PROTECT CHILDREN AND YOUNG WORKERS FROM OCCUPATIONAL SAFETY AND HEALTH RISKS IN AGRICULTURE

A facilitator’s visual guide
PROTECT CHILDREN AND YOUNG WORKERS FROM OCCUPATIONAL SAFETY AND HEALTH RISKS IN AGRICULTURE

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Food and Agriculture Organization of The United Nations
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Contents

Getting started

Introduction ........................................................................................................ i
Layout and brief description of the six modules ........................................ iii
Differentiating between child labour and safe, age-appropriate tasks .......... v
Age matters! ..................................................................................................... vii

Module 1: Sprains, strains, bone fractures & musculoskeletal disorders (MSDs)

Session 1: Introduction .................................................................................. 1
1.1 How are children and young workers exposed to hazards that could cause sprains, strains, bone fractures and MSDs? .... 2
1.1.1 Working in uncomfortable positions and postures ....................... 2
1.1.2 Working with tools and equipment not designed for children and young workers ........................................ 4
1.1.3 Carrying and Moving Heavy Loads ............................................... 6
1.1.4 Why do children and young workers face greater risk of sprains, strains and bone fractures? ......................... 8

Session 1.2: What are the consequences to children and young workers of exposure to ergonomic hazards? .............. 10

Session 1.3: What can farming communities do to prevent or reduce exposure of children and young workers to the risk of muscle sprains, strains? ......................................................... 12
1.3.1 Working on Raised Platforms ......................................................... 12
1.3.2 Using Well-Designed Tools and Equipment .................................. 14
1.3.3 Carrying Light Loads Only ............................................................. 16

Module 2: Dangerous Tools, Unsafe Machinery, Falls/Slips and Extreme weather

Session 2: Introduction .................................................................................. 19
2.1 How are children and young workers exposed to dangerous tools, unsafe machinery, and the risk of falls/slips? .......... 20
2.1.1 Working with dangerous tools ......................................................... 20
2.1.2 Working with Unsafe Machinery or Equipment ............................ 22
2.1.3 Slips, Trips and Falls ................................................................. 24
2.1.4 Extreme weather, drought, floods and wildfires .......................... 26

Session 2.2. What are the risks to health and human development from working with dangerous tools, unsafe equipment and machinery, or in conditions subject to slips, trips and falls? ...... 28
2.2.1 Immediate and Long-term Effects ................................................. 28
2.2.2 Why do children face a greater risk of harm from dangerous tools, unsafe equipment and machinery, and to slips, trips and falls? .......................................................... 30

Session 2.3. What can farming communities do to prevent or reduce the exposure of children and young workers to dangerous tools, unsafe equipment/machinery, slips/trips and falls? .......... 32
2.3.1 Proper Operation and Maintenance of Machinery ....................... 32
2.3.2 Reducing the Risk of Slips, Trips and Falls ................................... 35

Module 3: Dangerous Animals, Diseases and Harmful Dusts

Session 3: Introduction .................................................................................. 40
3.1 How are children and young workers exposed to dangerous animals, diseases and harmful dusts? ......................... 41
3.1.1 Dangerous Animals .......................................................................... 41
Getting Started

Introduction

This visual guide has been designed for use by a facilitator to lead a discussion with a group of participants on how to prevent and reduce exposure of children and young workers to occupational safety and health hazards in agriculture.

The aim of this tool is to raise awareness and knowledge on the hazards that children and young workers in agriculture are exposed to, the physical and mental risks associated with such exposure, and how to address these to protect children’s wellbeing and improve working conditions, especially for young workers of legal working age.

Structure of the visual guide:

This visual guide is organized into six modules. Module 0 provides an introduction while Modules 1 to 5 each discusses a set of priority hazards frequently encountered by smallholder farming households in Uganda. Module 1 to 5 are each divided into three sessions:

**Session 1**
How are children & young workers exposed to the risk of physical or mental harm when doing agricultural work?

**Session 2**
What are the negative effects of physical or mental harm on health and human development? Why are children and young workers in agriculture at greater risk than adults?

