HEALTH RISKS

FACED BY CHILDREN WORKING IN AGRICULTURAL PRODUCTION

Case of
- Citrus Fruit
- Cotton
- Hazelnut

Harvesting

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PREPARED BY
Asst. Assoc. Dr. Yeşim Yasin
Dr. Aral Sürmeli

CONTRIBUTORS
PT. Berktuğ Kubuk
Ertan Karabıyık
Seda Akço
Bürge Akbulut
Cansu Çabucak
İhsan İznebioğlu
Pınar Erçelik (Proofreading)

PHOTOGRAPHS
Aral Sürmeli
Atom Film
Cemre Yaşkeçeli
Mustafa Divana

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Kurtuluş Karaşın

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DEVELOPMENT WORKSHOP

+90 (541) 457 31 90 www.ka.org.tr info@ka.org.tr / kalkinmatolyesi
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ACRONYMS

CSO	Civil Society Organization
EU	European Union
FHC	Family Health Centre
FRS	Farmers Registry System
ILO	International Labour Organization
IPEC	International Program on the Elimination of Child Labour
METIP	Project for Improvement of the Working and Social Lives of Seasonal Migrant Agricultural Workers
PPE	Personal Protective Equipment
SMAW	Seasonal Migrant Agricultural Workers
TÜİK	Turkish Statistical Institute
USA	United States of America
WHO	World Health Organization

FOREWORD

The Development Workshop has since 2002 been conducting baseline studies on children working in seasonal agriculture on the basis of crops and locations; sharing data and information obtained from these studies with governmental agencies, civil society organizations, professional organizations, international agencies, the media, private sector firms and UN agencies; and using all available platforms to advocate for reducing and ultimately eliminating the number of children working in seasonal agriculture, which is considered as one of the worst forms of child labour, and improving their working and living conditions.

To obtain information in this context, the Development Workshop attaches importance and priority as far as possible to areas and issues where there are gaps and conducts various studies and surveys to fill these gaps. One of these important gaps has been identified as the lack of definition of threats and risks that children working in seasonal migrant agriculture face due to their working and living conditions with respect to different crops and farming processes.

The risks that seasonal migrant child workers face in working and living environments in citrus fruit, cotton and hazelnut farming have been researched and reported in the framework of this project funded by the Embassy of Netherlands.

We are indebted to families of workers, agricultural middlemen, crop field/orchard owners, representatives of government institutions, health workers, academics, and representatives of the private sector, professional organizations and civil society organizations who contributed to the report on *Health Risks Faced by Children Working in Agricultural Production: The Case of Citrus Fruit, Cotton and Hazelnut Harvesting by sharing their knowledge and experience.*

Our thanks are also due to representatives from 40 institutions who participated to and provided feedback during the meetings held in Adana and Ordu provinces for sharing survey findings.

We maintain our hopes that outcomes of the survey will contribute to the improvement of lives of children together with our hope that decent work conditions will soon be in place. We wish we can realize our hopes together for all working people, children in the first place.

Development Workshop

July 2018 Ankara

EXECUTIVE SUMMARY

893 THOUSAND
working children
in the age group 6-17

15.6 %
per cent of all children
in this age group

52.6 %
per cent of working
children as wage workers

44.7 %
per cent of working
children in agriculture

In Turkey there are 893,000 working children in the age group 6-17[1]. This corresponds to 5.9 per cent of all children in that age group and 15.6 per cent of children in the age group 15-17. Of all working children 52.6 per cent are wage workers while 46.2 per cent are unpaid family workers. 44.7 per cent of working children (399,000) are in agriculture.

Seasonal migrant labour is a form of wage labour observed in agricultural production. More the family members are included in agricultural employment; higher is the income of the family. Hence, child labour continues to be an important factor in determining total family income.

Employment of children under age 15 is prohibited by the Labour Code No. 4857 presently in effect in Turkey. Children in the age interval 15-18 can be employed given that this employment does not interfere with their education and that their health and safety is fully secured. Since these conditions are not met, seasonal migrant labour in agriculture is defined as *'one of the worst forms of child labour'* and upon Turkey's accession in 2001 to the ILO Convention No. 182 concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour the minimum age for admission to employment in this sector was set as 18.

However, agriculture is still the sector in Turkey where child labour is observed most commonly. The major factors leading to this situation can be listed as follows:

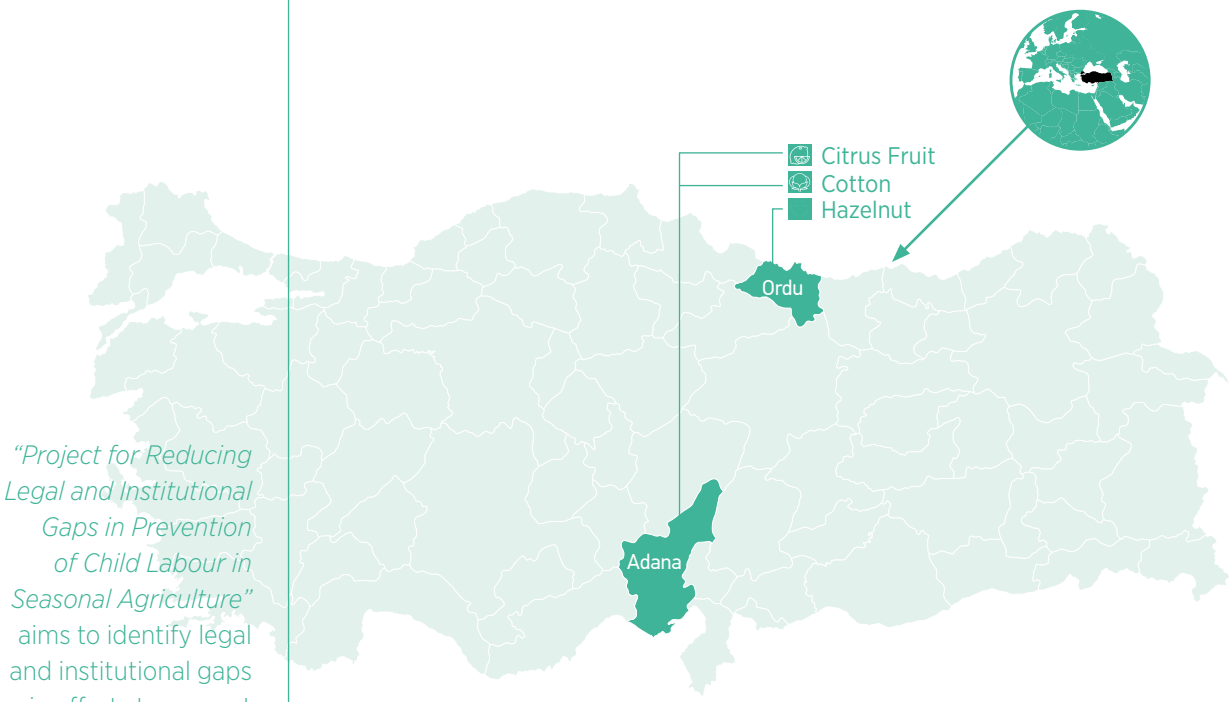
- Existing legislation remains ineffective in preventing child labour in agriculture.
- Authorities in charge of preventing child labour cannot fully perform their functions.
- Overcoming some cultural norms and traditional practices poses extra difficulties since risks faced by children working in agriculture is not properly analysed (by age groups and crops).

In this context the *"Project for Reducing Legal and Institutional Gaps in Prevention of Child Labour in Seasonal Agriculture"* implement-

1 2012 Child Labor Survey, Turkish Statistical Institute

ed by the Development Workshop with the financial support of the Embassy of Netherlands (September 2017 – August 2018) aims to identify legal and institutional gaps in efforts to prevent child labour in seasonal agriculture in Turkey a well as measures that must be adopted in the light of risks that child workers face.

For the purposes of the survey, two regions and three crops in which the incidence of seasonal migrant child labour is observed most commonly in Turkey were selected. Accordingly the project was conducted in provinces of Ordu and Adana focusing on harvesting of hazelnut, cotton and citrus fruit.



"Project for Reducing Legal and Institutional Gaps in Prevention of Child Labour in Seasonal Agriculture" aims to identify legal and institutional gaps in efforts to prevent child labour in seasonal agriculture in Turkey a well as measures that must be adopted in the light of risks that child workers face.

Three reports were prepared in line with the objectives of the project:

- Report on Legal Gap Analysis and Recommendations
- Report on Institutional Gap Analysis and Recommendations
- Report on Risks Faced by Children Working in Citrus Fruit, Cotton and Hazelnut Harvesting

The primary objective of this report, one of the three mentioned above, is to assess health risks faced by children in citrus fruit, cotton and hazelnut harvesting in their working and living environments within the framework of Article 71 of Labour Code and the Regulation on Principles and Procedures Relating to the Employment of Children.

At the preparation stage, a literature review was followed by field observations in Adana and Ordu provinces. Then, face-to-face interviews were conducted with seasonal migrant agricultural workers (SMAW), children and with relevant agencies and authorities. Following the data collection, risk categories were identified and reported in the light of suggestions made by specialist physicians and other experts. This work suggests that children engaged in agricultural production face the following crop-based health risks in their working environments, health risks related to their living environments and some common risks independent of crops:

HEALTH RISKS IN WORKING ENVIRONMENTS

Health Risks Faced by Children in Cotton Harvesting

Musculoskeletal System Diseases

Diseases related to musculoskeletal system often emerge in the long term. In cotton harvest, for example, continuous movements of squatting and bending lead to serious problems in knee and lower back joints in the long term. These movements impose excessive load on joints that may end up with chronic pain, hernia or function loss. In addition to these risks, sacks of cotton each weighing 10-15 kilogrammes may lead to pain on the back of child workers and it is the main cause of many problems including physical deformation and retarded development.

Effects of Pesticides-Poisoning and Skin Diseases

Cotton is one of the corps that requires intensive use of pesticides. Most harmful pesticides (plant killers) are among the fundamental chemicals used in cotton harvesting. Emergency departments of hospitals interviewed in the region reported that they frequently receive cases of poisoning. Many factors including unsafe storage of these chemicals or their presence in places where children can reach pose a serious risk for children both in their working and living environments.

Work Accidents and Use of Personal Protective Equipment (PPE)

The most frequently observed work accidents in cotton harvesting include cuts and wounds on limbs, especially hands, due to working without gloves. Also, limited use of PPE's such as eyewear may lead to injuries and visual impairments. The spread of mechanized farming also increased the risk of machinery-related accidents on the part of children on or near crop fields.

Health Risks Faced by Children in Citrus Fruit Harvesting

Musculoskeletal System Diseases

Movements of squatting and bending are common when fruits are to be picked from ground and they entail risks that are similar to those in cotton farming. In addition, carrying heavy sacks and boxes bear long-term risks that may threaten children with chronic pain and developmental deformations. In case weight is not distributed equally to different parts of the body while carrying load may lead to physical deformation, asymmetric spinal development and continuous pains.

Effects of Pesticides-Poisoning and Skin Diseases

In citrus fruit culture areas, the use of Class II pesticides considered by the World Health Organization (WHO) with high possibility of hazardousness for human health was commonly observed. The potential harm of pesticides may vary depending on the way of use, whether used with protective equipment or not and time elapsed. Interviews reveal that there are cases of poisoning, but related complaints are not always associated with pesticides. These types of risks may aggravate the severity of cases of both poisoning and skin disease while making protection and treatment more difficult.

Work Accidents and Use of Personal Protective Equipment (PPE)

A feature that distinguishes citrus fruit harvesting from other crops is the use of shears. To pick fruits on trees workers have to use their-shears sometimes while standing on not well-balanced ladders. This poses a risk in terms of both falling and cutting some parts of the

body. Given that children work for long hours under hot temperatures this method of collection that requires fine motor skills (careful use of smaller muscles) leads to adverse consequences for children.

Health Risks Faced by Children in Hazelnut Harvesting

Musculoskeletal System Diseases

It is reported that hazelnut is mostly picked from ground in the area examined. Hence we again see squatting and bending movements that bring along similar risks as in the case of cotton harvesting. Small size of hazelnut necessitates frequent grasping by hand. As is the case with other joints, frequent use of hands may lead to deformation and inflammation in joints and even problem ending up with function loss in longer term.

Effects of Pesticides-Poisoning and Skin Diseases

Vine mildew is a type of blight that may cause up to 50 per cent loss in hazelnut harvest and the major reason for using chemicals. Sulphur based chemicals used in agricultural combat work may lead to skin diseases if not handled properly. In addition, recent studies suggest that long-term exposure to agricultural chemicals may lead to serious and irrecoverable problems in nervous system, particularly in terms of keeping balance.

Work Accidents and Use of Personal Protective Equipment (PPE)

Slopped topography of hazelnut culture areas is a factor that leads to work accidents. Given high precipitation, accidents like falling are common. Further, unsuitability of PPE for children (often too large and loose) is a factor increasing vulnerability.

HEALTH RISKS IN LIVING ENVIRONMENTS

Health Risks Faced by Children Living in Adana Plain

The striking fact about living environments is that on average 4-6 persons have to share a tent of 10-15 square meters. This overcrowding means heightened risk of contagious diseases as well as almost total absence of privacy. Nutritional habits and easy access to work instruments (including chemicals and sharp edge instruments like shears) examined in living environments are of nature to both adversely affect child development and increase the risk of accidents.

Besides, it is observed that tent camp areas are not hygienic and there is limited access to safe water. Both of these may cause the spread and longer spell of contagious diseases. Interviews with workers confirm that the leading complaint about living spaces is the harm given by flies, scorpions and insects. Given the distance of living environments to health facilities, it is almost impossible to respond immediately to allergic reactions.

Another problem is the absence of any social space in living environments. Social communication, which is an important factor for psychological development particularly during adolescence is extremely limited since such spaces are not available and family members are the only counterparts that children can communicate.

Health Risks Faced by Children Living in Ordu and Giresun Provinces

The existence of prefabricated buildings and enclosed areas in Ordu and Giresun indicates that living environments are relatively better. It is observed, however, that these physical facilities cannot be maintained properly since working season here is shorter than in Adana Plain. Latrines with broken glasses and rusted fixtures in children's playgrounds are harbingers of various diseases. As for nutrition, even workers in best circumstances can consume meat only once a week as in Adana plain.

What is told in an interview by a civil society organization (CSO) known to be in close contact with child workers in the region draws attention to an issue on which there is not much data: Child abuse. CSO leaders assert that child abuse does exist, but not identified so often.

COMMON RISKS INDEPENDENT OF CROP

Besides risks specific to their living and working environments children also face some common risks for being SMAW. In the report, risks that are attached importance and found as assessable are addressed separately under the following headings.

• ***Travel to work:*** Traffic accidents occur frequently mainly as a result of transporting people exceeding the capacity of transportation vehicles.

• ***Discrimination:*** It takes place in a way that particularly affects child's social development. Facing discrimination as a result of his/her language, race or just for being SMAW, the child grows as deprived of many opportunities including education.

• ***Violence:*** SMAW may be exposed to physical or emotional abuse in both working and living environments. Examples include domestic abuse, peer violence and pressures exerted by 'çavuş' or 'ağa' who act as leaders of migrant workers.

