

Training resource pack on  
the elimination of hazardous  
child labour in agriculture

**BOOK 3**  
**ADDITIONAL RESOURCES**  
**FOR TRAINERS**

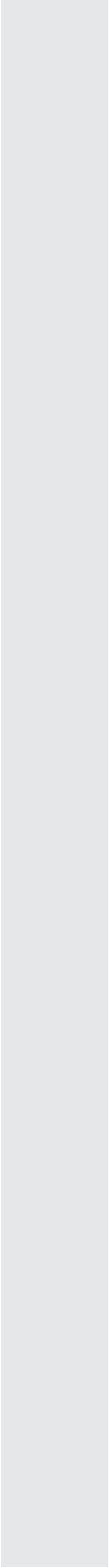


International  
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International  
Programme on  
the Elimination  
of Child Labour





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September 2005

International Labour Organisation  
International Programme for the Elimination of Child Labour

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TRAINING RESOURCE PACK ON  
THE ELIMINATION OF HAZARDOUS CHILD LABOUR IN AGRICULTURE

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BOOK 3

**ADDITIONAL RESOURCES  
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## BOOK 3: SECTION 1

### RISK MANAGEMENT

## Tackling OS&H by strengthening risk management

Section 1 of Book 3 is designed to help trainers to:

- integrate occupational safety and health principles in training activities with farmers
- use additional resources on occupational safety and health

The focus of the training materials in Book 1 is placed upon hazardous child labour and Prevention and Withdrawal strategies. However, we recognise that many children remain in the workplace in the short term:

- whilst prevention and withdrawal strategies are pursued, or
- because they have achieved the current minimum working age in their country (14-17 years)

These children remain at risk. So, there is a need to protect them whilst at work by improving occupational safety and health (OS&H) and working conditions and arrangements in the workplace. The additional resources in Section 1 below are provided on common hazards in agriculture. Provision of OS&H resources on hazards does not mean that hazardous child labour is being condoned or accepted.

The basis for improving OS&H standards and protection is by strengthening risk management in the agricultural undertaking. A key operational aspect of risk management is commonly called risk assessment. So we start Section 1 of Book 3 with a detailed sub section on risk assessment. The risk assessment principles outlined below should be applied to the hazards that are described afterwards.

## Risk assessment

The Safety and Health in Agriculture Convention No 184 (see Section 3 of Book 3 below for full text) refers in detail to the principles of risk assessment. According to the ILO<sup>1</sup> “Hazards and risks to workers’ safety and health should be identified and assessed on an ongoing basis.”

### What is a risk assessment?

A risk assessment involves three stages.

1. The first is identifying the **hazard** which we can define as – the potential to cause harm – which can include such things as workplaces, machinery, chemicals, tools such as machetes, and processes. A farmer should:
  - look around the workplace and see how people work
  - learn from experience of previous accidents and cases of work-related ill health
  - ask people who work on the farm for their views
  - think about the potential for harm with the different activities

The aim is to spot hazards that could result in harm.

2. Once the farmer has identified the hazards, she/he then has to evaluate the **risk** which we can define as – the likelihood that the harm from a particular hazard is realised. We need to decide who may be harmed, how they may be harmed and whether the risks from each hazard are controlled. So for example, if there are children working on a farm, the risks arising from hazards in the workplace are potentially much greater for them. They are more vulnerable due to a variety of factors including:
  - lack of work experience
  - lack of knowledge on hazards and risks, and on risk prevention and control measures and

<sup>1</sup> The occupational safety and health management system in the organisation Para 3.10

- children's bodies are still growing and their minds developing. Frequent awkward or heavy lifting and repetitive strains, for example, can permanently injure growing spines or limbs. Skin, eye, respiratory or nervous problems occur in children exposed to pesticides, and children are vulnerable to much lower levels of exposure than adults. There may well be chronic long-term health effects from exposure to pesticides that will not show up until the child is an adult
3. On the basis of the risk assessment, the farmer should adopt preventive and protective measures to ensure safety and health, and compliance with health and safety standards. The protective measures should follow the hierarchy laid down in ILO Safety and Health in Agriculture Recommendation 2001: Paragraph 5:
- elimination of the risk
  - control of the risk at the source
  - minimisation of the risk by such means as the design of safe work systems, the introduction of technical and organisational measures and safe practices and training, and
  - in so far as the risk remains, provision and use of personal protective equipment and clothing, at no cost to the worker

## **Risk assessment in practice**

Agricultural machinery is an example of a hazard. If there are dangerous parts of machinery that are unguarded, the risks of contact or entanglement are not controlled. On a farm where adults and children work, there is a risk to adults and children. But the risk to children is greater as they are unlikely to appreciate the dangers in the same way as an adult. So the risk to children in this case is very high. The farmer could eliminate the risk for children, by ensuring that children are withdrawn from the farm. She/he could minimise the risk for adults by placing a guard on the dangerous parts of the machinery.

## Examples of risk assessments

In Book 2 of this Training Resource Pack, two case studies were provided for participants in Training Activities 4 and 9. It will be a useful exercise to apply the principles of risk assessments to these two case studies.

### Case study 1 – Manual handling

*There was a cocoa farmer named Adeniyi who had a 13-year-old son named Kolawole. Adeniyi went farming to harvest his cocoa accompanied by his son. After harvesting and breaking the pods, Adeniyi loaded cocoa beans into bags weighing approximately 50 kgs each. Adeniyi carried these bags himself and also expected Kolawole to carry them. Although the cocoa was too heavy for Kolawole, he did not complain since his father carried bags himself. He also felt he should obey his father out of respect. After some time, one day while carrying a load, Kolawole collapsed. Adeniyi picked the boy up and rushed him to the clinic. The doctor examined Kolawole and found that he had sustained a spinal injury.*

1. The first step is to identify the hazard which in this case is manual handling. Manual handling includes lifting, putting down, pushing, pulling, carrying, moving or supporting a load by hand or bodily force. On looking at this activity it is clear that there is a hazard that could result in harm to Adeniyi and Kolawole from lifting 50 kilo bags.
2. We now have to evaluate the risk by deciding
  - who may be harmed
  - how they may be harmed, and
  - whether the risks from the manual handling hazard are controlled

From the information that we are given in the Case Study, both Adeniyi and Kolawole may be harmed by lifting and carrying such heavy weights. They both may suffer from musculoskeletal disorders such as aches, strains and sprains as a result of carrying the bags. But the risks arising from manual handling are potentially much greater for Kolawole.

He is thirteen years of age and is more vulnerable to permanent injury as his spine and limbs are still growing. From the information we are given, the risks from the manual handling hazard are not controlled.

3. We now have to consider preventive and protective measures based on ILO principles (see above), to ensure safety and health, and compliance with health and safety standards.

Adeniyi needs to harvest his crops so it is unlikely that the job can be avoided. But Kolawole should not be involved in the “manual handling” of heavy loads because this is one of “the worst forms of child labour” under Convention No. 182. Kolawole should be removed from work which involves the manual handling of heavy loads. At thirteen years of age, Kolawole should be restricted to “light work “activities after school is over and schoolwork has been done.

Adeniyi now has a number of options to improve his working conditions and minimise the risks from manual handling. Obviously, the solutions will depend on – local circumstances, whether resources and money are available, whether there are other farmers nearby who can loan equipment and so on – but might include using in the following order:

- a tractor trailer for transporting the beans
- small bins on wheels instead of bags, taking care that new risks are not created through pushing and pulling the bins
- smaller bags so that the weight of each bag of cocoa beans is far less than 50 kilos. This may mean more trips with the harvest, but the large weight to be carried in one bag is reduced
- a trolley, pallet, or mechanisation to move the bags to the means of transport that takes the of cocoa beans to market. Maybe the trolley or mechanisation and costs of this could be shared with other farmers who face similar problems
- two adults to lift each bag
- best practice and training for lifting – straight back; using leg muscles rather than back muscles; load close to body; no sudden exertion; handling loads in knee to shoulder region

## Case study 2 – Pesticides

*On a commercial plantation, there are three 16 year old workers who have recently been supplied with personal protective equipment (PPE) for use when they are spraying pesticides. Management did not consult the workers on the choice of PPE. The 16 year old workers do not wear the equipment because it does not fit properly and is uncomfortable. The manager takes no notice as he says that it is their choice.*

1. The first step is to identify the hazard which in this case is hazardous substances called pesticides. On looking at this activity it is clear that there is a hazard that could result in harm from spraying pesticides.
2. We now have to evaluate the risk by deciding
  - who may be harmed
  - how they may be harmed, and
  - whether the risks from the pesticides hazard are controlled

From the information that we are given in the Case Study, the three sixteen year old workers may be harmed by spraying pesticides. Pesticides (the suffix '-icide' means killer) are poisons designed to kill or control "pests", so working with pesticides is dangerous. The chemicals chosen to kill pests are selected because their toxic properties make them efficient at poisoning unwanted plants, insects, rodents and so on. These same properties make them potentially harmful to humans as we share many of the same chemical pathways as other natural organisms. All chemicals can be poisonous and cause injury or death – there are no safe substances. Like most other chemicals, pesticides which can enter the body directly or indirectly have the potential to cause both acute and chronic injury to human health.