**Session 3**
What can our community do to reduce exposure to hazards among children and young workers in agriculture?

Objectives:

- By the end of each module, participants will be able to:
  - Identify how children, including young workers, in agriculture are exposed to hazards that could cause physical and mental harm;
  - Describe the negative effects of exposure to hazards in agriculture and why children are at a greater risk of harm;
  - Discuss the role communities can play in preventing and reducing exposure of children and young workers to safety and health hazards in agriculture.
  - Facilitate the sharing of information on the control of hazards in agriculture.
Getting started
## Layout and brief description of the six modules

<table>
<thead>
<tr>
<th>Module 0</th>
<th>Getting started</th>
<th>This module provides information on the visual tool as well as a brief introduction to child labour and age-appropriate tasks.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module 1</strong></td>
<td>Sprains, strains, bone fractures &amp; musculoskeletal disorders (MSD)</td>
<td>This module discusses where and how children and young workers in agriculture are exposed to hazards such as poor lighting, repetitive motion, awkward movements, and poor posture, etc. The negative consequences of such exposure include injuries to the muscles and skeletal system.</td>
</tr>
<tr>
<td><strong>Module 2</strong></td>
<td>Dangerous tools, unsafe machinery, falls/slips and extreme weather</td>
<td>This module discusses where and how children and young workers in agriculture are exposed to unsafe working environments, dangerous tools and machinery. This hazards include slips, trips, falls, exposure to loud noises, heat, cold, working from heights, vibrations, and unguarded machinery and the negative consequences of such exposure.</td>
</tr>
<tr>
<td><strong>Module 3</strong></td>
<td>Dangerous animals, diseases &amp; harmful dusts</td>
<td>This module discusses where and how children and young workers in agriculture are exposed to people, animals and infectious plant materials that can be harmful. Examples of such hazards included blood or other bodily fluids, insect bites, dangerous animals, bacteria or viruses, harmful dusts and the negative consequences of such exposure.</td>
</tr>
<tr>
<td><strong>Module 4</strong></td>
<td>Agro-chemicals</td>
<td>This module discusses where and how children and young workers in agriculture are exposed to chemical substances such as pesticides and the negative consequences of exposure.</td>
</tr>
<tr>
<td><strong>Module 5</strong></td>
<td>Psycho-social factors</td>
<td>This module discusses where and how children and young workers in agriculture are exposed to work-related stress and the negative consequences to their mental and physical health.</td>
</tr>
</tbody>
</table>

**Note:**
The facilitator can begin by first discussing the symptoms and damaging effects of exposure to hazards in agriculture and then reflect on the various hazards and corresponding protection methods. Before beginning each training session, it is important to familiarize yourself with the illustrations and the corresponding text.
Getting started
Differentiating between child labour and safe, age-appropriate tasks

A **child** is a person younger than 18 years of age.

The child’s age is an important factor for differentiating between age appropriate tasks and child labour because not all children who work in agriculture are “child labourers”.

**Age-appropriate** tasks refer to tasks that do not interfere with the child’s education, are physically appropriate to the child’s development and allow sufficient time for recreation and leisure. Safe, age-appropriate tasks contribute to children’s development and welfare of their families enabling them gain skills and experience needed to become productive members of the society.

Children who have NOT attained the minimum age (below 14 years) for work are not allowed to work full time in agriculture or any other sector but should be in school being properly educated. They can engage in light work before and after school, weekends and school holidays.

**Light work** refers to non-hazardous activities done by children within their homes under observation and supervision of their families and not physically demanding in an environment free of exploitation.

Agriculture sector is one of the most hazardous working environments, especially for children. Much of the work children do in agriculture is not age appropriate, is likely to be hazardous or interferes with their education.

**Child labour** refers to work that is not age-appropriate, harms a child’s development (mental, physical, social or moral) and/or interferes with compulsory schooling.

**Hazardous work** is work which by its nature and/or circumstances under which it is performed, jeopardizes the health, safety and morals of a child.

Full participation in education should always be promoted for all boys and girls of school going age, including additional education and training opportunities afterwards.