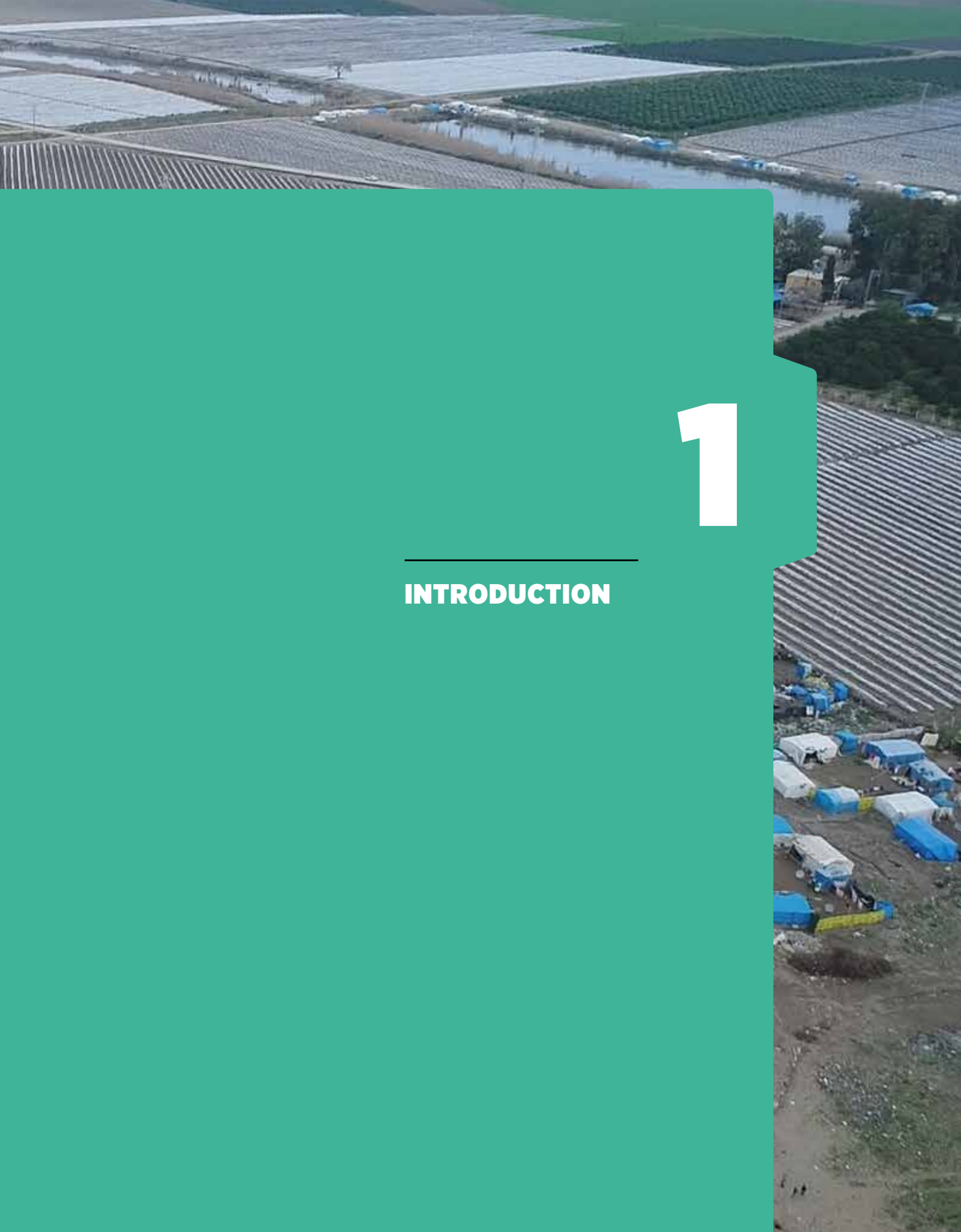
• ***Problems in access to healthcare services:*** Problems in access to healthcare services emerge as a result of poverty, locations distant to health facilities and frequent movement from one place to another. It is difficult for SMAW children to reach diagnosis and treatment and remain under medical control in both emergencies and chronic diseases.

• ***Situations specific to SMAW women and girls:*** : This is a case for situations in which vulnerability is multi-layered. Apart from general risks, many risks that SMAW children are exposed to may get more serious for women and girls. It is also known that some diseases affect them worse.

• ***Refugee workers and their children:*** It is both observed in the field and found in relevant literature that refugee or refugee groups including Syrians face health outcomes worse than that of Turkish SMAW population. The absence of a well-established legal status, discrimination and deeper problems in access to healthcare services are among the factors adversely affecting the health status of these groups, children in the first place.

• ***Pesticides used in agricultural production:*** Examining agricultural chemicals used we find that many are banned or classified as hazardous to human health by the World Health Organization. Short and long term effects of exposure to these chemicals are heavier for children (due to their anatomic differences).

SMAW's tent settlements in Adana Plain, 2017



1

INTRODUCTION

168 MILLION

Globally 168 million children in the age group 5-17, 11 per cent of total child population, are working

59 %

working children are working in the agriculture sector

According to the report "Global Estimates and Trends 2000-2012" published by the International Labour Organization (ILO) under the International Programme on the Elimination of Child Labour (IPEC) globally 168 million children in the age group 5-17, 11 per cent of total child population, are working. 50 per cent (85 million) of these children are in works that threaten their health, safety and development. Sector wise, agriculture stands as the one, which employs 59 per cent of working children.

The Turkish Statistical Institute (TÜİK) released the latest data about child labour in Turkey in 2012. According to 2012 Child Labour Survey data, there are 893,000 children in the age group 6-17 who are working. This corresponds to 5.9 per cent of all children in that age group and to 15.6 per cent of children in the age group 15-17. 52.6 per cent of children are wage earners while 46.2 per cent are unpaid family workers. Of all working children 44.7 per cent (399,000) are in agriculture.

The US Department of Labour's Bureau of International Affairs annually publishes sectors that countries employ children. According to the list published in 2015[1], children in Turkey are commonly employed in citrus fruit, cotton, tobacco, cumin and hazelnut culture[2]. The number of children among seasonal migrant workers is particularly high and when some works are concerned the share of child workers in total may be as high as one-third.

1 *Findings on the Worst Forms of Child Labor.* (2015). United States Department of Labor, Bureau of International Labor Affairs.

2 *Mevsimlik Gezici Tarım İşçiliği Araştırma Raporu*. (2014). Hayata Destek Derneği.

Yoksulluk Nöbetinden Yoksulların Rekabetine: Yabancı Göçmen İşçiler Mevcut Durum Raporu. (2016). Kalkınma Atölyesi.

Bereketli Topraklar Zehir Gibi Yaşamlar: Suriyeli Göçmen Mevsimlik Gezici Tarım İşçileri Adana Ovası Mevcut Durum Araştırma Raporu. (2016). Kalkınma Atölyesi.

Fındık Hasadının Oyuncuları: Batı Karadeniz İllerinde Fındık Hasadında Yer Alan Mevsimlik Gezici Tarım İşçileri, Çocuklar, Tarım Aracıları ve Bahçe Sahipleri Temel Araştırması (2014). Kalkınma Atölyesi.

Tarımda Mevsimlik İşçi Göçü Türkiye Durum Özeti. (2012). Mevsimlik İşçi Göçü İletişim Ağı (MIGA), Friedrich Ebert Stiftung, İstanbul.

Mevsimlik Tarım İşçilerinin Sorunlarının Araştırılarak Alınması Gereken Önlemlerin Belirlenmesi Amacıyla Kurulan Meclis Araştırma Komisyonu Raporu No: 716. (2015). Türkiye Büyük Millet Meclisi.

Semerci, P., Erdoğan, E. (2017). *Ben Kendim Büyüdüm Demiyorum-Adana'da Mevsimlik Gezici Tarım İşçilerinin Çocuklarının Yaşam Koşullarının Çocuğun iyi Olma Hali Perspektifinden İyileştirilmesi Projesi Araştırma Sonuçları*. İstanbul Bilgi Üniversitesi.

The number of children among seasonal migrant workers is particularly high and when some works are concerned the share of child workers in total may be as high as one-third.

Seasonal migrant labour in agriculture is a form of wage labour in this sector, which requires families who seek employment in this sector to move from their original settlements to place where agricultural production takes place in its various stages. Since families move with all their members, children also take part in this process as wage workers. Household income increases as families include more of their members in their work. Hence, child labour remains as an important item in family subsistence.

In particular, children in the age group 12-17 work in seasonal agriculture and move to other places with other family members. According to the survey conducted by the Support to Life Association (2014) with 168 seasonal migrant households, which provides data for 1,353 individuals, 35 per cent of children in the age group 5-11, 78 per cent in the age group 12-15, and 85 per cent of children in the age group 16-18 take part in agricultural works.[3]

35 %
of children in the age group 5-11

78 %
in the age group 12-15

85 %
of children in the age group 16-18 take part in agricultural works

Similarly, the Development Workshop survey conducted with seasonal migrant families travelling to Western Black Sea region for hazelnut harvesting (2014) indicates that 72,9 per cent of household members under age 18 (329 out of 451 children) takes part in hazelnut harvesting.[4]

Employment of children under age 15 is prohibited by the Labour Code No. 4857 presently in effect in Turkey. Children in the age interval 15-18 can be employed given that this employment does not interfere with their education and that their health and safety is fully secured. Since these conditions are not met, seasonal migrant labour in agriculture is defined as *'one of the worst forms of child labour'* and upon Turkey's accession in 2001 to the ILO Convention No. 182 concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour the minimum age for admission to employment in this sector was set as 18.

3 *Mevsimlik Gezici Tarım İşçiliği Araştırma Raporu*. (2014). Hayata Destek Derneği.

4 *Fındık Hasadının Oyuncuları: Batı Karadeniz İllerinde Fındık Hasadında Yer Alan Mevsimlik Gezici Tarım İşçileri, Çocuklar, Tarım Aracıları ve Bahçe Sahipleri Temel Araştırması* (2014). Kalkınma Atölyesi.

However, as outlined above, child labour still persists in many sectors and agriculture is still the sector where child labour is observed most commonly. The major factors leading to this situation can be listed as follows:

- Existing legislation remains ineffective in preventing child labour in agriculture.
- Authorities in charge of preventing child labour cannot fully perform their functions.
- Overcoming some cultural norms and traditional practices poses extra difficulties since risks faced by children working in agriculture is not properly analysed (by age groups and crops).

In this context, the *"Project for Reducing Legal and Institutional Gaps in Prevention of Child Labour in Seasonal Agriculture"* implemented by the Development Workshop with the financial support of the Embassy of Netherlands (September 2017 – August 2018) aims to identify legal and institutional gaps in efforts to prevent child labour in seasonal agriculture in Turkey a well as measures that must be adopted in the light of risks that child workers face.

For the purposes of the survey, two regions and three crops in which the incidence of seasonal migrant child labour is observed most commonly in Turkey were selected. Accordingly the project was

conducted in provinces of Ordu and Adana focusing on harvesting of hazelnut, cotton and citrus fruit.

Three reports were prepared in line with the objectives of the project:

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- Report on Risks faced by Children Working in Citrus Fruit, Cotton and Hazelnut Harvesting

The primary objective of this report, one of the three mentioned above, is to assess risks faced by children in citrus fruit, cotton and hazelnut harvesting in their working and living environments within the framework of Article 71 of Labour Code and the Regulation on Principles and Procedures Relating to the Employment of Children.

The report firstly explains the methodology of the survey conducted under the project. It then goes into detail of crop-specific risks in working life, risks observed in living environments in Ordu and Adana provinces, and common risks faced by children engaged in seasonal agricultural works.

2

METHODOLOGY

The present report, which was prepared for the purpose of assessing health risks that children employed in citrus fruit, cotton and hazelnut harvesting face in their living and working environments, started with a comprehensive literature review. This literature review covers such issues as seasonal migrant works, occupational diseases, child labour and child development. The risks and health problems inferred from this review were then discussed with specialists from developmental paediatrics, occupational diseases, public health, chest diseases and forensic medicine.

A qualitative survey was planned since the report aimed at investigating risks specific to regions and crops for which there is no sufficient data needed in a quantitative analysis. In this way, risks that are assumed as present were compared subjectively to SMAW children's own experiences for a comprehensive risk analysis.

Following the completion of literature review, two field studies were conducted to examine risks faced by children in their working and living environments with respect to specific crops. Field studies and interviews were conducted in Adana on 23-24 October 2017 to identify risks in cotton and citrus fruit culture and in Ordu on 29-30 October 2017 to do the same for hazelnut. During this fieldwork, face-to-face interviews were conducted with SMAW, children and resource persons and institutions by using semi-structured forms prepared earlier.

Following literature review and field visits, data collected were combined and grouped in similar health risks. This grouping was made by taking account of the limited nature of data collected by the sur-

vey team and morbidity in disease groups (i.e. the extent to which a disease affects the life quality of the person concerned). Among numerous risk factors, groups that emerge on the basis of common or similar causes (musculoskeletal system diseases, skin diseases, intoxication, occupational diseases and work accidents) are addressed and reported separately.

After examining risks that exist in working environments, the next step was to address risks that children face in their living environments and common risks independent of any specific crop (risks in the process of travel, discrimination, violence, problems in accessing healthcare services, situations specific to women and female children, risks faced by refugee workers and their children, risks from agricultural chemicals).

The present report is a significant contribution to its field by its crop-based analysis of risks faced by children in seasonal agricultural works. Its important limitation, however, is that it is not based on a sample that can be generalized to SMAW children. Data collected is qualitative and based on the experience of persons interviewed. It must be noted that risks of mental and spiritual health are not touched upon given the composition of the survey team and shortness of the period for data collection. Engagement in seasonal agricultural works is assumed to be a serious risk for mental development in particular, but no study with convincing evidence could be found on this issue.

3

HEALTH RISKS IN WORKING ENVIRONMENTS

3.1 HEALTH RISKS FACED BY CHILDREN IN COTTON HARVESTING

3.1.1 Musculoskeletal System Diseases

Since the height of cotton plant is at waist level of adults and little higher than that of children, its collection requires sending or squatting. Since upper limbs are not raised above shoulder level while picking cotton, risks related to musculoskeletal system concentrate back, lower back and lower limbs. Still, there may be risks for upper parts of the body as well since sacks tied to children can be heavy and there may be a relatively long distance to carry these sacks to be dumped in larger sacks.

Bending down is the most active movement when picking cotton from close to ground level. When cotton is taken out of its cocoon the body turns to other side for putting it in sack. The repetitive character of this movement is a serious risk factor for chronic low back pain and hernia. Since repetitive and slow movements instead of a sudden and sharp one progress in the course of time as an ever-increasing pain complaints may start long after. This is a factor that prevents both the identification of the cause and early intervention. Further, problems like pain on back may not be taken seriously when a child is concerned. Workers in different cotton fields express this frequently. Since it is a problem that is felt later in life, it is mostly expressed by adult workers.

Children's longer-term health problems like hernia and persistent pain on back are somewhat different from adults. A child's body is in continuous process of development and renewal. Thus, many damages to the body of a child are repaired faster than in adults. This means any pain at the night of a long working day may go away the next day. Yet, confronted with a repetitive stimulant over time the body eventually adapts to it. The process of development thus affected may later lead to some developmental problems including shortness, physical asymmetry or retardation. As a matter of fact, a health worker who used to work in cotton fields stated during our interview that children complain about back pains while

Bending down is the most active movement when picking cotton from close to ground level. When cotton is taken out of its cocoon the body turns to other side for putting it in sack. The repetitive character of this movement is a serious risk factor for chronic low back pain and hernia.

working, but they are brought to hospitals mostly for diseases like diarrhoea or upper respiratory tract infections.

During harvesting work, collecting cotton from lower branches of the plant or from ground is an activity in which lower limbs are also used together with waist and back. Picking from ground is also characterized by a repetitive body movement. Squatting and squatting/standing continuously places heavy load on hips and knees. The repetitiveness of the move is the real risk factor even if body moves in a normal position. It is known that body weight leads to chronic knee pain (patella femoral) as a result of movements close to ground. Calcification in buttocks and knees (osteoarthritis) is the most important long-term outcome of these movements. Since calcification occurs as a result of long-term exposure it cannot be seen as a point of intervention in children; but still frequent use leads to faster deformation of joints as other parts of the body. Even if 'recovery' period is shorter in children, body will eventually fail to cope up with this speed.

During harvesting work, collecting cotton from lower branches of the plant or from ground is an activity in which lower limbs are also used together with waist and back. Picking from ground is also characterized by a repetitive body movement. Squatting and squatting/standing continuously places heavy load on hips and knees.

Responding to the survey team, workers say they may consult to some untrained persons like "kırıkçı-çıkıkçı" (bonesetter) instead of formal healthcare institutions when they have some problems. In physical development of children, cases like misconducted bone union or re-location may lead to distorted development of musculoskeletal system. Though not crop-specific, this is a case mentioned by cotton harvesters only. Still, it can be inferred that similar cases also exist in other regions and in other worker groups.

The process of carrying cotton to larger sacks brings along similar risks as well. Carrying sacks of 10-15 kilogrammes by children on back may lead to muscular pains in short term besides its longer term effects on physical development. Carried continuously on the same part of the body, this load may cause asymmetric development and posture disorders.

Another feature of cotton is that it is suitable for mechanized farming. It is known that cotton culture in Çukurova Region is mechanized by 80-85 per cent. But it is not possible to use machines when it is raining. Machines cannot harvest crop when it gets wet, smaller and heavier. Workers interviewed in the field state that cotton can be picked only manually in these circumstances and renumeration (daily wage) per kilogramme is much lower since cotton gets lighter when it dries up. It is added that mostly children or Syrian refugee perform this lower paid work. Children are further burdened since it becomes harder to work in fields that get muddy after rainfall. Collecting wet cotton on muddy land increases the risk of both accident and diarrhoeal infection. Finally, these hardened working conditions means aggravation of all risks threatening musculoskeletal system.

Hoeing, another operation in cotton culture is also a heavy load for children. Though it is largely mechanized, there is still manual hoeing to clear weeds that cannot be removed mechanically. This is a work that requires bending and, although done for once for each plot, it is a long process. Keeping bent position for a long time is a risk factor in terms of lumbar hernia. Additionally, small injuries in muscles of the same part lay the ground for distortions and muscular pains that the child may experience in future. Meanwhile continuous upright position of neck is a factor of pain on both neck and back and may lead to asymmetric muscular development in longer term.

Carrying sacks of 10-15 kilogrammes by children on back may lead to muscular pains in short term besides its longer term effects on physical development.

Apart from risks specific to cotton harvest there are other risks specific to children including very limited work experience and limited capacity to fully assess hazards and risks which increase the possibility of health-threatening situations. Works assigned to children are almost the same with adults and exceed the capacity of children.[1] Working over capacity in both physical and emotional terms is harmful to health, which is defined as state of well-being in physical, mental and social terms.