The risks arising from pesticides use are potentially much greater for children under 18 years of age. Skin, eye, respiratory or nervous problems occur in children exposed to pesticides, and children are vulnerable to much lower levels of exposure than adults. There may well be chronic long-term health effects from exposure to pesticides that will not show up until the child is an adult. From the information we are given, the risks from the use of pesticides are not controlled.

3. We now have to consider preventive and protective measures based on ILO principles (see above), to ensure safety and health, and compliance with health and safety standards.

Before we look at protection measures for pesticides, we have to consider the involvement of three sixteen year old workers. They should not be involved in spraying pesticides because this is one of “the worst forms of child labour” under Convention No. 182, that is, “*work in an unhealthy environment which may, for example, expose children to hazardous substances*”. The use of Personal Protective Equipment is irrelevant. They should be removed from work which involves spraying pesticides.

If a farmer wants to introduce protection measures for **other adult workers** using pesticides, then the approach should follow the hierarchy below. Obviously, the solutions will depend on local circumstances.

## STEP 1: Elimination of the risk

The aim is to eliminate any possible risk by assessing if it is really necessary to use a pesticide? Check if:

- the weed, insect, or disease, been correctly identified, and is the degree of economic damage caused such that it warrants pesticide use?
- any other method of dealing with the pest problem is available? For example, integrated production and pest management, use of a non-chemical biopesticide, or an organic approach?
- the pesticide is legally approved and registered for the intended use?

If elimination of the risk is not possible, consider substitution:

- with a less hazardous pesticide?
- with a less hazardous formulation by using a granules instead of a liquid which can splash?

## STEP 2: Risk control

Risk control at source involves the use of what are known as *Technical and Engineering Controls*.

- Sealed mixing and filling systems for tractor-mounted sprayers.
- Pesticide formulations in dissolvable, water soluble plastic sachets.
- Pesticide tractor cabs fitted with approved, charcoal-based pesticide filters which absorb any pesticide before it enters into the cab.

**STEP 3:****Safe systems of work, the introduction of technical and organisational measures and safe practices**

- Ensure that there is a safe system of work in place, for example, are workers removed away from areas before spraying begins.
- Provide effective supervision.
- Check the spray equipment to see if it is in working order and properly calibrated.

**STEP 4:****Information and training**

- Ensure that farmers have had the correct training and are well informed of the law and what constitutes good practice.

**Hygiene and Health Surveillance**

- Provision of good washing facilities for users to wash after spraying.
- Provision of first aid equipment including eye washes.
- Provision of health surveillance.

**STEP 5:****Provision, use and maintenance/replacement of personal protective equipment (PPE)**

PPE is the least effective means of protecting the operator, and is the LAST control measure to be adopted, supplementing the other control measures identified above.

## Specific hazards and risks to child labourers in agriculture

The risk assessment principles outlined above should be applied to the hazards and risks that are described below. The description of hazards and risks are reproduced from IPEC's *Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice*<sup>2</sup>. Provision of OS&H resources on hazards does not mean that hazardous child labour is being condoned or accepted.

### Long hours of work, fatigue and sleep needs of adolescents

Long hours of work form part of the problem of hazardous child labour with too many children working too many hours. In agriculture, dawn to dusk is too often not an unusual working day, and the need for rest periods and holidays is generally ignored. There are also direct impact in terms of health and growth, with long term consequences in some cases.

Child workers of all ages may be particularly susceptible to fatigue and long hours of work due to physiological changes that cause them to require more sleep. As is now widely recognised, adolescents may actually need as much or more sleep than younger children. Sleep laboratory research has found that the amount of sleep needed by adolescents does not decrease significantly between the ages of 10 and 18 but remains at about 9.5 hours per night.

Fatigue or drowsiness associated with extended work hours may lead to poor judgement in performing duties, including the temptation to take dangerous shortcuts. Some work schedules such as those involving long or unusually late or early hours may contribute to fatigue in child workers, and fatigue is associated with an increased likelihood of injury. There is also evidence that insufficient sleep is associated with moodiness, irritability and difficulty in modulating impulses and emotions.

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<sup>2</sup> IPEC Tackling Hazardous Child Labour in Agriculture: Guidance on Policy and Practice, Guide Book 3

Long hours of work and associated drowsiness/sleepiness can interfere with schooling and education. Even if a child attends school, she/he may not be able to concentrate or participate fully due to being tired. US research findings indicate that working more than 20 hours a week during the school year can negatively affect student achievement to a significant degree. US National Agricultural Workers Survey data show, however, that many children in agriculture work 35 hours a week or more. Although some of these work hours might be during the summer, peak demand periods for agricultural work also take place during the fall and spring when the school year begins and ends.

There are many well documented cases of child labourers regularly working long hours, especially during busy periods like harvesting and planting.

## **Strenuous labour, heavy loads and musculoskeletal disorders**

Agricultural labour involves strenuous, heavy, often monotonous, work. Human effort provides more than 70 per cent of the energy required for crop production tasks in developing countries. The carrying of excessive and/or awkward loads, repetitive and often, forceful, actions, bending, stooping, and the adoption of awkward and uncomfortable postures can cause numerous but largely unreported musculoskeletal disorders in agriculture.

Musculoskeletal disorders include a group of conditions that involve the nerves, tendons, muscles, and supporting structures such as intervertebral discs. They represent a wide range of disorders, which can differ in severity from mild periodic symptoms to severe chronic and debilitating conditions. Examples include sprains and strains, carpal tunnel syndrome, tenosynovitis, tension neck syndrome, swelling of the wrist, forearm, elbow and shoulder, low back pain, hernia, arthritis, sciatica.

Manual handling includes lifting, putting down, pushing, pulling, carrying, moving or supporting a load by hand or bodily force. It is not just the weight of the load that can cause injury: the size and shape, the available grip, the way that the load is carried, where and how often it has to be carried, all play a part. Workers may suffer from musculoskeletal problems such as aches, strains and sprains as a result of manual handling. These can also be caused by other tasks which involve repetitive movements, force, unusual postures, prolonged pressure on a joint, badly organised working practices or work environment. There is strong evidence that various disorders of the neck, elbow, hand and wrist, and back are related to factors in the workplace.

Approximately 15 to 20 per cent of an individual's height is acquired between the ages of 10 and 20 years. About half that growth occurs during a 2-year period that includes the phase of most rapid growth, the peak height velocity. During this period of rapid growth, adolescents are at particularly high risk of injury to ligaments and to bone growth plates (epiphyses).

Heavy work at an early age has direct consequences on the child's physical and mental development. Physically, children are not suited to long hours of strenuous and monotonous work. Child agricultural labourers are particularly at risk of musculoskeletal damage as their bones are growing, joints developing etc. Their bodies suffer the effects of fatigue due to excessive energy expenditure faster than adults, and most of these children also suffer from malnutrition because of inadequate food intake, which lowers their resistance and makes them more vulnerable to illnesses. The prevalence of anaemia, poor nutrition and long hours of work further reduces children's working capacity, and fatigue contributes to the frequency and severity of accidents and diseases.

Such work may result in physical disability or impairment in later life. Back strains represent a fairly high proportion of the work-related strains affecting children. As back pain is rare among children and adolescents, and the history of back pain has been identified as a risk factor for new back injuries, the long-term consequences of back strains among adolescent workers are of substantial concern.

## Ergonomics

Ergonomics is the study of work in relation to the workplace environment in which it is performed and to the workers who perform it. It is used to determine how the workplace can be designed or adapted to the worker in order to prevent a variety of health problems and to increase efficiency; in other words, to make the job fit the worker, instead of forcing the worker to conform to the job. It is a broad science encompassing the wide variety of working conditions that can affect worker comfort and health, including factors such as:

- lighting and temperature
- noise and vibration
- tool, machine and workstation design
- footwear and protective equipment
- work organisation and job design, including factors such as shift work, rest breaks, and meals

Without the application of ergonomic principles, tools, machines, equipment and workstations are often designed without due consideration being given to the fact that people are of all different heights, shapes and sizes, and have different levels of strength. Women workers have suffered particularly in this regard. Similarly, there are mismatches between the size of adolescents and the dimension of equipment or machinery designed for adults. Traditional agricultural tools and methods in particular require high human energy input.

So children's safety and health problems arise because their physical proportions, working capacity and limitations are not taken into consideration in designing work methods, tools and equipment. Therefore, they are more at risk of being injured. Children using hand tools designed for adults run a higher risk of fatigue and injury. When personal protective equipment does not fit children, they have to work without it or use alternative devices, such as handkerchiefs to cover their nose and mouth, which do not provide protection. In heavy work, including the carrying of heavy loads, excessive stress may be placed on the bones and may result in skeletal damage or impaired growth because children are undergoing the process of growth and development.

**IPEC's position is that tools should not be better designed or work posts better adapted for child workers. Such developments would signal the recognition of child work as legitimising child labour.**

## **Extreme temperatures and climatic conditions**

Agricultural work involves extremes of temperature and climatic conditions. Child labourers may be exposed hot, humid work in tropical areas, and in temperate zones in the summer. Heat stroke and excessive sun exposure are hazards in these circumstances. Conversely, they may be exposed to cold, often wet, conditions in temperate zones, and in even in tropical zones at altitude, such as tea-growing estates.

