Lahore in the Labour and Resource Department, Government of the Punjab.

The study was conducted in ten occupations in which child labour is commonly found in Pakistan: crop agriculture, brick-making, cotton production, date-picking, livestock-raising, mat-making, rag-picking, restaurant work, stone-working, and small workshops; and in two districts of Pakistan: Sahiwal in Punjab province and Sukkur in Sindh province. According to data available,² children in the age group of 5-17 years constituted 48% of the total population in Sahiwal. Of these, 41% were working children. The total number of children engaged in work in this district was 75,021. In Sukkur, 46% of the population consisted of children aged 5-17. Of these, 75% or 45,515 were working and 59% of these working children were found to be engaged in hazardous forms of child labour. The local authorities, workers and employers have committed significant resources and effort to addressing the problem of child labour in both of these districts. Major findings of the baseline surveys of child labour in Sahiwal and Sukkur districts are given as Appendix at the end of this report.

The research methodology employed structured interviews coupled with physical examinations and psychological assessments on a randomized control sample of between 150 and 240 children for each occupational group. The samples were gender-

balanced. A total of 2,260 children were studied. The study focused on the following aspects:

- assessment of the hazards to which workers, particularly children, are exposed in the target occupational sectors;
- assessment of physical health, injuries and nutritional status of the child workers in each sector;
- assessment of psychosocial stresses and mental health problems faced by the child workers in each sector;
- comparison of the physical and psycho-social health indicators of each of the study populations with non-working children and with working children in other sectors of the economy;
- preparation of recommendations for concerned stakeholders (particularly employers, government, workers) based on analysis of the data.

Results of the study confirmed, and gave scientific precision to the observation, that children engaged in these occupations have been suffering significant health impacts due to their work and that, overall, their physical and psychological health is inferior to that of their counterparts from the same areas who go to school full-time.

In agriculture-related occupations (crop agriculture, cotton production, date palm farming, and livestock-raising), the investigations show that child workers tend to be healthier, on the whole, than children in any of the other occupations studied, with two very serious exceptions: pesticide poisoning and injuries to feet and hands from machinery. Particularly distressing is the toll taken by the toka fodder-cutting machine which has resulted in a large number of amputations. Also of great concern are the study data indicating severe pesticide exposure, which in the case of children, can be deadly or leave the child with lifelong neurological defects. As mechanical

² Reports on Baseline surveys of child labour in Sahiwal and Sukkur carried out by CACL-II Project in 2011. Those reports will be published later on 2013. See main findings at the Appendix section of this report.

and chemical farming techniques proliferate in rural Pakistan, but remain unmediated by the increased knowledge that comes with education (an overall average of 90% of children have had no schooling and are virtually illiterate), the knowledge of basic health and safety measures is slow to percolate.

In manufacturing occupations (mat-making and brick-making), which are largely rural industries, the studies found a high level of respiratory, ear, and tooth infections and a low level of scholastic attendance. This may be a function of the high poverty level of families in these two settings and their lack of easy access to schools or health services. Not surprisingly, musculo-skeletal complaints were common due to the positions in which the children were obliged to work, as well as injuries to their hands and feet. Depression was also relatively common among the manufacturing children. Of these, the child brick-makers were subject to high work stress and low social integration, consistent with the nature of their work (tight deadlines, isolated worksites), and their social profile as internal or external migrants.

The two resource extractive occupations selected for the study, rag-picking and stone-breaking, are occupations to which the poorest strata of society are obliged to resort. The social profile of the stone-breakers bears this out: very large family size (9.3), very low level of schooling (93%). In other respects they are quite different – one being more urban, the other rural, which may account for the fact that stone-breakers display high levels of psychological trauma when compared with all other sectors, while the rag-pickers have a better future outlook than all other sectors. Children in both industries suffer extremely high levels of serious injury.

In the service-related occupations (small workshops and restaurants), the children had a more positive future outlook, lower depression rates, and overall better psycho-social stress indicators than all other sectors studied. In addition, their rates of schooling, while not good, were still higher than all of the others'. On the physical health side, many were exhausted as they not infrequently worked for long hours and into the evening. The children in small workshops sustained injuries to their heads, face, hands, and feet on a regular basis and the children in restaurants and tea stalls suffered burns and stomach problems, but their overall health appears to be better than that of children in any of the other sectors.

Looking at all of the studies from a gender perspective, it is evident that while some tasks are done by both girls and boys, there are certain tasks and certain occupations which are dominated by one or the other. Those where girls are particularly active are cotton-picking, mat-making, and home-based food service. Those where boys predominate are date palm cultivation, brick-making, and small workshops. To some extent boys are doing work that requires greater physical strength and stamina or the use of machinery. However, many girls too are being injured in toka accidents and many girls are hauling heavy loads of bricks. Areas where girls are at special disadvantage are longer working hours (in certain occupations), lack of discrete and clean washing and sanitation facilities, and education (an overall rate of 94% of girls were found not to have completed schooling). In all occupations studied, girls trailed boys in entry to and perseverance in school.

Looking at what the research shows from a social perspective, in all occupations studied, the working children come from families where the size is

greater – an average of 8 persons – than among those where the children are going to school – about 7 persons. Children from families forced to migrate due to conflict (Afghans) or natural disaster (flood victims) or to take advantage of seasonal opportunities (Baluchi stone-crushers) almost invariably are obliged to work because schools and other services are not geared to accommodate transients. While many other social factors could be coming into play, it was not the purpose of this study to explore causes of child labour in general.

Among the recommendations put forward for preventing and protecting children from dangerous work and for ameliorating working conditions for children of legal age for employment, one of the key ones is capacity-building. Presently very little specialized occupational health and safety expertise is available to assist government or the private sector in assessing risks. There is currently only one public sector OSH institution in Punjab province of Pakistan, the Centre for the Improvement of Working Conditions and Environment (CIWCE) in Lahore. This study has shown how, given the opportunity and resources, such institutions can play an important role in recognizing, evaluating and suggesting

practical ways of controlling the health and safety hazards faced by workers in various economic sectors. Management of health and safety risks is known to have very tangible benefits in terms of overall economic productivity.

Another recommendation, closely tied to the first, is awareness-raising at the grassroots. Campaigns to sensitize parents and child workers to the dangers involved in certain types of work and the advantages that can accrue from going to school can create the foundation of understanding that will lead to longer term attitude change. Also important, of course, is raising the awareness of policy makers as they are in a position to establish the essential regulatory structure for further encouraging behavior change.

It is important that the results of the OSH studies be discussed with parents, employers, government officials and other stakeholders and their opinion and cooperation should be sought on how best to combat hazardous work of children. Development of an effective strategy in this area requires their consultation and participation. The representatives of local bodies should be taken on-board in any effort to combat child labour in their areas.



INTRODUCTION

1. INTRODUCTION

This study of the health risks faced by working children was carried out in Sahiwal district in Punjab province and Sukkur district in Sindh province of Pakistan. These districts were selected because the ILO-IPEC's is implementing the Phase II of the Combating Abusive Child Labour Project (CACL-II), in these districts, with the financial support of the government of Pakistan and the European Union. The study was intended to assist the project management, its partners and other agencies which are providing education, skill training and other services to the children in these two districts, to better direct their efforts to those children most at risk.

There are two objectives for research of this sort. First, it demonstrates to policy-makers as well as parents and employers that children are especially vulnerable in the workplace and thus underscores the importance of protective laws, and most particularly

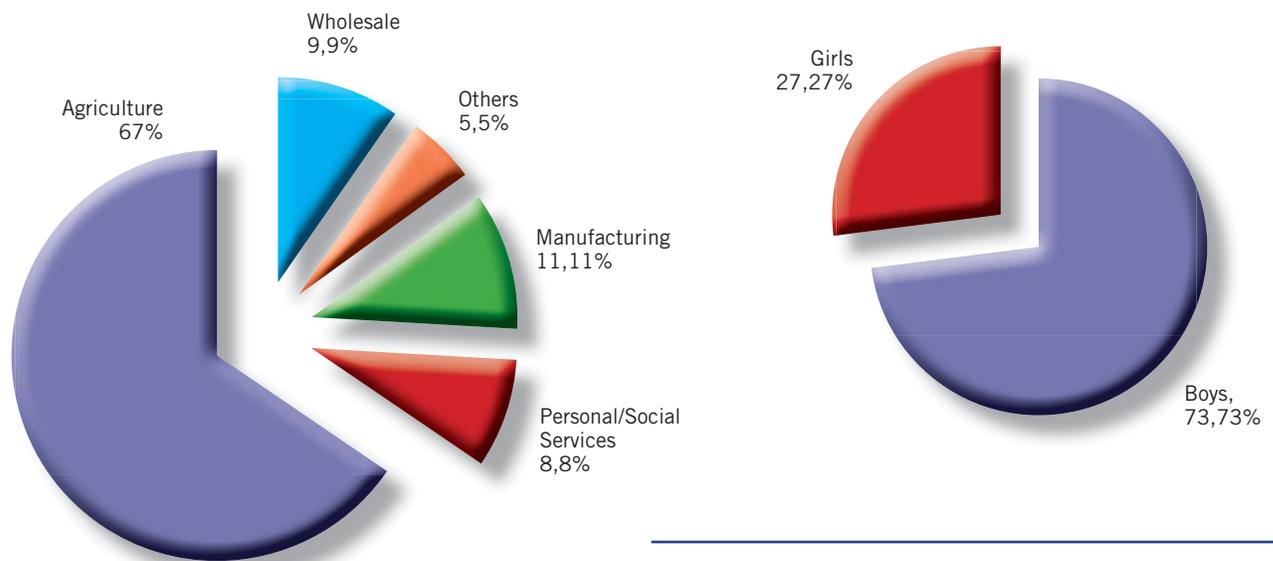
the so-called "hazardous list".² Second, it identifies areas where health, safety and psychosocial risks faced by children in each sector can be reduced or mitigated to a sufficient degree that young people of employment age can work safely and legally.

1.1 CHILD LABOUR IN PAKISTAN

There has been no recent national survey of child labour in Pakistan but smaller project-related studies have provided important documentation on the extent and types of child labour. In short, child labour among children under the official age of employment (i.e. 15 years of age) and hazardous work among children between 15 and 18 years, which qualifies as a "worst form of child labour" is extremely common.

One third of the working children are literate, boys being more educated than girls and urban children more than the rural children. Employment status by broad categories indicates that about 70% of the working children are unpaid family helpers. Significant urban-rural differentials are observed in their employment status.

Figure 1. Economically Active Children in Pakistan



² All countries ratifying ILO Convention No. 138 on the Minimum Age and ILO Convention No. 182 on the Worst Forms of Child Labour accept to undertake a tripartite consultation process to identify the types of work and conditions that are to be prohibited to young persons under 18 years of age.

1.2 STUDY DESIGN & METHODOLOGY

There are few studies which focus specifically on the occupational health of children. This study makes an important contribution not only in documenting health risks and impacts but also toward disentangling the effects of poverty from those associated with the nature and circumstances of the work itself.

Research of this nature is faced with a number of challenges: the variety of occupations in which children are engaged and their mobility from one to another, the distances and other conditions with which any study in a developing country must contend, as well as constraints in terms of time and other resources. These factors make a highly rigorous examination extremely difficult to undertake. But even if the results are indicative rather than definitive, scientific rigor is not the purpose of such an exercise. Action research, i.e. research which is undertaken to inform policy and guide interventions in the direction of the best interests of the children concerned, must be responsive to a different set of concerns, for example, timeliness, flexibility, and practicality.

Nonetheless, this study has moved far beyond the usual descriptive research through its use of (a) sampling, (b) control groups, and (c) a careful preparation through prior consultation and field-testing. It is also unique in that it assesses not only physical health and safety, but also psychological well-being. There is little robust data on the psycho-social effects of child labour; yet descriptive and anecdotal evidence suggests that, because a child is still in a stage of rapid psychological and intellectual development until the late teens, psycho-social stress can have a very great and long-lasting negative impact. Child labourers (particularly those in hazardous work) may therefore suffer damage such that their employability and social functioning as adults may be impaired. And because the damage is not visible, as are wounds or diseases, they do not receive the assistance they require to recover. While these risks may be recognized, few attempts have

been made in child labour research to assess psychosocial impacts. This has been due, in large part, to lack of an adequate instrument that encompasses the various domains in which children's psychological functioning and development can be affected and the challenges of conducting such studies in developing countries where expertise in this area is limited.

The Psychosocial Vulnerability Assessment Tool (PVAT) was developed for the purpose of assessing a variety of psychosocial indicators among the ten occupational groups. The tool consists of the following subscales: (a) emotional difficulties (existing instrument: Depression Self Rating Scale); (b) work stressors; (c) sense of agency; (d) social integration; (e) traumatic stress reactions; (f) coping; and (g) future outlook.

1.3 THE RESEARCH PROCESS

1. Following is an outline of the process undertaken in the preparing for and conducting the study and the elements it included:
2. preparatory work, consisting of visits to the areas concerned and discussion with key informants, was undertaken in order to understand the general socio-economic context and the processes in which children were involved. The local people were informed about the intent of the study and asked to participate.
3. A literature search was conducted to identify the variables relevant to each of the occupations under study from previous studies that had been undertaken, both in the region and outside.
4. The research instruments were designed drawing on those used in similar studies in the region. Adaptations were made to key them to the Pakistan situation. The instruments were then field-tested, revised, and in the case of the psychological instruments, field-tested again. All the questionnaires were pre-tested before use in the study. Because there was a diversity of dialects and languages used in the

- study areas (including Punjabi, Siraiki, and Sindhi), the questions had to be translated into those spoken by the children being interviewed. Interviewers fluent in these languages were selected for the study.
5. A workplace-based survey was conducted to establish the universe from which a purposive sample was drawn. The sample size for each of the ten occupations to be studied was set at approximately 200. This number was required so that there would be a sufficient number of respondents to provide a reasonably accurate assessment of health safety and psychosocial stresses faced by the study population.
 5. A study team, consisting of OSH technicians, interviewers, and a trained physician visited 15 villages (6 in districts Sukkur and 9 in Sahiwal) to conduct the studies. Children present on the day of the visit and agreeing to participate were included in the study.
 6. All children were examined by the physician, who made a clinical judgment according to a structured questionnaire and recorded his observations on a form.³ The physician collected a health history, then examined the children's limbs for evidence of injuries and conducted tests of their respiratory, gastro-intestinal, cardio-vascular, and musculo-skeletal systems for evidence of illness.
 7. The interviewers gathered background information on the children including his/her health and safety-related complaints and perceptions and entered it in a form. Though the main objective of this study was to collect data about the health and safety of the target group, information about the social indicators of the respondents was also considered important as it is linked intricately with health and safety status. The social indicators included information about the respondents' schooling, educational level and enrollment. Those enrolled at schools or having attended schools were classified as literate while those who had never attended a school were classified as illiterate.
 8. The interviewers also conducted the psychological assessment using the Psychosocial Vulnerability Assessment Tool (PVAT) which was specially-adapted for use in this study.
 9. The OSH technicians conducted a risk assessment of the workplaces, the residential environment and documented the working conditions of the children using a standard protocol
 10. In order to compare the health status and psychosocial stress of the working children with non-working children, a control group of children from the surrounding rural localities within the study districts who were enrolled at nearby schools was identified. The controls were examined by the physician and the observations were recorded in the health assessment form. The PVAT tool was also administered to these control group children, and since these children were literate, they filled out the PVAT tool by themselves.