3.1.2 Effects of Pesticides: Poisoning and Skin Diseases

Distinct from other crops, cotton is known as the one for which insecticides are used most intensively.[2]

Interviews conducted suggest that insecticides are applied against such cotton pests as bollworm and whitefly. Also used during harvesting season are chemicals for opening up cocoons and ensuring defoliation.

Endosulfan, one of the chemicals used, is classified as "Class I" by the World Health Organization (WHO) which means it is definitely hazardous to human health and must be used with extreme care.

Endosulfan, one of the chemicals used, is classified as "Class I" by the World Health Organization (WHO) which means it is definitely hazardous to human health and must be used with extreme care. While it has similar effects to other pesticides in acute phase, it may also bring along coma, respiratory distress and even death. In longer term it harms kidneys and liver the most.[3] Since its effects are studied on adults as in other pesticides, effects on children are not fully known. Still, it can be inferred that they are much more destructive when children are concerned.

As a pesticide used in citrus fruit culture, permethrin is not defined in the context of cotton culture. Still, there are many sources indicating that it is used in cotton culture both in Turkey and in other countries. The fact about this pesticide is that it ranks 6th in WHO's 10 most hazardous pesticides. It can be added that the use of zeta-cypermethrin is prohibited in the European Union (EU).

Looking at causes of hospital referrals due to poisoning in Adana, we observe that it is more frequent in the period May-June when the number of SMAW is higher and there is intensive use of pesticides.[4] This shows clearly that poisoning due to pesticides is an important risk for SMAW. Further pesticide-related cases of

1 Güler, Z. (2015). Özel Politika Gerektiren Grupların İş Yaşamındaki Sağlık ve Güvenlik Riskleri ile Kontrol Tedbirleri. *Labour World*, 117-134.

2 *The Children Behind Our Cotton*. (2007). Environmental Justice Foundation, London, UK. ISBN No. i-904523-13-7

3 *The Deadly Chemicals in Cotton.* (2017). Environmental Justice Foundation in collaboration with Pesticide Action Network UK, London, UK. ISBN No. 1-904523-10-2

4 Seydaoglu, G., Satar, S., Alparslan, N. (2005). Frequency and Mortality Risk Factors of Acute Adult Poisoning in Adana, Turkey, 1997-2002. The Mount Sinai Journal of Medicine, New York, 72(6), 393–401. www.ncbi.nlm.nih.gov/pubmed/16358165

poisoning have longer periods of inpatient care with 4.2 days on average.[5] Relative to other factors, it can be said that chemicals-related cases of poisoning are more severe and require longer and more serious medical intervention. A study conducted in India on chronic effects of chemicals found a correlation between long-term exposure to chemicals used in cotton culture and mental retardation in children living close to cotton fields.[6] When visited, boxes of chemicals used in cotton farming were observed around camping sites of SMAW.

Sacks of agricultural chemicals kept in tent camp areas (Adana, 2017)

As can be seen in the photo, the wheel that children swing on is at a distance of one meter to the sack of chemicals hanging down. This testifies that chemicals pose a serious risk not only in crop fields but also in living environments. It must be added that defence mechanisms of children too young to go out to fields are weaker. Further, once out of their containers, it is impossible to prevent the spread of chemicals around.[7] Persons interviewed state that containers of chemicals are used for carrying water and randomly left near irrigation/drainage canals or farming plots. Though not observed during fieldwork, it is known to be an established practice to keep chemicals as wrapped by headscarves.[8] This type of storing provides no protection from the effects of chemicals and these materials have to be kept in their original containers.

Leaving chemicals unlocked at levels reachable by children and child's curiosity to objects around, increase the risk of children's contact and even ingestion of the poison. Risks in living environments, however, are not limited to these: It is observed that outwear used while working in fields are kept in tents at night especially in tents with single room. Health workers in the area speak about health risks posed to children by substance remnants of these dresses.

5 Ibid.

6 *The Deadly Chemicals in Cotton.* (2017). Environmental Justice Foundation in collaboration with Pesticide Action Network UK, London, UK. ISBN No. 1-904523-10-2.

7 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

8 Fişek, A. G. (1985). Çalışma Ortamındaki Çocuklar için Özel Risk Etmenleri. Ankara: WHO.

Hospitals and family medicine units visited in the region state that cases of poisoning emerge most frequently during the period of agricultural irrigation. Apart from poisoning there are also serious cases of skin irritation on hands and face. Small children in particular try to explore objects around by touching or taking into mouth. In environments where hygiene cannot be ensured, the risk of these chemicals to affect people through respiration, digestion and skin contact is high. It is further stated that there are undiagnosed cases of asthma in the region, which can be associated with the use of agricultural chemicals.

3.1.3 Work Accidents and Use of Personal Protective Equipment

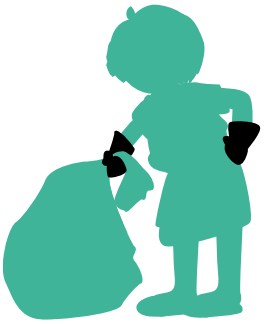
Personal protective equipment (PPE) has its importance in work safety and health in all sectors. Especially when working environments cannot be made safer after a certain point and sources of risk cannot be eliminated, PPE emerges as the most important instrument to protect workers from risks even if it is the last resort. In agricultural works, PPE protects workers from the harmful effects of chemicals while reducing work accidents.

In this context, given the size of the crop and ways of picking it the risk of traumatic work accidents like falling is low in cotton harvesting. Further, limited use of shears and similar tools relative to other crops reduce the risk of man-made work accidents. However, during field visits it was observed that workers do not use gloves while picking cotton. Interviews conducted and literature suggests that workers in cotton harvesting frequently confront cases of thorn and weed prick. Workers and çavuş[9] state that stinging nettle in particular harms hands. It is known that contact with such plants brings in the risk of tetanus. Given that the rates of full immunization are low for SMAW children, it is possible to face even fatal infections. Wearing gloves is therefore of importance for both workers and children.

Another important point about wearing gloves is that it reduces direct contact with chemicals. A survey covering workers in different crops in the US indicates that use of gloves can reduce the incidence of skin irritation (itching, rash, irritancy) and problems such as dizzyness, headache, etc. down to one-fifth. Other PPEs (masks,

9 Çavuş" refers to persons who organize and follow work in crop fields and establish working plan for workers.

special boots, etc.) also serve the same purpose.[10] It is known, however, that chemicals leave their residues on workers' outwear. Their harm to human health further increases because of such factors as sleeping near crop fields, keeping outwear inside tents and taking shower[11] 1-2 times a week.[12]



Given that the rates of full immunization are low for SMAW children, it is possible to face even fatal infections. Wearing gloves is therefore of importance for both workers and children.

Studies on migrant seasonal workers in the US reveal that eye injuries occur mostly as a result of thorns and plant branches, and that working days lost by SMAW as a result of health problems are four times as much than in normal population.[13] Even longer working day losses may emerge as a result of other reasons: work-related injuries are more frequent, workers have delayed access to healthcare services[14] and the quality of healthcare services is low. Missing work days is an important problem for daily or lump sum (kabala)[15] paid workers. As to children, eye injuries may be more frequent and severe. This points out to the importance of eyeglasses as another PPE.

Mechanized harvesting is gaining ground in cotton culture. The presence of children in cotton fields while mechanized harvesting is going on creates risks of accident. The survey team found that the youngest child in cotton harvesting is 8 years old. Further, children take part in harvesting with other family members in plots not fit for mechanised harvesting or when crops fell off as a result of rain. A part of machine collected cotton remains on plots and this part is collected by workers on their own account. Working 11-12 hours a day poses risks of infection and fatigue for children, besides such risks as falling and injuries.

10 *Mevsimlik Tarım Göçünden Etkilenen 6-14 Yaş Grubu Çocuklar İçin Temel Araştırma.* (2013) Kalkınma Atölyesi.

11 Monaghan, P. F., Bryant, C. A., McDermott, R. J., Forst, L. S., Luque, J. S., Contreras, R. B. (2012). Adoption of Safety Eyewear among Citrus Garvesters in Rural Florida. Journal of Immigrant and Minority Health, 14(3), 460–466. doi.org/10.1007/s10903-011-9484-3

12 *Mevsimlik Tarım Göçünden Etkilenen 6-14 Yaş Grubu Çocuklar İçin Temel Araştırma.* (2013) Kalkınma Atölyesi.

13 Quandt, S. A., Schulz, M. R., Talton, J. W., Verma, A., Arcury, T. A. (2012). Occupational Eye Injuries Experienced by Migrant Farmworkers. *Journal of Agromedicine*, *17*(1), 63-69. doi.org/10.1080/1059924X.2012.629918

14 Rev, O. (2015). *HHS Public Access*, *14*(11), 871–882.

15 Lump sum ("kabala") payment means payment on the basis of per unit of land or output quantity. This form of payment is preferred by land/orchard owners especially in hoeing, weeding and harvesting since what makes importance for them in some crops is the quality and timeliness of output. Remuneration for hoeing, weeding and harvesting of one decare of land or for obtaining a sack, kilogramme or a ton of a product is called lump sum or "kabala" remuneration.

Hoe used in manual hoeing is a sharp instrument as needed to cut out weed and aerating soil. While using it a child may hurt himself/herlsef and others around.

Hoe used in manual hoeing is a sharp instrument as needed to cut out weed and aerating soil. While using it a child may hurt himself/herlsef and others around. This risk further increases if done quickly since control of the instrument will be more difficult. An additional risk factor is that even a tiny cut on skin may lead to tetanus. Due to the nature of the acts of hoeing a traumatic effect is probable on the shoulder and muscles (rotator cuff) that ensure the strength and stability of shoulder motion. Resulting pains may stop after a short rest and by painkillers, but in longer term they will restrict the use of shoulder joint.

The effects of chemicals used in cotton culture are addressed in detail in section 3.1.2. The list includes many chemicals known to cause 'occupational asthma' and chronic pulmonary diseases[16] in longer term. Protective mask as a PPE becomes important at this point. When asked during field visits workers say they don't use masks since it becomes disturbingly hot when used. Instead of mask, they cover their faces with simple tulle type cloth. In any case, the size of these masks is not fit for use by children and will not prove effective when used.

16 Dangi, B.M., Bhise, A.R. (2017). Cotton Dust Exposure: Analysis of Pulmonary Function and Respiratory Symptoms. *Lung India: Official Organ of Indian Chest Society, 34*(2):144-149.

3.2 HEALTH RISKS FACED BY CHILDREN IN CITRUS FRUIT HARVESTING

3.2.1 Musculoskeletal System Diseases

The work done in citrus fruit harvesting is to collect fruit from tree branches and others that have fallen to ground. This involves repetitive motions of squatting and standing up or squatting for a long time. These motions repeated over and over in a working day cause ‘patella femoral’ pain in knees in short term due to distorted load of body weight and constitute a risk factor for calcification (osteoarthritis) in longer term.

The work done in citrus fruit harvesting is to collect fruit from tree branches and others that have fallen to ground. This involves repetitive motions of squatting and standing up or squatting for a long time. These motions repeated over and over in a working day cause ‘patella femoral’ pain in knees in short term due to distorted load of body weight and constitute a risk factor for calcification (osteoarthritis) in longer term.

After having been cut off by using shear, citrus fruit is placed in baskets near trees. The average weight of a full basket is 25-30 kilogrammes. These baskets are then taken to a part of the orchard by young male workers for the first round of sifting. After sifting they are placed in boxes and loaded to trucks.

Child worker picking citrus fruit from lower branches (Adana, 2017)

Children carrying baskets of citrus fruit (Adana, 2017)

The process of carrying and loading poses serious risks to musculoskeletal system of child, adolescent and young workers. First of all, repetitive carrying of such heavy loads on back may cause both acute problems and physical deformities in longer term.

The same persons (4-5 workers) usually keep carrying the boxes the whole day. The average weight of boxes loaded to trucks is 20-25 kilogrammes. The same team does the loading. Daily remuneration of workers is determined not on the basis of hours worked but by the amount of harvested crop with respect to different types of citrus fruit. The number of workers in citrus fruit harvesting teams varies by the type of fruit and harvesting season; but they comprise mostly of 30-35 workers. These teams are expected to load 1 to 2 trucks daily. Given that a truck is loaded with 600-800 boxes of fruit on average, it can be calculated that each loading worker carries this weight 150 to 200 times a day.

The process of carrying and loading poses serious risks to musculoskeletal system of child, adolescent and young workers. First of all, repetitive carrying of such heavy loads on back may cause both acute problems and physical deformities in longer term. Since the duration of work depends on full loading of trucks, the process has to go fast. Thus, doing this work without taking protective measures may lead to muscle or joint injuries. When the field team asked workers if they had musculoskeletal problems, the response given by workers was “is there anyone among us who have no pain on back/waist?” This response suggests that the problem is very common and “normalized.”

Besides heaviness of baskets, the way of lifting and carrying is also an important risk factor. Rotation movement made while lifting a basked and placing it upon the shoulder is considered as an import-

Lifting and carrying baskets (Adana, 2017)

ant risk for shoulder injury by the survey team and the physiotherapist assisting the team.

Yet, it is clear from both observations on the field and interviews with workers that the same shoulder is used in carrying baskets. Weight on the same part of the shoulder leads to unbalancing effect on musculoskeletal system and may cause scoliosis and distortion in posture and walking in longer term.

Specific joints in the body can carry specific loads in a healthy way only in specific ways and angles. When child's physical development is concerned, this type of work may lead to long-term deformations and chronic pains.

Weight on the same part of the shoulder leads to unbalancing effect on musculoskeletal system and may cause scoliosis and distortion in posture and walking in longer term.

The body position taken with the form and heaviness of the basket and continuous overhead activity creates the risk of 'shoulder impingement syndrome.'

The fact is that the work of filing baskets with fruit, lifting, carrying and loading baskets to trucks pose both acute and longer term risks. This unbalanced weight loaded upon musculoskeletal system may cause hernia on neck (cervical), back (dorsal) and low back (lumbar) in longer term besides acute injuries and pains.

14 year-old child, carrying boxes of citrus fruit (Adana, 2017)

3.2.2 Effects of Pesticides: Poisoning and Skin Diseases

In citrus fruit culture, chemicals can be used at different levels in different regions and orchards. The amount of chemicals used is determined mainly by the presence of pests that undermine the amount and quality of crops. In citrus fruit culture major targets include flour beetle, Mediterranean fruit fly, Aculops lycopersici (mite), white fly and red spider. Dursban (chemical chlorpyrifos), permethrin and endosulfan are the chemicals most frequently referred to.

Although its use is prohibited in citrus fruit culture, the chemical Dursban is still used since no other chemical is effective. It is known that this chemical found as "moderately hazardous to human health" (Class II) by the World Health Organization damages nervous system in longer term. Further, while 56 days of time lapse is required between application and harvesting, it is often ignored as a result of pressing market demand. This violation causes high exposure to this chemical on the part of workers. During field visits, the survey team found that a chemical used in citrus fruit culture which requires two weeks of waiting until harvesting/picking was applied just one day before harvesting and workers were not informed about it. It was also observed that residues of this chemical could be detected by naked eye.

During its field visits, the survey team found that a chemical used in citrus fruit culture which requires two weeks of waiting until harvesting/picking was applied just one day before harvesting and workers were not informed about it. It was also observed that residues of this chemical could be detected by naked eye.

The methods of applying agricultural chemicals constitute an important factor in terms of exposure. It is done either manually or automatically by a dripping system. Automatic method is regarded as harmless at least mostly since it does not require workers. When the chemical is applied on specific parts of the plant as in the case of Mediterranean fruit fly the exposure may increase depending on the direction of the wind.

In addition to chemicals, insect traps are also used in combatting pests. It is observed that types of insect trap used in citrus fruit culture include sweets, adhesives and pheromones (chemical released by female insects). These traps yield their effect by physical contact with pests. They are quickly absorbed when in contact with human skin. Unlike agricultural chemicals, their effect on human health is yet not known well.

During interviews with health workers in the region, it is stated that cases of poisoning attributable to chemicals may not be recog-

nized. It is difficult to attribute emerging health problems directly to agricultural chemicals. It is considered that cases of dysentery, diarrhoea and vomiting which are related to other causes such as lack of hygiene and living conditions are also related to the effects of chemicals. But estimating the share of these effects is difficult even in more comprehensive surveys. Further, it is stated by representatives of the local Chamber of Agriculture which is responsible for inspecting orchards and crop fields that cases like vomiting and fainting attributed to extremely hot temperatures and other reasons may also be associated with the effects of chemicals.

3.2.3 Work Accidents and Use of Personal Protective Equipment

Different from other crops covered in the survey, citrus fruit harvesting is a work performed quickly and by using shears. Citrus fruit is collected by cutting out from tree branches without crop fallen on found as in the case of hazelnut or picking from cocoon or from ground as in the case of cotton. In citrus fruit orchards visited it was observed that all workers including children used gloves. Yet, as is the case in all other PPE, these gloves are not fit for children's hands. Further, no information could be obtained about how frequently these gloves are renewed.

The benefit of use of gloves serving as a physical barrier is disputable when children are concerned. If their sizes are unfit and not renewed, gloves lose their function. Though neither adults nor children stated any complaint, family medicine doctors and other health workers interviewed in the region state there are frequent cases of skin infections (dermatitis) and cuts. This suggests that gloves are not used at all or not as they should be used.