Heat causes a dilation of superficial blood vessels and thus dehydration through excessive perspiration (sometimes rendered more severe by excessively protective and waterproof clothing), as well as leg oedemas, cramps and fainting/exhaustion, and facilitate poisoning through cutaneous absorption and the spread of pesticides inside the organism.

Heat stress is greater in children because their sweat glands are developing and the same moderately low environmental temperature will cause an increase in the consumption of oxygen of the child before that of the adult. As the child grows and becomes more active, muscular activity plays a more important part than temperature in oxygen consumption. However, a US study in part questions this assumption, by stating that, "It is well known that young children are more vulnerable to heat-related illnesses than adults; however, whether older children and adolescents are also more vulnerable than adults is not known".

Studies on the effect of heat exposure on workers' health have shown that temperatures that differ even minimally from the comfort zone tend to increase the risk of accidents.

Exposure to the sun can also cause burning, diffuse redness on the exposed parts of the skin, associated with cutaneous atrophy which may lead to localized thickenings after several years and varying degrees of sunstroke. Long-term exposure to the sun can lead to premature ageing of the skin and increased likelihood of skin cancers.

Low temperatures and lack of warm dry clothing can result in frost nip, chilblains and even frostbite and hypothermia in more extreme conditions. Working in cold and wet/rainy working conditions also increases the risk of respiratory infections. Working in humid/wet conditions, whether hot or cold, can also result in foot rots.

The negative effects of long hours of work may also be increased by the effect of extreme climatic conditions.

## Cutting tools

Where manual labour prevails, child workers regularly use cutting tools – machetes, knives, scythes, sickles etc. – to cut crops, hay, weeds, brushwood, and to split open fruit pods. Many injuries are machete-related, ranging from minor cuts to the severing of body parts. Repetitive and forceful actions associated with cutting can also harm children's musculoskeletal development.

The machete (cutlass) is the tool that is most commonly used by less skilled workers on the farm or plantation. Factors which affect both cutting injuries and musculoskeletal damage are the size of the machete, sharpness and cutting frequency. Keeping the machete sharp aids in reducing injuries since with a sharp machete the worker does not have to swing as hard and can maintain better control over the machete. Safety-gloves armoured with chain mesh have been developed to provide protection to the hand from machete-related injuries. In spite of the fact that machetes are so widely used, there is very little easily available safety literature on safer working methods.

Some high-growing fruits pose especial problems and risks when manually harvesting. Oil palm trees are cultivated in vast plantations in tropical regions throughout the world. Oil palm fruits grow in bunches four to five metres above the ground, along thorny leaf fronds, and weigh between 15 to 25 kilograms. Men and, sometimes, boys cut down fruit bunches from trees using a long, heavy pole with a knife on the end (a "Malay") or by climbing them to harvest the fruit directly. The use of the Malay puts a lot of strain on the musculoskeletal system.

## **Falls**

Falls may occur from heights or on the same level, or even into wells/pits. Falls from the same level occur from slippery surfaces, uneven ground, poor lighting, tripping over objects or being pushed by a moving object.

One of the most common causes of accidents is falling from ladders or working platforms. In the case of bins, silos, barns and other storage structures, falls from heights most often occur from and in storage structures. The causes are unguarded roofs, floor openings, stairways, lofts and shafts, and climbing ladders or standing on raised work areas such as an unprotected platform. Falls from height may also result from climbing on or off the transportation unit (for example, wagons, carts and tractors), or climbing trees to harvest fruit.

## **Falling objects**

There is also a danger of being hit by falling objects. These can include fruit or branches, especially when fruit is being cut standing under trees, or falling bales or containers where these are in stacks.

For example, oil palm trees are cultivated in vast plantations in tropical regions throughout the world. Oil palm fruits grow four to five metres above the ground, along thorny leaf fronds. Men, and often boys, use a cutting tool on along pole, and injuries can be sustained from falling fruit bunches, which are made up of thousands of oval-shaped fruits, and weigh between 15 and 25 kilograms.

## **Farm machinery**

Powerful and high speed machinery is used in agriculture. Many workers – child or adult – do not realise just how powerful machines are in comparison to their own power, nor do they fully comprehend how fast the machines are. A quick pull away action of a human arm normally generates less than 1 horsepower or even less. A small 16 horsepower machine such as a walk-behind mower may have 20-40 times more power to pull a person into the machine than the person can generate pulling away. A

medium-sized machine operating at 40-60 horsepower will have hundreds of times more power than a person.

Common machinery hazards and where they occur include pinch points, wrap points, pull-in points, shear/cutting points, free-wheeling parts, thrown objects, stored energy, burn points, and noise-induced hearing loss. For power-take off accidents (wrap/pull-in points) see tractors below.

Machinery safety is largely a matter of keeping the original guards and shields in place, and replacing them in position immediately after machinery repairs or maintenance, and promptly replacing damaged guards or shields.

### **Tractor accidents**

Farm tractors have many characteristics that result in them being the most important piece of power equipment on the farm. The most serious hazards associated with tractor operations include overturns, runovers, and power take-off (PTO) entanglement.

### **Overturns**

Tractor overturns fatally injure far more victims than any other type of accident. There are different types of overturn:

- rearward overturns – a tractor with its rear wheels turning at only 2 miles per hour (3 kph) will be vertical in 1 second if the object it is pulling resists movement. An inexperienced driver may need as much as 1.5 seconds to decide on and carry out remedial action. A chain or a towrope hitched to high could cause a rearward overturn of the towing tractor even on level ground
- driving near ditches or banks especially when turning is another common source of tractor overturns, as is working on steep slopes, especially if these are slippery, e.g. grass-covered, frozen etc.

The most important safety device for a tractor is a rollover protective structure – a bar or cab.

## Runovers

There are three basic types of runover incidents, when:

- a passenger (extra rider) on the tractor falls off the tractor and is run over by it
- the tractor operator falls off the tractor, or starts the tractor from the ground instead of from the operator's seat, and is run over by it
- a person already on the ground is run over by the tractor

Extra rider accidents occur because there is no safe location for an extra person on a tractor, yet the practice of taking extra riders is very common as a means of saving time, for convenience, or baby-sitting. Safety experts and tractor manufacturers strongly recommend against an operator carrying an extra rider for any reason.

Climbing onto or off farm trailers whilst still in motion, and falling beneath the trailers wheels and being crushed, is another common type of runover accident. Forklift trucks are another common source of knock down and/or runover accidents on farms and plantations.

## Power take off (PTO) entanglement

The tractor's power take off (PTO) stub shaft transfers power between the tractor and the PTO-powered machinery. Power transfer is accomplished by connecting a detachable drive shaft from the tractor's PTO stub to the machinery. The PTO stub and drive normally rotate at circa 540 rpm (9 times/second) or 1,000 rpm (16.7 times/second) when operating at full recommended speed. Most accidents or incidents involving PTOs stem from clothing suddenly caught by an engaged but unguarded PTO stub or shaft, or when feeding crop material into machinery intakes.

When a machine is running at full recommended PTO speed, crop material moves into the machine intake at approximately 3.7 metres/second. If a worker is holding onto crop material as it begins entry into the machine, she or he is usually unable to let go quickly enough to release the material before being pulled into the machine. In 0.3 seconds, the worker will be pulled 1.1m into the machine. This situation often happens when the crop material plugs the intake point of the machine and the

worker attempts to unplug it with the PTO engaged. A master shield over the PTO stub, and PTO guards on each detachable PTO drive shaft protect against entanglement.

## Noise

In an occupational setting, noise is most simply defined as unwanted sound. It is a combination of sounds at various frequencies and intensities. Continuous exposure to high levels of noise at work can cause permanent hearing problems and damage.

The main factors involved in hearing problems are:

- the noise level (based on sound intensity and sound frequency) – usually measured in units called dBAs
- the daily exposure to noise and over how many years

There is a risk of hearing damage from exposures upwards of 80 dB(A). As a guide, if you cannot hear a normal conversation clearly when you are two metres away from the speaker, the noise level is likely to be around 85dB(A) or higher. If you cannot hear someone clearly when you are about one metre away, the level is likely to be around 90dB(A) or higher.

Health effects of exposure to excessive noise are:

- “Peak” type of noise hearing damage (measured in units called pascals) where the level of noise may be so great that there is a risk of instantaneous hearing damage, such as when using cartridge operated tools or guns.
- Temporary hearing loss which is most noticeable when starting on a noisy job. For noise that is above 80dB(A) and is continuous, the sound energy transmitted to the hair cells of the inner ear is so great that they adapt by raising their threshold of response, shifting their field of sensitivity upwards and no longer responding to very soft sounds. This phenomenon is known as temporary threshold shift and its extent depends on the intensity of noise, its duration and to some extent on its frequency composition. Recovery from temporary hearing loss usually takes a few hours or at most a couple of days if the noise exposure has been severe.