³ *One possible area of weakness in the study is that the respondents of the study include only those children who were present on the day of the visit by the survey team and agreeing to participate. This process of sample selection is not therefore, strictly speaking, random. Difficulties in approaching the respondents made this bias unavoidable.*

Table 1. Age and gender profile of control group

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
8	1	0	1	0	0	0	1	0	1
9	1	0	1	1	0	1	2	0	2
10	1	1	2	1	0	1	2	1	3
11	2	0	2	3	8	11	5	8	13
12	2	2	4	13	6	19	15	8	23
13	4	1	5	8	18	26	12	19	31
14	13	6	19	12	7	19	25	13	38
15	10	0	10	11	2	13	21	2	23
16	12	5	17	10	0	10	22	5	27
17	12	4	16	0	0	0	12	4	16
18	48	7	55	0	0	0	48	7	55
Total	106	26	132	59	41	100	165	67	232

1.4 DATA COMPILATION AND ANALYSIS

The collected data was entered into a database for analysis. All the forms were first manually checked to remove any anomalies and any forms with inconsistencies were rejected. All the questions in the data forms collected from the field were coded and entered into the database which had been designed for this purpose.

This database was later analyzed using SPSS and Excel software in order to calculate statistics, to compare the results of controls versus working respondents and to establish correlations between work and different occupational health and safety indicators if they existed.

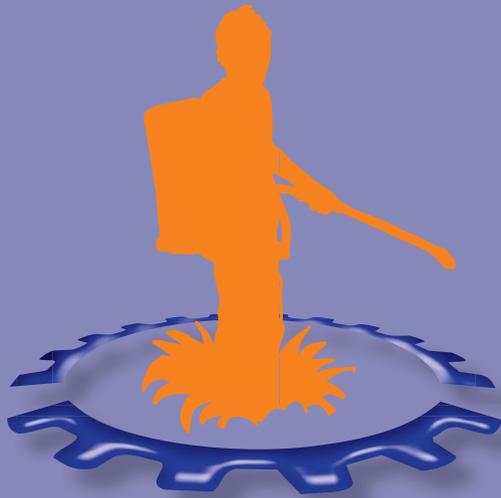
The prevalence rate of different indicators of health was calculated as percentage. As most of the variables in the physical examination were categorical in nature, a Chi-square test was used to analyse and compare the prevalence rates among different categories of respondents. Based on this comparison, p-values were calculated to determine whether and

to what degree the associations between health indicators and work in a particular economic sector were significant.

For the psychological tests, when testing differences between groups, for each of the psychosocial indicators, t-test analyses were conducted to compare scores between one sector as a sub-group and the other sectors combined.

1.5 ORGANIZATION OF THE REPORT

The studies from the ten occupational sectors are summarized below. They are categorized in four sections: agriculture-related industries, fabrication and manufacturing, resource extraction, and services. Each study follows a similar pattern. The general characteristics of the industry are presented along with the typical tasks which children and young persons may be undertaking. Next is presented the data which describe the physical and psychological health profile of the respondents. Finally, recommendations for action are presented based upon an analysis of these results for each sector.



AGRICULTURE

2. CROP AGRICULTURE

The process and its agriculture plays a central role in Pakistan's economy. It is the second largest sector, accounting for over 21% of GDP, and remains by far the largest employer, absorbing 45% of the country's total labour force.⁴

Nearly 62% of the country's population resides in rural areas, and is directly or indirectly linked with agriculture for their livelihood. There are no recent national data on child labour in agriculture, but estimates based on the last National Survey of Child Labour (1996)⁵ indicate that over two thirds (67%) of working children were engaged in agriculture, approximately 8 times greater than in the urban areas. In rural areas, three fourths of the working child population is working as unpaid family helpers, as compared with one third in the urban areas. So a vast majority of child workers are engaged, part-time or fulltime, in agriculture-related work.

The agricultural processes are diverse and there is no single pattern of work. The nature of tasks and activities depends on the season of the year, geographic pattern of crops, land holdings in the area.

Rigorous studies of the implication of agriculture related activities on the health, safety and psychosocial wellbeing of the children are still very limited for developing countries. Most of the published literature pertains to the developed world where conditions of work are more stringently regulated. Accidents related to use of heavy machinery (tractors, harvesters) and poisoning from pesticides head the list of health impacts. By contrast in Pakistan, there appear to be a wider range of health issues compounded by poverty and lack of education.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Crop harvesting • Digging potatoes • Picking corn • Vegetable picking • Loading of goods • Ploughing • Treating Seeds with pesticides/insecticides • Leveling/Furrowing of cultivable land • Seed Sowing • Watering the sowed land • Pesticides spray & use of fertilizers • Harvesting the crop/Picking the cotton buds • Sorting the cotton fibers from cotton seeds • Cutting fodder • Feeding the cattle 	<ul style="list-style-type: none"> • Potato picking • Corn picking • Vegetable picking • Various types of work in the fields • Treating Seeds with pesticides/insecticides • Seed Sowing • Sorting the cotton fibers from cotton seeds • Cutting fodder with help of Tokka machine for cattle • Feeding the cattle

⁴ Government of Pakistan: "Economic Survey 2009-10", Islamabad, 2010.

⁵ ILO, Federal Bureau of Statistics of Pakistan: "National Survey of Child Labour in Pakistan", Islamabad, 1996.

2.1 STUDY DESIGN FOR CHILD LABOUR IN CROP AGRICULTURE

Table 2. Age and gender profile of respondent working children

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	1	5	6	4	0	4	5	5	10
8	2	5	7	9	1	10	11	6	17
9	1	8	9	7	0	7	8	8	16
10	1	4	5	16	2	18	17	6	23
11	1	5	6	4	1	5	5	6	11
12	0	3	3	14	1	15	14	4	18
13	1	1	2	9	0	9	10	1	11
14	5	2	7	10	1	11	15	3	18
15	2	3	5	7	1	8	9	4	13
16	0	4	4	7	1	8	7	5	12
17	1	6	7	10	0	10	11	6	17

18	1	0	1						
Total	16	46	62	97	105	113	54	167	

Table 3. Educational profile of child workers from crop agriculture

Education status		Male	Female	All
Dropped out	N	52	45	97
	%	46.0	83.3	58.1
Still attending school	N	13	3	16
	%	11.5	5.6	9.6
Never attended school	N	48	6	54
	%	42.5	11.1	32.3
Total	N	113	54	167

2.2 SOCIAL PROFILE OF CHILD WORKERS IN CROP AGRICULTURE

2.2.1 Education and literacy

As can be seen from the data in Table 3, 90% of children working in agriculture have either dropped out or have never attended school. The dropout rate of female respondents was even higher (94%). This disturbing result is amplified by the fact that in both the study districts, school enrolment is, for the general population, reasonably good.

A likely contributing factor to the low scholarization rate is the lack of education of the parents, which results in a general apathy towards the education of children. Until this cycle can be interrupted through compulsory education regulations and school availability, there is little chance the situation will improve.

2.2.2 Family characteristics of children in agriculture

The respondents were asked about the number of their siblings to affirm the common assumption that large sized families are more likely to send their children for work than those with smaller number of children. The study showed that family size is not the sole determining factor for children being relegated to work in the agriculture sector; a number of other factors such as traditions, ethnicity, poverty,

and illness or loss within the family may be at play. The data indicated that the mean family size of the respondents was 8.6 in Sukkur it was 8.8, while those from Sahiwal it was 8.3. On the other hand the mean family size of non-working control group children was 7.1 in Sukkur, 6.9 in Sahiwal and 7.0 overall.

2.3 EXPOSURES AND RISKS

2.3.1 Working conditions

Only 15 (6.8%) respondents -- all boys over 14 years of age -- reported that they have to work during night time, indicating that night work is relatively uncommon in agriculture. Tasks which are performed at night include monitoring irrigation of the crops or ploughing. Some farm machinery such as wheat threshers and fodder choppers may also be operated at night.

Almost all the respondents worked outdoors and were thus exposed to heat or cold in their work. Noise, however, was less of a problem, only 36% mentioning it. This is consistent with the pattern of work in the agriculture sector, where the noise sources are the tractors and other machinery like wheat threshers, harvesters or related farm machinery. Only older male children work in the tasks with higher probability of noise exposure.

Almost 90% of the respondents stated that they were regularly exposed to high levels of airborne dust in their work. This is not surprising in that agriculture in general is a dusty operation, dust being raised by ploughing, by transport and other vehicles, as well as hoeing and harvesting.

On the question about the availability of washing facilities at workplace, the responses indicate that while a majority of the respondents think that their washing facilities are adequate, there is strong gender-based difference, with approximately 90% of the girls judged the washing facilities as inadequate. This also reflects the lack of proper privacy needed by the girls and women working in agriculture.

2.3.2 Exposure to chemicals

The respondents report that the chemicals they work with or are exposed to regularly include:

- Pesticides of various kinds (including herbicides, organophosphorus, chlorinated pesticides) in the form of spray and dusts
- Fertilizers DAP and Urea
- Sulphuric acid (used for preparation of cotton seed)
- Various kinds of fuel oils and lubricants and greases
- Fumes and smoke from machinery exhaust

2.4 HEALTH PROFILE OF CHILD WORKERS IN CROP AGRICULTURE

2.4.1 Physical health and injuries

Not only do child workers in agriculture suffer from various illnesses, they are also concerned about their health. Cough and backache are rated of highest concern by both girls and boys, whereas most types of pain and infection do not seem to worry them.

Approximately half of boys reported cuts and bruises as a result of their work, indicative of the relatively more risky tasks that they perform, such as work with farm animals, and their use of sharp tools and farm machinery. Almost 20% of children working in agriculture suffered an injury in the last six months. There is a wide range of sources of injury including burns and being hit by a buffalo, but the most common for both girls and boys are cuts on the hands and feet. It is noteworthy that the data indicate that children of 14 years and below are more prone to injuries than older children. This may be due to their relative inexperience in handling sharp tools, but the factors bear further investigation.

Exhaustion was noted by a vast majority of the respondents, both males and females (86%) as was sleepiness which may be an indicator not only of fatigue but also stress. Sleepiness at work was reporting particularly by males in the age group 15-18.

When agricultural child workers are compared with those in other sectors of the economy, the physical health indicators of the children working in agriculture related activities were better than those of children engaged in all nine of the other hazardous sectors being studied. Differences in prevalence rates for the indicators were also statistically significant, indicating that children working in agriculture are less likely to suffer from these ill health than the children in the other nine sectors. The child workers in agriculture were worse off than the other working children only in terms of their having lower than normal height or body weight.

While the children in the agriculture sector had better health indicators compared to other child workers in the study, they were worse off when compared with the non-working control group of schoolchildren from the same districts. They had lower height and body weight as might be expected, but in addition they had a higher prevalence of ear infections, teeth problems, chest problems, backache, pain in neck and shoulders, and respiratory allergies than their non-working counterparts.⁶ This data shows that children working in the agriculture sector, though generally healthier than children working in other sectors of economy, are more vulnerable to a number of diseases and ailments when compared with the school-going children.

2.4.2 Psychological health

Results for children in agriculture sector as sub group compared with other children in hazardous sectors demonstrate that higher traumatic complaints are found among working children in the agriculture sector.⁷

⁶ Only the prevalence of anomie and body deformities were higher in the non-working control group children and the differences in the prevalence rates were statistically significant.

⁷ Of note, these are preliminary results, as analyses have not been adjusted for other factors that might influence differences (e.g. demographics).

2.5 RECOMMENDATIONS FOR ACTION

As is evident from the analysis of data and other findings of this study, the children working in the agriculture sector face a number of hazards and problems in their working and living places which pose a threat to their physical and psychosocial wellbeing. On the other hand, these children are also playing an important role in the family economy and, ultimately, in the economy of the country in general. Agricultural labour is an important source of livelihood for the poorer segments of society who are generally more vulnerable to food insecurity and ill health and who have a very low level of literacy, often no permanent residence or no property of their own. The challenge is to enable these children, particularly those of legal employment age, to achieve their potential without jeopardizing their health and safety. The problems they face currently must be resolved in order to encourage healthier employment conditions in agriculture for the future. Improved health and safety will also result in enhanced productivity, better earnings and help to prevent the occurrence of worst forms of child labour in agriculture. Although this is a great challenge, there are a number of actions if taken by the government, employers, and other concerned stakeholders that can create a discernible change toward healthier and safer employment of young persons in agriculture even in the short term. Some of these are listed below.

2.5.1 Statutory reforms and implementation of laws

The current Pakistan labour laws are not applicable in the agriculture sector. Hence, one of the first actions to take is to ensure that laws on child labour are extended to agriculture. Once laws or statutes are in place, enforcement needs to be strengthened: labour and agricultural inspectors have to be equipped with understanding of the special vulnerabilities of children, knowledge about the short and long term impacts, and skills as well as the means to inspect farms and instruct agriculture sector workers, employers and parents on safe work.

2.5.2 Special role of the Agriculture Department

The Agriculture Department has a strong connection with the farmers and farm workers through the training programs they run on farming techniques and the technical assistance they provide to the rural population on modern methods of agriculture. The extension and other staff of the Agriculture Department can play a vital role of sensitizing and securing compliance from farm families if they are trained to recognize and address hazardous child labour in agriculture. For example, they can urge that special attention be paid to preventing children from being exposed to pesticides, from lifting heavy weights, from night work and from work with power-driven farm machinery. Simple leaflets can be an important aid for them to use in their interactions with agricultural communities.

2.5.3 Labeling of hazards

Since oftentimes poisoning results simply from storing dangerous pesticides and other chemicals in unmarked bottles, one immediate step that can be taken is to conduct a campaign to ensure that hazardous chemicals are properly labelled and that machinery is labelled with instructions as to the age limit of children and young persons, who are allowed to work with them.

2.5.4 Introduction of safer technologies

A number of farm machines such as wheat threshers and fodder choppers, or cutting implements such as hoes and scythes, can easily be made safer and more worker friendly through ergonomic design and covering moving parts so they cannot cause accidents.

2.5.5 Awareness raising and education

An important way of making young workers and family members in agriculture aware of the hazards and risks to which they are exposed is through an awareness campaign. Effective means of awareness-raising, suitable to the rural Pakistan environment, is through documentaries, illustrated booklets, leaflets, posters and so-called "street" theatre. Healthcare facilities

It was found during the informal discussions during the study that workers in the agriculture sector rarely access the health care facilities and instead rely on local healers for their health needs. Any effort at elimination of hazardous child labour in this sector should have a health component, whereby the workers should be provided basic health facilities and taught the importance of basic personal hygiene and health care.

3. COTTON-GROWING

3.1 CHILD LABOUR IN COTTON-GROWING

Pakistan is the fifth largest producer of cotton in the world, the third largest exporter of raw cotton, the fourth largest consumer of cotton, and the largest exporter of cotton yarn. Out of a total of 5 million farmers, 1.3 million cultivate cotton. Over 3 million hectares, covering 15% of the cultivable area in the country are devoted to cotton production. Cotton and cotton products contribute about 10% to GDP and 55% to the foreign exchange earnings of the country. Taken as a whole, between 30%-40% of Pakistani cotton production is for domestic consumption. Thus between 60%-70% is exported as raw cotton, yarn, cloth, and garments.