Children who have attained the minimum legal age (14 years) for admission into employment, have completed compulsory education or are out of school, can be encouraged to engage in non-hazardous agricultural work provided they have been properly trained, work under safe, healthy conditions and are properly supervised by an adult.
Getting started
Age matters!

In Uganda, children are grouped into three categories when it comes to matters to do with work/employment:

- Children aged 5-11 years should only be involved in educational tasks helping their family members and always supervised by an adult;

- Children aged 12-13 years can be involved in light work: Not exceeding 14 hours per week, which is not dangerous, not done between 7pm and 7am at night, is supervised by an adult aged over 18 years, and does not interfere with their education;

- Children aged 14-17 years can be employed for not more than 43 hours per week but CANNOT do hazardous work.

The 14-17 age cohort deserve specific attention because:

It is a stage in life typically decisive in terms of how youth will transition from school to work and from being children to adults, where decisions are made that will affect their likelihood of transitioning out of poverty.

This age group are legally able to be employed but are easily exploited as they often do not benefit from the same rights and access to resources as adults, such as signing contracts and accessing financial services.

Girls can face additional barriers due to social and cultural norms, such as expectation of early marriage and pregnancy.
<table>
<thead>
<tr>
<th>Icons/Symbols</th>
<th>What they mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back strain</td>
<td>Direct sun light</td>
</tr>
<tr>
<td>Snake bite</td>
<td>Drought</td>
</tr>
<tr>
<td>Fall sign</td>
<td>Slippery surface</td>
</tr>
<tr>
<td>Muscle strain</td>
<td>Do not touch</td>
</tr>
<tr>
<td>Machine injury</td>
<td>Keep out of reach for children</td>
</tr>
<tr>
<td>Danger</td>
<td>Protect aquatic life</td>
</tr>
<tr>
<td>Protect your face</td>
<td>Use appropriate gloves</td>
</tr>
<tr>
<td>Wear a mask</td>
<td>Wash your Hands always</td>
</tr>
<tr>
<td>Use a respirator</td>
<td>Use overall or long-sleeved clothing</td>
</tr>
</tbody>
</table>
PROTECT CHILDREN AND YOUNG WORKERS FROM OCCUPATIONAL SAFETY AND HEALTH RISKS IN AGRICULTURE
MODULE 1
Sprains, strains, bone fractures & musculoskeletal disorders (MSDs)
Session objective

The participants can identify where and how children and young workers are exposed to the risk of sprains, strains, bone fracture or musculoskeletal disorder (MSD) when doing agricultural work and the negative consequences of such exposures. Participants will also become familiar with mitigation measures to put in place in order to promote safe practices, especially for young people.

Note for the facilitator

Explain that musculoskeletal disorder (MSDs)

Refers to injuries and disorders to soft body tissues including muscles, nerves, tendons, ligaments, joints, cartilage, and spinal discs.

When facilitating this session, first ask the farmers to think about the many physical activities performed by children and young workers during a farming season - such as tilling soil, planting seeds, weeding, pruning, lifting and carrying heavy loads, digging, climbing, harvesting - from the beginning of the season through all the stages of production, processing, storage, transportation and marketing.

Guide them to discuss the tasks that are typically carried out by children and young workers of different ages that may be hazardous.
Session 1.1 How are children and young workers exposed to hazards that could cause sprains, strains, bone Fractures and MSDs?

1.1.1 Working in uncomfortable positions and postures

Some tasks are performed high above the ground or in awkward postures that may require raising and/or stretching the arms to apply force, straining muscles in the arms, shoulders, neck, back or legs.

Other tasks are performed on the ground or below elbow level, requiring the worker to bend, lean, sit or squat for long periods of time. These tasks sometimes involve repetitive movements and high force.

Examples of exposure to uncomfortable positions and postures include:

- Manually milking animals while squatting.
- Harvesting crops involving cutting, plucking or picking.
- Cleaning or processing of the harvested crop.
- Manual spraying, pumping or pedaling.
- Pruning trees, slashing brush or weeds.
- Using equipment such as a plow, tractor, or adult-sized tools.

Note for the facilitator

Ask which tasks children and young workers of different ages typically carry out on the farm or in the community that may cause risk of muscle sprains or strains and bone fractures.