- Permanent noise-induced hearing loss is a health effect which people working in conditions noisy enough to induce temporary hearing loss can expect to suffer after about ten years of such exposure. Loud continuous noise damages the sensitive hair cells in the inner ear. This damage is irreversible and the cells cannot be replaced. As this condition does not generally result in totally deafness, the main consequence of noise-induced hearing loss is the inability to understand speech in normal conditions, which is considered a severe social handicap. Even a slight impairment of hearing may result in a significant and irreversible reduction in the quality of life. Hearing loss cuts its victim off from other people, social interaction becomes more and more of a strain, and family life becomes difficult.
- Tinnitus, a disturbing 'ringing in the ear', which is actually the echo of our own hearing mechanism. Tinnitus usually persists all the time and is especially troublesome at night when it can prevent sleep. In people with normal hearing it will get drowned out, but as deafness sets in, the echo becomes tormenting.
- Stress can be produced by high noise levels, and this condition can contribute to cardiovascular and circulatory problems, digestive problems, psychological disturbances and symptoms such as nervousness or sleeplessness, reduced performance, and can provoke annoyance responses and changes in social behaviour.

In studies on noise exposure among young and adult workers, it has been found that young workers are more susceptible to noise-induced hearing loss than adults. Noise exposure limits set for adults would not be adequate for children.

## **Pesticides and other chemicals in agriculture**

The main categories of chemical substances used in agriculture are pesticides, chemical fertilisers, veterinary products, and general commodity chemicals.

## Pesticides

Pesticides are widely used in agriculture and to control organisms carrying diseases (vectors) and have extensive home, school, amenity and industrial uses. Many leaflets and books talk of fungicides, herbicides, insecticides, and the other classes of pesticides as though they were separate categories of chemicals when, in fact, they are all types of pesticides.<sup>3</sup> Pesticides are often referred to by other names such as agrochemicals, crop protection products or plant protection products.

It has been reported that an estimated 1 to 5 million cases of pesticide poisonings occur every year, resulting in 20,000 fatalities among agricultural workers. Most of these poisonings take place in developing countries where safeguards typically are inadequate or lacking altogether. Pesticide exposure of child labourers – whether they are involved in mixing and applying pesticides, or at risk from contamination from spray drift, a failure to observe pesticide re-entry intervals, or from contaminated soil or water- is one the main health and safety risks that they face. Furthermore, many of the pesticides used in agriculture in developing countries are ones that are banned or severely restricted in industrialised countries.

Pesticides may enter the body through the skin, by inhalation, and by ingestion. Child labourers can be exposed to pesticides in a variety of ways: through opening/handling pesticide containers; diluting, mixing and applying the substances; exposure to spray drift from being in the vicinity when crops are sprayed, contamination from acting as field markers for aerial spraying; contact with residues on plant leaves or on the soil surface (especially if working barefooted, and especially if they re-enter the field before the appropriate re-entry interval) during weeding, pruning and harvesting; and while eating and drinking in the field. Water may become contaminated and then be used for drinking, bathing, cooking, or even washing clothes.

<sup>3</sup> “Pesticide means any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport, or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or substances which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant, or agent for thinning fruit or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport.” Source: International Code of Conduct on the Distribution and Use of Pesticides. FAO Rome, revised version, 2003, p 6.

Particularly hazardous are labour intensive crops such as fruits and vegetable, which are extensively treated with pesticides.

Exposure to pesticides can result in immediate (acute) and long-term (chronic) health effects. There is concern for both the acute and chronic effects that might result from workers being exposed to pesticides and other agricultural chemicals, beginning at younger ages, especially childhood. Estimates of the occurrence of pesticide-related illnesses are difficult to make because under-reporting is likely. The impact on health of pesticide exposure depends on a variety of factors which includes the type of pesticide involved, its toxicity, the dose/concentration, the timing and length of exposure, and the way in which the exposure occurs. Health impacts include:

### **Acute poisoning**

Acute poisoning symptoms can range from mild to severe, depending on the pesticide involved and the degree of exposure, and include skin, eye and lung irritation, breathing difficulties, nausea, vomiting, loss of consciousness, sensory perception problems, heart symptoms etc. In some cases, such exposure may be fatal, though generally those poisoned will recover following medical treatment.

### **Long term chronic health effects**

Pesticides have also been associated with a number of delayed effects which only become apparent over a longer period of time. These include:

- Reproductive effects – certain pesticides have been linked to reproductive problems such as birth defects, spontaneous abortions, stillbirths, lower birth weights and early neonatal deaths
- Endocrine disruption – The endocrine system and the hormones it generates and controls play a key role in growth and development, and especially sexual differentiation, in human beings and animals. Many pesticides are capable of disrupting endocrine systems in pests, wildlife and laboratory animals. In small doses, these pesticides are able to mimic or block hormones or trigger inappropriate hormonal activity. At high enough doses during critical times of growth and development

such exposures have the potential to interfere with important developmental and reproductive functions and may cause sterility, lowered sperm counts, cancer of the reproductive organs and other health effects

Puberty is central to the normal growth and development that occurs in adolescence. The biological systems that lead to reproductive capacity are initiated and maintained by a complex system of hormones in the brain and reproductive organs. Although the time of onset and the speed with which each stage occurs vary widely among individuals, the events that mark puberty for both girls and boys occur in a predictable sequence. Although there are no data to demonstrate adverse effects on normal hormonal development, there are concerns that any chemical exposures that alter the delicate balance of these hormones and their feedback loops could have devastating effects, given the importance of the endocrine system during adolescence

- Neuro-toxicological and neuro-behavioural effects – impaired development of the nervous system can cause lowered intelligence and behavioural abnormalities. There is a lack of studies on neuro-behavioural effects
- Carcinogenic effects – cancers in children include leukaemia, sarcomas, lymphoma and brain cancer have been associated with parents or homes that have been exposed to pesticides. People may face an increased risk of developing cancer during their lifetime if they have been exposed to carcinogens in their childhood
- Immunological effects – a weakened immune system, particularly in growing children, exacerbates the risk of infectious disease and cancer, thus increasing mortality rates

Other chronic health effects include chronic dermatitis, fatigue, headaches, sleep disturbances, anxiety, memory problems, blood disorders and abnormalities in liver and kidney function, and chronic neuro-toxicity, and adverse reproductive consequences. Some of these effects may result in permanent ill health, and even death.

For some pesticides, chronic low dose exposures may cause effects such as impaired development of a nervous system, compromised immune system or cancer. Epidemiological studies have described statistical associations between various prenatal and/or low dose childhood pesticide exposures and increases in pregnancy loss, congenital malformations, childhood cancers and neuro-developmental disabilities. However, there are frequently limitations to epidemiological studies in this area, including uncertain and non-specific exposure assessment, lack of specificity in disease classification, and lack of control for confounding factors.

### **Fertilisers**

Chemical fertilisers, such as nitrates, phosphates and potassium, are plant nutrients and trace elements applied generally to the soil to promote crop growth.

Dry, chemical fertiliser, which is hygroscopic and attracts moisture, can draw out moisture from the skin and cause burns. There are many instances of child labourers applying chemical fertilisers with their bare hand or using a spoon. Dry fertiliser can also cause irritation of the mouth, nose and eyes. Liquid fertilisers also need careful handling as these are in a highly concentrated form.

Fertiliser residues in water may also cause health problems for the general population. Nitrogen is a basic ingredient in artificial fertilisers. Resulting nitrate pollution is considered to be one of the most serious water quality problems in the world. The most certain health risk due to excess nitrate absorption is “blue baby syndrome”. Nitrates are reduced to nitrites in the body, and nitrite interferes with the blood’s ability to carry oxygen to the body tissues, resulting in a bluish colour of the baby’s skin. Elderly persons with breathing difficulties may also be affected. There is also speculation that nitrates may be possible cancer-causing agents due to the formation of substances known as nitrosamines in the stomach/guts of humans and animals.

Fire is a risk with all types of fertilisers with toxic fumes again being released. Fertilisers containing 90% ammonium nitrate present an explosive risk whilst those with 80-85% or less are capable of self-sustaining decomposition when stored in large heaps with toxic fumes being given off. Avoid overlarge heaps of

fertilisers and store away from other flammables such as straw, diesel etc.

### **Veterinary products**

Veterinary products, often termed animal medicines, range in fact from powerful drugs to sheep dips, which in reality are pesticides. So the term 'medicine' can be misleading. Treat all veterinary products/medicines with caution. Certain veterinary drugs also need special storage to avoid human misuse. Equipment associated with administration of veterinary products includes syringes and needles, dosing guns, flutter valves, tail and ear tags etc. Safe storage of, and proper training in use and maintenance of much of this equipment is needed to minimise risks, such as avoiding needle stick injuries.

### **Commodity chemicals**

Commodity chemicals often come in bulk containers and contain caustic or corrosive materials. Chemicals in this category include, for example, powerful disinfectants for use especially in livestock production, acids for straw and silage treatment, and acids and solvents used for cleaning glass, machinery etc. Fumes released when mixing products can be a special hazard, especially if they are being used in confined or enclosed spaces.

### **Dusts**

Agricultural workers are exposed to a wide variety of animal and crop dusts, fibres, mists, fumes, gases and vapours, and micro-organisms which can cause respiratory and/or skin or eye problems. The health effects of dusts are dealt with in the next sub-section below on diseases.