Cotton production supports Pakistan's largest industrial sector, comprising some 400 textile mills, 7 million spindles, 27,000 looms in the mill sector (including 15,000 shuttleless looms), over 250,000 looms in the non-mill sector, 700 knitwear units, 4,000 garment units (with 200,000 sewing

machines), 650 dyeing and finishing units (with finishing capacity of 1,150 million square meters per year), nearly 1,000 ginneries, 300 oil expellers, and 15,000 to 20,000 indigenous, small scale oil expellers (kohlus). It is by any measure Pakistan's most important economic sector.

3.2 TASKS AND ASSOCIATED RISKS IN COTTON PRODUCTION

Cotton growing is a seasonal activity in which a large number of workers, particularly girls and women, are involved. These workers are mainly landless families from the surrounding area or are transient workers from neighboring districts. Cotton crop is repeatedly sprayed with herbicides and insecticides. Also cotton seed is treated with dilute sulfuric acid before sowing. Most of the children are engaged during cotton picking, but some also work for weeding of the crop when the plants are young.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Plowing • Treating seeds with pesticides/insecticides • Leveling/Furrowing of cultivable land • Sowing cotton seed • Watering the sowed land • Spraying pesticides & disseminating fertilizer • Picking cotton • Loading of cotton bundles • Cutting down cotton plants • Tying up the cotton sticks 	<ul style="list-style-type: none"> • General field maintenance • Sowing seed • Treating seed with pesticides/insecticides • Picking cotton • Cutting down cotton plants after the harvest • Tying up the cotton sticks

Preliminary visits to the cotton-growing areas and discussion with key informants found considerable diversity in the activities and patterns of work.

The nature of tasks and activities varied with the season of the year, the geographical pattern of crops, and land holdings in the area.

Table 4. Age and gender profile of children working in cotton production

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	0	2	2	2	2	4	2	4	6
8	1	7	8	3	2	5	4	9	13
9	1	5	6	3	4	7	4	9	13
10	2	11	13	8	8	16	10	19	29
11	1	5	6	4	3	7	5	8	13
12	1	11	12	5	10	15	6	21	27
13	0	8	8	3	3	6	3	11	14
14	0	8	8	6	5	11	6	13	19
15	0	14	14	7	2	9	7	16	23
16	0	6	6	2	3	5	2	9	11
17	0	3	3	1	9	10	1	12	13
18	0	1	1	0	1	1	0	2	2
Total	6	81	87	44	52	96	50	133	183

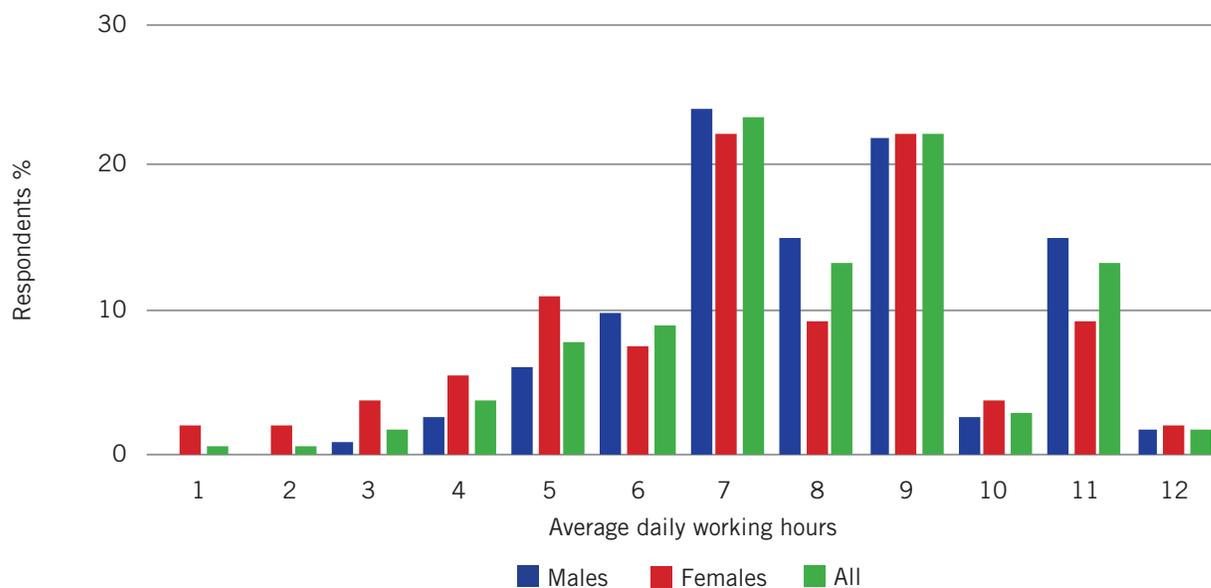
3.3 SOCIAL PROFILE OF CHILD WORKERS IN COTTON PRODUCTION

A high percentage (84%) of children in this sector have either dropped out or have never attended school. It is noteworthy that, although extremely high, it is somewhat lower than that of children working in crop agriculture.

3.4 EXPOSURES AND RISKS

Only 3 children among the cotton sector respondents reported that they worked during night time; these were all of the older age group (15-16) and all were boys. Both boys and girls, however, worked long hours, from 7 to 9 hours a day (see Figure 2) and most (79%) reported fatigue as a result.

Figure 2. Pattern of working hours of the children in cotton growing sector



Almost all the respondents confirmed that they were obliged to endure extremes of heat and cold because of their work outdoors. And similarly most (89%) reported falling or tripping while at work. A slightly smaller majority (78%) complained about high dust levels during their work.

One of the questions asked of the respondents was whether or not they worked with or were exposed to chemicals regularly. Cotton is susceptible to insect molestation and thus usually requires extensive use of pesticides. A study of pesticide use in cotton growing areas of Pakistan⁸ indicated that most of the cotton pickers were not aware of protective measures (such as using gloves, wearing shoes and covering the face) during picking and that an estimated 2.23 million women cotton pickers became sick due to pesticide exposure. This translates into a huge direct economic loss of 105 million rupees for health treatment and an indirect loss of 660 million rupees when the money value of five days' work of 2.23 million pickers is calculated compounded by the fact that this is an external cost to the lowest income strata of society.

Studies conducted on cholinesterase (ChE) enzyme activity in women cotton pickers revealed that the inhibition of this enzyme in 25% (22 of 88) females in Multan⁹ and in 42% (of 40) women in Multan and Bahawalpur¹⁰ was in dangerous range. The blood samples of 22 out of 25 cotton pickers from Multan area were reported to contain residues of pesticides belonging to the organophosphate, carbamate and chlorinated groups (Masud and Parveen, 1998).

A season-long study in India¹¹ looked into the pesticide poisoning among cotton pickers in three villages. It found that typical female tasks, which included diluting concentrated chemicals and refilling spraying tanks, were as hazardous as direct pesticide application. Of 323 reported events, 83.6% were associated with signs and symptoms of mild to severe poisoning, and 10% of the pesticide application sessions were associated with three or more neurotoxic/systemic signs and symptoms typical of poisoning by organophosphates, which were being used in 47% of the applications. Even when neurotoxic effects were extremely serious, as in 6% of the cases, none of the workers sought medical care. Low-income marginal farm workers were more often subjected to severe poisoning than were farm owners.

The children in this study confirmed that they were using the following:

- pesticides of various kinds (including herbicides, organophosphorus, chlorinated pesticides) in the form of spray and dusts;
- fertilizers DAP and Urea;
- sulphuric acid (used during the preparation of cotton seed).

They were also exposed to chemicals from various kinds of fuel oils and lubricants and greases as well as fumes and smoke from machinery exhaust.

Almost 75% of the children working in the cotton fields mentioned frequent headache as their most common health problem and headache was the health condition which the children expressed as their greatest concern. Headache can be a symptom of pesticide poisoning and demands further attention.

⁸ Khan, Iqbal, Ahmad, and Soomro: "Economic Evaluation of Pesticide Use Externalities in the Cotton Zones of Punjab, Pakistan", *The Pakistan Development Review* 41:4, Part II, winter 2002, pp. 683-698.

⁹ Masud, S.Z.: "Determination of acetylcholinesterase activity in pesticide workers". *Annual Report, Tropical Agricultural Research Institute, Pakistan Agricultural Research Council, Karachi, 1991.*

¹⁰ Tahir, S.: "Pesticide effect on human health in Pakistan". *Consultancy Report submitted to FAO, FAO, Islamabad, 2000.*

¹¹ Mancini et al.: "Acute Pesticide Poisoning among Female and Male Cotton Growers in India", *International Journal of Occupational and Environmental Health*, Number 3, July/September 2005, pp. 221-232(12).

3.5 HEALTH PROFILE OF CHILDREN WORKING IN COTTON PRODUCTION

In addition to headache, 66% of the respondents complained of back pain, respiratory and abdominal problems. They expressed concern about their health which suggests they would be amenable to information about how to stay safe and healthy.

Half of the respondents reported cuts and bruises. This is indicative of some of the tasks performed by children in cotton production as they work with bare hands and sharp tools to cut down and bundle the dried cotton plants. Thirty of the 183 children in the sample had sustained a cut on their foot, hand, or fingers during the last six months.

The general health indicators of the children working in cotton growing sector were generally better than those of children engaged in the other nine hazardous sectors of economy being studied. The prevalence rates for anemia, teeth problems, cumulative trauma

disorders were higher in the children from cotton growing sector than amongst the working children in the other sectors. Differences in prevalence rates for these indicators were also statistically significant.

3.6 PSYCHOSOCIAL HEALTH

Children in the cotton growing sector, as compared with other children in hazardous sectors, appear to have higher rates of depression. On the positive side, they have better indicators in terms of better future outlook, coping and social integration.

3.7 RECOMMENDATIONS FOR ACTION

Recommendations for improving the situation of cotton pickers is similar to that of general crop agriculture. However, given the ubiquitous use of pesticides, an informational campaign directed at simple protective measures such as handwashing might be quite effective in reducing exposures.

4. DATE PALM FARMING

4.1 CHILD LABOUR IN DATE PALM FARMING

Date palm farming is carried out in desert areas of Pakistan. Dates are grown in orchards in hot dry sandy areas with some water available for irrigation. Dates are an important source of income for the rural families and land owners. Pakistan is the fifth largest date producer in the world, with an area of 74.80 thousand hectares and production of 426.80 thousand tons. Most of the dates are grown in Baluchistan. Khairpur and Sukkur districts are main date growing areas in Sindh province.

4.2 TASKS AND ASSOCIATED RISKS IN DATE FARMING

The date orchard involves not only planting but requires continuous care and application of necessary inputs year-round. It is labour intensive work. Although most of the work is done by adult males, children may be engaged in some of the processes.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Planting of dates tree • Manual ploughing in orchards • Watering the plants • Spraying and pesticides/insecticides treatment • Pollination of female trees. • Dates Picking • Dates segregation/sorting • Loading on carts and tractors • Manual transportation to the drying fields • Collecting and loading of trucks for transportation to the market • Cutting of dates trees and their transportation as fuel wood. 	<ul style="list-style-type: none"> • Dates segregation/sorting (rarely)

There is very little specific literature on health and safety hazards faced by child or adult workers in date palm orchards. However, since similar operations are common in most fruit orchards, the health and safety risks have been documented in a number of studies of orchard workers.

A qualitative study¹² looked into the health and safety risks faced by orchard workers. It was reported that these workers are exposed to an array of occupational health and safety hazards that result in injury,

illness, and, in some cases, death. The purpose of this qualitative study was to identify and explore factors that contribute to occupational risks related to orchard work. Twenty-five Hispanic orchard workers in the US were interviewed. They reported that the most common type of accident was falls, usually from a ladder; and the most common injuries were strains and sprains.

A study analyzed the workers' compensation claims of orchard workers in Washington State in the United States.¹³ Of the 13,068 claims in the

¹² Salazar et al.: "Occupational Risk Among Orchard Workers: A Descriptive Study", *Family & Community Health: July/August 2005, Vol. 28, Issue 3, pp. 239-252.*

¹³ Hofmann et al.: "A descriptive study of workers' compensation claims in Washington State orchards", *Occupational Medicine, Oxford, England, 2006, Vol. 56, Issue 4, pp. 251-257.*

dataset, 4,020 (31%) were determined to be ladder-related injuries. Ladder-related claims accounted for nearly half (48%) of all 'compensable' claims (e.g. claims involving time loss, disability or 'loss of earning power' in addition to medical expenses). Claims related to ladders were not only the most frequent but also the most expensive collectively in terms of medical aid, time loss and other costs. On a per-claim basis, ladder-related injuries were among the most severe and costly reported injuries. Other common causes of injury among claims were branches and vegetation, structure and material and ground-related injuries.

A study was carried out in India to look into the association of brain cancer with work in the orchards.¹⁴ Retrospectively, case files along with death certificates of 432 patients of primary malignant brain tumors and 457 controls (non-tumor neurologic diseases), admitted for treatment simultaneously over a period of 4 years from January 2005 to December 2008, to the Neurosurgery hospital, and were studied. Follow-up and family interaction was established. All orchard-related 389 patients had high-grade tumors as compared to the non-pesticide tumors. Mortality in pesticide-exposed tumors was 12%. The higher or upper-normal levels of serum cholinesterase (AChE) were observed in 54.7% (213 out of 389) patients and decreased levels were found in only 45.3% (176 out of 389) orchard-related patients (RR = 19.4; OR = >5; 95% CI = >1-10). Although serum AChE levels were a routine investigation in malignant brain tumors, this was not routine in other neurological conditions (hospitalized controls). Familial gliomas have shown an emerging trend in the orchard residents of the valley of Kashmir.

¹⁴ Bhat, A.r. et al.: "Brain cancer and pesticide relationship in orchard farmers of Kashmir", *Indian Journal of Occupational and Environmental Medicine*, 2010, Sep./Dec., Vol. 14, Issue 3, pp. 78-86.

4.3 STUDY DESIGN FOR CHILD LABOUR IN DATE PALM WORK

Table 5. Age and gender profile of respondent working children from date palm sector

Age (years)	Male	Female	All
7	0	0	0
8	3	0	3
9	6	0	6
10	14	2	16
11	10	1	11
12	31	1	32
13	37	0	37
14	34	0	34
15	23	0	23
16	14	0	14
17	19	0	19
18	1	0	1
Total	192	4	196

4.4 SOCIAL PROFILE OF CHILD WORKERS IN DATE PALMS

Only 22% of the children were attending school, while, 88% had either dropped out or had never attended schools. Though the enrolment in schools is reasonably good in Sukkur district, the poverty and lack of commitment to education by the families, makes it extremely difficult for children to be enrolled and to be kept at school.

The data indicate that the mean family size of the respondents was 8.6. The mean family size of non-working control group children was 7.1, indicating that the families engaged in date growing are likely to raise large sized families.

4.5 EXPOSURES AND RISKS

None of the respondents reported that they work during the night. But during the day, they work, on average, between 8 and 10 hours. All the respondents perceived that their working conditions required work in extreme heat.

A large majority (95%) of the respondents reported having fallen. Most of the tasks in date growing are performed at considerable height which may extend up to 30 feet above ground level. There is only primitive fall protection and safety equipment available to workers. However, children rarely go up to the top of the palm trees; they help on the ground. Even here the slip and trip hazards are common.

Since most of the work in date growing takes place in the open, poor lighting is only a problem during peak season when the dates are picked and processed and the workers start work early in the morning and adults at least continue to work after dark.