Child workers using shear in citrus fruit harvesting (Adana, 2017)

As mentioned above, the use of shear is the main factor that distinguishes citrus fruit harvesting from other crops. The survey team observed that workers use shears in a very quick way. This poses the risk of injury on hands and on other parts of the body even when gloves are used. This risk is much greater for adolescents since their eye-hand coordination is yet not fully developed.

Another hazard in using shears is the fact that worker's face has to be close to the fruit. A child worker has to work too close to the fruit to cut it out exactly from the right point while not breaking branches of the tree, which leaves him defenceless against branch-

es and leaves that may harm his face and eyes. During field visits it was observed that no worker used protective glasses. Yet this is an important protective equipment for workers using sharp edged tools. A SMAW study conducted in the US found that branches and pesticides constitute the most frequently observed causes of eye injuries. As a matter of fact it was found that the incidence of eye injury is 3.5 times higher among SMAW than in agricultural workers in general.[17] Since children's arms are shorter than adults it is clear that they have to work closer to branches and shear. This places them in a risky position in terms of injuries in eyes and other parts of body.

Cases of heatstroke are an important problem derived from the geographical location of the Adana Plain. It must not be forgotten that children lose fluid more, their physical recovery mechanisms are less developed than adults and their water and calorie needs are also higher since their bodies are in a continuous process of anabolism.

Cases of heatstroke are an important problem derived from the geographical location of the Adana Plain. It must not be forgotten that children lose fluid more, their physical recovery mechanisms are less developed than adults and their water and calorie needs are also higher since their bodies are in a continuous process of anabolism.[18] It was observed in fields visited that the only precaution for sun and heat is thin pieces of cloth and simple hats distributed for purposes of advertisement. Both the relevant literature and workers interviewed tell about cases of fainting. It is known that this problem is seen more frequently among women. There is no clear information the shares of heat, poisoning or other causes in this incidence of fainting. It was stated during interviews with the Chamber of Agriculture that causes such as poisoning, which are more dangerous and have potential to arouse public reaction, are actually covered by attributing cases to extremely hot weather. This point is addressed and discussed in more detail in section 3.2.2. In addition to working under sun, no shade for resting and eating was observed in fields and orchards visited. It is stated that shades of tractors or trucks are used depending on the position of the sun. Resting or sleeping close to such vehicles bring along many risks. Drivers of these vehicles in particular may not see young children when they move. Further, their shades may not be sufficient for all workers in the area.

17 Quandt, S. A., Schulz, M. R., Talton, J. W., Verma, A., Arcury, T. A. (2012). Occupational Eye Injuries Experienced by Migrant Farmworkers. *Journal of Agromedicine*, *17*(1), 63-69. doi.org/10.1080/1059924X.2012.629918

18 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

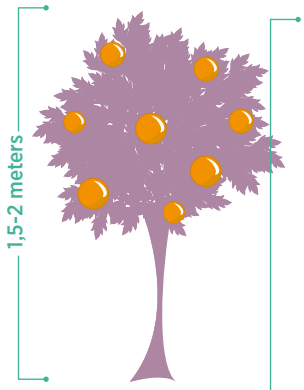
In the field visited, it was stated by a "çavuş" organizing work on behalf of middleman that working day is determined not by hours but when the truck is fully loaded. To finish up earlier workers prefer to keep breaks short or have no breaks at all.

The turning of hazards into risks is something related to the frequency of accidents. In citrus fruit culture there are many factors that may increase this frequency. In the field visited, it was stated by a "çavuş" organizing work on behalf of middleman that working day is determined not by hours but when the truck is fully loaded. To finish up earlier workers prefer to keep breaks short or have no breaks at all. This tendency also involves faster use of shear and faster carrying. In addition to this, "çavuş" states that employers may assign additional works to workers within the day when there is need to go for more output than originally planned. In such cases it is impossible for workers to refuse this additional work since their earning depends upon it. In a working environment of this nature the intention to finish up earlier further increases stress. In short, all these are significant obstacles to efficient and healthy labour process. Studies conducted in this context suggest that factors like getting up too early and working fast without breaks aggravates the risk of depression.[19] This should be considered as occupational diseases even if it emerges later.

It is known that musculoskeletal system diseases bring along long term risks such as neck, low back and back pains as well as distorted development. In addition to these, work accidents, ankle sprains or shoulder dislocation occur more frequently among those living with

19 Sandberg, J. C., Grzywacz, J. G., Talton, J. W., Quandt, S. A., Chen, H., Chatterjee, A. B., Arcury, T. A. (2012). A Cross-Sectional Exploration of Excessive Daytime Sleepiness, Depression, and Musculoskeletal Pain among Migrant Farmworkers. *Journal of Agromedicine*, *17*(1), 70–80. doi.org/10.1080/1059924X.2012.626750

chronic pain.[20] Risks are aggravated adding works like quick collection and carrying in citrus fruit harvest.



A reason for increased accident risk for children is that they are preferred to adults in specific processes of harvesting. Though the same can be observed in other crops for different reasons, the main factor in citrus fruit harvesting is that they are lighter in climbing up to higher branches without harming lower ones and in picking fruit from upper parts of a tree more easily.

A reason for increased accident risk for children is that they are preferred to adults in specific processes of harvesting. Though the same can be observed in other crops for different reasons, the main factor in citrus fruit harvesting is that they are lighter in climbing up to higher branches without harming lower ones and in picking fruit from upper parts of a tree more easily. It is observed that trees in citrus fruit orchards are 1.5 to 2 meters high, but it is stated that there are higher trees in other orchards. This risk further increases if citrus fruit harvest takes place on sloped land. In ladder use, the fact that the worker holding the ladder works at the same time and fixing of ladder in dense branches increase the risk of falling. Falling from a height of 1.5-2 meters would hurt the child seriously. If this happens with shear in hand, this may harm not only the child but also others around.

Tractor driving is another source of risk in crop fields and in living environments. There are many among interviewed workers who say they started driving tractor at ages 11-14. Since the size and position of mirrors and pedals of a tractor is designed for adults, its use by children is a risk for both drivers and others around. Tractor accidents and injuries make it to the public and news. In 2017 seven people, two of whom were children were injured after capsizing of a tractor.[21] Although news did not mention that the driver was a child, it is known that such vehicles are sometimes used by children.

Although not specific to citrus fruit culture, there are some major factors that make children more vulnerable to work accidents. Children, young children in particular have yet limited capacity of risks assessment and adoption of relevant precautions given their insufficient education and early stages in brain development.[22]

20 Ibid.

21 Sakarya'da traktör devrildi: 6'sı çocuk 9 yaralı. (08.09.2017) www.yenisafak.com/gundem/sakaryada-traktor-devrildi-6si-cocuk-9-yarali-2792196

22 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

Child working in citrus fruit harvest (Adana, 2017)

Workers are under time pressure in citrus fruit farming: Çavuş and their assistants use discourses that are supposed to encourage workers to faster work which may turn into verbal and/or physical abuse. Stress created on children by this environment increases the risk of work accident and it is figured out that this situation is not specific to citrus fruit harvesting but true for all crops where kabala system is practised. Families of children are not in a position to stand against this type of abuse all the time since it may lead to economic losses for the family.

Lastly, it is important to acknowledge that work accidents and occupational diseases are underreported in all sectors. Since there is no inspection, it can be assumed that the situation in seasonal migrant works in agriculture is just ignored. When the illicit and sensitive issue of child labour is concerned there may be no reporting at all.

3.3 HEALTH RISKS FACED BY CHILDREN IN HAZELNUT HARVESTING

3.3.1 Musculoskeletal System Diseases

There are two methods used in hazelnut harvesting. The first is to collect hazelnut from ground after they have dropped from trees. The second is to pick hazelnut directly from branches. A hazelnut parcel is higher from the ground by 3-4 meters. Depending on the way of harvesting different parts of musculoskeletal system may be more or less active and load on joints and form of repetitive movements may change. Hence the report assesses risks in both ways of harvesting. Employers and agricultural experts interviewed in the field say that hazelnut harvesting in Ordu province is mostly done by picking from ground while it may take different forms from region to region.

The interviewed farmers state that workers start working at 7:00 am, take a rest of 30 minutes before lunch, and work until 18:00 pm with another 30 minutes rest in afternoon. Only two rest breaks in a working day of 11 hours is not enough. The Health and Safety Executive, a UK based institution determining work safety and health criteria stress the need for 5-10 minutes of break in one hour when repetitive motions are concerned.[23] Detailed information on working hours and rest breaks was taken from Ordu province only; yet it is considered suggested rest periods exist in no crop that SMAW are working.[24]

Hazelnut parcels

High and sloping land in Ordu has geographical and climatic conditions fit for high output in hazelnut. While it may be considered that the main risk is falling, working for 11 hours a day on steep landscape for a period of one month is harmful to both adults and children. Human anatomy is more fitting for lifting equal weights on two sides (body weight, weight of sack carried, etc.). Involuntary muscles of the body flex and try to strike a balance according to given incline.

Another feature of hazelnut parcels is that they are located higher than surface ground. The child has to get closer to the parcel to collect fruits on the ground and keep his balance from a different angle

23 *Manual Handling Operations Regulations 1992 (as amended). Guidance on Regulations L23 (Third edition)*. HSE Books 2004 ISBN No. 978 0 7176 2823 0 www.hse.gov.uk/pubns/books/l23.htm

24 The MAC - Tool - Manual Handling Assessment Charts. (2014). *Occupational Safety and Health Administration*, 1–15. osha.lv/pt/topics/msds/slic/handlingloads/15.htm/20.htm

The child has to get closer to the parcel to collect fruits on the ground and keep his balance from a different angle on an already steep land. The body has to take unusual positions for collecting hazelnuts near the plot.

on an already steep land. The body has to take unusual positions for collecting hazelnuts near the plot. This leads to over-capacity working of muscles and tiredness.

Lower back pain is one of the most frequently mentioned health problems in interviews conducted in Ordu province. In face-to-face interviews it is stated that *'one in every two workers has pain on lower back'*. Though the rate is not known, it is estimated that the problem is quite common. It is considered that picking from ground and squatting are the causes of this problem. Serious consequences of such motions are defined for other crops as well. As in other crops, hazelnut is also collected into big sacks. Each weighing 15-20 kilogrammes[25], these sacks are carried by adolescents on their back in some cases. Besides acute pain on back, this may cause musculoskeletal system distortions in longer term.

Though not observed frequently in the field, local people say workers harvest hazelnut by tying themselves up to a tree standing at a higher point on extremely steep land. While it may reduce the risk of falling, this method means working in a quite uncomfortable position. Working in such positions increases the weight on joints and may lead to mutilation. It is also more dangerous in terms of work accidents and thus addressed in the section related to work accidents.

As in all crops collected from trees, in hazelnut harvesting too the movement of the arm at the level of the shoulder is the basic motion. The shoulder impingement syndrome may emerge as in the case of citrus fruit picking as a result of long-term repetitive movements.[26]

25 Schaub, M. (2012). *Türkiye'den Fındık: Fındık Tarımında Çevresel ve Sosyal Sorunlar*. Siegburg.

26 Yılmaz, F., Şahin, F., Kuran, B. (2006). İşe Bağlı Kas İskelet Sistemi Hastalıkları ve Tedavisi. *Nobel Med*, *2*(3), 15–22.

In both ways of collecting, the area focused on is much larger and the crop is smaller in hazelnut than in citrus fruit and cotton. Much finer work of forearm, wrists and fingers and the motion of grasping by fingers is a risk factor for De Quarvian's Tenosynovitis[27] and trigger finger.[28] Though not expected at early ages, it may turn into chronic pain and disturbance in longer term undermining the functioning of hands and fingers.[29]

3.3.2 Effects of Pesticides: Poisoning and Skin Diseases

Interviews were conducted with the chamber of agriculture, agricultural chemical dealers and orchard owners to learn about agricultural chemicals used in hazelnut culture in Ordu province. Pear blight beetle, may bug and hazelnut worm are mentioned as pests that cause loss in both output and quality in hazelnut and there are chemicals used against. There is no licensed pesticide that can be used against blight beetle and may bug; it is stated that some unlicensed chemicals are used. Besides pesticides, herbicides are also used against weed and wild plants around hazelnut parcels. Since basic irrigation buckets are used in applying herbicides, fixing the correct dose is almost impossible.[30] Glyphosate used as herbicide as well as Thiacloprid, Deltamethrin and Thiamethoxam used as insecticide are all classified as Class I by WHO. These herbicides and pesticides are used out of the working hours of harvesters.

Vine mildew is a plant disease that may lead up to 50 per cent loss in output. Chemicals used in combat work contain sulphur and may cause skin problems on hand when gloves are not used. In fields visited, however, it is stated that medication is made by bare hand and children walk barefoot on grounds medicated.

Sloped topography of most hazelnut parcels makes work harder in certain respects relative to other crops. The effects of this on musculoskeletal system are addressed in the relevant section. Neurolog-

27 It is the inflammation of tendons that control movement of the thumb and their tendon sheath at wrist level.

28 It is a painful disorder in which trigger finger gets stuck in a bent position.

29 Repetitive Strain Injuries of the Hand and Wrist. (n.d.). www.nuh.com.sg/patients-and-visitors/specialties/department-of-rehabilitation/about-us/occupational-therapy/repetitive-strain-injuries-of-the-hand-and-wrist.html

30 Schaub, M. (2012). *Türkiye'den Fındık: Fındık Tarımında Çevresel ve Sosyal Sorunlar*. Siegburg.

ical effects of long time exposure to pesticides and other chemicals are defined only in more recent times. Studies suggest that long-term exposure may have its effects on cognitive abilities and sensory systems. It is stated that most affected systems are somatosensory[31] and vestibular[32] systems, which help keeping active and passive balance.[33] While it has its effects on children working in other crops too, it is more pronounced in hazelnut culture. Working of body in uneasy positions and the need to keep balance for a long time increase the risk of traumatic work accidents like falling and stumbling as a result of distortions in somatosensory and vestibular systems.

Neurological effects of long time exposure to pesticides and other chemicals are defined only in more recent times. Studies suggest that long-term exposure may have its effects on cognitive abilities and sensory systems.

When asked if they observe cases related to chemicals used in hazelnut culture, health workers said there were cases of organophosphate poisoning. Organophospates form the building blocks of pesticides. Exposure may cause problems like blurry sight, nausea and vomiting in acute phase while longer-term consequences include cardiac and pulmonary diseases and neurological disorder.[34] Further, though not mentioned during field visits and interviews with health workers, some organophosphate based pesticides are found as the leading cause chemical poisoning in Adana region.[35]

3.3.3 Work Accidents and Use of Personal Protective Equipment

As stated above there are two methods of harvesting in hazelnut: Picking from ground and picking from trees. Both have their risks of work accidents.

It is a great risk for children that PPE are designed and produced with anatomic characteristics of adults in mind. The size of gloves used in harvesting, for example, disqualifies them as a barrier to

31 It is the parts of the nervous system transmitting senses of pain, heath, touching and position.

32 It is the sensory apparatus of the inner ear in the nervous system that affect balance, eye movements and position.

33 Sunwook, K., Nussbaum, M. A., Quandt, S. A., Laurienti, P. J., Arcury, T. A. (2016). Effects of Lifetime Occupational Pesticide Exposure on Postural Control Among Farmworkers and Non-Farmworkers. *Journal of Occupational and Environmental Medicine*, *58*(2), 133–139. doi.org/10.1097/JOM.0000000000000655

34 Children of Seasonal Migrant Workers. *Early Childhood Matters.* (2013). Bernard Van Leer Foundation & Early Childhood Matters, 121, 52.
bernardvanleer.org/app/uploads/2015/12/ECM121_Children-of-seasonal-migrant-workers.pdf

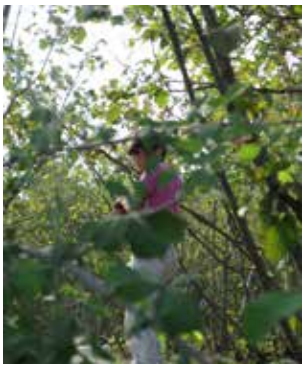
35 Seydaoglu, G., Satar, S., Alparslan, N. (2005). Frequency and Mortality Risk Factors of Acute Adult Poisoning in Adana, Turkey, 1997-2002. *The Mount Sinai Journal of Medicine, New York*, *72*(6), 393–401.
www.ncbi.nlm.nih.gov/pubmed/16358165

contact with chemicals. Anatomically unfit gloves fall short of protecting hands from various plants and thorns. Though employers say all workers are given gloves and they are renewed regularly, they still admit that there is no check whether they are actually used or not. There is frequent contact with stinging nettle in particular which is known to cause various allergic reactions in skin.

When hazelnut culture is practised on steep slopes, it is important to work with plastic boots which grasps the ground firmly. Documentaries and other visual materials on hazelnut culture suggest that children are not given footwear of this kind. This may lead to serious accidents due to falling especially in Ordu where hazelnut orchards are located on quite steep slopes.