Much of the dust that creates health problems is invisible to the naked eye. For example, minute particles of crop and livestock dust that penetrate into the deep lungs can be as small as 7-8 microns in diameter (a micron is one-thousandth of a millimeter). By way of comparison, the average width of a single strand of human hair is 100-150 microns.

## Diseases (Biological hazards)

There are a wide range of diseases resulting from agricultural work. The type of diseases that child and adult agricultural workers are at risk from are governed by the:

- types of organisms they are exposed to
- geographical region in which they live – tropical, temperate etc
- general environment in which they work and live
- general health status of the individual
- degree of malnutrition

Occupational diseases are acute or chronic illnesses arising from the inhalation, absorption, ingestion of, or contact with, harmful materials or /organisms in the workplace and immediate environment. Diseases can be contracted through routine exposures such as contact with animals (a term which includes, insects, mites, parasites etc), animal carcasses, working in or near livestock houses and stabling areas, contaminated plant material and crop dusts, or contaminated water or soil.

### Allergic respiratory diseases

In agriculture, respiratory diseases resulting from the development of allergic reactions to animal or crop dusts, that is, from dusts containing organic matter, are widespread. Plant material usually causes disease by inhalation of very fine vegetable dust into the respiratory tract. Vegetable matter may itself contain biologically active compounds such as histamines and acetylcholine. In addition to vegetable matter, these dusts may contain biological contaminants such as bacteria or moulds, or even storage mites. Pesticide residues may also be present. Animal material such as feathers or wastes may also cause similar types of diseases to plant materials.

The two main allergic-type respiratory caused by occupational exposure to organic dust particles are *occupational asthma* and *extrinsic allergic alveolitis*. In the case of both asthma and alveolitis, once an individual has been sensitised to a particular allergen, specific cellular changes occur so that, after a period of latency, further contact results in an acute allergic

reaction. Many allergic sensitisers have a gradual effect which appears only weeks or even years after exposure started (even in adulthood in the case of child labourers). Avoiding serious damage to health means removing the sensitised person from further exposure to the allergen. If exposure is allowed to continue, the respiratory symptoms will become progressively worse and may result in chronic lung disease, and may even become life-threatening.

### **Skin diseases**

The most common type of agriculture-related skin disease is irritant contact dermatitis. Acute contact dermatitis is characterised by skin reddening (erythema), swelling (oedema), pimples (papules), vesicles or blisters. It is especially localised on the hands, wrists and forearms. The chronic form can have deep fissures, thickening and hardening of the skin (lichenification), and severe dryness (xerosis). It can be incapacitating and even irreversible.

Irritant contact dermatitis can be caused by crop dust, vegetable and bulb plants, animal feeds, plus substances such as pesticides, motor/machinery oil and grease, degreasing solvents etc. associated with farm work.

Allergic contact dermatitis is a reaction to exposures to sensitisers in certain flowers produced in ornamental floriculture; chrome contained in rubber boots or gloves; veterinary antibiotics; pesticides; disinfectants and soaps. In vegetable production, for example, artichoke, brussel sprouts, cabbage, celery, chicory, chive, endive, garlic, horseradish, leek, lettuce, okra, onion, parsley and parsnip have been reported to contain vegetable allergens and to sensitise vegetable workers.

Other skin diseases include photo-contact, sun-induced, heat-induced, arthropod-induced dermatoses (arthropods are insect-type creature, e.g. mites). Certain photosensitive substances, such as mineral oils and greases and antibiotics, can produce acute inflammatory cutaneous lesions (including acne) when exposed to the sun. Dry, chemical fertiliser can draw out moisture from the skin and cause burns.

Fungal infections may be directly contracted from infected animals or developed in areas of skin maceration. This maceration results from humidity and heat, contact with sugar from fruit, and excessive perspiration due to the use of waterproof clothing such as rubber boots and gloves. Such lesions are often difficult to treat, take long to cure and are contagious.

Bites, scratches, stings and thorn punctures can also damage the skin, and may also be ways of disease getting into the body. These abrasions/wounds can become infected if not cared for and treated. They increase the likelihood exposure to diseases such as tetanus which can only enter the body through a wound or cut through.

The skin can also be a medium for absorbing harmful substances into the body. Tobacco harvesters can suffer from green tobacco sickness when working with damp tobacco leaves. Water from rain or dew on the tobacco leaves probably dissolves nicotine – an acute poison – facilitating its absorption through the skin. The symptoms are headache, pallor, nausea, vomiting and prostrations.

### **Diseases transmitted by animals to humans (zoonoses)**

Diseases of animals that can pass naturally from animals to humans from contact with animals or animal products – the technical term for which is, “zoonoses” – are caused by a wide range of infectious micro-organisms such as bacteria, fungi, viruses, protozoa, and rickettsias. They also include diseases which are not directly transmissible between animals and humans but have a common, inanimate reservoir such as soil (papozoonoses), an example of which is tetanus (which is contracted when wounds/cuts come into contact with tetanus-contaminated soil).

## **Livestock**

Agricultural child labourers working with livestock are frequently injured by being bitten, butted, jostled, stamped on, gored, or trampled. Animals do not need to be aggressive to cause serious harm, or even kill, a child. The dangers of mature cattle and horses are obvious, but sheep and pigs have caused serious injury, often when apparently playful.

Child labourers herd farm animals, water them, and/or milk them. Draught animals such as horses, donkeys, mules and oxen are used for dragging or carrying loads. These types of animals have injured workers by biting or kicking.

Children in pastoral communities may spend many months as shepherds/herders in remote, isolated areas looking after the herds. Herders are one of the most widespread categories of child worker in Africa. One of their principal tasks is to water their animals. "When the well is deep (40 to 50 metres), water must be drawn up with the help of a team of animals. The child worker must lead the team to the end of the pumping track and then lead it back to the well often at a run. Assuming a well depth of 40 metres and a container averaging 30 litres, the child worker has to travel 27 kilometres back and forth in order to water a herd of 200 camels.

## **Venomous/Wild animals**

In many parts of the world, in rural areas, there is constant danger from insects, reptiles and other animals. Hazards include being bitten by snakes or stung by spiders, scorpions, centipedes, hornets, wasps, bees, mites (acarids), and mosquitoes. In addition, child workers in tropical and sub-tropical areas, working in crops such as tobacco, are often exposed to bloodsucking creatures like leeches.

## **Psychosocial hazards**

Child labour damages children's mental health. Because of their premature incorporation into the workforce, children often have to perform tasks which are unsuited to their physical and mental abilities and needs. Working children are more vulnerable than adult workers because of a combination of psychological and social reasons. Some children at work are under psychological stress. The motivation for them to start working and to retain the job is to contribute to the financial support of the family, which is a heavy responsibility at an early age. Children react differently from adults when exposed to similar hazards. For example, child workers may prefer to face a challenge rather than be considered weak by other children, and may therefore attempt tasks that present greater risks.

## **Violence including harassment**

Violence is a workplace risk, and the prevention and control of violence are workplace issues. The term violence is used in its broadest sense to include all forms of aggressive or abusive behaviour that may cause physical or psychological harm or discomfort to its victims, whether they may be the intentional targets or innocent bystanders involved only impersonally or incidentally.

Child labourers face violence at work, including physical, mental and sexual harassment. Violence can include systematic harassment by managers and supervisors, harsh supervision, ganging up by fellow workers, to violence against workers by clients and members of the public. Sexual harassment is unwelcome conduct of a sexual nature which detrimentally affects the individual concerned and the work environment.

## **Drug addiction and agricultural child labour**

Drug addiction among agricultural labourers linked to the strenuous nature of their work may be an under-recognised problem. For example, Khat is a natural stimulant from small tree native to East Africa and Southern Arabia. Khat leaves contain a number of chemicals among which are two controlled substances – cathinone and cathine – according to US law. Chewed in moderation, khat alleviates fatigue and reduces appetite. Compulsive use may result in manic behaviour with grandiose delusions or in a paranoid type of illness, sometimes accompanied by hallucinations. It is used in Arabia, the Congo, Ethiopia, Kenya, Malawi, Tanzania, South Africa, Uganda, Zambia and Zimbabwe, and it has been brought into the USA and other countries for use by emigrants from the source countries. IPEC reports have shown child labour to be involved in khat production, and there is evidence that many of these children also become users.

## Poor sanitation and hygiene

A lack of clean drinking water, hand washing facilities, and toilets, especially when working in the fields, presents another hazard to agricultural workers. Both adult and child labourers are at high risk of infectious diseases, dermatitis, urinary tract infections, respiratory illnesses, eye disease, and other illnesses, and the spread of parasites is also encouraged. In addition, because there is a lack of day-care services for children in rural areas, parents often bring their infants and young children with them to the fields and they too are exposed to poor sanitation and hygiene. Lack of washed, clean clothing is often also an important problem.

## Substandard housing

Because many agricultural workers live where they work, their lives and occupations are inseparable. There is a close link between housing, worker well-being and productivity.