Key message

Tasks involving awkward postures, repetitive movements or high forces can cause injury and be harmful to the health and development of children and young workers both in the short- and long-term.
1.1.2 Working with tools and equipment not designed for children and young workers

Children and young workers who use tools or equipment that are designed for adults or are not adjustable to their normal standing or sitting positions face a greater risk of suffering a MSD such as a back, arm or shoulder injury.

Examples of tasks that potentially involve the use of poorly designed tools or equipment include:

- Digging or weeding using a hand hoe with a long shaft or heavy blade.
- Lifting, lowering or moving heavy objects with a cart, dolly or winch.
- Pushing or pulling heavily loaded carts or bicycles, especially on uneven ground.
- Using tools for drying, cleaning, sorting, or packaging the crop.

Note for the facilitator

Ask participants to identify the types of tools or equipment used in the community, describe how their use by children and young workers can affect working positions and postures and explain why children and young workers who use these tools or equipment face a greater risk of harm.

Key message

Children or young workers’ bodies are not fully developed should not be required to perform tasks using tools and equipment designed for adults - this can increase a risk of injury to their muscles and bones.
1.1.3 Carrying and moving heavy loads

Farms usually store, handle and transport many types of materials and commodities. Often these materials must be moved across uneven surfaces by hand or using inappropriate tools.

Children and young workers who lift or move heavy loads can experience pain, muscle fatigue and/or injuries to the back, neck, legs or shoulders. Carrying or moving heavy loads on uneven surfaces increases the risk of injury because of the risk of slips, trips, falls and dropping the load.

Handling heavy loads may occur while carrying out activities such as:
- Carrying seeds, water or chemicals to the fields.
- Carrying weeds and brush away from the fields.
- Transporting produce from the fields.
- Loading and offloading produce from vehicles.
- Moving equipment such as pumps or carts across the fields.

Note for the facilitator

Ask participants to identify agriculture tasks that involve carrying or moving heavy loads in their community, whether children or young workers are involved and why.

Key message

Carrying or moving heavy loads can cause serious physical injuries. Children and young workers should not lift or transport heavy loads.
1.1.4 Why do children and young workers face greater risk of sprains, strains and bone fractures?

Children and young workers:

- may be required to carry out tasks regardless of their physical strength and ability due to economic dependency on their labour;

- may be asked to perform tasks beyond their physical strength because they lack the power to say ‘no’ to commands from adults;

- often lack the safety awareness as well as work and training experience and are unable to make informed judgments about their own safety to protect themselves;

- have strong desires to help and to perform well, even if it means going beyond their physical capacities;

- may suffer physical harm but not tell anyone for fear of punishment or embarrassment;

- may copy unsafe practices from adults;

- may be poorly or harshly supervised, without regard for their increased risk of injury;

- are at a higher risk of musculo-skeletal harm and impaired growth because their bodies are still developing implying that their muscles are weak and bone tissues are softer which increases risk of severe damage.
Immediate and long-term effects

- Exposure to ergonomic hazards that cause MSDs may result in numbness, loss of strength, soreness and fatigue;

- Long-term exposure to repetitive motions, awkward postures, high stresses and forceful exertion may cause serious long-term injuries such as back pain, neck and upper extremity damage, stunted growth, spinal injury and other lifelong disabilities;

- Children and young workers are at greater risk of suffering long-term muscular and skeletal injuries from carrying heavy loads;

- Children and young workers who suffer musculoskeletal injuries are at a higher risk of suffering serious harm including stunting, spinal injury, loss of limb
The most effective way of reducing the risk of muscular injuries is by eliminating the hazard at its source through engineering control or substitution. This should be accompanied by provision of relevant information and training of workers on safe use of working tools as well as Personal Protective Equipments (PPEs) where necessary.