As can be seen in the photo, a hazelnut orchard stands on a slightly elevated level even on a smooth land. Thus, anatomic position of the child when collecting from the margins of the orchard may lead to balance loss and falling.

Anatomic position of the child when collecting from the margins of the orchard may lead to balance loss and falling.



Child working in hazelnut harvesting

memurlar.net

Child who got hurt at a hazelnut orchard passed away

A child passed away while playing at a hazelnut orchard when her family was harvesting hazelnuts in Duzce.

29 August 2017

Sevde Demir (13), whose family came to Akcakoca-Akkaya as SMAW, fell while playing and hit her head.

Her family drove her to the Akcakoca Public Hospital with their private car. After the first aid, she was sent to Duzce University Medical School Hospital, and lastly she was sent to the Yalova Public Hospital. Demir, lost her life besides all the medical procedures.

Sevde Demir's funeral will be held in Idil-Sirnak.

The mode of collecting hazelnut and topographical conditions distinguish this culture from other crops also in terms of machinery use. These conditions as well as precipitation limit possibilities of mechanized farming and encourage manual harvesting. Hence, the risk of work accidents related to mechanized farming is lesser in hazelnut than in other crops. Nevertheless, proximity of children to agricultural machinery or their use of such machinery may lead to accidents as in other crops. In one living area visited agricultural machinery was in a nearby location that can be easily accessed by children. Besides harming children themselves, use of machinery is also a threat to people around. In 2007 six children were injured upon capsizing of a tractor used in hazelnut culture.[36] While work accidents resulting from machinery constitute a risk for male children in particular, girls are more prone to various accidents in general.[37]

The mode of collecting hazelnut and topographical conditions distinguish this culture from other crops also in terms of machinery use. These conditions as well as precipitation limit possibilities of mechanized farming in Ordu.

36 Tarım işçilerini taşıyan traktör devrildi! Çok sayıda ölü ve yaralı var. (10.08.2017) www.sozcu.com.tr/2017/gundem/tarim-iscilerini-tasiyan-traktor-devrildi-cok-sayida-olu-ve-yarali-var-1967038/

37 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

Their smaller size makes children relatively advantaged in harvesting hazelnut as in some other crops. Since hazelnut trees are not high, children can reach hazelnut easier among other plants with their smaller hands. This, however, increases the risk of cuts and injuries since children work closer to trees and other plants around.

Insect bites/sting or skin contact with their secretion may lead to skin inflammations. It is therefore important to work with PPE like work gloves. Since 'paederus dermatitis'[38] is observed only among hazelnut workers in Giresun, it is proposed to classify this specific problem as an occupational disease.[39]

Work accidents are under-reported in all work branches. In agricultural works where there is no inspection, the situation is even worse and there is almost no record of cases unless there is need for urgent intervention and there is mortality. It is presumed that work accidents involving children are reported only occasionally due to some legal sanctions existing in the field of child labour. [40]

Since hazelnut trees are not high, children can reach hazelnut easier among other plants with their smaller hands. This, however, increases the risk of cuts and injuries since children work closer to trees and other plants around.

38 Paederus insects cause a dermatological illness, usually self-limiting, and SMAWs are exposed to it much more than the normal population.

39 Uzunoğlu, E., Oğuz, I. D., Kir, B., Akdemir, C. (2017). Clinical and Epidemiological Features of Paederus Dermatitis Among Nut Farm Workers in Turkey. *American Journal of Tropical Medicine and Hygiene*, *96*(2), 483-487. doi.org/10.4269/ajtmh.16-0582

40 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

4

HEALTH RISKS IN LIVING ENVIRONMENTS

4.1

HEALTH RISKS FACED BY CHILDREN IN THEIR LIVING ENVIRONMENTS IN ADANA PLAIN

5-6 persons

16 m²

According to a report prepared under METIP, 5-6 persons cohabit a space of 16 square meters which may go up to 7-8 persons in the case of Syrian refugee families

Living environments of SMAW vary with respect to crop (length of the harvesting period, shorter-longer periods of harvest, machinery use, etc.), the period that workers spend in the area, existing infrastructure and workers' original places of settlement and culture. While the present study covers SMAW in cotton, citrus fruit and hazelnut culture, its scope is not limited to workers and their working areas but also includes different living environments (tent camps).

During visits it was observed that living space in tents is 10 to 15 square meters that is shared by 4-6 persons on average. Similarly, a report prepared by the Governorate of Seyhan under METIP states that 5-6 persons cohabit a space of 16 square meters which may go up to 7-8 persons in the case of Syrian refugee families.[1]

1 *Mevsimlik Tarım İşçileri Çalışma ve Sosyal Hayatlarının İyileştirilmesi Konulu Ortak Çalışma Raporu* (2017). Adana: Seyhan Kaymakamlığı.

First of all, the risk of communicable diseases is high in such congested settings. It was found that the incidence of tuberculosis in overcrowding of living space by SMAW could be six times higher than in other settings.[2]

Nutrition is another problem. Nutritional habits of workers are influenced by many factors. According to a nurse who once worked in agriculture, the leading factor is where SMAW come from and their culture. While some groups bring along dry food from their home (cereals, tarhana, dry eggplant, etc.), others have their meals with what they collect in gardens and fields around and shopping. Despite some variances, the rule is that their diet consists mostly of carbonhydrates. Workers interviewed say they have meat only once a week. Adequate and balanced diet is a must for children's healthy development. The health screening survey conducted in Adana Plain in 2014 by the Medical Search and Rescue Association measured the weight and height of children and found that development curve of most children remained below average (i.e. normal development curve of children in the same age group in Turkey).[3] Studies conducted in other countries on the health status of SMAW also confirm as a result of longer term tracking that children are malnutrioned.[4] It is observed that bread as the major food item for many workers is baked openly. These open bakeries require the supervision of an adult while bread is being baked, but fire goes on after bread is baked and there is no safeguard to keep children away from these places. These facilities are 50-60 centimetres high from the ground and located in a way that even children 3 to 4 years old can touch or fall on.

Studies conducted in other countries on the health status of SMAW also confirm as a result of longer term tracking that children are malnutrioned. It is observed that bread as the major food item for many workers is baked openly.

Even in outdoor environments, poisonous gasses and particles from biomass fuel affect lungs negatively and longer-term exposure may lead to serious lung problems including chronic obstructive pulmonary disease (COPD). The highest risk group in this respect is women and children with their longer exposure.

2 Hansen, E., Donohoe, M. (2003). Health Issues of Migrant and Seasonal Farmworkers. *Journal of Health Care for the Poor and Underserved*, *14*(2), 153-164. doi.org/10.1353/hpu.2010.0790

3 *Sen Oradaysan Biz de Oradayız*. (2015). Acıbadem Üniversitesi & Medikal Arama Kurtarma Derneği.

4 Mcmahon, T., Zijl, P. C. M. Van, Gilad, A. A. (2015). NIH Public Access, *27*(3), 320–331.

Workers interviewed say they can take shower only once or twice a week and they have no hot water. It is stated that trucks transport drinking water and water for general use to some settlement places.

Hygiene is another problem area faced in living environments. Workers interviewed say they can take shower only once or twice a week and they have no hot water. It is stated that trucks transport drinking water and water for general use to some settlement places. The safety of this water is disputable. In a survey covering children in the age group 6-14, the Development Workshop found that almost 50 per cent of children can take shower only once a week.[5] The same report says there is no wastewater or sewage system in many living environments. It is clear that this situation poses more serious problems for female children and women. Combined with increased need of toilet, personal care and hygiene in menstruation periods, the absence of electricity and lighting makes the situation worse for female workers. It is also a factor increasing the risk of various forms of abuse.

What is said above is an important risk in terms of upper respiratory tract infections and infections transmitted through faecal-oral ways.[6] Indeed there are many health screenings confirming this: A screening conducted in Seyhan District in 2017 to cover SMAW found one in every five children as having bronchitis (a lower respiratory tract infection) and one in every five with diarrhoea. More importantly, in a survey conducted in April 2017, a month when respiratory tract infections are normally expected to be rare in general population, incidence was found high among workers. The same report states that recovery takes longer than what is considered as normal in these cases.[7] This situation is the outcome of various factors including relatively severe nature of infections, weaker immunity system of children and difficulties in having access to adequate healthcare. Furthermore, these outcomes are not specific to Adana. Another survey conducted in Şanlıurfa found more than one debilitating intestinal parasites (pathologic) in more than half of children.[8] It is known that chronic (long term) parasitic infections cause retardation in development together with diarrhoea.

5 *Mevsimlik Tarım Göçünden Etkilenen 6-14 Yaş Grubu Çocuklar İçin Temel Araştırma.* (2013) Kalkınma Atölyesi.

6 It is a way of transmitting disease, in which the microbes in the stool transmit to one's mouth, occurs usually when there is limited clean water and poor hygienic conditions.

7 *Mevsimlik Tarım İşçileri Çalışma ve Sosyal Hayatlarının İyileştirilmesi Konulu Ortak Çalışma Raporu* (2017). Adana: Seyhan Kaymakamlığı.

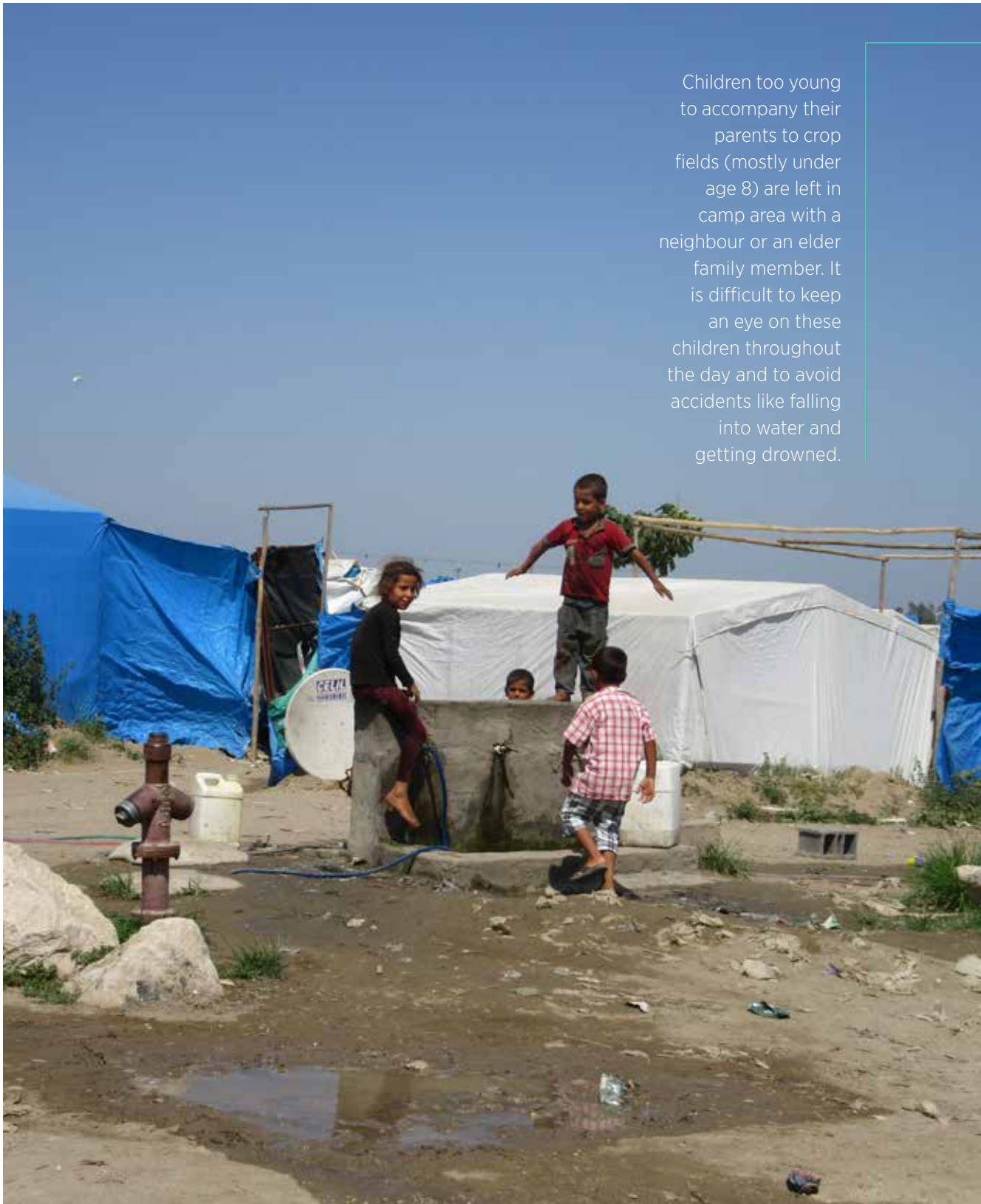
8 Nguyen, N. L., Gelaye, B., Aboset, N., Kumie, A., Williams, M. A., Berhane, Y. (2012). Intestinal Parasitic Infection and Nutritional Status among School Children in Angolela, Ethiopia. *Journal of Preventive Medicine and Hygiene, 53*(3), 157-164

When workers and children are asked about disturbing problems in their living environments they refer to the presence of insects, flies and scorpions. Some children complain about not sleeping well at night because of flies while others mention risks coming from scorpions, snakes and bees that seem to be everywhere and in fact there have been many cases of bite and sting. This brings along the risk of allergic reactions along with poisoning. Distance to health facilities and inadequate means of public transportation are factors preventing quick diagnosis and treatment in such cases. Allergic reactions emerging in cases like bee sting (e.g. anaphylactic shock) may be fatal. Urgent intervention is thus particularly critical. This risk exists even if no such case is mentioned by health workers and workers interviewed in the region. Community health centre workers mentioned no case of malaria although one can think of it given irrigation canals, muddy/swampy area and presence of mosquitos near living environments. Health records also confirm the absence of any case of malaria. Still, it should not be forgotten that outbreaks of this kind may emerge suddenly.

Distance to health facilities and inadequate means of public transportation are factors preventing quick diagnosis and treatment in such cases. Allergic reactions emerging in cases like bee sting (e.g. anaphylactic shock) may be fatal.

Irrigation and drainage canals constitute another risk factor in living environments. Tent camps in Adana plain in particular are located close to these canals which pose two types of danger: children falling in and getting drowned and using water from this source which is contaminated by wastes.

Living environments near irrigation and drainage canals



Children too young to accompany their parents to crop fields (mostly under age 8) are left in camp area with a neighbour or an elder family member. It is difficult to keep an eye on these children throughout the day and to avoid accidents like falling into water and getting drowned.

A case in which a child drowned in water took place in the area surveyed and was on the news. Children too young to accompany their parents to crop fields (mostly under age 8) are left in camp area with a neighbour or an elder family member. It is difficult to keep an eye on these children throughout the day and to avoid accidents like falling into water and getting drowned. The second risk related to water canals is that they are used for discharging solid and liquid wastes. With the exception of a limited number of tent settlements, there is no regular waste collection in living areas of SMAW. Interviewed SMAW say that water canals used to be clean but later turned contaminated as a result of the presence of 12 months long SMAW settlements in the area. It is also observed that chemical wastes (pesticides, fertilizers, etc.) are also discharged in these canals. Besides their role in the contamination of natural environments, these wastes also constitute a serious health risk to SMAW using the water (for bathing, drinking or laundry washing). Many dermatologic problems attributed to exposure to chemical substances in living environments can also be associated with use of water from canals. Additionally, it is reported by various sources that packs of agricultural chemicals are not disposed of in line with relevant regulations but used instead for various purposes including as water containers especially by seasonal workers. According to the *Waste Management Regulation*[9] the use of these packing materials, which should actually be disposed of in living environments, cannot be accepted with respect to health risks they pose.

Another problem is the location of tent settlements near relatively higher places along roads and drainage canals. Since there is no physical demarcation (barrier, fence, etc.) between settlements and roads with busy traffic, there is serious risk of accident.

Another problem is the location of tent settlements near relatively higher places along roads and drainage canals. Since there is no physical demarcation (barrier, fence, etc.) between settlements and roads with busy traffic, there is serious risk of accident. This risk is even higher for children at playing ages. Tent settlement established on relatively higher elevations are affected heavily by such events as strong wind and rain while there is threat to life in settlements located close to high voltage transmission lines and base stations. The risk of lightning strike exists in areas with high precipitation. Indeed it was reported that two persons died on Adana Plain as a result of lightning strike.[10] Moist ground under

9 www.resmigazete.gov.tr/eskiler/2015/04/20150402-2.htm

10 Adana'da üzerlerine yıldırım düşen 2 tarım işçisi öldü. (19 Mart 2015) www.mynet.com/haber/yasam/adanada-uzerlerine-yildirim-dusen-2-tarim-iscisi-oldu-1756649-1

tents in areas with high precipitation leads to dampness and long exposure causes both general problems of hygiene and other health problems including skin rash and rheumatic diseases. It is also a problem that inside of tents cannot be heated enough because of rains and indoor spaces can get cold. What comes to mind first is disruption in sleeping quality for sleeping on wet and cold ground. Given that enough and quality sleep is an important factor in child development, this situation may lead to serious concerns in terms of retardation of growth/development.