Housing of agricultural workers is characterised by inadequate and overcrowded installations, no heating, poor ventilation, deficient sanitary facilities and non-potable drinking water, which enhance the spread of communicable diseases such as upper respiratory tract infections, influenza and tuberculosis. Living conditions on many farms and plantations, or labour camps, remain inhuman, with workers living in tents, makeshift plastic huts/shacks or hostels for long periods. Poor housing may also be a factor in contributing to the spread of HIV/AIDS. In Asia, in tea plantations, it has been noted that the housing is generally substandard.

Another aspect of life for migrant (or individual) farm worker children is substandard, overcrowded labour camps, makeshift housing of cardboard, plastic or wood, or no housing at all.

## **Lack of child care facilities**

Child labour is also a child care issue. Parents bring their children to the fields because day care in rural areas either not available or little accessible or affordable. Thus infants, toddlers, and young children are exposed to the same workplace hazards as their parents.

## **HIV/AIDS**

AIDS (Acquired Immuno Deficiency Syndrome) is a disease caused by destruction of the immune system by a virus called HIV (human immunodeficiency virus). As the disease hits at the most productive age groups generally, most of the 40 million people infected with HIV, are in the prime of their working lives. At least 25 million of those infected with HIV are workers aged 15 to 49. The effects are momentous – on workers and their families, enterprises, and national and regional economies. The impacts on rural populations, their livelihoods, their farming systems, and food security have been especially severe.

There are an estimated 14 million children, under the age of 15, orphaned by AIDS, 95 per cent of them in Africa. By 2010 it is estimated there could be as many as 35 million. Little effort though has been made to correlate rises in child labour and HIV/AIDS in developing countries.<sup>4</sup> A series of IPEC rapid assessment studies in Africa suggests that HIV/AIDS is among the major causes of child labour in that region.

Poor housing and living conditions play an important part in transmission of the disease. A family or group of families may share one room and in certain instances spouses are not allowed to live together on the undertaking. Seasonal labour migration results in a high concentration of men living in labour camps without their families. All these practices coupled with poor working conditions and low wages have accelerated the spread of the disease among the workers. Access to information and health services is poor and people are unlikely to know how to protect themselves from infection.

<sup>4</sup> Rapid assessments by UNICEF and the ILO, as well as qualitative studies from the World Bank, have been conducted on the topic or closely related areas recently, and may shed light on this new area of study.

Child labourers are often at direct risk of infection. Through their vulnerability to sexual exploitation/harassment they can fuel the spread of the disease. Poor conditions of work and low wages have driven many workers into behavioural patterns that increase the risk of infection and transmission of the disease such as involvement in commercial sex, sexual favours etc.

The consequences for children and child labour include:

- When an adult in a family becomes ill with AIDS-related illnesses, children, especially girls, are likely to have to take on more household tasks, or seek income generating work, to make up for lost income, and to help pay for medical expenses. It is probable that a child or children in the household will have to leave school
- A parent dying of the disease, especially the “breadwinner”, increases pressure in children in the household to work
- Child-headed households – where both parents have died as a result of AIDS and the child is acting as head of the household and looking after her/his brothers and sisters
- AIDS orphans with no family who live and work on farms/plantations as their sole means of survival;
- The AIDS epidemic forces many children out of school and into child labour

## **Malnutrition/Poverty**

Malnutrition is the largest contributor to disease in the world. Malnutrition is directly or indirectly associated with 50 per cent of all child mortality. Childhood and maternal underweight alone are responsible for 138 million disability adjusted life years (DALYs) lost or 9.5 per cent of the global burden of disease.

Malnutrition weakens resistance to infections. Another consequence may be stunting – small physical size in relation to age – in rural child workers. Stunting is a process that begins in infancy and is a result of the dual impact of under-nutrition and infection. A study on farm workers highlights the problem, “Farm work in South Africa is remarkable for the closed nature of the sector. Farm workers tend to move from one farm to the

next but stay within the same social stratum. Relatively few children of farm workers manage to leave the sector, precisely because of the inadequate educational infrastructure in rural farming areas, and poor social circumstances, manifested in levels of childhood stunting of the order of 30 per cent.”

Malnutrition reduces mental capacity. Malnourished children are less likely to enrol in school, or more likely to enrol later. Currently, hunger and malnutrition reduce school performance. Better-nourished girls are more likely to stay in school and to have more control over future choices.

Malnutrition, hot and humid weather, and endemic diseases are all contributing factors to the capabilities and performance of agricultural workers.

Malnutrition is also part of the cycle of poverty, escape from which is extremely difficult. There is evidence that chronically undernourished farm children grow up to become chronically undernourished adult farm workers.

## BOOK 3: SECTION 2

### ILO AND IPEC

## International Labour Organisation (ILO)

The International Labour Organisation (ILO) is the United Nations (UN) specialised agency which seeks the promotion of social justice and internationally recognised human and labour rights. The ILO formulates international labour standards in the form of Conventions and Recommendations setting minimum standards of basic labour rights: freedom of association, the right to organise, collective bargaining, abolition of forced labour, equality of opportunity and treatment, *elimination of child labour* and other standards regulating conditions across the entire spectrum of work related issues. It also provides technical assistance in numerous fields.

The ILO also promotes the development of independent employers' and workers' organisations and provides training and advisory services to those organisations. Within the UN system, the ILO has a unique tripartite structure with workers and employers participating as equal partners with governments in the work of its governing organs.

## IPEC

The International Programme on the Elimination of Child Labour (IPEC) is a technical cooperation programme of the International Labour Organisation (ILO). IPEC aims to progressively eliminate child labour worldwide, emphasising the eradication the worst forms of child labour as a priority. Worst forms of child labour include slavery, forced labour, trafficking, debt bondage, serfdom, prostitution, pornography, and hazardous work.

IPEC works to achieve the phased elimination of child labour by strengthening national capacities to address the problem and by promoting a worldwide movement to combat it. IPEC collaborating agencies in a country include the ministries of labour, employers' and workers' organisations, as well as other concerned partners in the public and private sectors.

The policy framework for IPEC is based on the Declaration on Fundamental Principles and Rights at Work, adopted in 1998, along with the Minimum Age Convention No.138 (1973) abolishing child labour and Convention No.182 (1999) Eliminating and Prohibiting the Worst Forms of Child Labour.

## **IPEC action on child labour**

Since it began its operations in 1992, IPEC has worked to achieve its aims in several ways:

- through country-based programmes which promote policy reform
- building institutional capacity and putting in place concrete measures to end child labour
- awareness raising and mobilisation intended to change social attitudes and promote ratification and effective implementation of child labour Conventions

These efforts have resulted in hundreds of thousands of children being withdrawn from work and rehabilitated or prevented from entering the workforce.

IPEC's worldwide experience shows that as child labour is a complex problem, action to combat it must be holistic and multifaceted in approach so as to result in positive and sustained impact. Undertaking isolated measures has value in that it enables IPEC and its partners to test and demonstrate strategies. However, impact is best achieved through a whole array of interconnected and critical sets of action. It is not sufficient merely to have a programme that withdraws children from work or that rescues them from situations of the worst forms of child labour. It is imperative that these children are provided with viable developmental opportunities, including education and training, so that they do not return to the same kind of work or enter other, possibly worse, forms of child

labour. It is equally important that credible and cost-effective systems be put in place to ensure that “new” children do not replace those withdrawn from the workplace.

IPEC's gradual shift in its emphasis from being primarily a deliverer of operational programmes to a catalyst, facilitator and advocate for the child labour cause is expected to continue and intensify.<sup>5</sup> IPEC programmes reflect the fact that the causes of child labour are generally several and varied and so its solutions would need to come from many groups and perspectives. With this premise, the programmes work at the level of the children, their families, communities, the employers and adult workers, the government and society in general.

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<sup>5</sup> A Future Without Child Labour, ILO, Geneva, May 2002 p117

## **BOOK 3: SECTION 3**

### **KEY TEXT FROM ILO CONVENTIONS**

- C138 Minimum Age Convention 1973
- C182 Worst Forms of Child Labour Convention 1999
- C184 Safety and Health in Agriculture Convention 2001

## **C138: Minimum Age Convention 1973**

### **Key Articles**

#### **Article 1**

Each Member for which this Convention is in force undertakes to pursue a national policy designed to ensure the effective abolition of child labour and to raise progressively the minimum age for admission to employment or work to a level consistent with the fullest physical and mental development of young persons.

#### **Article 2**

1. Each Member which ratifies this Convention shall specify, in a declaration appended to its ratification, a minimum age for admission to employment or work within its territory and on means of transport registered in its territory; subject to Articles 4 to 8 of this Convention, no one under that age shall be admitted to employment or work in any occupation.

2. Each Member which has ratified this Convention may subsequently notify the Director-General of the International Labour Office, by further declarations, that it specifies a minimum age higher than that previously specified.

3. The minimum age specified in pursuance of paragraph 1 of this Article shall not be less than the age of completion of compulsory schooling and, in any case, shall not be less than 15 years.

4. Notwithstanding the provisions of paragraph 3 of this Article, a Member whose economy and educational facilities are insufficiently developed may, after consultation with the organisations of employers and workers concerned, where such exist, initially specify a minimum age of 14 years.