The majority of the children (82.1%) stated that they were regularly exposed to dust. Although date growing itself is not a dusty operation, it is carried

out in the open areas which are usually dry and where the wind blows the fine dust and sand.

4.5.1 Exposure to chemicals

The child workers mentioned that they encounter pesticides and fertilizers in their work as date palms are frequently sprayed with pesticide which is applied at the top of the tree. Thus there is danger of pesticide drift to all those associated with the work.

4.6 HEALTH PROFILE OF CHILD DATE PALM WORKERS

4.6.1 Physical health and injuries

A high proportion of the working children experienced headache (84%). The study indicates that most of the children worried about this along with fever, stomach pain, and backache.

Many of the working children suffered cuts and bruises (65%) due to their work. Date leaves are sharp and abrasive and cause frequent minor cuts on the hands and fingers. Also sharp instruments are used during date harvesting and tree cutting, which may cause deep cuts.

Table 6. Comparison of health indicators of child workers in date palm farming with child workers in other sectors of economy

Health indicators	Prevalence rate (%) in the child workers from date growing sector N=196	Prevalence rate (%) in the non-working children controls N= 232	P-Value	Significance (* indicates a significant relationship of disease indicator with work)
Lower than normal Weight	53.6	20.4	0,000	*
Anemia	54.1	41.0	0,000	*
Ear problems	100.0	75.1	0,000	*
Teeth problems	100.0	83.3	0,000	*
Backache	69.9	56.7	0,000	*
Headache	78.1	53.5	0,000	*
Vertigo	63.8	32.1	0,000	*
Pain in neck & shoulders	50.0	31.2	0,000	*
Cumulative Trauma Disorders	1.0	20.5	0,000	*
Abdominal problem	52.0	33.3	0,000	*
Injury marks	72.4	39.9	0,044	*
Burns	16.3	9.7	0,004	*
Skin problems	40.8	14.3	0,000	*
Respiratory allergy	7.1	9.7	0,243	
Eye allergy	4.1	21.1	0,000	*
Fungal infections	0.0	2.0	0,048	*
Diarrhea	27.6	8.7	0,000	*

The general health indicators of the children working in the date growing sector were generally worse than those of children engaged in the other hazardous sectors being studied. The prevalence rates for lower body weight, anemia, ear infections, teeth problems, backache, headache, vertigo, pain in neck and shoulders, abdominal problems, injury marks, burns, skin problems, eye allergies and fungal infections was higher and statistically significant among the child workers in the date growing sector than among child workers in other sectors of the economy.

The working children in date palm sector were also worse off in terms of prevalence of ill health indicators, when compared with the non-working control group children from the same district who were attending regular schools.

Low body weight, ear infections, teeth problems, backache, headache, vertigo, pain in neck and shoulders, injury marks, burn marks, and skin problems, respiratory allergies, fungal infections and diarrhea were higher in the children in the date growing sector than in their non-working counterparts from schools.

4.6.2 Psychosocial health

Comparisons between child laborers in date palm work and a control group (non child labor) demonstrate statistical differences between groups for all of the protective factors, yet not for the symptoms.

The results demonstrate that higher traumatic complaints are found among child workers in date palm farming. On the other hand, children involved in this sector demonstrate higher levels of social integration and coping skills.

4.7 RECOMMENDATIONS FOR ACTION IN DATE PALM FARMING

A number of practices and techniques if adopted can make the work in date palm farming safer for

youth of employment age, which help to obviate the need to rely on work by children. A key focus in this sector has to be placed on promoting use of fall protection equipment, use of better and ergonomic tools during work, better protective measures for all during pesticide spraying operations not just the person doing the spraying, protection from extremes of weather and making available first aid and raising awareness of the workers on how to avoid the risks associated with date production.

5. LIVESTOCK-RAISING

5.1 CHILD LABOUR IN LIVESTOCK-RAISING

According to the Economic Survey of Pakistan, livestock production contributes about half of the value added in the agriculture sector, amounting to nearly 11% of Pakistan's GDP, more than crop agriculture. The national herd consists of approximately 24.2 million cattle, 26.3 million buffaloes, 24.9 million sheep, 56.7 million goats and 0.8 million camels. In addition to these there is a vibrant poultry sector in the country with more than 530 million birds produced annually. These

animals produce 29.472 million tons of milk (making Pakistan the 5th largest producer of milk in the world), 1.115 million tons of beef, 0.740 million tons of mutton, 0.416 million tons of poultry meat, 8.528 billion eggs, 40.2 thousand tons of wool, 21.5 thousand tons of hair and 51.2 million skins and hides.

Government initiatives are being undertaken to modernize milk collection and to improve milk and milk product storage capacity. The Federal Bureau of Statistics provisionally valued milk production at Rs.758,470 million in 2005 and noted growth of over 70% since 2000.

5.2 DESCRIPTION OF IMPORTANT PROCESSES AND THEIR HAZARDS

Table 7. Tasks and hazards found in livestock sector

Process	Pictorial view	Hazards
<p>This occupation involves,</p> <p>Grazing (feeding) of animals</p>		<p>Long working hours</p> <p>Fall, slip and trip</p>
<p>Making chopped foddres for animals</p>		<p>Making fodder for animals with the help of cutter/Toka machine may result in amputation, electric shocks and severe injuries.</p>
		<p>Musculo-skeletal disorders</p>

Rearing and looking after of animals

Milking, Feeding at sheds/ homes(Dera)

Cleaning of sheds sheds/homes (Dera)



Cases of amputation of limbs are common

Heat stress related disorders

Milking the cattle is labourious

Cuts and bruises during handling of fodders

Heat stress related problems"

Poor hygiene, Poor lighting. Slips, trips and falls.

Musculo-skeletal disorders

Heat Stress

5.2.1 Injuries due to fodder chopper (toka) machines

The fodder chopper machine (Toka in local dialect) is one of the most common agricultural machines used in the households and animal sheds. Most of the farmers keep dairy animals to supplement their income through sale of milk and dairy products and for sale for meat. Toka is an integral part of the household in rural areas as fodder is brought from fields and chopped before feeding to the animals. Though the law prohibits the employment of children on Toka¹⁵ as a regular occupation, children and young persons (including girls and boys) regularly work on these machines, mostly to help in the family chores.

Accidents are regularly reported in the press where children, young persons or adults have lost hands, fingers or arms or suffered other serious bodily injuries during work on Toka. In one village alone, two men had lost arms due to entanglement in the Toka (one at the age of 18), another had lost his fingers when he was 17 years old. In another village, two women had suffered Toka related injuries, one had lost three fingers at the age of 18 years and the other lost 4 fingers at the age of 16. These examples suggest that there would be hardly a village where a victim of Toka is not found.



Fodder is pushed by hands into the fodder chopper creating risks of severe injuries.

¹⁵ Prohibited processes under the Employment of Children Act, 1991.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Goat rearing • Feeding fodder to animals • Herding of cows and sheep • Buffalo herding • Milking • Grading of animals/Livestock • Bringing green fodder • Preparing green fodders for animals with the help of Toka Machine • Feeding animals with green fodders or Vunda • Milking of animals • Feeding medicines to animals • Cleaning of the animal sheds and living surrounding premises (dera) 	<ul style="list-style-type: none"> • Feeding fodder to animals • Care of cows and sheep • Care of buffaloes • Getting green fodders • Preparing green fodders for animals with the help of Tokka Machine • Feeding animals with green fodders or Vunda • Milking of animals • Cleaning of the animal sheds and living surrounding premises (dera)

According to data from Australia,¹⁶ of a total of 257 farm-related fatalities 34 were deaths of children less than 15 years of age. Workers in the livestock sector and those working with farm machinery were found to be most at risk of fatalities.

A study carried out in India¹⁷ on injuries caused by farm machinery found that the fodder chopper (which is extensively used for animal rearing there as well as in Pakistan) is the leading source of injuries. An epidemiological study done in north India showed that all age groups sustain fodder-cutter injuries while operating the machine. More than 64% of the victims were children below 15 years of age. The injuries led to a large number of limb amputations among the persons operating the machine or playing around it.

Working directly with animals poses risks as well. For example, the rate of asthma is higher among poultry workers as shown by a study in the United States.¹⁸ A review of studies of agriculture related health and safety risks¹⁹ noted studies of dairy farmers which showed heightened levels of hearing loss, osteoarthritis of the hip and knee, high risk of traumatic injury, and falls.

Workers in animal confinement units are at risk for an asthma-like syndrome characterized by chest tightness, cough, and dyspnea with exertion. Various studies have shown that 2% to 40% of workers have symptoms of the asthma like syndrome on a daily basis. Chronic bronchitis also appears to be more common in those working in animal confinement units than in the general population.

¹⁶ Erlich, S.M. et al.: "Work-related agricultural fatalities in Australia, 1982-1984", *Scandinavian Journal of Work, Environment and Health*, 1993, Vol. 19, pp. 162-167.

¹⁷ Mohan, D. et al.: "Development of safer fodder-cutter machines: a case study from north India", *Safety Science*, 2004, Vol. 42, pp. 43-55.

¹⁸ Arif, A.A. et al.: "Prevalence and risk factors of work related asthma by industry among United States workers: data from the third national health and nutrition examination survey (1988-94)", *Occupational and Environmental Medicine*, 2002, Vol. 59, Issue 8, pp. 505-511.

¹⁹ Von Essen, S.G. and McCurdy, S.A.: "Health and Safety Risks in Production Agriculture", *Western Journal of Medicine*, 1998, Vol. 169, No. 4, pp. 214-220.

5.3 STUDY DESIGN FOR CHILD LABOUR IN LIVESTOCK

Table 8. Age and gender profile of respondent working children

Age (years)	Numbers by gender		
	Males	Females	All
7	2	7	9
8	5	1	6
9	3	2	5
10	3	5	8
11	3	2	5
12	18	2	20
13	8	1	9
14	12	7	19
15	20	6	26
16	37	6	43
17	27	4	31
18	38	3	41
Total	176	46	222

5.4 SOCIAL PROFILE OF CHILD WORKERS IN LIVESTOCK

As in other types of agriculture, a very high percentage (84%) of the children have either dropped out or have never attended schools. The illiteracy rate of female respondents was slightly higher than the male child workers.

The data show that the mean family size of the respondents (7.2) was only slightly larger than the mean family size of non-working control group children in this area (6.9). This suggests that child labour may be not so much a function of adversity among the families concerned but rather of culture and tradition.

5.5 RISKS AND EXPOSURES

5.5.1 Working conditions

Few of the children reported that they have to work during night time. Those who do are usually engaged in feeding the animals. Unlike children in other

occupations, there appears to be a wide range in the number of hours of work of children in the livestock sector (from 2 to 12 hours).

Other than being exposed to heat and cold and the elements, the working conditions of these children appeared less onerous than in other occupations. Dust levels, noise levels, etc. were not of much concern to them. As the children eat with their families, food and eating facilities does not concern them either.

5.5.2 Exposure to chemicals

There were, however, a number of potentially hazardous chemicals being used in their environment and to which they might be exposed either by using them themselves or being in the vicinity. These include pesticides of various kinds and veterinary medicines.

5.6 HEALTH PROFILE OF CHILD WORKERS

5.6.1 Physical health and injuries

A vast majority of the children (80%), both boys and girls, were fatigued from their work. Many younger girls complained of headaches (66.7%) and the data appear to indicate that both boys and girls experienced increasing levels of back pain as they became older. This may reflect the adoption of increasingly strenuous tasks with age. Other than occasional bouts of ill health, however, most of the children had few specific complaints of illnesses. The injuries they sustained were most commonly cuts, for example from sickles. The range of injuries gives an indication of the nature of hazards they frequently encounter. They include dog bites, buffalo kicks, burns, and injuries of the foot, leg, hand, fingers and face.

On virtually all indices of health, the children working in livestock related activities were significantly better than those of children in the other study sectors. The only exception seems to be eye problems, and to a lesser extent, burns. Interestingly, they also scored better than the controls in a number of areas. The

two areas where they were significantly higher than the controls was in back pain and in eye problems.

5.6.2 Psychological health

The results that while depression self-rating, impact of events, and work stressors might be slightly higher in the among working children in livestock sector than in other sectors, these children also show higher positive indicators including coping and sense of agency, indicating they are more resilient and confident.

5.7 RECOMMENDATIONS FOR ACTION

5.7.1 Special role of the Agriculture and livestock Departments

The Agriculture and Livestock Departments interact with the farmers and livestock producers. They also run awareness programs on animal rearing techniques and education of the rural population on modern methods of dairy and poultry farming. The extension and other staff of these departments can play vital role if they are trained to recognize and address hazardous child labour in livestock sector. Special attention needs to be paid to prevention of children from injuries to fodder chopping machinery, cutting tools, lifting of heavy weights, and night work by children. Special checklists and informational leaflets can be prepared to support this.



MANUFACTURING

6. MAKING PALM LEAF MATS

6.1 TASKS AND ASSOCIATED RISKS INVOLVED IN MAT-MAKING

Weaving of mats from date palm leaves is carried out in those parts of Pakistan where date orchards are found. These are usually rural hot dry sandy areas

with some water available for irrigation. The date palm mats are used as prayer rugs in mosques, as construction material for low cost houses in desert areas and as hand fans. Mat-making is labour intensive work usually carried out in the home. Family members do this type of work together.

Table 9. Review of tasks and hazards found in mat-making

Process	Pictorial view	Hazards
<p>Dates leaves are being cut from trees.</p>		<p>Dates leaves are very sharp and can injure injured hands and fingers of workers.</p>
<p>Tied in bundles and carried to home on head.</p>		<p>Use of chemicals/ colors may effects the skin and eyes of workers.</p>
<p>Leaves are dried and dyed with different colors/ Chemicals.</p>		
<p>Knitting Matts/ Basket manually while sitting in squatting position.</p>		<p>Due to awkward posture, and long hours workers may suffer from backache, joint pain and RSI/CTD.</p>

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Cutting of date leaves • Coloring the leaves • Basket Making • Mat Making 	<ul style="list-style-type: none"> • Coloring the leaves • Basket Making • Mat Making • Making bread plates (chhabi) using a needle • Making of Hand Fans • Box Making • Needle work

6.1.2 Health and safety evidence base

There is virtually no literature on health and safety hazards faced by child workers in mat-making. However, the health and safety risks have been documented in traditional handicraft making, glass bangle making and carpet and rug weaving which have similar operations in many respects to mat-making.

For example, knotting of carpets is hazardous to the health of workers, particularly to children, as they are more prone to develop skeletal problems due to poor posture²⁰ as well as impaired vision or even blindness²¹ due to the close work and often low illumination available. Headache, blurring of vision, backache, abdominal pain, limb pains, and respiratory tract infections have been found to be more prevalent in carpet-weaving children.²² Carpet-weaving children also suffer injuries due to the use of sharp instruments during their work.²³ Studies of adult carpet weavers have corroborated

²⁰ Kutluhan S. et al.: "Carpal tunnel syndrome in carpet workers", *International Archives of Occupational and Environmental Health*, 2001, Vol. 74, Issue 6, pp. 454-457.

²¹ Kavoussi, N.: "An occupational health study in carpet industry in Kerman, Iran", *Scandinavian Journal of Work, Environment and Health*, 1973, Vol. 10, pp. 48-51.

²² Matoo, G.M., Rauf, A. and Zutshi, M.L.: "Health status of school age children employed in carpet weaving in Ganderbal Block", *British Journal of Industrial Medicine*, 1986, Vol. 43, Issue 10, pp. 698-701.