The absence of socialization spaces for children in their living environments is another problem. Together with the development of musculoskeletal system, a child starts acting on his/her own (especially after starting to walk) and needs stimulants for social development. The number, quality and sources of these stimulants are critical for physical and emotional development. These needs continue until post-adolescence. The inadequacy of stimulants is an important problem for children working as SMAW or left in tent camps. Starting from the birth of the child, parents spend most of the day working out in fields or orchards; the infant do not receive sufficient stimulus even when somebody cares him/her. It goes on as child grows. Children not going out to crop fields in their pre-ad-

Children not going out to crop fields in their pre-adolescence period spend their time around their camping sites. Yet, this is a space where instruments and materials of work are kept and there is nothing preventing children's access to these materials and instruments.

olescence period spend their time around their camping sites. Yet, this is a space where instruments and materials of work are kept and there is nothing preventing children's access to these materials and instruments (chemicals, tools and equipment and even tractors). This situation is clearly observed especially in tent settlements visited in Adana province.

SMAW's work instruments may be 'toys' for children. Chemicals and their boxes are open and tractor is a 'toy' that children get on and off.

SMAW's work instruments may be 'toys' for children. Chemicals and their boxes are open and tractor is a 'toy' that children get on and off. While playing, children are not accompanied or observed by any adult. Pipes are not fixed well and may hurt children if roll down. Playing grounds are muddy. Power cables are on the ground or at heights that children can reach. It is observed in some living areas that there are cattle and sheep around and with armies of flies. Some children walk around barefoot. This situation increases health risks including parasitic infections, fungus, skin infections like piodermia, scars and tetanus.

Problems related to social development persist during adolescence and later on. SMAW state that the only environment for socialization of young males is the coffee house at the centre of the district where they play backgammon. The situation is worse for women: There is no socialization other than with their acquaintances around tents.

Since adults share the same space with children the latter may witness the sexual life of the former which may lead to serious psychological consequences.

Lastly, privacy is a problem since tents are located too close to each other and entry is not restricted during daytime. This is problematic especially for adolescent children. Privacy has two sides: Since adults share the same space with children the latter may witness the sexual life of the former which may lead to serious psychological consequences. Open tents also pose a risk in terms of child abuse.

4.2 HEALTH RISKS FACED BY CHILDREN IN THEIR LIVING ENVIRONMENTS IN ORDU AND GIRESUN PROVINCES

The first living environment visited in hazelnut culture area was prefabricated buildings near the sea provided for seasonal workers by Giresun Governorate. According to the survey team with direct observations on situations in other regions, this area with prefabricated dwellings is better than other living areas. The first positive feature observed is houses are located in an orderly manner with sufficient distance in-between. Their heightened entrance reduces the risk of flooding. A prefabricated house has more than one room and there are locks on doors, which is functional in avoiding some risks that exist in other places. Though in better conditions, the living space is on average 20 square meters, which is not large enough for a family of 4-5 members.

The location of settlement is selected as a place isolated from the city and mostly near the sea or a river, which poses the risk of flood. Another risk involved in the selection of settlement is proximity to urban waste disposal areas. Already a risk group with respect to hy-

Boarding facility for SMAW provided by Giresun Governorate

With better conditions relative to other settlements, Uzunisa tent camp has a park and also a facility where children can attend school. However, as seen in the photo toys of children are all rusty and there is a risk infection like tetanus.

giene and associated infections, MSAWs face multiplied risks when located as exposed to urban wastes in addition to their own.

Uzunisa tent camp in Altınordu district of Ordu was covered in 2017 by a wide-scope health screening project conducted by Ordu Directorate of Health. This work included maternal and child health, cancer screening, anthropometric follow-ups and relevant treatments. The survey team came across with a work of this kind first at this location. A serious flood hit the area in 2011. Though there was no fatality or injury all tents and other materials of SMAW were destroyed. It is the most important risk factor that this settlement area is on a streambed. With better conditions relative to other settlements this one has a park and also a facility where children can attend school. However, as seen in the photo toys of children are all rusty and there is a risk infection like tetanus.

Children's playground in tent camp in Uzunisa, Ordu Altınordu District

Tent camp in Uzunisa, Ordu Artınordu District

Having fences surrounding living environments protects children from water-related risks. This protective measure was observed also in other living environments visited in Ordu province. It is positive that there are latrines in living environments, but it is observed that their windows are fractured and taps broken. Further, since women's latrine is located close to socialization space used in evenings and there is no sufficient lighting it is problematic in terms of both privacy and the risk of abuse.

Another living area visited is the facility provided by an orchard owner near his plot. As can be seen in the photo, workers stay on the upper floor of a building where such materials as pesticides

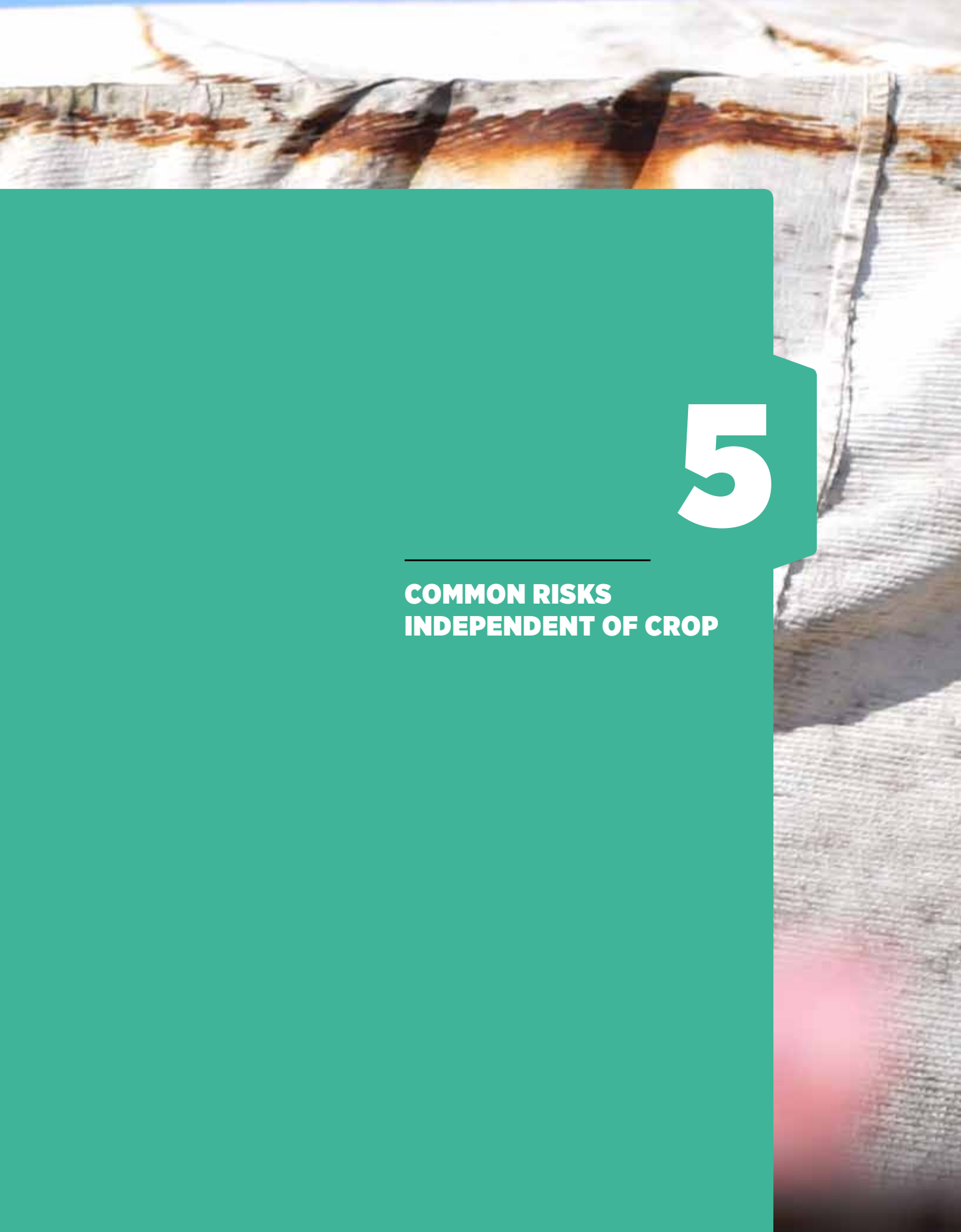
Workers stay on the upper floor of a building where such materials as pesticides are stored. There is nothing to protect the building from wind and insects.

are stored. There is nothing to protect the building from wind and insects. Problems of this nature leave workers and their children in particular open to infections.

A special feature here is that hazelnut is consumed raw in orchards. Children particularly, can get diarrhoea if they eat raw hazelnut while working.

A hazelnut farmer was interviewed to find out about the eating habits of workers. Being in this activity for a long time, the farmer said on average 70 per cent of the cost of meals of workers was covered by orchard owners. The farmed added that meal with meat is served 'only once a week' even in most favourable places and workers' nutritional habits are influenced by their city of origin and culture as in other regions. Here too, unbalanced nutrition has its serious risk for physical and emotional development of children. A special feature here is that hazelnut is consumed raw in orchards. Children particularly, can get diarrhoea if they eat raw hazelnut while working. Further the risk of poisoning increases since freshly collected fruits bears residues of chemicals (fertilizers, pesticides, herbicides).

Lastly a civil society organization in Ordu province working on education and other rights of children was interviewed on issues of child abuse and sexual abuse. In spite of absence of any quantitative data, the experience of field workers reveals that 'abuse is a norm'. Cultural norms such as silence about these events, the belief that whatever happened must be kept within the family and accusing or stigmatizing the victim instead of perpetrator suggest that cases of abuse are more frequent than what can be estimated. Further, respondents state that such culturally sensitive issues like sexual abuse are not communicated to them, but they are positively sure about the existence of such events. Solution to these problems can be found through psychosocial interventions that require long and intensive work with the child and his/her family. It is more difficult to implement this model of intervention with mobile and closed communities like SMAW.



5

COMMON RISKS INDEPENDENT OF CROP

5.1 TRAVEL TO WORKPLACE

The most frequently observed cause of mortality among seasonal migrant workers is traffic accidents taking place while travelling from their original settlements to temporary working places and while travelling from their tent camps to farming plots. Many risk factors are known to exist including unsafe vehicles, excessive number of passengers in a single vehicle and placement of passengers in places of vehicles allocated to cargo.

According to data provided by the Council of Work and Worker's Safety and Health, 234 children in this sector died in the period 2013-2016 and large part of these deaths was the result of traffic accidents.

SMAW are frequently mentioned in the media mostly on the occasion of traffic accidents. According to data provided by the Council of Work and Worker's Safety and Health, 234 children in this sector died in the period 2013-2016 and large part of these deaths was the result of traffic accidents. This information and related news[2,3] reveal that inspections and sanctions in this field remain insufficient.

This journey is riskier for children. Even in safe and well-maintained vehicles, damages to children in case of any accident are more serious. For instance children may be thrown out of vehicle in a collision that may only give a shock to adults or get seriously injured. Further, protective materials (air bag, etc.) are designed with adult size in mind. Even a small accident may harm children seriously in unsafe, overloaded and poorly maintained vehicles without safety belt tor when children sit on adults' laps.

The *'Prime Ministerial Circular no. 2017/6 on seasonal migrant agricultural workers'* issued in 2017 sets detailed criteria and duties for the process of transportation 2017 as well. Some important criteria include prevention of traffic from midnight to 6:00 am in morning as the period in which accidents occur most frequently and building necessary road infrastructure fit for temporary living environments. It is expected that implementation of the provisions of this circular will reduce accidents.

In particular, inspections planned so as to coincide with harvest times and SMAW's move as well as deterrent sanctions has been effective in

1 Denetimsizliğe 54 kurban daha. (13.09.2017)
www.milliyet.com.tr/denetimsizlige-54-kurban-daha-gundem-2518308/

2 Tarım işçisi kadınlar yollarda öldürülüyor. (07.07.2017)
ekmekvegul.net/gundem/tarim-iscisi-kadinlar-yollarda-olduruluyor

3 Düzce'de minibüs şarampole devrildi: 13 yaralı. (20.09.2017)
www.sabah.com.tr/yasam/2017/09/20/duzcede-minibus-sarampole-devrildi-13-yarali

reducing the incidence of such cases. However, workers still continue to move with unsafe vehicles to reduce their cost of transportation. There is need to develop a multi-disciplinary approach, as is the case with other issues, to fully prevent traffic accidents. Full prevention does not seem possible unless improvements are made in such areas as remuneration, workers' health, living and working conditions in SMAW's original settlements and where they move to work.

5.2 DISCRIMINATION

Given that health is the state of full well being in physical, emotional and social terms[4] it is clear that discrimination harms people in all respects. As far as children are concerned, discrimination-based trauma that they may experience in their emotional and social development process is of critical importance in long term. The burden of being the 'other' is extremely heavy for a child, which he/she tends to accept this status as an absolute truth. As such the child is pushed to thinking that life is nothing else but working in a field; so develops resistance to any intervention designed to alter living or working conditions.

The problem of mother tongue too must be considered along with this situation. Many reports and surveys about SMAW indicate that Turkish is not the native language of the majority (two-thirds in general) of this people.[5,6,7] Despite frequently expressed, this fact which is quite important in different layers in terms of health is generally missed:

Many reports and surveys about SMAW indicate that Turkish is not the native language of the majority (two-thirds in general) of this people.

The association between health and education is well established. Longer the time in school better the health status of persons. This is important both for the child and his/her mother as the caregiver starting from pregnancy. A quality formal education is essential for a good care both for adults themselves and their children. Studies

4 *Constitution of WHO: Principles*. (n.d.). Retrieved March 08, 2018, from www.who.int/about/mission/en/

5 *Mevsimlik Tarım Göçünden Etkilenen 6-14 Yaş Grubu Çocuklar İçin Temel Araştırma.* (2013) Kalkınma Atölyesi.

6 *Mevsimlik Gezici Tarım İşçiliği 2014 Araştırma Raporu, 53.* (2014) Hayata Destek Derneği.

7 Lordoğlu, K., Çınar, S. (n.d.). *Mevsimlik Tarım İşçileri: Marabadan Ücretli Fındık İşçiliğine*

8 Hernandez, D. J., Napierala, J. S. (2014) Mother's Education and Children's Outcomes: How Dual-Generation Programs Offer Increased Opportunities for America's Families. *Foundation for Child Development*.

affirm that there is strong and positive correlation between years that a mother has had in school and child's health status.[8]

CSOs or governmental organizations have many training programmes in capacity building. However, these interventions in the field of health will largely lose their effect if not in native language of the target group. On issues such as good farming practices, protection from damages of pesticides, and work safety there is yet no comprehensive training programmes developed in any language other than Turkish. Upon the arrival of Syrian refugees, there are some training programmes developed in Arabic, but not for SMAW.

5.3 VIOLENCE

Given their overall working and living conditions, one may think that seasonal migrant child workers in agriculture are vulnerable to all forms of violence. Before all, child labour itself is a form of economic violence within a system that deters children's physical and mental development, exploits their labour and denies them the opportunity to spend what they earn for their own needs. Besides, in the special case of SMAW the working environment itself is highly prone to physical violence and abuse. The sources of violence can be intermediaries, farmers, child's own parents and relatives, siblings or peers. Since children are not fully capable of attentiveness and concentration as a result of their yet developing capacities, it is an expected outcome that they face physical violence under time pressure.

Domestic violence is a determining factor in both living and working environments. Although dimensions and forms of violence may vary with respect the characteristics of living environments, it may be present at all points in the life of SMAW children.

Domestic violence is a determining factor in both living and working environments. Although dimensions and forms (physical, sexual, emotional) of violence may vary with respect the characteristics of living environments, it may be present at all points in the life of SMAW children. In the field study conducted by the survey team, there was no mention of any case of physical and sexual violence. Yet, given existing living and working conditions it must be considered that they can well lead to cases of violence. To document cases of violence there is need for qualitative surveys that focus exclusively on this issue.

9 Walker, S. P., Wachs, T. D., Meeks Gardner, J., Lozoff, B., Wasserman, G. A., Pollitt, E., ... Carter, J. A. (2016). Child development: risk factors for adverse outcomes in developing countries. *The Lancet*, *369*(9556), 145–157. doi.org/10.1016/S0140-6736(07)60076-2

It is known that the risk of domestic violence and abuse is inversely related with socioeconomic level.[9] In addition to this, the fact that children share the same space with their parents while sleeping leads to children witnessing their parents sexual life especially in tents. Moreover children may also witness cases of violence against their mothers. The *"normalization"* of violence in people's daily life can make it invisible for this reason. It is expressed in interviews that there are frequent cases of domestic violence and violence between different groups (e.g. between local people and the Roma or Kurdish workers). It is further stated that people are uninformed about their rights when they face violence and they need guidance as to how to act in any case of violence.