5. Each Member which has specified a minimum age of 14 years in pursuance of the provisions of the preceding paragraph shall include in its reports on the application of this Convention submitted under article 22 of the Constitution of the International Labour Organisation a statement—

(a) that its reason for doing so subsists; or

(b) that it renounces its right to avail itself of the provisions in question as from a stated date.

### **Article 3**

1. The minimum age for admission to any type of employment or work which by its nature or the circumstances in which it is carried out is likely to jeopardise the health, safety or morals of young persons shall not be less than 18 years.

2. The types of employment or work to which paragraph 1 of this Article applies shall be determined by national laws or regulations or by the competent authority, after consultation with the organisations of employers and workers concerned, where such exist.

3. Notwithstanding the provisions of paragraph 1 of this Article, national laws or regulations or the competent authority may, after consultation with the organisations of employers and workers concerned, where such exist, authorise employment or work as from the age of 16 years on condition that the health, safety and morals of the young persons concerned are fully protected and that the young persons have received adequate specific instruction or vocational training in the relevant branch of activity.

#### **Article 4**

1. In so far as necessary, the competent authority, after consultation with the organisations of employers and workers concerned, where such exist, may exclude from the application of this Convention limited categories of employment or work in respect of which special and substantial problems of application arise.

2. Each Member which ratifies this Convention shall list in its first report on the application of the Convention submitted under article 22 of the Constitution of the International Labour Organisation any categories which may have been excluded in pursuance of paragraph 1 of this Article, giving the reasons for such exclusion, and shall state in subsequent reports the position of its law and practice in respect of the categories excluded and the extent to which effect has been given or is proposed to be given to the Convention in respect of such categories.

3. Employment or work covered by Article 3 of this Convention shall not be excluded from the application of the Convention in pursuance of this Article.

#### **Article 5**

1. A Member whose economy and administrative facilities are insufficiently developed may, after consultation with the organisations of employers and workers concerned, where such exist, initially limit the scope of application of this Convention.

2. Each Member which avails itself of the provisions of paragraph 1 of this Article shall specify, in a declaration appended to its ratification, the branches of economic activity or types of undertakings to which it will apply the provisions of the Convention.

3. The provisions of the Convention shall be applicable as a minimum to the following: mining and quarrying; manufacturing; construction; electricity, gas and water; sanitary services; transport, storage and communication; and plantations and other agricultural undertakings mainly producing for commercial purposes, but excluding family and small-scale holdings producing for local consumption and not regularly employing hired workers.

4. Any Member which has limited the scope of application of this Convention in pursuance of this Article—

(a) shall indicate in its reports under Article 22 of the Constitution of the International Labour Organisation the general position as regards the employment or work of young persons and children in the branches of activity which are excluded from the scope of application of this Convention and any progress which may have been made towards wider application of the provisions of the Convention;

(b) may at any time formally extend the scope of application by a declaration addressed to the Director-General of the International Labour Office.

### **Article 6**

This Convention does not apply to work done by children and young persons in schools for general, vocational or technical education or in other training institutions, or to work done by persons at least 14 years of age in undertakings, where such work is carried out in accordance with conditions prescribed by the competent authority, after consultation with the organisations of employers and workers concerned, where such exist, and is an integral part of—

(a) a course of education or training for which a school or training institution is primarily responsible;

(b) a programme of training mainly or entirely in an undertaking, which programme has been approved by the competent authority; or

(c) a programme of guidance or orientation designed to facilitate the choice of an occupation or of a line of training.

### **Article 7**

1. National laws or regulations may permit the employment or work of persons 13 to 15 years of age on light work which is—

(a) not likely to be harmful to their health or development; and

(b) not such as to prejudice their attendance at school, their participation in vocational orientation or training programmes approved by the competent authority or their capacity to benefit from the instruction received.

2. National laws or regulations may also permit the employment or work of persons who are at least 15 years of age but have not yet completed their compulsory schooling on work which meets the requirements set forth in sub-paragraphs (a) and (b) of paragraph 1 of this Article.

3. The competent authority shall determine the activities in which employment or work may be permitted under paragraphs 1 and 2 of this Article and shall prescribe the number of hours during which and the conditions in which such employment or work may be undertaken.

4. Notwithstanding the provisions of paragraphs 1 and 2 of this Article, a Member which has availed itself of the provisions of paragraph 4 of Article 2 may, for as long as it continues to do so, substitute the ages 12 and 14 for the ages 13 and 15 in paragraph 1 and the age 14 for the age 15 in paragraph 2 of this Article.

## **Article 8**

1. After consultation with the organisations of employers and workers concerned, where such exist, the competent authority may, by permits granted in individual cases, allow exceptions to the prohibition of employment or work provided for in Article 2 of this Convention, for such purposes as participation in artistic performances.

2. Permits so granted shall limit the number of hours during which and prescribe the conditions in which employment or work is allowed.

## **Article 9**

1. All necessary measures, including the provision of appropriate penalties, shall be taken by the competent authority to ensure the effective enforcement of the provisions of this Convention.

2. National laws or regulations or the competent authority shall define the persons responsible for compliance with the provisions giving effect to the Convention.

3. National laws or regulations or the competent authority shall prescribe the registers or other documents which shall be kept and made available by the employer; such registers or documents shall contain the names and ages or dates of birth, duly certified wherever possible, of persons whom he employs or who work for him and who are less than 18 years of age.

## **C182: Worst Forms of Child Labour Convention 1999**

### **Key Articles**

#### **Article 1**

Each Member which ratifies this Convention shall take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency.

#### **Article 2**

For the purposes of this Convention, the term *child* shall apply to all persons under the age of 18.

#### **Article 3**

For the purposes of this Convention, the term *the worst forms of child labour* comprises:

- (a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict;
- (b) the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;

(c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;

(d) work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.

#### **Article 4**

1. The types of work referred to under Article 3(d) shall be determined by national laws or regulations or by the competent authority, after consultation with the organizations of employers and workers concerned, taking into consideration relevant international standards, in particular Paragraphs 3 and 4 of the Worst Forms of Child Labour Recommendation, 1999.

2. The competent authority, after consultation with the organizations of employers and workers concerned, shall identify where the types of work so determined exist.

3. The list of the types of work determined under paragraph 1 of this Article shall be periodically examined and revised as necessary, in consultation with the organizations of employers and workers concerned.

#### **Article 5**

Each Member shall, after consultation with employers' and workers' organizations, establish or designate appropriate mechanisms to monitor the implementation of the provisions giving effect to this Convention.

#### **Article 6**

1. Each Member shall design and implement programmes of action to eliminate as a priority the worst forms of child labour.

2. Such programmes of action shall be designed and implemented in consultation with relevant government institutions and employers' and workers' organizations, taking into consideration the views of other concerned groups as appropriate.

**Article 7**

1. Each Member shall take all necessary measures to ensure the effective implementation and enforcement of the provisions giving effect to this Convention including the provision and application of penal sanctions or, as appropriate, other sanctions.
2. Each Member shall, taking into account the importance of education in eliminating child labour, take effective and time-bound measures to:
  - (a) prevent the engagement of children in the worst forms of child labour;
  - (b) provide the necessary and appropriate direct assistance for the removal of children from the worst forms of child labour and for their rehabilitation and social integration;
  - (c) ensure access to free basic education, and, wherever possible and appropriate, vocational training, for all children removed from the worst forms of child labour;
  - (d) identify and reach out to children at special risk; and
  - (e) take account of the special situation of girls.
3. Each Member shall designate the competent authority responsible for the implementation of the provisions giving effect to this Convention.

**Article 8**

Members shall take appropriate steps to assist one another in giving effect to the provisions of this Convention through enhanced international cooperation and/or assistance including support for social and economic development, poverty eradication programmes and universal education.

## C184: Safety and Health in Agriculture Convention 2001

### Key Articles

#### Article 1

For the purpose of this Convention the term *agriculture* covers agricultural and forestry activities carried out in agricultural undertakings including crop production, forestry activities, animal husbandry and insect raising, the primary processing of agricultural and animal products by or on behalf of the operator of the undertaking as well as the use and maintenance of machinery, equipment, appliances, tools, and agricultural installations, including any process, storage, operation or transportation in an agricultural undertaking, which are directly related to agricultural production.

#### Article 2

For the purpose of this Convention the term *agriculture* does not cover:

- (a) subsistence farming;
- (b) industrial processes that use agricultural products as raw material and the related services; and
- (c) the industrial exploitation of forests.

#### Article 3

1. The competent authority of a Member which ratifies the Convention, after consulting the representative organizations of employers and workers concerned:

- (a) may exclude certain agricultural undertakings or limited categories of workers from the application of this Convention or certain provisions thereof, when special problems of a substantial nature arise; and

(b) shall, in the case of such exclusions, make plans to cover progressively all undertakings and all categories of workers.

2. Each Member shall list, in the first report on the application of the Convention submitted under article 22 of the Constitution of the International Labour Organization, any exclusions made in pursuance of paragraph 1(a) of this Article giving the reasons for such exclusion. In subsequent reports, it shall describe the measures taken with a view to extending progressively the provisions of the Convention to the workers concerned.