²³ Das, P.K., Shukla, K.P. and Ory, F.G.: "An occupational health programme for adults and children in the carpet weaving industry, Mirzapur, India: A case study in the informal sector", *Social Science & Medicine*, 1992, Vol. 35, Issue 10, pp. 1293-1302.

these findings, adding persistent cough to the health complaints. In addition, the risk of developing carpal tunnel syndrome is high among adult carpet weavers, but this has not been explored in child carpet weavers.

6.2 STUDY DESIGN FOR CHILD LABOUR IN MAT-MAKING

Table 10. Age and gender profile of respondent working children from the mat-making sector

Age (years)	Male	Female	All
7	0	3	3
8	0	4	4
9	2	13	15
10	7	41	48
11	3	18	21
12	5	22	27
13	5	25	30
14	1	12	13
15	7	9	16
16	4	3	7
17	4	11	15
18			
Total	38	161	199

6.3 SOCIAL PROFILE OF CHILD WORKERS IN MAT-MAKING

Only 12.1 % of the children were attending school. The drop-out rate for the girls was more than double that of the boys with only 9.9% female respondents still attending school as compared with 21.1% male respondents were still attending. These low rates are

consistent with the other occupations which take place in largely rural areas.

The mean family size of the working children was 8.8 compared with the control group of 7.1 in the area.

6.4 EXPOSURES AND RISKS

6.4.1 Working conditions

Other than exposure to heat and cold, the children's working conditions were not particularly difficult with respect to the variables included in the study, such as work at night, poor lighting, and dust levels.

6.4.2 Exposure to chemicals

The respondents were asked about the specific chemicals they work with or are exposed to regularly. Some of these workers use commercial dyes and colours in which the dried date leaves are soaked before these are used for weaving.

6.5 HEALTH PROFILE OF CHILDREN

6.5.1 Physical health and injuries

All of the children reported that they were tired as a result of their work and 86% said they suffered from back pain; this is consistent for both boys and girls. Many of the children were cut by the dried date leaves which are sharp and abrasive. Out of 42 respondents, 35 had received cuts during the last six months.

Almost all of the general health indicators show mat-weaving children to be inferior in health to those

working the other hazardous sectors of the economy. The prevalence rates for lower body weight, anemia, ear infections, teeth problems, respiratory infections, backache, headache, vertigo, pain in neck and shoulders, cumulative trauma disorders abdominal problems, injury marks, dermatitis, eye allergies and fungal infections was higher and statistically significant among the child workers in the child workers in mat-making than the other 9 sectors of economy.

The working children in mat-making sector were also worse off in terms of prevalence of ill health indicators, when compared with the non-working control group children from the same district who were attending regular schools.

6.5.2 Psychosocial health

The results show that mat-making children have higher levels of depression and traumatic complaints than those in other occupations and these are further aggravated by a low sense of agency. On the other hand, they report lower work stress.

6.6 RECOMMENDATIONS FOR ACTION TO IMPROVE HEALTH AND SAFETY FOR MAT-MAKING

6.6.1 Statutory reforms and implementation of laws

The coverage of the laws on child labour needs to be extended to cover home-based enterprises such as mat-making. But it is not enough to have laws. Enforcement agencies must be strengthened and inspectors have to be equipped with knowledge and skills as well as means to reach out to the workers, employers and parents in this sector.

7. BRICK-MAKING

7.1 BRICK-MAKING AND ITS ASSOCIATED RISKS

The workers in the brick kiln sector are one of the most vulnerable segments of the workforce. Due to the remoteness of the brick kilns, most of these workers cannot take advantage of even the minimal services (educational, social welfare, health) that are available in the rural areas. A high proportion of brick kiln workers are children.

According to the World Bank,²⁴ Pakistan is faced with an annual shortage of 1.5 million of housing units. Fired clay bricks are the most important construction material used in Pakistan, thus the brick kiln industry is pivotal in meeting the demand of housing in the country. According to some estimates,²⁵ the brick industry contributes approximately 1% of the GNP of Pakistan and according to 1996 estimates, its employment cost was 310 million rupees, which should have risen substantially in view of the inflation and massive boost in construction in 2000 and afterwards. Annual production of bricks in 1996 in Pakistan was 22 billion and the total production value was Rs. 1,527 billion. The market is dominated by one enterprise which produces approximately 70% of the bricks. Because it is largely rural-based and has sought little external investment, there has been little technical progress in production methods.

The brick kilns are classified as factories under the Factories Act 1934. The factories have to be registered under this Act with the Directorate of Labour Welfare which is the Inspectorate of Factories. Due to their rural nature and distant locations, very few brick kilns were registered as factories till 2007. However in 2007 subsequent to the order of the

Supreme Court of Pakistan²⁶ and under the directions of the Government of Punjab the district formations of the Labour and Human Resource Department, Government of Punjab launched a vigorous campaign to register brick kilns under the Factories Act, 1934. The inspecting officers paid visits to the brick kilns and collected data about the employment and ownership and filed papers for their registration. According to the registration data compiled by the Directorate of Labour Welfare, there were a total of 3,836 brick kilns in Punjab.

Brick is as old as civilization itself, dating back to ancient Mesopotamia around 5,000 BC. The thick clay and mud deposited by the Tigris and Euphrates rivers was reinforced with straw and shaped into brick and then dried in the sun. As time progressed, bricks were glazed in a variety of colors and used to adorn the facades of the ziggurat, or temple towers, built as stairways to and for the gods. Eventually, and most likely in light of the fact that when wooden houses burned, the brick on the remaining chimneys had been strengthened, fire-hardened bricks began to replace adobe ones in India and the Middle East. The archeological ruins of Mohenjo-Daro and Harappa which date back over 4,000 years contain both mud-brick and baked-brick buildings which indicate that the industry was well developed in the region of Pakistan in ancient times.

An adult can usually make 500-1,500 bricks in a 9 hour day depending on their skill and physical health. Payment is by the number of bricks produced.

Between 30-150 persons (10-50 families) are associated with each kiln. They live at the site in simple shelters.

²⁴ Lecture by Engineer Rukhsana Rahooja, Principal Scientific Officer, Council for Works and Housing Research, Ministry of Science & Technology, Government of Pakistan (2006) at 2nd International Conference on Construction Industry-ICCI "Construction Boom in Pakistan: Present & Future".

²⁵ *Ibid.*

²⁶ Supreme Court of Pakistan, Human Right case No. 5091, 2006.

7.1.1 Description of brick-making process

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender. The tasks in brick kilns are gender specific to a certain extent.

Main tasks of males	Main tasks of females
<ul style="list-style-type: none"> • making mud by mixing soil and water • transporting mud to the brick-making field on carts • making bricks • transportation of green bricks to the kiln area • loading the fired bricks on tractor lorries or mule carts for transportation to the markets. 	<ul style="list-style-type: none"> • cleaning of home, washing, caring for babies • transporting mud to the brick-making field on carts • making bricks • preparation and bringing of food to the work area

7.1.3 Health and safety of brick-making

Health and safety of work at brick kilns has received very little study relative to the number of workers employed in this industry. The few studies which have been carried out in different parts of the world evidence similar health effects.

A study of 268 brick workers in Cape Town, South Africa²⁷ documented clear associations between acute and chronic respiratory symptoms, dust exposure, and evidence of airflow limitation, independent of the effect of smoking.

A study of 22 kilns in Lucknow, India²⁸ which looked at both environmental and health hazards posed by the brick kilns found that the levels of suspended particulate matter (SPM) of 93.3 mg/m³ were much higher than the prescribed limit, rendering the workers engaged in these kilns at risk from dust and heat related diseases.

A similar study of brick kilns operating in Kathmandu valley of Nepal²⁹ used both interviews and physical examination of school children from close to and farther away from the brick kilns to assess the effect of brick kilns on environment and human health. The ratios for respiratory problems like tonsillitis and acute pharyngitis were statistically significant among the students near the kilns. A study in Viet Nam³⁰ of a refractory brick operation identified, in addition to respirable dust hazards, noise, heat, and lack of head protection. Gravimetric assessment showed that silica dust exposure levels exceeded the Vietnamese permissible exposure level by almost fivefold.

²⁷ Myers, J.E. and Cornell, J.E.: "Respiratory Health of Brickworkers in Cape Town, South Africa. Symptoms, Signs and Pulmonary Function Abnormalities", *Scandinavian Journal of Work, Environment and Health*, 1989, Vol. 15, Issue 3, pp. 188-194.

²⁸ Pangtey, B.S. et al.: "An environmental profile of brick kilns in Luckn", *Environmental Science and Engineering Magazine*, 2004, July, Vol. 46, Issue 3, pp. 239-244.

²⁹ Joshi, S.K. and Dudani, I.: "Environmental health effects of brick kilns in Kathmandu valley", *Kathmandu University Medical Journal*, 2008, Jan-Mar, Vol. 6, Issue 1, pp. 3-11.

³⁰ Hai, D.N. et al.: "An occupational risk survey of a refractory brick company in Ha Noi, Viet Nam", *International Journal of Occupational Medicine and Environmental Health*, 2001, Jul-Sep, Vol. 7, Issue 3, pp. 195-200.

7.2 STUDY DESIGN OF CHILD LABOUR IN BRICK KILNS

Table 11. Age and gender profile of respondent working children

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	2	1	3				2	1	3
8	2	2	4	4	4	8	6	6	12
9	4	4	8	6	0	6	10	4	14
10	7	6	13	14	1	15	21	7	28
11	2	3	5	9	1	10	11	4	15
12	2	4	6	15	1	16	17	5	22
13	2	5	7	8	1	9	10	6	16
14	1	2	3	7	0	7	8	2	10
15	6	4	10	7	0	7	13	4	17
16	6	5	11	5	0	5	11	5	16
17	4	1	5	15	0	15	19	1	20
18	5	10	15	1	0	1	6	10	16
Total	43	47	90	91	8	99	134	55	189

7.3 SOCIAL PROFILE OF CHILD WORKERS IN BRICK KILNS

A majority of the children (56%) have either dropped out or have never attended schools. The dropout rate of female respondents was more than double than that of males. Contributing to this is the lack of schools at or near the brick kilns, lack of education of the parents, and a general apathy towards the education of children. Family size was high in Sukkur – 8.4 compared with 7.1 for the control group – but in Sahiwal only 7.4 compared with the controls' 6.9. There is no explanation for this differential.

The living conditions of brick kiln families are a cause for concern. They reside in shelters provided by the brick kiln owners. These shelters are cramped, poorly maintained, with an inadequate water supply, and in close proximity to donkeys and other animals.

7.4 EXPOSURES AND RISKS

7.4.1 Working conditions

As noted above, the atmospheric contamination in the vicinity of the kilns can be substantial. With the increasing price of coal, a number of cheaper fuels are being used to fire the kilns, such as plastic scrap, shredded rubber tires, wood shavings, dried fruit pulp, poultry farm droppings and used lubricants, many of which pose grave environmental threats due to emission of toxic gases, e.g. dioxins. In addition to the smoke, the 79% of the children confirmed that they experienced high dust levels in their work, due to digging loose soil, loading and unloading of bricks, etc.

Compounding the dust and smoke, children are exposed to sun and heat for long periods of time. This, along with long work hours contributes to their being exhausted at the end of the day.

Regarding washing and sanitation facilities at the workplace, although half of the boys felt they were adequate, approximately 90% of the girls did not think so ... a reflection of cultural concerns for proper privacy needed by the girls and women.

7.5 HEALTH PROFILE OF CHILD WORKERS IN BRICK KILNS

7.5.1 Physical health profile

The average of 67% of children experiencing back pain and headache masks the fact that, in contrast to some of the other occupations, it is the boys which have the highest prevalence, increasing to as much as 20% higher among older boys. This may be a reflection of the boys' taking on heavy lifting and transport duties as they became older. The gender differential is even more pronounced when injuries of the last six months are recorded: boys have a total of 33 injuries, whereas girls have only 3.³¹

Quite a high number of children, a majority being males in the age group of 15 years and above, reported eye injuries most likely due to dust particles as well as flying brick fragments.

In general, when compared with children in other occupations and even more so compared with the controls, the brick kiln workers show a statistically significant higher rate of chest, ear and teeth infections. They also tend to be thin (low weight for height).

7.5.2 Psychosocial health

Results for children in brick kilns as compared with other children in hazardous sectors show that they are experiencing relatively high work stress and low social integration in addition to higher depression symptoms.

7.6 RECOMMENDATIONS FOR ACTION AT BRICK KILNS

7.6.1 Statutory reforms and implementation of laws

In theory, the present laws cover brick kilns like any other manufacturing facility; however, the implementation of laws in this sector has been patchy at best so far. The brick kiln workers should also be eligible for coverage under the Social Security

Scheme, but only a handful of workers have been issued social security cards as this sector does not generally pay the mandatory contribution. Coverage under social security scheme would lead to fewer turnovers of workers and less reliance on hefty loans and advances which tie these workers to their employers in order to meet basic health and living expenses.

7.6.2 Introduction of technology for brick-making and brick firing

Brick-making is a labour intensive task in which the whole families of brick makers are involved. As found during this study, many workers suffer from musculo-skeletal and other disorders due to their long working hours, awkward posture and repetitive and monotonous work. Due to low earnings and outdated methods of production the workers in this sector are vulnerable to exploitation. Many of these workers become trapped in debts which force them to pledge the work by their families in return for the debt incurred by them. Though extruder-based technology has been introduced at some brick kilns, it has not so far succeeded due to a number of technical and financial reasons to replace the hand-molding of bricks. There is urgent need to introduce a worker-friendly technology which can liberate the children and women from arduous labour so the children can go to school and the women can contribute in the household income by engaging in more productive and less hazardous work like raising cattle, handicraft making and agriculture.

7.6.3 Improving living conditions

Because the living conditions of the brick kiln families are so very basic, they are inadequate to protect the inhabitants from the elements. Provision of adequate housing at the brick kilns is essential.

³¹ None of the workplaces had a first aid facility or a trained first aider in case of injuries. The result is that many wounds become infected. A major demand of the families was that they be provided first aid and basic health care.



RESOURCE EXTRACTION

8. RAG-PICKING

Rag-picking (also called scavenging or waste-picking) was identified as one of the hazardous sectors of the economy in Sahiwal and Sukkur districts and specific interventions are underway to rehabilitate children in this sector through education, skill training and health and safety interventions. When the Government of Pakistan ratified ILO Convention No. 182 on the Worst Forms of Child Labour, this sector was notified as a hazardous occupation prohibited to children below 14 years in 2005 under the Employment of Children Act of 1991³² after Pakistan ratified the ILO Convention No. 182.

8.1 TASKS AND RISKS ASSOCIATED WITH RAG-PICKING

Rag-pickers pick up trash from streets, homes and businesses, or work on garbage dumps, commercial and municipal waste sites. While the majority of rag-pickers are adults, a significant proportion is children.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Rag-picking • Work in scrap yard for sorting and bundling of materials • Cardboard collection • Picking of PET bottles of drinks • Paper picking • Cart driving • Picking refuse from collection sites • Sorting of items • Handling donkey cart • Selling of sorted items to the junk yard place/Kabaria • Handling and transportation of hospital waste 	<ul style="list-style-type: none"> • Rag-picking • Cleaning bottles • Collection cleaning and bundling of PET bottles used for soft drinks • Paper picking • Plastic picking • Bricks pieces picking • Collecting the bottles • Cart driving • Sorting of items • Handling donkey cart • Selling of sorted items to the junk yard place/Kabaria

8.2 HEALTH AND SAFETY EVIDENCE BASE ON RAG-PICKING

Most of the literature on child workers involved in rag-picking is descriptive, although a number of studies that have looked into the life and work of slum dwellers and road-side squatters include discussion of health.