The source of risks in working environments is different. The *"ağa"* or *"çavuş"* heading workers force them to work beyond their physical capacity to get the most (in their own words *'to prevent their temporizing'*). Çavuş cruising working area whole day treat children harshly in particular and resort to physical violence in some cases. Even if offended, families of children do not stand out against this kind of treatment since it is the çavuş who pays them as the representative of their employer. It is understandable that they tolerate such cases since their children are paid too, even if it is lower than what is paid to adults.

The source of risks in working environments is different. The *"ağa"* or *"çavuş"* heading workers force them to work beyond their physical capacity to get the most (in their own words *'to prevent their temporizing'*).

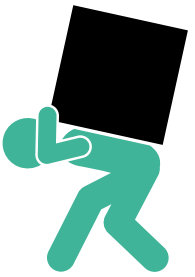
Besides, even when living and working areas are physically separated, they still constitute a continuum in a sense and peer bullying may emerge among working children as a form of violence. Peer bullying can manifest itself even in "playing" form (e.g. throwing stones to each other). Peer bullying in both working and living environments can be considered as a risk that further aggravates already unfavourable circumstances where self-development opportunities are almost absent and even erodes what can be said to exist.

Peer bullying may emerge among working children as a form of violence. Peer bullying can manifest itself even in "playing" form.

5.4 ACCESS TO HEALTHCARE SERVICES

SMAW's access to healthcare services has many obstacles both in emergencies and in routine polyclinic check-ups. The risk of losing a day's wage is one of the most serious impediments to visiting a family practitioner or a hospital. Also, the distance between living places and health facilities may be a problem in some cases.

Observations by the survey team and studies on SMAW's access to healthcare services[10] indicate that workers seek healthcare services only if there is any loss of function. In other words, workers do not seek any formal health service unless their problem prevents their working in fields and orchards. Yet, as health problem gets more and more serious, its treatment becomes more difficult and costly and requires advanced care. Further, longer time has to be spent in hospital; operation may become necessary and the possibility that the problem getting chronic increases. The most skirting example to this is musculoskeletal system problems faced by SMAW. At the outset these problems can be addressed by simple methods like training workers in keeping right posture and lifting load in correct ways and/or physical rehabilitation. If these are not done, however, musculoskeletal system problems can assume debilitating dimensions that require surgery. The case is even more serious for children since all kinds of stimuli (carrying heavy load in an unbalanced way, etc.) affect the normal growth of body. The risks of retarded and distorted development and physical deformation increase in the course of time. This issue is discussed in more detail with respect to specific crops.



The case is even more serious for children since all kinds of stimuli affect the normal growth of body. The risks of retarded and distorted development and physical deformation increase in the course of time.

Turkey made significant changes in it's health system through the reform initiative called 'Transformation in Health.' The most important of these took place in first step healthcare services. First step healthcare services are expected to serve as a filter before inpatient facilities by covering preventive, protective and curative services in the context of public health including home-based and outpatient care. In this context region-based integrated system was abandoned and relevant services started to be delivered through population-based family medicine model. In this model, basic protective services such as immunization, pregnancy, birth, infant and child monitoring are delivered by family medicine staff at family

10 *Sen Oradaysan Biz de Oradayız*. (2015). Acıbadem Üniversitesi & Medikal Arama Kurtarma Derneği.

A family medicine practitioner who is in charge of a population of at most 4,000 in normal conditions may have to follow a population of 10-15,000 in harvesting season.

health centres that serve to a specific population. When in another province, persons can receive healthcare services only as *'guest patient'*. However, large-scale periodic population movements exert pressure on regional health facilities. A family medicine practitioner who is in charge of a population of at most 4,000 in normal conditions may have to follow a population of 10-15,000 in harvesting season. Children's access to preventive healthcare services may be problematic due to such factors as vaccines stored for a population of 4,000, health workers penalized for poor performance[11] and families not taking their children to immunization in order not to lose a day's wage. In interviews conducted in Ordu province, the focus was on first step healthcare services in which nurses deliver out in the field and refer persons, when necessary, including children to family medicine practitioners. It is also reported that there is a doctor and health room during harvesting season in tent camps in Fatsa, Altınordu and Saraycık. Meanwhile, language is also an important barrier when healthcare is concerned. Since there is no systematic employment of interpreters, work is carried out by occasional help from native speakers. This practice may lead to undesired consequences in terms of both communication and privacy.

The case is also valid for emergency health problems. Given the distance between city centres and living/working places, it may take longer to carry for an ambulance to reach patients to the place where they will be treated. The means of public transportation is limited and families are mostly dependent to vehicles of employers or middlemen when there is need to take their children to a health facility.

11 In the new remuneration system introduced by 'transformation in health', doctors working in Family Health Centres (FHC) are in charge of ensuring and monitoring access to protective healthcare services such as pregnancy, birth and immunization of a population they are assigned to (at least 1,000 and at most 4,000). However, since SMAW is mobile, a new born missing his or her vaccination in due period the doctor in charge is imposed a cut on his or her salary. This is used as a tool to increase immunization and pregnancy checks. Family practitioners are not paid any extra when they work after 17:00 hours. (Akdağ, R. (2012). Türkiye Sağlıkta Dönüşüm Programı Değerlendirme Raporu, 2003-2011).

5.5 SITUATIONS SPECIFIC TO SMAW WOMEN AND GIRLS

Vulnerability may be multi-layered. If you are living with HIV, for example, you are in a vulnerable group in terms of health. In addition to HIV, if you are also black, refugee, LGBT+ and a sex worker, the degree or scope of your vulnerability multiplies. In the case of SMAW, this is true for women and and female children.

Under the given gender roles, the girl child is positioned as a "young parent" at home if not working out in fields with her family. She is left to take care of her younger (even elder) siblings. She is the one who takes care of other children left home with their feeding, changing, sending to sleep, etc. Other responsibilities include keeping the living space clean and in order and routine household chores. They are expected to serve not only to younger ones but elders as well when needed. Thus, though they may seem "not working" for not being with other family members out in fields, they are actually working children with their "invisible" work. Without living their childhood, they are expected to grow as unpaid family workers and mothers.

Under the given gender roles, the girl child is positioned as a "young parent" at home if not working out in fields with her family. She is left to take care of her younger (even elder) siblings. She is the one who takes care of other children left home with their feeding, changing, sending to sleep, etc.

If the female child is also working out in harvesting her work continues uninterrupted from fieldwork to household chores and care. During meal and rest breaks out in fields she is the one who sets the table, prepares the meal and serves tea as if she is not entitled to any rest. As such, the girls experience double burden and double vulnerability. Studies find that SMAW girls and women work for 16-18 hours a day on average and that the incidence of frequent illness and musculoskeletal system problems is the highest among female children as an indicator of overload on the body. What is mentioned here as "routine tasks" are those that do not create any added value in terms of personal, physical and cognitive development and as such they are of opposite nature to the motto of "women's empowerment" that we come across frequently in recent discourse.

12 Kaya M., Özgülnar N. (2015). Mevsimlik (Gezici/Geçici) Tarım İşçilerinin İki Yerleşim Birimindeki Yaşam Koşulları ve Sağlık Durumlarına Niteliksel Bakış. *Turkish Journal of Public Health*, *13*(2): 115-26.

Insufficient toilet and bathing facilities in living environments and absence of any toilet in working environments means people including girls meet their needs outdoors or in toilets common to all and take bath in tents.

Another important problem for girls working in fields and orchards is related to potential troubles that may emerge during their menstrual periods since it is not easy to keep privacy in such environments. Since shopping places are often kilometres away, the availability of or access to hygienic pads is quite limited. These pads have to be changed and properly disposed of regularly within the day. It can be inferred that this is a problem for women out in the field in a crowded working environment. Hence the availability of hygienic latrines is of special importance in this respect. Hygiene and sanitation problems in menstruation periods add to other gender related problems of adolescent girls and women.

In the same context, the absence of privacy in living environments in addition to working places is a factor creating environments conducive to sexual abuse and physical violence. Although cases of abuse are not expressed directly, when there is talk about hazards of working as SMAW, it was stated that *"girls fall from tree and they suffer hymen rupture."* This statement was recorded by the survey team invoking the possibility of sexual abuse.

Further, insufficient toilet and bathing facilities in living environments and absence of any toilet in working environments means people including girls meet their needs outdoors or in toilets common to all and take bath in tents.[13] A survey found that 47 per cent of SMAW women cannot take bath and 56 per cent cannot go to toilet when in need.[14] These circumstances lay the ground for important problems with respect to both hygiene and women's health. The leadings ones are bacterial vaginosis[15] resulting from keeping urine in order not to use toilets frequently and urogenital infections like urinary tract infection or cystitis[16], these are diseases deteriorating life quality, often painful and not easy to treat in given circumstances. Further, these infections may bring along many complications in adulthood including ectopic pregnancy, low birth weight, congenital infections in newborns, miscarriage, sepsis, cervix cancer, infertility and pelvic inflammatory disease[17].

13 Ibid.

14 Yağmur Y., Orhan E. İ. (2017). Mevsimlik Tarım İşçisi Kadınların Yaşam Koşulları ve Genital Hijyen Uygulamaları. *Uluslararası Sosyal Araştırmalar Dergisi*, *10*(51): 614-20.

15 Excessive growth of bacteria in vagina that leads to infection with increased vaginal discharge.

16 Urinary canal infection.

17 Infection of the upper part of female reproductive system such as ovaries and fallopian tubes.

Relative to males, girls' and women's body water and muscle are less;[18] creatinine clearance rates[19] are lower by 15 per cent[20] and body fat mass is higher. This means that they are affected more by heavy work, have lower heat tolerance and higher sensitivity to all chemicals. Relative to men, women's respiratory capacity and blood haemoglobin levels are lower by 11 and 20 per cent, respectively, which means use of force and making effort affects them more than males[21]. Further studies provide evidence that musculoskeletal problems are observed more commonly among women since almost all tools and equipment are designed according to male anatomy.[22,23]

Parents themselves had their education discontinued as a result of seasonal migrant works and presently they have more than one child; if they want their children go to school they prefer their sons given their material means. Left behind in schooling as well, the daughter is disadvantaged in this respect as well.

Another problem confronting girls is the shortfall of stimuli, which is an important part of personal and cognitive development. The absence of stimuli like books, games or computer around may lead to cognitive slowness if not to mental retardation. Parents themselves had their education discontinued as a result of seasonal migrant works and presently they have more than one child; if they want their children go to school they prefer their sons given their material means. Left behind in schooling as well, the daughter is disadvantaged in this respect as well.[24] What is left for female children who had to discontinue their education is early marriage, adolescent pregnancies and birth-related health problems.[25] Although this issue was not addressed in detail during field visits, the experience of the survey team and facts available in the relevant literature make it clear that SMAW girls or others living with SMAW family members will face similar problems.

18 McGarry, K., Babb, K., Edmonds, L., Duffy, C., Anvar, M., Jeremiah, J. (2016). Kadın Sağlığı Konuları, *Andreoli and Carpenter's Cecil Essentials of Medicine* (9. Baskı), Editörler Ivor J. Benjamin, Robert C. Griggs, Wdward J. Wing, J. Gregory Fitz, Güneş Tıp Kitabevleri: Ankara, s.698.

19 It's a medical test to determine kidneys' speed

20 Bilir N. (2016). İş Sağlığı ve Güvenliği. Güneş Tıp Kitabevleri: Ankara, s.118.

21 Ibid.

22 Strazdins, L., Bammer, G. (2004). Women, Work and Musculoskeletal Health. *Social Science and Medicine*, *58*(6), 997-1005. doi.org/10.1016/S0277-9536(03)00260-0

23 Wijnhoven, H. A. H., De Vet, H. C. W., Picavet, H. S. J. (2006). Prevalence of Musculoskeletal Disorders is Systematically Higher in Women than in Men. *Clinical Journal of Pain*, *22*(8), 717-724. doi.org/10.1097/01.ajp.0000210912.95664.53

24 Yıldırak, N., Gülçubuk, B., Gün, S., Olhan, E., Kılıç, M. (2002). *Türkiye'de Gezici ve Geçici Kadın Tarım İşçilerinin Çalışma ve Yaşam Koşulları ve Sorunları.* Uluslararası Çalışma Örgütü, Ankara.

25 Çelik, K. Şimşek, Z., Tar, Y.Y., Duman, A.K. (2016). *Gezici Mevsimlik Tarım İşinde Çalışan Kadınların Çalışma ve Yaşam Koşullarının İrdelenmesi.* Dünya Bankası.

5.6 REFUGEE WORKERS AND THEIR CHILDREN

Syrian refugees put pressure on governmental agencies and CSOs and as a consequence a large part of these refugees had to work in various sectors as cheap labour force to subsist and maintain their families.

The situation of displaced workers or others moving elsewhere for economic reasons is in general worse than other seasonal migrant workers. Surveys reveal that their overall health status is also worse.[26] This is the outcome of not physiological differences of refugees but their socioeconomic status and risks emanating from this status. The sudden and mass inflow to Turkey of Syrian refugees in particular put pressure on governmental agencies and CSOs and as a consequence a large part of these refugees had to work in various sectors as cheap labour force to subsist and maintain their families. This informal labour force also constitutes a risk factor in respect to child labour.

The employment of refugee families and their children is a common phenomenon in seasonal agricultural works, which are largely informal, and with weak inspection mechanisms. In addition to this, these refugees are engaged in more hazardous works, work longer hours and are paid less. There are even cases where these groups work just for meals and a tent.[27] The situation gets even more serious with Syrian children: Physical and psychological trauma created by war and displacement makes children even more fragile. It is frequently observed that post-traumatic effects remain longer if children are not given rehabilitation earlier.

In addition to trauma and vulnerabilities deriving from the "very nature of migration", interruption of education and discrimination they face as children are also associated directly with their health status. They all undermine the emotional, physical and social development of children. Efforts to survive within SMAW, an already vulnerable group, 'brings along double vulnerability. One of the extreme examples of discrimination is that Syrian children work for longer hours and in heavier works than their Turkish peers. Here too, abuse is a greater risk for children and there is almost no supervision.

26 *Sen Oradaysan Biz de Oradayız*. (2015). Acıbadem Üniversitesi & Medikal Arama Kurtarma Derneği.

27 Ibid.

Syrians in Turkey (plus unregistered Syrians) have extremely limited access to healthcare services and what they can access is limited to cases of emergency.

Another point that must be raised in this context is that refugee groups other than Syrians in Turkey (plus unregistered Syrians) have extremely limited access to healthcare services and what they can access is limited to cases of emergency. Syrian refugees who have completed their registration process and with a given foreign identity number can benefit healthcare services in provinces they reside on equal terms with Turkish citizens. However, refugees who move to a province other than they are registered with have to be granted a "travel permission document" and register with the population affairs authority of the province they have arrived. While the present report was being prepared, it was reported that issuance of these documents is "frozen" temporarily. This means, in practice, Syrian refugees who have to work and live in another province are de facto denied access to healthcare services except cases of emergency. During our interviews it was stated that about 80 per cent of SMAW living and working in Adana Plain are Syrian refugees.[28] This sheer percentage is sufficient to draw attention to the dimensions of the problem.

28 *Then and Now: Seasonal Agricultural Workers and Their Children in the Adana Planin. (2017). The Development Workshop.*

5.7 PESTICIDES USED IN AGRICULTURAL PRODUCTION

Chemicals and fertilizers used in agriculture are classified by their hazardousness to human health by the World Health Organization (WHO). According to this WHO classification, for each crop covered in the report there is at least one chemical considered as moderately hazardous or hazardous. It must be added that hazards of chemicals may vary by several factors including protective measures adopted, training and experience of their users, etc.

Pesticide Toxicity Classification[29]

The World Health Organization classifies pesticides according to acute toxicity. The amount of a chemical required to kill 50 percent of an exposed population of laboratory rats is called LD50 (lethal dose 50%). For each product both oral and dermal intakes of LD50 are measured. Higher the toxicity of the product lesser the amount needed to be fatal or harmful for human beings.

	Oral LD50		Dermal LD50	
	mg per kg body weight reqired to kill 50% of rat population			
WHO category	**solids**	**liquids**	**solids**	**liquids**
Ia Extremely Hazardous	5 or below	20 or below	10 or below	40 or below
Ib Highly Hazardous	5-50	20-200	10-100	40-400
II Moderately Hazardous	50-500	200-2000	100-1000	400-4000
III Slightly Hazardous	Over 500	Over 2000	Over 1000	Over 4000

Chemicals and fertilizers classified as extremely hazardous and moderately hazardous have similar health effects. In acute phase they lead to symptoms that affect all systems including dizziness, nausea, headache, vomiting, diarrhoea, respiratory distress, burning eye and fit.[30] Fast progressing problems like these constitute the most common cause of SMAW application to healthcare services. But it is also known that acute effects may emerge after a time lapse of four weeks. In addition to these acute indications there are much more serious health problems resulting from long term exposure and both

29 World Health Organisation, Recommended Classification of Pesticides by Hazard, 2009, ISBN 978 92 4 154796 3 www.who.int/ipcs/publications/pesticides_hazard_2009.pdf

30 *The Deadly Chemicals in Cotton.* (2017). Environmental Justice Foundation in collaboration with Pesticide Action Network UK, London, UK. ISBN No. 1-904523-10-2.

their diagnosis and treatment take longer. Toxic chemicals contained in chemicals and fertilizers may cause, in longer term, cancers, degenerative-neurologic diseases, severe depression, learning difficulties and many others that affect different organs.[31,32]

The level of harm and effects on human health are affected by each step in the process of chemical use. It is known that shorter the half-life of a chemical, lesser its effects on human health. First of all, warnings and other information on the pack of the chemical must be easily understandable, clear and of sufficient size. These information and warnings must have a language fit for the education level of persons using them in crop fields and orchards. Under the survey there were face-to-face interviews with dealers, warehouses and farmers. Examining labels on containers of chemicals it was found that writings are too small and in some there was no information in Turkish. It can be considered as a problem since the formal education of SMAW is usually at primary school level and native language is not Turkish in many cases.