### 1.3.1 Working on raised platforms

Using raised platforms (e.g. stools, drying racks, tables, ladders, etc) can enable children and young workers to carry out tasks such as milking animals, cleaning, sorting or drying of produce, harvesting crops, and loading goods, in comfortable postures;

**Key Message**

Avoiding awkward postures and stresses will reduce pain and fatigue, lower the risk of injury and allow more work to get done.
1.3.2 Using well-designed tools and equipment

- Workers are encouraged to use tools and equipment that are appropriate in relation to their height, weight, strength, and skill level when performing different farming operations;

- commonly used tools and equipment such as hoes and shovels should have shafts of appropriate length and weight for children and young workers to perform manual tasks such as tillage in normal standing postures and minimize bending, squatting, or straining;

- tools and equipment to be used by children and young workers should be of appropriate size that matches their height and physical strength.(e.g., the hoe, shovel blade, or pushcart should be smaller and lighter).

Key message:

By using properly designed tools, equipment, machines and work platforms, agricultural workers are able to carry out their tasks in more natural postures that greatly reduce the risk of suffering a MSD.

Well-designed tools and equipment can also allow agriculture workers to perform tasks more efficiently and productively.
1.3.3 Carrying light loads only

- It is important that children and young workers in agriculture carry loads that are appropriate to their body weight and physical strength;

- heavy loads should only be carried out by adults yet when feasible, adults should use labour saving technology such as wheelbarrows, bicycles, wheeled carts, levers, pulleys, and winches;

- use of labour saving technology will greatly reduce the risk of a musculoskeletal injury.

Notes for the facilitator

After this first session is complete, ask participants to brainstorm additional ideas that would reduce the risk of harm to young workers related to muscular and skeleton injuries. Make a list of the group’s ideas on a poster.

Go through the list and ask them to identify which items have already been done, and what still needs to be done. Ask participants to each identify one item from the list to follow up on immediately and to report back to the group on how it went during the next meeting or training session.

Key message:

Children and young workers are at greater risk of suffering long-term muscular and skeletal injuries from carrying heavy loads.

Overall, it is important to recognize age appropriate tasks and sharing knowledge among household and community members, including appropriate weight to be carried, safe and appropriate tools to use or avoid, safe postures and more.
MODULE 2

Dangerous tools, unsafe machinery, falls/slips and extreme weather
Session 2

INTRODUCTION

Session objective

The participants are able to identify where and how children and young workers are exposed to dangerous tools, unsafe machinery, the risk of falls/slips and extreme weather the negative consequences or long-term effects of such exposure, as well as relevant mitigation measures.

Notes for the facilitator

Farm operations involve the use of different types of technologies from hand tools to complex equipment and machinery.

Farm operations may take place indoors or outdoors, including working from heights or in confined spaces; using dangerous or poorly designed equipment and tools; exposure to engine exhaust, vibrations, and extreme temperatures, all of which expose child workers to a significant risk of harm.

Agricultural work also involves the risk of working in extreme weather conditions, including high heat, cold, drought, floods, rainstorms, high winds, lightning and wildfires. These conditions may cause heat- or cold-related illness, injury, or even death.
2.1.1 Working with dangerous tools

- Examples of tasks where workers may be exposed to dangerous tools include:
  - Land and crop preparation – slashing, burning, cutting, clearing, weeding, digging, ploughing, pruning;
  - Harvesting and processing – cutting, digging, climbing, sorting, peeling, slicing, chopping, and slaughtering.

Note for the facilitator

Guide the participants to think of the different types of activities carried out by children and young workers of different ages either on the farm, in transit or in the markets. Which of these tasks involve the use of dangerous tools?

Ask participants to list the tools they have seen children use and in which context?

Key message

Children and young workers may be particularly vulnerable to injury from the use of dangerous tools because of their limited experience or training, lack of safety awareness or information, and lack of supervision.
2.1.2 Working with unsafe machinery or equipment

Farm operations require the use of a wide variety of technologies ranging from simple hand tools to complex and dangerous equipment and machinery. The machinery may be powered by draught animals, wind, steam, internal combustion engines or electricity.

Examples of tasks involving use of dangerous machines/equipment include:

- Land clearing (slashing, bush clearing).
- Field operations (ploughing, planting, weeding, chemical application, harvesting).
- Processing (cutting, slicing, chopping, cleaning, sorting, milling, packing, heating, cooling).
- Transportation (carrying, loading, offloading, moving).