A questionnaire survey,³³ conducted in Tamil Nadu, India with 65 randomly selected rag-pickers showed

how rag-pickers could learn to protect themselves from unhygienic practices and addiction.

An earlier study by the CIWCE looking into the health and safety problems faced by the child workers in rag-picking in Lahore³⁴ found that they were involved in collecting and sorting of all types of urban waste including commercial, industrial and hospital wastes. Most of the child workers (95%) reported disturbed sleep, some reported physical punishment (19%), most (60%) disliked their work. A sizeable proportion (21%) of the working children admitted to eating scavenged food. Eating of meat was

³² SRO 1280(I) 2005 dated 20 December, 2005 by Ministry of Labour, Government of Pakistan.

³³ Chandramohan, A. et al.: "Solid waste, its health impairments and role of rag pickers in Tiruchirappalli city, Tamil Nadu, Southern India", *Waste Management and Research*, 2010, Oct., Vol. 28, Issue 10, pp. 951-958.

³⁴ Awan, S.: "Occupational Health and Safety Risk Assessment of Child Labour in Scavenging Sector in Lahore", unpublished report, 2003.

much higher in the working children than the control group, which was attributed to cultural differences.

Injuries were reported by 62% of the children which included cuts, falls, road accidents, dog bites and violence. The basic health indicators (height, weight, pulmonary functions), when compared across the same age groups, were much poorer in the working children than the control group of the same age, as was the ratio of respiratory diseases. In most cases the difference was statistically significant. Musculo-skeletal disorders, such as pain in the lower back, neck and shoulder were very common in the working

children and the ratios were statistically significant compared with those in the control group. The ratios of ENT disorders (rhinitis, tonsillitis and ear infections) were 2-8 times higher in the working children than the control group. Eye problems were 2 times more common in the scavenging children than the control group. The blood examination revealed twice the rate of abnormalities and Hepatitis B than in the control group. Urine examination indicated a high probability of urinary tract infections in a large proportion of the working children.

8.3 STUDY DESIGN FOR CHILD LABOUR IN RAG-PICKING

Table 12. Age and gender profile of respondent working children

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	1	0	1	0	0	0	1	0	1
8	2	1	3	1	0	1	3	1	4
9	1	2	3	7	0	7	8	2	10
10	7	5	12	11	8	19	18	13	31
11	1	2	3	11	2	13	12	4	16
12	2	5	7	12	1	13	14	6	20
13	4	6	10	12	1	13	16	7	23
14	4	3	7	5	0	5	9	3	12
15	5	5	10	5	0	5	10	5	15
16	7	11	18	5	0	5	12	11	23
17	5	6	11	5	1	6	10	7	17
18	5	11	16				5	11	16
Total	44	57	101	74	13	87	118	70	188

8.4 SOCIAL PROFILE OF CHILD WORKERS

Astonishingly, 84% of rag-picking children of school age are out of school, either never enrolled or having dropped out, in spite of the fact that school enrolment is reasonably good in Sukkur and Sahiwal districts. Factors which contribute to the low enrolment are: (a) the fact that the families move frequently in search of work (a previous study showed 63% were of Afghan origin),³⁵ (b) their inability to speak the local language, and (c) the parents' lack of

education and consequent apathy towards education of their children. The itinerant lifestyle of the rag-picking families, makes it extremely difficult for children to be enrolled and retained in school. Also many of the rag-picking families do not share the local language, making it extremely difficult for children to get education. The lack of education of the parents, poverty and a general apathy towards the education of children is the cause of non-enrolment of school age children in this sector.

³⁵ *Ibid.*

Table 13. Educational profile of child workers from rag-picking sector

Education status		Male	Female	All
Dropped out	N	5	10	15
	%	4.2	14.3	8.0
Still attending school	N	20	10	30
	%	16.9	14.3	16.0
Never attended school	N	93	50	143
	%	78.8	71.4	76.1

The data indicated that the mean family size of the respondents was 8.4, while the mean family size of non-working control group children was 7.1 in Sukkur and 6.9 in Sahiwal, indicating that the working children come from large-sized families.

Only 6.9% of all males in the 15 years and above age group admitted to smoking cigarettes regularly. However observation revealed that most males, in fact, smoked cigarettes or chewed tobacco; females were not observed to be smoking.

8.5 EXPOSURES AND RISKS

8.5.1 Working conditions

While night work is very uncommon in this sector, children are faced with other sources of stress, such as heat or cold, traffic noise, and dust (noted by 75% of the respondents). Rag-picking, in general, is a dusty operation, carried out in dusty locations. All phases of the process, such as picking, sorting and transportation tend to be dirty. For this reason, the availability of washing facilities is of particular interest to rag-pickers. The majority of the respondents (81%) mentioned this lack. Unable to wash, the child workers are even more likely to contract infectious diseases.

8.5.2 Exposure to chemicals

Few of the child respondents could name specific chemicals they were exposed to, however through observation it is apparent that most handle chemical containers of all kinds including those containing

medical waste from hospitals, pharmacies and clinics.

8.6 HEALTH PROFILE OF CHILD RAG-PICKERS

8.6.1 Physical health and injuries

The most common health problems that the children experienced or were concerned about were fever, headache, backache and cough and the vast majority, both boys and girls (94%), reported fatigue due to their work.

About half of the children had suffered from injuries in the last 6 months and the nature of the injuries were quite severe. This indicates extreme precautions have to be taken even by adult workers in order to prevent injuries and that this sector is very risky for children. Within the last six months alone, five children suffered syringe or knife wounds.

Compared with children engaged in the nine other hazardous sectors included in the study, the children working in rag-picking were generally worse off in terms of general health indicators. Specifically, the prevalence rates for ear infections, teeth problems, headache, backache, vertigo, pain in neck and shoulders, cumulative trauma disorders, injury marks on body, and diarrhea were much higher in the rag-picking child workers than in the other hazardous sectors. These differences in prevalence rates were statistically significant.

Compared with non-working children in school, the rag-picking children scored lower on almost all dimensions...sometimes two to three times lower ... and similarly low compared to their peers in other occupations.

8.6.2 Psychosocial health

The results demonstrate that while depression and work stress are higher in the rag-picking workers, these children seemed to have a better future outlook.

8.7 RECOMMENDATIONS FOR ACTION FOR RAG-PICKING CHILDREN

Quite a number of businesses count on rag-pickers for raw materials and rely on them to keep the environment clean and tidy. Yet, while these businesses and their contractors benefit economically, most scavengers remain deeply impoverished. Despite being an important economic activity with a large number of workers, this sector has remained largely invisible for the government agencies, NGOs, social protection institutions, education and health service providers. While it provides a means of earning livelihood for vulnerable and poor segments of society, its impact on the health, safety, education and well-being of child workers is a cause of great concern. There is an urgent need to take action to save children from the harmful impacts of scavenging.

Due to the dangers inherent in rag-picking as documented above, and because rag-picking is listed by the government as prohibited for persons under 18 years of age, rag-picking at any age is, in effect, a “worst form of child labour”. Under these circumstances, the only acceptable solution would normally be immediate removal of all children from this form of work. Given that many families may be refugees from civil conflict or natural disaster, however, priority should be given to enforcing the law with regard to school-age children, with remedial measures such as parental awareness-raising, and educational ‘catch-up’ programmes put in place in the localities where rag-picking families tend to live. For children above legal working age, there may be some tasks or ways in which risks could be mitigated enabling them to continue to provide assistance to the family in greater safety.

An outline of an action-oriented approach for risk reduction for older youth is offered as follows.

8.7.1 Reduction in working hours

Most of the scavenging is carried out at odd hours — either very early in the morning or in the evening. These hours increase the vulnerability of the children

to abuse, violence, dog bites, accidents and injuries. Scavenging is a dirty, tedious and time-consuming task, requiring immense concentration, which causes musculo-skeletal disorders in the children as shown in the present study. Reduction in working hours and not allowing youth to engage in rag-picking work between the hours of 8:00 p.m. and 8:00 a.m. could provide a first step toward improvement in work risks.

8.7.2 Banning of hazardous activities

Certain activities pertaining to rag-picking expose the workers to extreme hazards. Scavenging of hospital waste exposes the workers to infectious and fatal diseases. Although major hospitals have somewhat regulated their waste collection and disposal, still a large number of clinics, small hospitals and medical labs throw their waste in the municipal waste. The hospital waste items particularly syringes, infusion bags, medicine bottles are valuable items for scavengers. Therefore they like to collect these items, thus exposing themselves and the general public through them to grave health risks. There is need to adopt a strict hospital and healthcare waste management law, requiring the generators to be responsible for their waste. Infrastructure for such waste management should be provided within the municipal waste management system. The owners and medical staff of the healthcare facilities should also be trained on hazardous aspects of waste and waste management.

Some activities of scavengers like burning of metal and cable scrap including tyres releasing toxic substances and particulates, which are inhaled by the scavengers as well as by the general public, creating grave public health problems. Such waste burning should be completely banned.

8.7.3 Awareness programmes

It is important that the results of OSH studies be discussed with parents, contractors, government officials and other stakeholders and their opinion and cooperation be sought to combat hazardous impacts of scavenging on the children. Any strategy in this area should only be evolved with their consultation and participation. The representatives of local bodies

should be taken on-board in any effort to combat child labour in their areas

8.7.4 Healthcare facilities

The present study indicates that the scavengers have no access to even the minimum healthcare facilities. Any effort at combating child labour in this sector should have a health component, whereby the workers should be provided basic health facilities and taught the importance of basic personal hygiene and health care. They also need to be educated on the harmful impact of certain kinds of wastes and dangerous practices of collection/sorting. The messages also need to be conveyed to the parents of the child scavengers, who in many cases do not know the dangers their offspring are exposed to.

8.7.5 Skill training of the adults

While many of the scavenging families may be temporary immigrants from other countries or other areas of Pakistan, it is socially and economically advantageous to the municipalities where rag-pickers are working to assist these families in

finding alternative, safer sources of employment. Improvement in family income may reduce the necessity to put their children to hazardous types of work like scavenging. The families may have traditional skills, such as weaving, that could be fostered through marketing or special income generation programmes tailored to the skills profiles and backgrounds of the scavenger families.

8.7.6 Improvement of living and working conditions

The living conditions of the study population are not acceptable. The sleeping arrangements of the child workers (in close proximity to adults) exposes them to abuse. The lack of potable water and sanitary facilities creates grave risk of disease. Responsibility for taking at least some immediate minimum steps, such as a reasonable toilet, washing facilities, and accommodation, could lie with the employers/contractors who purchase the goods from the rag-pickers.

9. STONE-CRUSHING

9.1 ANALYSIS OF THE STONE-CRUSHING SECTOR AND ITS HAZARDS

Stone-crushing is an important sector of economy in certain areas of Pakistan. Crushed stones are needed for constructing houses, buildings, roads, dams, and other infrastructure. In Pakistan, stone-crushing is

carried out either through machinery or by hand. The machine-based crushers are usually large enterprises, employing mainly adults, almost all of them males. On the other hand, hand crushing of stones is carried out by families including women and children. This activity takes place either on the construction sites like roads or alongside the machine-based crushing units.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Rock blasting • Transportation of heavy rocks stone to the crushing site on wheel barrows • Crushing of large stone in small pieces • Loading the crushed stones on the trucks 	<ul style="list-style-type: none"> • Helping the family in cooking and serving meals • Laundry and child care • Crushing large stones in small pieces

Manual stone-crushing is not very complex. It involves excavation and blasting of rocks, their transportation to the crushing area, manually crushing the stones into small pieces and loading of trucks with crushed stones.

The work is seasonal in nature, primarily in the winter (October-May). In June, the families migrate to Baluchistan, where they work in apple and other fruit orchards.

9.1.1 Evidence base on occupational health of stone-crushers

While stone-crushing is by no means rare and in fact occurs in many countries throughout the world, there has been comparatively little rigorous examination of the health and safety effects on children who work in this sector. It is possible to gain some understanding of this, however, through studies of quarry and mineral extraction industries.

A cluster of 50 stone-crushing units located near Chennai, India, was studied to determine ambient

concentrations.³⁶ Pulmonary function tests performed on workers showed that the average values of pulmonary function in these workers were significantly lower than the average values for normal South Indian healthy males. A second study from India of 500 quarry workers and stone-crushers in Madurai indicated that the workers, who have been engaged in these industries for more than five years, are almost all affected by respiratory disorders such as asthma, wheezing, dry cough and other discomforts such as chest pain, abdominal pain, skin dryness and eye irritation. A study of stone-crushing units in Iran³⁷ showed that respirable dust and quartz was 1.41 times greater than Occupational Safety and Health Administration permissible exposure limits (OSHA PEL).

³⁶ Sivacoumar, R. et al.: "Particulate Mater from Stone-Crushing Industry: Size Distribution and Health Effects", *Journal of Environmental Engineering*, 2006, March, Vol. 132, Issue 3, pp. 405-414.

³⁷ Bahram, A.R. et al.: "Determination of Exposure to Respirable Quartz in the Stone-Crushing Units at Azendarian-West of Iran", *Industrial Health*, 2008, Vol. 46, Issue 4, pp. 404-408.

9.2 STUDY DESIGN FOR CHILD LABOUR IN STONE-CRUSHING

Table 14. Age and gender profile of respondent working children

Age (years)	M	F	A
7	8	0	8
8	11	2	13
9	11	0	11
10	25	5	30
11	7	1	8
12	24	2	26
13	18	0	18
14	15	0	15
15	19	1	20
16	18	0	18
17	28	0	28
18	4	0	4
Total	188	12	200

Stone-crushing children have one of the highest drop-out and non-enrolment rates of all the occupations studied (93%). In part this is due to the migratory lifestyle of the stone-crushing families, which makes it extremely difficult for children to be enrolled or retained in school. Other factors which enter into the picture are that stone-crushing sites are usually at a distance from where rural are located and the fact that stone-crushing families do not share the local language, many of them coming from Khyber Pakhtunkhwa and Baluchistan provinces. Stone-crushing families also have one of the highest family sizes among all the study occupations

9.3 EXPOSURES AND RISKS

The stone-crushers rarely work at night, and the number of hours they work varies with a peak at 4 hours and another at 8 hours. At those times, it appears that girls work many more hours than boys; at other times it is the reverse.

The child respondents confirmed that, like in the other studies, they were exposed to high dust levels during their work. Almost all respondents (97%)

stated that they were regularly exposed to high airborne dust at the workplace. And almost all (97%) stated that they were exhausted from their work.

9.4 HEALTH PROFILE OF CHILDREN IN STONE-CRUSHING

While many children reported cuts or bruises (mean of 77%), the children expressed greater concern about backache, cough, and headache, in that order. The data indicates that about half of the children had suffered from injuries in the last 6 months. The nature of injuries was quite severe in this sector. At least one boy had his hand amputated due to being crushed by rocks. One boy suffered a head injury from flying rock from blast, while the study team was at site. One boy had lost his tooth as it was hit by a rock. This indicates that this sector is very risky for children as well as adults. Extreme precautions have to be taken to prevent injuries. Lack of first aid, access to medical facilities and even transportation in case of injury, makes these workers highly vulnerable when injuries occur.