## II. GENERAL PROVISIONS

### Article 4

1. In the light of national conditions and practice and after consulting the representative organizations of employers and workers concerned, Members shall formulate, carry out and periodically review a coherent national policy on safety and health in agriculture. This policy shall have the aim of preventing accidents and injury to health arising out of, linked with, or occurring in the course of work, by eliminating, minimizing or controlling hazards in the agricultural working environment.

2. To this end, national laws and regulations shall:

(a) designate the competent authority responsible for the implementation of the policy and for the enforcement of national laws and regulations on occupational safety and health in agriculture;

(b) specify the rights and duties of employers and workers with respect to occupational safety and health in agriculture; and

(c) establish mechanisms of inter-sectoral coordination among relevant authorities and bodies for the agricultural sector and define their functions and responsibilities, taking into account their complementarity and national conditions and practices.

3. The designated competent authority shall provide for corrective measures and appropriate penalties in accordance with national laws and regulations, including, where appropriate, the suspension or restriction of those agricultural activities which pose an imminent risk to the safety and health of workers, until the conditions giving rise to the suspension or restriction have been corrected.

### **Article 5**

1. Members shall ensure that an adequate and appropriate system of inspection for agricultural workplaces is in place and is provided with adequate means.

2. In accordance with national legislation, the competent authority may entrust certain inspection functions at the regional or local level, on an auxiliary basis, to appropriate government services, public institutions, or private institutions under government control, or may associate these services or institutions with the exercise of such functions.

## **III. PREVENTIVE AND PROTECTIVE MEASURES**

### **GENERAL**

### **Article 6**

1. In so far as is compatible with national laws and regulations, the employer shall have a duty to ensure the safety and health of workers in every aspect related to the work.

2. National laws and regulations or the competent authority shall provide that whenever in an agricultural workplace two or more employers undertake activities, or whenever one or more employers and one or more self-employed persons undertake activities, they shall cooperate in applying the safety and health requirements. Where appropriate, the competent authority shall prescribe general procedures for this collaboration.

**Article 7**

In order to comply with the national policy referred to in Article 4 of the Convention, national laws and regulations or the competent authority shall provide, taking into account the size of the undertaking and the nature of its activity, that the employer shall:

- (a) carry out appropriate risk assessments in relation to the safety and health of workers and, on the basis of these results, adopt preventive and protective measures to ensure that under all conditions of their intended use, all agricultural activities, workplaces, machinery, equipment, chemicals, tools and processes under the control of the employer are safe and comply with prescribed safety and health standards;
- (b) ensure that adequate and appropriate training and comprehensible instructions on safety and health and any necessary guidance or supervision are provided to workers in agriculture, including information on the hazards and risks associated with their work and the action to be taken for their protection, taking into account their level of education and differences in language; and
- (c) take immediate steps to stop any operation where there is an imminent and serious danger to safety and health and to evacuate workers as appropriate.

**Article 8**

1. Workers in agriculture shall have the right:
  - (a) to be informed and consulted on safety and health matters including risks from new technologies;
  - (b) to participate in the application and review of safety and health measures and, in accordance with national law and practice, to select safety and health representatives and representatives in safety and health committees; and
  - (c) to remove themselves from danger resulting from their work activity when they have reasonable justification to believe there is an imminent and serious risk to their safety and health and so inform their supervisor immediately. They shall not be placed at any disadvantage as a result of these actions.

2. Workers in agriculture and their representatives shall have the duty to comply with the prescribed safety and health measures and to cooperate with employers in order for the latter to comply with their own duties and responsibilities.

3. The procedures for the exercise of the rights and duties referred to in paragraphs 1 and 2 shall be established by national laws and regulations, the competent authority, collective agreements or other appropriate means.

4. Where the provisions of this Convention are implemented as provided for by paragraph 3, there shall be prior consultation with the representative organizations of employers and workers concerned.

## **MACHINERY SAFETY AND ERGONOMICS**

### **Article 9**

1. National laws and regulations or the competent authority shall prescribe that machinery, equipment, including personal protective equipment, appliances and hand tools used in agriculture comply with national or other recognized safety and health standards and be appropriately installed, maintained and safeguarded.

2. The competent authority shall take measures to ensure that manufacturers, importers and suppliers comply with the standards referred to in paragraph 1 and provide adequate and appropriate information, including hazard warning signs, in the official language or languages of the user country, to the users and, on request, to the competent authority.

3. Employers shall ensure that workers receive and understand the safety and health information supplied by manufacturers, importers and suppliers.

### **Article 10**

National laws and regulations shall prescribe that agricultural machinery and equipment shall:

- (a) only be used for work for which they are designed, unless a use outside of the initial design purpose has been assessed as safe in accordance with national law and practice and, in particular, shall not be used for human transportation, unless designed or adapted so as to carry persons; and
- (b) be operated by trained and competent persons, in accordance with national law and practice.

## **HANDLING AND TRANSPORT OF MATERIALS**

### **Article 11**

1. The competent authority, after consulting the representative organizations of employers and workers concerned, shall establish safety and health requirements for the handling and transport of materials, particularly on manual handling. Such requirements shall be based on risk assessment, technical standards and medical opinion, taking account of all the relevant conditions under which the work is performed in accordance with national law and practice.
2. Workers shall not be required or permitted to engage in the manual handling or transport of a load which by reason of its weight or nature is likely to jeopardize their safety or health.

## **SOUND MANAGEMENT OF CHEMICALS**

### **Article 12**

The competent authority shall take measures, in accordance with national law and practice, to ensure that:

- (a) there is an appropriate national system or any other system approved by the competent authority establishing specific criteria for the importation, classification, packaging and labelling of chemicals used in agriculture and for their banning or restriction;
- (b) those who produce, import, provide, sell, transfer, store or dispose of chemicals used in agriculture comply with national or other recognized safety and health standards, and provide adequate and appropriate information to the users in the appropriate official language or languages of the country and, on request, to the competent authority; and

(c) there is a suitable system for the safe collection, recycling and disposal of chemical waste, obsolete chemicals and empty containers of chemicals so as to avoid their use for other purposes and to eliminate or minimize the risks to safety and health and to the environment.

### **Article 13**

1. National laws and regulations or the competent authority shall ensure that there are preventive and protective measures for the use of chemicals and handling of chemical waste at the level of the undertaking.

2. These measures shall cover, inter alia:

(a) the preparation, handling, application, storage and transportation of chemicals;

(b) agricultural activities leading to the dispersion of chemicals;

(c) the maintenance, repair and cleaning of equipment and containers for chemicals; and

(d) the disposal of empty containers and the treatment and disposal of chemical waste and obsolete chemicals.

## **ANIMAL HANDLING AND PROTECTION AGAINST BIOLOGICAL RISKS**

### **Article 14**

National laws and regulations shall ensure that risks such as those of infection, allergy or poisoning are prevented or kept to a minimum when biological agents are handled, and activities involving animals, livestock and stabling areas, comply with national or other recognized health and safety standards.

## **AGRICULTURAL INSTALLATIONS**

### **Article 15**

The construction, maintenance and repairing of agricultural installations shall be in conformity with national laws, regulations and safety and health requirements.

## **IV. OTHER PROVISIONS**

### **YOUNG WORKERS AND HAZARDOUS WORK**

#### **Article 16**

1. The minimum age for assignment to work in agriculture which by its nature or the circumstances in which it is carried out is likely to harm the safety and health of young persons shall not be less than 18 years.
2. The types of employment or work to which paragraph 1 applies shall be determined by national laws and regulations or by the competent authority, after consultation with the representative organizations of employers and workers concerned.
3. Notwithstanding paragraph 1, national laws or regulations or the competent authority may, after consultation with the representative organizations of employers and workers concerned, authorize the performance of work referred to in that paragraph as from 16 years of age on condition that appropriate prior training is given and the safety and health of the young workers are fully protected.

### **TEMPORARY AND SEASONAL WORKERS**

#### **Article 17**

Measures shall be taken to ensure that temporary and seasonal workers receive the same safety and health protection as that accorded to comparable permanent workers in agriculture.

### **WOMEN WORKERS**

#### **Article 18**

Measures shall be taken to ensure that the special needs of women agricultural workers are taken into account in relation to pregnancy, breastfeeding and reproductive health.

## **WELFARE AND ACCOMMODATION FACILITIES**

### **Article 19**

National laws and regulations or the competent authority shall prescribe, after consultation with the representative organizations of employers and workers concerned:

- (a) the provision of adequate welfare facilities at no cost to the worker; and
- (b) the minimum accommodation standards for workers who are required by the nature of the work to live temporarily or permanently in the undertaking.

## **WORKING TIME ARRANGEMENTS**

### **Article 20**

Hours of work, night work and rest periods for workers in agriculture shall be in accordance with national laws and regulations or collective agreements.

## **COVERAGE AGAINST OCCUPATIONAL INJURIES AND DISEASES**

### **Article 21**

1. In accordance with national law and practice, workers in agriculture shall be covered by an insurance or social security scheme against fatal and non-fatal occupational injuries and diseases, as well as against invalidity and other work-related health risks, providing coverage at least equivalent to that enjoyed by workers in other sectors.
2. Such schemes may either be part of a national scheme or take any other appropriate form consistent with national law and practice.

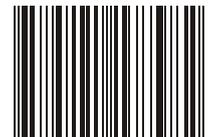


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