All warnings and other information on the pack of the chemical must be easily understandable, clear and of sufficient size. These information and warnings must have a language fit for the education level of persons using them in crop fields and orchards.

Persons to apply agricultural chemicals must have received certificated training from chambers of agriculture and with at least two years of experience. Under the *Regulation on the Use of Biocidal Products*[33] persons who would perform agricultural medication must absolutely have this certificate and no other person should be allowed to do it. Furthermore, holders of this certificate can apply medication only on their own farmland and more specialized training and professional certificate is required to engage in medication on farming lands of others. Further, chemicals used must also be registered with the Farmer Registration System (FRS). In interviews with staff from the Chamber of Agriculture, it is stated that 100,000 hectares of land in Turkey is not registered with the FRS and thus there is no supervision related to the use of chemicals on this land. Meanwhile, the amount of chemicals used by farmers registered with the FRS cannot be figured out. Hence, being registered or not does not make any difference in practice.

31 Ibid.

32 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

33 cevresagligi.thsk.saglik.gov.tr/2013-08-28-13-18-43/mevzuat/977-biyosidal-%C3%BCr%C3%BCnlerin-kullan%C4%B1m-usul-ve-esaslar%C4%B1-hakk%C4%B1nda-y%C3%B6netmelik.html

Another risk factor is the type of chemicals and their doses in using. It is known that the "only difference between medicine and poison is the dose of use". There are some agricultural chemicals and fertilizers that may be licensed for a crop and banned in others. It is observed in both Adana and Ordu that this ban is not complied with and cases of use of excessive amounts of unlicensed chemicals are too common. Studies conducted abroad show that excessive use of chemicals does not bring in much and it may even reduce next year's crop by damaging both soil and water.[34] Though there is no comprehensive survey in this issue in Turkey, it can be inferred that outcomes will be the same. The misbelief in benefits of excessive use of chemicals further increases their effects on workers and children. Given scientific studies that demonstrate the effects of normal dosage, the outcomes of overdose use can easily be estimated. Chemicals that cannot be absorbed and biodegraded by plant and soil will remain longer in environments and increase the risk of contact.

It is also very difficult to assess the effects of a single pesticide since some are used together and it is difficult to find out relative proportions of each.

It is almost impossible to fully assess the effects of agricultural chemicals on human body. Work to this end looks for traces of chemicals in human blood. It is of concern that some studies found biomarkers[35] in all workers and their families.[36] Meanwhile studies in the US report that at least 50 per cent of health problems associated with pesticides go undetected and it is almost impossible to keep track of long-term effects especially in mobile groups such as SMAW.[37] Further, it is also very difficult to assess the effects of a single pesticide since some are used together and it is difficult to find out relative proportions of each.

34 Jallow, M. F. A., Awadh, D. G., Albaho, M. S., Devi, V. Y., Thomas, B. M. (2017). Pesticide Knowledge and Safety Practices Among Farm Workers in Kuwait: Results of a Survey. *International Journal of Environmental Research and Public Health*, *14*(4). doi.org/10.3390/ijerph14040340

35 Biomarkers are catabolic or ruptured forms of pharmaceutics or substances used to detect the existence of that pharmaceutics or substance in blood.

36 Arcury, T. A., Quandt, S. A. (2011). Living and Working Safely: Challenges for Migrant and Seasonal Farmworkers. *North Carolina Medical Journal*, *72*(6), 466-70. doi.org/10.1016/j.biotechadv.2011.08.021

37 Das, R., Steege, A., Baron, S., Beckman, J., Harrison, R., Das, R., ... Harrison, R. (2017). Farm Workers in the United States, *3525*(December).

The main exposure for SMAW is when these chemicals are applied and the risk of exposure for children is when crops are collected. The risk for children is higher if they are nearby when agricultural spraying is carried out or somewhere close to the field/orchard. For both groups the ways that these chemicals enter the body and have their distortive effects are similar. Most commonly agricultural chemicals have their effects via respiratory and digestive systems and skin.[38]

The risk for children is higher if they are nearby when agricultural spraying is carried out or somewhere close to the field/orchard.

The use of personal protective equipment (PPE) is a method that should be adopted only if there is no chance of eliminating risks in their origin. So the use of PPE may prevent exposure to a certain extent. The use of gloves and masks substantially reduce both acute and chronic effects. When relevant behaviour was asked about during field visits it turned out that workers used almost no PPE at all, had their meals in fields and smokers smoked without taking off their gloves. These increase exposure and health problems like poisoning.[39]

There is more than just one reason for greater harm to children. Children's skin is thinner than adults and thus their first line of defence against external factors is weaker. Further, children breathe more relative to adults per unit of body weight and consume more water; it is because besides mere survival a child's body spends more energy for physical and mental development.[40]

Yet undeveloped state of kidney's filtering (clearance) function and insufficient production of liver enzymes is a factor extending the period of duration of toxic chemicals in body. An important reason why children are affected more severely by medicine is their body mass index.[41] As the value of this index increases so does the amount of chemicals that body can be exposed to per kilogramme. Working

38 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

39 Manyilizu, W. B., Mdegela, R. H., Helleve, A., Skjerve, E., Kazwala, R., Nonga, H., ... Lyche, J. (2017). Self-Reported Symptoms and Pesticide Use among Farm Workers in Arusha, Northern Tanzania: A Cross Sectional Study. *Toxics*, *5*(4), 24. doi.org/10.3390/toxics5040024

40 *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice.* (2006). International Labour Organization (ILO).

41 Children of Seasonal Migrant Workers. *Early Childhood Matters.* (2013). Bernard Van Leer Foundation & Early Childhood Matters, 121, 52.
bernardvanleer.org/app/uploads/2015/12/ECM121_Children-of-seasonal-migrant-workers.pdf

as SMAW starting from childhood or going out to crop fields with family lengthens the period of exposure and hence the cumulative effect of chemicals. This cumulative effect may lead to diseases like cancer in later ages. Major risks for children include leukaemia, sarcoma, lymphoma and brain cancers. There are many studies indicating that dental health problems including cavities in the first place are also among most commonly observed states of ill-health among children.[42,43,44]

The harm of these chemicals to pregnant women is also important.[45] In other words, health risks to children working as SMAW or accompanying their parents in their working places actually start before birth. In cases where chemicals known as carcinogen and toxic are used and women are exposed, the risks of stillbirth, involuntary miscarriage and contraction to genetic diseases increase further.[46] A study in the US found that the infant mortality rate is two times higher in SMAW groups than in general population.[47] In women at their reproductive ages, these chemicals cause infertility, lower blood values and kidney and liver dysfunctions.[48]

Health risks to children working as SMAW or accompanying their parents in their working places actually start before birth.

42 *Sen Oradaysan Biz de Oradayız*. (2015). Acıbadem Üniversitesi & Medikal Arama Kurtarma Derneği.

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6

OVERALL EVALUATION TABLE OF RISKS

The last part of the report presents an overall evaluation of risks faced by children in cotton, citrus fruit and hazelnut harvesting whose details are given above. For this purpose, Article 71 of the Labour Code and the Regulation on Employment of Child and Adolescent Workers are taken as basis to identify risk areas in the light of conditions that must be satisfied for the employment of children and risks corresponding to these areas are assessed in summary for each crop.

Article 71 in Labour Code refers to more than one criterion in determining where children can be employed. The first is age. As a principle, it is forbidden to employ children under age 15. However, there are two exceptions to this prohibition: (1) Children under age 14 can work in artistic, cultural and advertisement activities given that requirements stated in the law are satisfied; (2) Children over age 14 but under 15 can be employed only in light works.

Another criterion is related to the characteristics of the work. Works that children over age 14 and completed the age of compulsory education may be allowed to do must be in such nature as not to interfere with their physical, social and moral development and, if they are still continuing, their education. As to children over age 15, their work must not prevent their school attendance and continuation of vocational training.

As the last criterion, the Regulation on the Employment of Children and Adolescents gives the list of occupations children can and cannot work with reference to risks that these occupations pose. Accordingly, children under 18 cannot be employed when the following items exist:

- Danger of falling and getting injured.
- Pesticide and fertilizer application.
- Lifting loads heavier than 10 kilogrammes.
- Environments with high noise and/or vibration.
- Working under too hot or cold temparature.
- Use of substances harmful to health and leading to occupational diseases.

- Works requiring extreme attention.
- Works requiring standing on foot for long period of time.
- Payment on piece-rate and premium system.
- No possibility of returning home or to family upon the completion of work.
- Threat to development (safety, health, physical, mental, moral, psychological).
- Risks that may threaten development, health and safety due to children's inexperience, unawareness or yet not fully developed status that requires measures to be taken by employers.

Since there is yet no comprehensive study identifying these risks by crops or ways of farming, neither is there any source that can be used as reference in local level planning, determining minimum working age and carrying out inspection and prevention work. The purpose of this study is to fill this gap for three crops and to offer a reference source by assessing risks involved in cotton, citrus fruit and hazelnut harvesting. In this context the following table gives a summary assessment for each risk area mentioned above with respect to all three crops.

RISK AREA (1) DANGER OF FALLING AND GETTING INJURED

Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
Survey results did not reveal any risks in this area.	• There is danger of falling. Children are preferred when there is need to reach higher branches since their weight is fit for reaching fruits without breaking branches. This is the main source of the risk of falling. This risk is higher when citrus fruit harvesting is made on sloped land. • There is risk of getting injured. This risk exists since citrus fruit harvesting requires use of shears.	• There is danger of falling. Since hazelnut harvesting mostly takes place on sloped land there is serious risk of falling and getting injured.

RISK AREA (2) PESTICIDE AND FERTILIZER APPLICATION

Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
• Pest control is done in cotton harvesting to get bolls opened. Also chemicals are applied 6 to 8 times in a season against pests and insects.	• There are chemicals applied shortly before citrus fruit harvesting. While it is said that harvesting is not given start before the effects of pesticides are gone, there are cases of harvesting that start a day after agricultural spraying.	• Agricultural chemicals are used in hazelnut culture to combat diseases and children walk barefoot on ground where these chemicals are applied. Also, boxes of these chemicals are left open around and empty boxes are used for such purposes as fetching water.

RISK AREA (3) LIFTING LOADS HEAVIER THAN 10 KILOGRAMMES

Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
• There is risk of carrying heavy load. The weight of cotton sacks may vary from 10 to 15 kilogrammes. Carrying of this weight on back by children is harmful for the development of musculoskeletal system. • Risk of unbalanced carrying. The size of cotton sacks is often larger than the size of the child. This means unbalanced carrying in addition to the load itself. Keeping balance is more difficult as the size of the load gets larger.	• There is risk of carrying heavy load. After picking, citrus fruit is gathered in baskets of 25-30 kilogrammes and carried to the place where the first sifting is to be made. After sifting, products are filled in boxes of 20-25 kilogrammes and taken to trucks for loading. The way that these baskets and boxes carried on back or shoulders is damaging to the development of musculoskeletal system.	• There is risk of carrying heavy load. After picking, hazelnut is filled in sacks of 15 to 20 kilogrammes and carried on back by adolescent children. This is damaging to the development of musculoskeletal system of children concerned.

RISK AREA (4) ENVIRONMENTS WITH HIGH NOISE AND/OR VIBRATION

Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
Survey results did not reveal any risks in this area.		

RISK AREA (5) WORKING UNDER TOO HOT OR COLD TEMPERATURE[1]		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
• There is risk of working under excessively high temperature. In months of September-November when cotton harvesting takes place in Adana, the average highest temperature is around 33 C° (shade temperature) (the highest temperature recorded is 43 C°). It is observed that workers use hats, scarfs etc. while harvesting. But these are not sufficient. It is further observed that even in longer periods of work, almost no worker carry water with him/her and no practice of frequent water intake. Children need water more since they lose more water while working. Hence their risk is higher than that of adults.	• There is risk of working under excessively cold temperature. During the period November-February when citrus fruit harvesting work is the most intensive, the average lowest temperature in Adana is around 5 C° (the lowest temperature recorded is -8 C°). Working too long in cold weather is dangerous particularly for children and increases the risk of hypothermia. • There is risk of working under excessively high temperature. Citrus fruit harvesting may start in August and continue until May. In August, the average highest temperature in Adana may be as high as 35 C° (shade temperature) (the highest temperature recorded is 43 C°). It is frequently mentioned that working under these conditions may lead to fainting and dehydration. Since child's body expends more water and calorie relative to weight such dry and hot environments are much more dangerous.	• In hazelnut harvesting, temperatures drop and precipitation increases as altitude gets higher. This brings the risk of exposure to extreme cold and hypothermia.

RISK AREA (6) USE OF SUBSTANCES HARMFUL TO HEALTH AND LEADING TO OCCUPATIONAL DISEASES		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
Survey results did not reveal any risks in this area.		

1 Information about average temperatures by provinces retrieved from the website of the General Directorate of Meteorology of Ministry of Forestry and Water Works: www.mgm.gov.tr/veridegerlendirme/il-ve-ilceler-istatistik.aspx?k=H

RISK AREA (7) WORKS REQUIRING EXTREME ATTENTION		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
Survey results did not reveal any risks in this area.	• Since done by quick shearing, picking citrus fruit from trees is quite demanding and carelessness may lead to the injury of the child or another person.	• Since broken branches mean damage to an orchard, it is an undesired situation. This is why utmost attention is required.

RISK AREA (8) WORKS REQUIRING STANDING ON FOOT FOR LONG PERIOD OF TIME		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
• The average working day in cotton harvesting is 12 hours and large part of this daily work is performed on foot and in bended position.	• Citrus fruit harvesting is done on foot and in irregular body positions; children work on foot for 8-10 hours a day with only 3 rest breaks.	• Daily working time in hazelnut harvesting is 11 hours and at least 9 hours of this time requires continuously standing on foot. There are also risks associated with frequent bending keeping in balance on sloping land.

RISK AREA (9) PAYMENT ON PIECE-RATE AND PREMIUM SYSTEM		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
• Payment in cotton harvesting is mostly made over unit quantity, which means that workers are paid according to kilograms of cotton they picked. This system of payment invites the working of young children together with other family members for long hours a day.	• The most commonly used system of payment in citrus fruit harvesting is by per truck loaded. This system of payment invites the working of children for long hours a day.	While payment for hazelnut harvesting is mostly made on daily basis, there are also cases where workers are paid on unit basis.

RISK AREA (10) NO POSSIBILITY OF RETURNING HOME OR TO FAMILY UPON THE COMPLETION OF WORK		
Cotton harvesting	**Citrus fruit harvesting**	**Hazelnut harvesting**
Survey results did not reveal any risks in this area.		

RISK AREA (11) THREAT TO DEVELOPMENT (SAFETY, HEALTH, PHYSICAL, MENTAL, MORAL, PSYCHOLOGICAL)		
Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
Independent of any specific crop, there are also developmental risks associated with seasonally migratory way of life. These risks include accidents (travel to workplace, presence of nearby water canals or brooks, building fire for heating or cooking etc.), missing school, malnutrition, lack of access to healthcare services, to play and sports, etc. and discrimination and/or exposure to violence.		
RISK AREA (12) RISKS THAT MAY THREATEN DEVELOPMENT, HEALTH AND SAFETY DUE TO CHILDREN'S INEXPERIENCE, UNAWARENESS OR YET NOT FULLY DEVELOPED STATUS THAT REQUIRES MEASURES TO BE TAKEN BY EMPLOYERS		
Cotton harvesting	Citrus fruit harvesting	Hazelnut harvesting
• No measure is taken to prevent the access of children to equipment and chemicals used in harvesting. Related containers are kept open in places where children can reach and used for such purposes as fetching water.	• Quick use of shears poses a serious threat to children with yet undeveloped hand-eye coordination and experience in using such instruments. No protective equipment is provided by employees to reduce this risk. • Not enough time is allowed for going away of the effects of chemicals used before starting harvesting. • No measure is taken to prevent the access of children to equipment and chemicals used in harvesting. Related containers are kept open in places where children can reach and used for such purposes as fetching water.	• When children are not warned about not eating fresh hazelnut immediately after picking, they may fall ill since this may lead to diarrhoea. • There is no sufficient measure to keep chemicals used in harvesting out of the contact of children. Children mays walk round barefoot on poisoned ground. • No measure is taken to prevent the access of children to equipment and chemicals used in harvesting. Related containers are kept open in places where children can reach and used for such purposes as fetching water.

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DEVELOPMENT WORKSHOP

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