Compared to the other occupations being studied, the stone-crushing children had higher rates of ear infection, teeth problems, chest problems, backache, vertigo, pain in neck and shoulders, cumulative trauma disorders, injury marks on body, and diarrhea. These differences in prevalence rates were statistically significant.

From a psychological perspective, the child workers had a higher rate of traumatic complaints than those in the control group or in the other study occupations.

9.5 RECOMMENDATIONS FOR ACTION

9.5.1 Special role of the Mining Department

The Mining and Minerals Department regulate working conditions in the quarries and thereby have contact, more or less frequently with the stone-crushers. Mining and quarrying leases are also regulated by them. They can have a positive impact

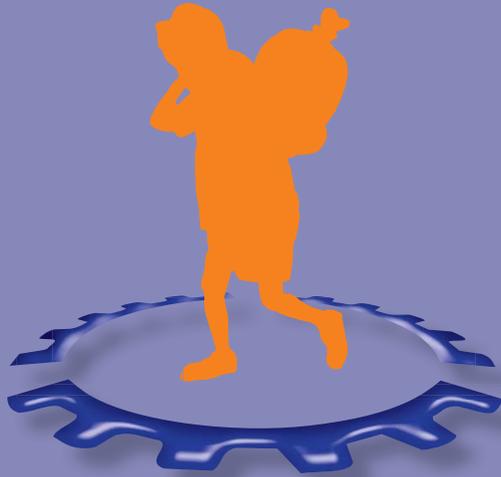
if involved in a timely way in any effort to combat health and safety hazards in this sector.

9.5.2 Introduction of safer technologies and techniques

Lot of accidents can be avoided if workers have proper tools for crushing and transportation/loading. Also blasting is highly dangerous operation, which needs to be carried out under strictly controlled conditions by highly trained workers. Children should not be allowed anywhere near a blasting site.

9.5.3 Assessment of exposure to free silica

A number of studies all over the world have shown that stone-quarry workers and stone-crushing workers have high probability of exposure to free silica from the rocks. There is need to assess silica exposure among the manual and mechanical stone-crushing workers. This may help draw the attention of authorities to find a solution to the problems of stone-crushing workers.



SERVICES

10. SMALL WORKSHOPS AND GARAGES

10.1 TASKS AND ASSOCIATED RISKS

Small repair workshops of various kinds cater to the needs of various customers in urban as well as rural areas of Pakistan. The most common workshops found along roadsides are the auto-repair garages which do body work, electrical work, battery charging, tire change/repair, and lathe machining; in addition to cars, some specialize in tractors and agricultural machinery, buses and trucks, motorcycles and bicycles, rickshaws, etc. Also common are furniture and woodworking producers, welding workshops, and small-scale steel works. Almost all of these employ boys of various ages, and in fact are seen as an important entry door to employment, especially for those who are school dropouts or are illiterate. In the absence of a credible youth employment system, these workshops provide skill training as

well as a source of income for apprentices. Girls are also employed in small workshops, especially for packaging foodstuffs, spices and tobacco products.

These workshops pose a number of risks and threats to health, safety and morals of children. Many hazardous chemicals are used, heavy weights are lifted, children have to perform risky tasks like welding, metal polishing, grinding and spray-painting which can endanger their health and even their lives. Customary working conditions entail long working hours, work in cramped spaces, meager wages, and abuse from employers, customers and co-workers.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Repairing car electrical • Body work (hammering out dents) • Tire repair • Car painting • Tractor engine work • Motor mechanic • Motor winding • Diesel engine work • Welding • Lathe work • Kamani (leaf springs and shock absorber) work • Silencer mechanic • Making spare parts • Repairing generators • Gear work • Printing press • Electronics • Furniture polishing • Wood working • Oil shop • Fabricating bus bodies • Iron workshop • Vehicle poshish (upholstery) work • Grinding • Charging of batteries 	<ul style="list-style-type: none"> • Packing and grinding of chewing tobacco (Niswar) • Stitching of polypropylene bags

As can be seen, mostly boys are employed in the workshops of all kinds including auto repair, machine shops, tools shops, furniture workshops and electrical repairs. The girls were found employed only the packing and packaging workshops engaged in grinding of chewing tobacco and in re-sizing and stitching of polypropylene bags in Sahiwal district.

10.2 EVIDENCE BASE OF RISKS IN SMALL WORKSHOPS

Occupational health problems and exposures associated with small informal economy workshops are well-documented in the literature. For example, a study in Tanzania³⁸ found a high level of self-reported occupational health problems amongst adult welders and metalworkers, as well as exposure to dust, fumes, noise and sun; personal protective equipment was little used.

Studies of children in these occupations are less common. Two studies from Pakistan, one in

Lahore³⁹, the other in Peshawar⁴⁰ yielded similar findings concerning the smoky, dusty and dirty work environment. The latter study found that the subject group, as compared to controls, had high blood lead levels (mean \pm 42.4 μ g/dl ($p < 0.001$)), low hemoglobin (mean \pm 11.2 g/dl ($p < 0.01$)), and decreased calcium levels (mean \pm 8.6 mg/dl ($P < 0.01$)). The effects were particularly pronounced in younger age groups. Most (68%) of the children in the study group described symptoms consistent with these abnormalities such as headaches, raised hearing thresholds, memory loss and generalized body pain. Not surprisingly, 87% of the children did not like the work they were doing. None of the children had been taught protective measures.

Although work in automobile workshops is hazardous, the hours long, and the wages lower than in other types of child labour, low-income families who are concerned that their children need to gain

10.3 STUDY DESIGN FOR CHILD LABOUR IN SMALL WORKSHOPS

Table 15. Age and gender profile of respondent working children

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	2	0	2	4	0	4	6	0	6
8	0	1	1				0	1	1
9	2	1	3	3	0	3	5	1	6
10	12	3	15	15	0	15	27	3	30
11	2	1	3	10	0	10	12	1	13
12	7	2	9	18	0	19	25	3	29
13	13	1	14	15	0	15	28	1	29
14	7	2	9	7	0	7	14	2	16
15	23	7	30	10	0	10	33	7	40
16	38	8	46	9	0	9	47	8	55
17	7	6	13	7	0	7	14	6	20
18	17	2	19				17	2	19
Total	130	34	165	98	0	98	228	35	263

³⁸ Rongo, L.M.B. et al.: "Occupational exposure and health problems in small-scale industry workers in Dar es Salaam, Tanzania: a situation analysis", *Occupational Medicine*, 2004, Vol. 54, Issue 1, pp. 42-46.

³⁹ Khan, R.E.A.: "Socioeconomic Aspects of Child Labour: A Case Study of Children in Auto Workshops", *Lahore Journal of Economics*, 2001, Vol. 6, No. 1, pp. 93-112.

⁴⁰ Khan, R.E.A. et al.: "Blood Lead Levels and Occupational Hazards in Child Labour in Peshawar", *Pakistan Journal of Medical Research*, Vol. 45, No. 2, 2006.

professional skills at early age consider it to be a form of apprenticeship.

10.3 SOCIAL PROFILE OF CHILD WORKERS IN THE SMALL WORKSHOPS SECTOR

10.3.1 Education and Literacy

An interesting finding is that 44% of the children in small workshops were still attending school. Only 19% had dropped out. Compared to children in other study populations, they have better literacy and higher educational levels, which might be a factor influenced by the fact that workshops tend to be located in population centres which have a higher probability of having schools than remoter farming areas.

Table 16. Educational profile of child workers from small workshops

Education status		Male	Female	All
Dropped out	N	33	17	50
	%	14.5	48.6	19.0
Still attending school	N	107	9	116
	%	46.9	25.7	44.1
Never attended school	N	88	9	97
	%	38.6	25.7	36.9

Family size was 8.1, which is higher than the controls (7.0).

10.4 EXPOSURES AND RISKS

10.4.1 Working conditions

The data show that a majority of the respondents work between 8 and 12 hours per day. One in five children (18.6%) works into the night. Almost all report that they regularly experience heat or cold stress during or as a result of their work. This is consistent with the nature of the tasks performed by these children and that although electricity is available at most workshops, it is not used for heating or cooling and in any case, children are generally working outside most of the time.

Since the workshops are often untidy and have tools, parts and other articles lying on the floor, it is not surprising that the majority (81%) of the respondents reported that they had slipped, tripped, or fallen. The majority of the respondents (72%) also noted high noise levels in their work, of which machines and engines are common sources. However, 65% of the respondents were exposed to dust, most likely because many of the workshops are located on dusty roads and involve processes which generate dust.

The majority (78.5%) of the child workers reported being tired by their work.

Poor lighting was not generally considered a problem nor were there commonly complaints about eating facilities. This is because children in workshops usually get free meals from the owners. In many cases this is also considered as a form of payment. As many of these children belong to poor families, they consider it a blessing that they have the opportunity to eat a mid-day meal during the day, which might not possibly be the case in their homes.

10.4.2 Exposure to chemicals

Many of the workshops use chemicals in various process. The main chemicals mentioned by the respondents include:

- Kerosene
- Paints
- Diesel
- Cutting oils
- Gasoline
- Acids
- Latex solutions (tire shops)
- Grease
- Lubricant oils
- Metal colours
- Battery water
- Coolants

- Epoxy resins
- Glue and varnish

10.5 HEALTH PROFILE OF CHILD WORKERS IN SMALL WORKSHOPS

Compared with the earlier Pakistan studies, a smaller but still serious number of working children report frequent headache (53.8%) and back pain (50%). These complaints may indicate stress, long working hours, malnutrition, or poor posture, as well as exposure to the chemicals noted above. The lower figures might be attributed to the fact that the current study includes a mix of different types of workshop whereas the former ones were limited to auto workshops. While prevalence of headaches was similar for both boys and girls, many more girls than boys reported having back pain. This was particularly pronounced in the case of girls 15 years and older where 69.6% reported back pain as compared with boys of that age who reported 45%. Compared with children in other industries, the children had higher prevalence rates for respiratory and eye problems.

Within the last six months alone, two children had their arms amputated. Over half (54%) of the boys in the workshops reported cuts and bruises during this period. This is indicative of the children's work with sharp tools, moving and relatively unguarded machinery, heavy objects and extensive manual handling in the small workshops.

10.6 RECOMMENDATIONS FOR ACTION TO PROTECT YOUNG WORKERS IN SMALL WORKSHOPS

In the absence of a well-organised skill training system, especially for illiterate and semi-literate persons, small workshops provide an important opportunity for apprenticeships and learning a trade. However, all too often, so-called "apprenticeships" in small workshops are not rewarding in terms of skill learning or preparing for a trade and, in fact, can be quite exploitative, posing grave risks to the health and safety of the child workers. Of greatest concern, of course, is that there is not adequate supervision

and instruction on how to work with machines and dangerous chemicals.

10.6.1 Risk reduction measures

- Good maintenance and housekeeping and a high standard of cleanliness are essential to avoid injuries at the workshops
- Unguarded machinery especially can result in grave and fatal accidents. Such machinery should be provided with guards and guards which should not be removed during operation.
- Work by children (i.e. youth between the age of 15 and 18) should not be allowed in the areas where they may be exposed to high levels of dust or where work with chemicals is taking place. Adults in those areas should also be provided with protection in the form of PPEs and work environment controls.
- The design of the work stations needs major improvement. Many of the musculo-skeletal problems faced by young workers, whose muscles and skeletal structure is still developing, are caused by uncomfortable posture and work arrangements. The work stations should suit the size of the workers – which is of particular concern in the case of girls -- and make the job comfortable.
- Precautionary notices in simple language and the local dialect concerning the health hazards involved in various operations should be displayed in the workplaces. Similarly, there should be posted notices concerning harassment and sexual misconduct that specify such actions are impermissible and stating the specific actions that will be taken by the employer should such inappropriate actions take place. Such policies are not gender-specific.
- Facilities for washing the hands with soap and running water should be installed at strategic places so that the workers can frequently wash the dirt, metal dust, grease, and other substances from their hands and skins and, in case of emergency such as contact with toxic chemicals, it is possible to quickly irrigated the eyes or other affected part. Separate accommodation for outdoor clothes and work clothes should be provided.

- Eating and smoking should be prohibited in the work area due to the danger of contamination. Suitable mess rooms should be provided and the workers required to wash their hands and scrub under the nails before eating.
- Depending upon the type of work, it may be necessary for young workers to be provided with separate work clothes. These clothes should not be taken home to be washed, which risks contaminating the worker's family, but instead cleaned frequently by the employer.
- Young workers should be fully informed of the health hazards involved. Periodic medical examination of workers is desirable especially to discover cases of health impairment. Especially the audiometry of workers exposed to high noise should be carried out.
- First-aid boxes should be provided and adequately maintained in the workshops and young workers should be trained on to use these for even slight abrasions. An emergency procedure should be clearly spelled out in the case a young worker or apprentice is severely injured.

10.6.2 Reduction in working hours

Working hours for children in all sectors should be regulated. By reduction in working hours, major improvements can be made in children's health and safety profile and creation of incentive, as well opportunities, for education -- whether formal or non-formal -- and leisure. When calculating the number of hours that children should be allowed to work, consideration must be given to the number of hours they spend in school, plus the number of hours spent in household chores (a particular concern in the case of girls), plus the number of hours of travel to and from the workplace. Children of all ages require more sleep than adults. To exceed these limits, increases the chances for injury and mistakes which can be costly to the enterprise.

10.6.3 Banning of hazardous activities

Certain activities in these workshops expose the workers to extreme hazards, such as work with powered machinery, use of toxic chemicals, and extremely arduous or repetitive tasks. Children should be banned from engagement in all such activities. For training purposes, older children can be instructed how to undertake tasks of this nature only under close supervision, not as a routine activity. During training, it is the responsibility of the employer to ensure that the children be provided with protective equipment (goggles, gloves, hard-toed shoes, etc.).

10.6.4 Statutory reforms and implementation of laws

The Shops & Establishments Ordinance is usually applicable to small scale workshops. However this law does not cover health and safety adequately. Protection of workers, both adults and young workers of legal age, needs to be included in this law and the law extended to cover workshops in the informal economy. The labour inspectorates have to be strengthened and inspectors have to be equipped with knowledge and skills as well as means to reach out to the small scale and informal sector workers, employers and parents.

10.6.5 Labeling of hazards

The hazardous processes, chemicals and machinery needs to be properly labeled with special instructions for age limit of children and young persons, who are allowed to work with them.

11. RESTAURANTS AND TEA STALLS

11.1 TASKS AND ASSOCIATED RISKS IN RESTAURANT WORK

Small hotels, restaurants and tea stalls cater to the needs of the local population and travelers in urban as well as some rural areas. They are located along highways, at bus and truck stands, near

districts courts and in residential areas and cater to varying clientele and needs. Some are merely ovens (tandoors) for making chappatis, others provide only tea, while still others offer a variety of menus. While some are of substantial size, employing tens of workers, others may be run by a single person, and still others are home-based restaurants where the cashier is a male member of the family and the cooking is done by the women in the attached family residence. Children, almost all of them boys of various ages, are found in this type of work.

Main tasks performed by children

The respondents were asked about their main tasks. The following box shows main tasks by gender.

Main tasks performed by males	Main tasks performed by females
<ul style="list-style-type: none"> • Dish washing • Waiter • Tea making • Making chappatis on tandoor (oven) • Tikka (barbecue) making • Waiter • Sweeper • Burger making • Making Tea/curries • Storage of food items • Handling LPG Cylinders/Wood as fuel • Preparing raw food items for cooking with help of cutters/knives • Cleaning of restaurants and kitchen • Bringing prepared food from homes to hotels for sale 	<ul style="list-style-type: none"> • Dish washing • Tea making • Cutting and preparing meat and vegetables • Making chapattis on tandoor (oven) • Cleaning

Mostly boys are employed in restaurants and tea stalls. Girls are engaged only in restaurants where food is prepared in the household and then served at nearby restaurants. Such arrangements were only found in Sahiwal district.

Even in developed countries of North America and Europe, restaurants employ a large number of adolescents and young workers, particularly during school breaks. A study in the US reports a large number of injuries in the form of cuts, burns and sprains to

young workers.⁴¹ It examined data from the National Electronic Injury Surveillance System for nonfatal injuries to adolescents, ages 14 through 17, who were injured while working in fast food restaurants. Of approximately 44,765 adolescent injuries during a two-year period, an estimated 27,997 occurred in fast food restaurants. The injury rate in the 15-17 age group was higher than for all other industries combined, with little disparity in rates between the sexes. This study identifies the fast food industry as the source of a large proportion of occupational injuries to adolescents.

⁴¹ Personick, M.E.: "Profiles in Safety and Health: Eating and Drinking Places", *Monthly Labor Review*, 1991, Vol. 114, No. 6, pp. 19-26.

11.2 STUDY DESIGN FOR CHILD LABOUR IN RESTAURANTS AND TEA STALLS

Table 17. Age and gender profile of respondent working children

Age (years)	Sahiwal			Sukkur			Overall		
	Male	Female	All	Male	Female	All	Male	Female	All
7	1	1	2	1		1	2	1	3
8	3	0	3	2		2	5	0	5
9	2	0	2				2	0	2
10	8	1	9	9		9	17	1	18
11	3	0	3	6		6	9	0	9
12	4	1	5	16		16	20	1	21
13	3	0	3	16		16	19	0	19
14	9	2	11	17		17	26	2	28
15	16	2	18	12		12	28	2	30
16	18	3	21	12		12	30	3	33
17	16	3	19	10		10	26	3	29
18	15	4	19				15	4	19
Total	98	17	115	101		101	199	17	216

11.3 SOCIAL PROFILE OF CHILD WORKERS IN RESTAURANTS

A third of children working in the hotel and restaurant sector attended school, while 11% had dropped out and the remaining 56% had not enrolled at all. While not good, this means that children in this sector have comparatively better literacy and education than in most others. Similarly, although still larger than the controls, their family size of eight members was significantly smaller than is the case in many other occupations.

11.4 EXPOSURES AND RISKS

11.4.1 Working conditions

Work in restaurants and tea stalls is notorious for long hours of work in cramped spaces, meager wages, and abuse from employers, customers and co-workers. Almost 20% of the children in the study (19.9%), i.e. one in five, reported that they have to work at night. A majority of the respondents (mainly boys) reported working 8 or 10 hours a day. A large majority of girls, however, reported working 12 hours a day, a few working 13 or even 16 hours!

Two-thirds of the children felt that the washing and sanitary facilities were not adequate. Most of these small restaurants and tea stalls do not have adequate toilet and washing facilities even for the customers. Eating facilities, on the contrary, were considered good by 84% of the children, no doubt because they normally can expect free meals from the owners and also have the leftovers to eat. In many cases this is also considered as a form of payment. As many of these children belong to poor families, they consider it a blessing that they have the opportunity to eat a mid-day meal during the day, which possibly might not be available to them at home.

The cluttered work environment often found in small eating places is conducive to trips and falls and a large majority (91 %) of the respondents reported this to be the case. Noise also contributes to stress at work; 56% of the respondents stated that they encountered high noise levels in their work, mainly due to the surrounding traffic. A similar number stated that they had to contend with high dust levels due to the congested roads where they are located. It is not surprising that 90% of the respondents reported exhaustion from their work.

11.4.2 Exposure to chemicals

The chemicals that the children regularly use are: dish washing soap, kerosene, LPG, and cleaning products containing acids. However, they are also exposed to noxious fumes, especially where leaded gasoline is still in use.

11.5 HEALTH PROFILE

11.5.1 Physical health and injuries

Many of the respondent working children (62%) complained of body aches and pains during or after work. Headache, back ache, and fever were the areas of greatest concern to them; cuts and bruises were less so, although the children routinely work with sharp tools, glassware, metal utensils and other sharp-edged implements, and cuts were common – a little over half the children had experienced a cut within the last six months.

The better nutritional status of the children is reflected in the fact that their weight for height is twice as good as that of those in other occupations and even better than the controls. In terms of virtually all other health indices, except headache, stomach ache, and burns, they were far better than their peers in the other lines of work.

11.5.2 Psychological health

The data clearly demonstrate that depression is lower among children working in the restaurants and tea stalls and that they have a better future outlook.

11.6 RECOMMENDATIONS FOR ACTION FOR WORKERS IN RESTAURANTS AND TEA STALLS

11.6.1 Strategies for risk reduction

- Good maintenance and housekeeping and a high standard of cleanliness are essential to avoid injuries at the restaurants
- Facilities for washing the hands with soap and running water are crucial so that the workers can frequently wash their hands, and thus safeguard not only their own health but that of the customers as well.
- First-aid boxes should be provided and adequately maintained in the workshops and workers should be trained to use the facilities for even slight cuts.

Some additional suggestions should be considered to eliminate hazardous child labour in this sector

11.6.2 Reduction in working hours

By reduction in working hours of the children major improvements can be made in their health and safety profile. Working hours for children, but particularly girls, who appear to be working excessively long hours, should be regulated.

11.6.3 Banning of hazardous activities

Certain activities in the restaurants that expose the children to extreme hazards, such as frying, using harsh cleaning chemicals, and changing gas cylinders should be banned, and a notice provided to that effect.



CONCLUSION

CONCLUSION

Overall, this report looks at common forms of child labour in Pakistan from a new angle – that of the health, safety and mental well-being of the girls and boys engaged in this work. It brings to light risks and results which are sometimes hidden from ordinary view, because they appear insurmountable. Yet, after examining the hazards, because this study goes on to propose some specific and practical means of addressing them, it moves the discussion forward.

This conclusion gives a resume of key steps to be taken to ameliorate the situation of child workers. Although the studies took place in and pertain particularly to Pakistan, their findings have wide applicability because similar occupations and working conditions are found throughout south Asia, and in fact, in many areas of the world.

The key recommendations for immediate action are as follows:

1. Identify risks. Every work situation has risks. Whether a child is of the age to be legally employed, or is younger and working out of grave necessity, is attempting to combine school and work, or is just helping her/his parents on an occasional basis, it is crucial that both the parent and the child know the risks to which s/he is exposed. Once aware, both child and parent are in a better position to negotiate with the employer, if there is one or in any case, to take steps to increase the child's safety.
 2. Raise awareness. It is not enough for one parent and one employer to take positive action if exploitation of children through hazardous work is rife throughout the whole industry. Simple informational materials provided through health care providers, through the media, or in the workplace can be helpful in raising awareness of all concerned.
- The key recommendations for substantive action are as follows:
1. Strengthen the legal foundation. Ensure that law and policy adequately covers the type of work that the young persons are engaged in. Without laws or statutes, a parent has no recourse should a child be injured. Protective agencies have no basis on which to negotiate with employers. Law and policy can be enacted at any level.
 2. Provide essential services. It is not enough to advocate for increased school attendance if the schools are not nearby. It is not enough to have a first aid plan if there is no health center to rush to in case of emergency. The study found that young workers in all ten occupations have no access to even the minimum healthcare facilities. In most cases such workers are not listed. Any effort at combating child labour should have a health component.
 3. Enforce laws. With the passage of 18th Constitutional Amendment by the parliament of Pakistan in 2010, education has become a provincial subject. Another important and positive change is the insertion of Article 25-A in the Constitution of Pakistan that guarantees the right to free and compulsory education to all children of age 5 to 16 years in Pakistan. This free and compulsory education is to be provided by the State, which, by definition includes both Federal and Provincial Governments. Civil society must be persuaded that this is the only viable route out of poverty and vulnerability to natural disaster. Changing of attitudes is partly awareness-raising and education, but also partly enforcement and penalty for infraction.
 4. Family planning. The study clearly showed a correlation between child labour and family size. The larger the family, the more likely the children were enlisted to provide support. There are also indications that the larger the family, the more likely that the children are

forced into dangerous situations that prejudice their development and diminish their own chances for a successful, healthy life. These families as well as the others in the areas where such families belong have to be made aware of and encouraged to use population control measures. For this an interface of the NGOs can be established with the existing government institutions providing health care and population control measures.

5. Family economic support. If the income of the family is improved, they may be less pressured to put their children into hazardous types of work. Ways and means should be sought to enhance the income of vulnerable families, e.g. special income generation programmes tailored to the needs of such families, skill training programmes for adults and young workers, or income support such as conditional cash transfers.



APPENDIX

APPENDIX

Major findings of the Baseline Child Labour Surveys in Sahiwal and Sukkur

SAHIWAL

Survey data shows that about half of the population consisted of children (47.8%) between ages 5-17 years. Children less than 5 years of age were just 8.1%. The estimated number of children was 188,089, of which 77,851 were working that means about 41% of the total population of age 5-17 years were working children. Out of total working children 75,021 (97%) were categorized as child labourers. Of these, 93% were in rural areas. Out of 21.2% child labourers in the age group 5-11 years, about 56% were boys. Similarly, out of 31% of child

labourers in the age group of 12-14 years, about 67% were boys. Bulk of child labourers was found in the age group 15-17 years and boys constituted about 65% of these. It has been observed that the major occupations in which children were engaged were agriculture (cotton picking, livestock rearing) and construction.

Among all working children, only 22% had ever attended a school. Of these 71% were boys. About 69% of working children were dropped out at primary level and 24% at secondary school.

Distribution of child labourers in sex and age groups

		Child labour					
		Male		Female		Total	
		Count	Table N %	Count	Table N %	Count	Table N %
Age groups	5-11 years	8,882	56%	7,007	44%	15,889	21.2%
	12-14 years	15,551	67%	7,682	33%	23,233	31.0%
	15-17 years	23,254	65%	12,644	35%	35,898	47.8%
	Total	47,688	64%	27,333	36%	75,021	100.0%

The most frequent health problems in both boys and girls due to work were physical injuries, eye problem, fever and fatigue. There was no significant difference between boys and girls response about these problems, which means both experienced same hazards while working. Some peculiarities in boys' responses were fractures and sprains. This may

be due to their work that involved heavy loads, in construction or auto-workshop industries. Fever and fatigue was more prevalent in girls.

Among household characteristics, those who reported working children were deprived of basic amenities. About 45% of such households had only two rooms

to live in and only 17% had three rooms. While in non-working children households this percentage was about 37 and 31 respectively. For cooking, about 73% households with working children used wood and about 3% other sources of energy that may have been animal dung-cakes whereas the main source of energy for non-working child households was gas. Drinking through a pipe inside the house supplied water to 79.5% of households with no working child, compared to 58.6% of households reporting working children.

Literacy in adult members of household reporting working children was quite low. About 54.6% adult male members were not able to read or write with understanding. Compared to this, households with non-working children had about 16.4% illiterate members. The difference in female members of the household is wider; in working children households only 22% women are literate compared to non-working children households where this percentage is 80.

Besides illiteracy, about 86% of male and about 49% female household members were employed in working children households. In other households only 16.6% females were working. And the majority of people worked in farms in the agricultural sector. But this was not rewarding because the average monthly income in working children's households was Rs. 12,986 compared to others where it was Rs. 13,740. The real difference was higher but these were average (mean) figures.

SUKKUR

Analysis of data regarding economically active/working children reveals that out of 99,616 children of 5 to 17 years of age almost 46% were working children in the District Sukkur. Therefore, about 45,515 are working children. Furthermore considering gender differences, data revealed that among 34,483 female children only 12.8% are reported to be working children, while among 65,133 male children almost 63% are reported to be working children. BLS estimates presence of. Out of 45,515 economically active children, about 34,077 children

(75%) were categorized as child labourers (91% boys). Of these, about 16,782 children (49%) were involved in hazardous occupations, thus categorized as Worst Forms of Child Labour (WFCL). Considering gender differences, about 98% of the WFCL were boys. Most frequently reported hazardous occupations were agriculture and livestock and construction. Amongst the non-hazardous occupations, children were mostly involved in farming (37%) and shop keeping (17%).

Analysis further revealed that most prevalent work situation for children of age 5-17 years was as "unpaid family worker", while average monthly income of working children was found to be Rs. 3,166. Again re: gender groups, analysis revealed that there was a large difference between monthly income of male and female working children. The average monthly income for males was reported to be Rs. 3,315, while for females it was Rs. 1,661 only. The work intensity can lead to many safety and health issues for working children. Over all, average per week working hours were estimated to be 34 hours for all working children but male working children (35.4 hours/week) were reported to be working for significantly greater number of hours per week than the female working Children (22.2 hours/week).

Analysis regarding educational status of the working children indicates that 54.6% of working children were literate. Almost 45% of the working children reported to have never attended school and few commonly reported reasons for never attending school were "lack of interest in studying", "schooling as being unaffordable for the household", and "lack of permission from family for attending school". The work related issues were reported by only less than 8.7% of the working children.

Considering characteristics of household and household members having a working child, analysis reveals that overall 58.5% of the household members were males while 41.5% were females. It further indicates that the age group of 10-19 years was the most prevalent age group among the members of the households, while the age group of 0-9 years

seems to be the second most prevalent group. This finding suggests that the age group of 5-17 years (child worker's age group) may be the most prevalent age group in the targeted area that may increase the probability of existence of child labour including the worst forms of child labour.

Another important estimate regarding the schooling of HH members is that only 38.8% of members were able to read and write. On gender differences, it is also evident that in comparison to the 50.8% of the males who could read and write only 20.7% of the female were able to read and write. Among around 39% literate members of household, only 20.8% are currently studying while 10.8% have studied till primary or below level. More than 61% of the HH members reported to have never attended school and few commonly reported reasons for never attending school were lack of interest in schooling, lack of permission from family for attending school, and schooling as being unaffordable due to poverty.

Activity status is another important characteristic of household members. Almost 49.3% of HH members are estimated to be economically active during the past week with rural HH members having slightly higher percentage than the urban HH members. Almost 57% of working HH members reported that they have started working from the age group of 5-14 years suggesting that child labour may be a prevalent practice in the district Sukkur from long. Considering work place, among the rural HH working members the most prominently reported workplace is plantation/farm/garden while among urban HH members the most prominently reported workplace is shop/coffee house/restaurant and hotel. Analysis indicates clear gender differences in the place where the household members carry-out their main work. The most common workplace for females is reported to be 'at her family dwelling', while most common workplace reported for men is 'plantation/farm/garden'. Over all, the total working hours per day during the last week as reported by the working members of the household ranged from 6.1 to 6.3 (except Fridays). Furthermore, analysis shows that average total working hours per week are found to be 42 hours, while average

monthly income of the household is found to be Rs. 11,400/- while average monthly expenditure is Rs.10,447.



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