Notes for the facilitator

Ask the participants to list the types of equipment, machines and installations they commonly use to carry out different farming operations throughout the farming season.

The facilitator can probe further by asking how children’s exposure to this equipment might be dangerous.

Key message

Children and young workers should not be allowed to operate or maintain dangerous machinery or equipment even when the power source is turned off.

Injuries to children and young workers due to exposure to farm equipment and machinery are extremely serious and include amputations, hearing loss, eye injuries, crushing, electrocution, and carbon monoxide poisoning from exhaust gases.
2.1.3 Slips, trips and falls

Agricultural workers commonly experience slips, trips and falls when carrying out farming activities at heights, on ladders or raised platforms, and due to slippery and uneven surfaces.

- Examples of tasks or working conditions where workers may be exposed to slips, trips or falls include:
- Working at heights such as from ladders, in trees, silos, storage barns, and damaged bridges.
- Unprotected floor openings/holes/pits, slippery or steep walking surfaces.
- Areas with poor lighting and visibility or when carrying objects that block the view.

Notes for the facilitator

Guide the participants to think about the various farming activities in the fields, farm buildings, and facilities where workers may be exposed to slips, trips and falls.

The facilitator can probe further by asking how children’s participation in these farm operations may increase their risk of injury from slips, trips or falls and why.

The facilitator can ask participants what they see in this illustration.

Key message

Children and young workers may be particularly vulnerable to slips and falls when they work in unsafe environments. They lack the experience and judgment to look out for hazards, and may overestimate their ability to work safely in slippery conditions or in areas without adequate lighting. Children do not have an adult’s capacity to anticipate danger from unsafe working conditions, and are more often motivated to work hard and please their elders than to work safely.
2.1.4 Extreme weather, drought, floods and wildfires

Agricultural work exposes children and young workers to the risk of working in extreme weather conditions, including high heat, cold, drought, floods, rainstorms, high winds, lightning and wildfires.

Examples of exposure to extreme weather include:

- Children and young workers who work in extreme heat or for long periods in hot environments may be at risk for heat stress and dehydration;

- Floods threaten children’s survival and development, with direct impacts including injuries and death by drowning. Floods compromise safe water supplies and damage sanitation facilities, increasing the risk of diarrhoea and other disease outbreaks. Flooding often endangers children’s access to education and safe housing. Flash floods pose special risks to children, because they combine the destructive power of a flood with incredible speed. Flash floods occur when heavy rainfall exceeds the ability of the ground to absorb it. In many countries, floods kill more people each year than tornadoes, hurricanes or lightning;

- Droughts have multiple effects on poor families and communities. Crops fail, livestock die and income drops, leading to food insecurity. Water becomes scarce and the lack of food and water, can result in disease and social disorder, with children among the most vulnerable;

- Children exposed to wildfires, including those started by lightning, are at risk from fire, smoke, and psychological stress. Acute stress from fires and the emotional responses of others around them can also impact children during this time. Children are especially vulnerable to smoke, as they are in a critical period of development when toxic exposures can have profound negative effects.
What are the risks to health and human development from working with dangerous tools, unsafe equipment and machinery, or in conditions subject to slips, trips and falls?

2.2.1 Immediate and long-term effects

- Slips, trips and falls can cause strains, sprains, bruises, lacerations, fractures and even infections.
- Exposure to loud noise can cause hearing loss.
- Exposure to engine exhaust can cause carbon monoxide poisoning or suffocation.
- Dangerous machinery and equipment can cause amputations, crushing injuries, electric shocks, and blinding.
- Children exposed to extreme cold can develop a dangerously low body temperature (hypothermia). Children and adults respond to cold extremes by shivering, developing “goose bumps”, and experiencing a slow heart rate. Eventually the shivering ends, and disorientation and lack of responsiveness occur, sometimes leading to death.

Note for the facilitator

The facilitator can probe further by asking how children are particularly vulnerable to long-term negative health consequences related to the above.
2.2.2 Why do children face a greater risk of harm from dangerous tools, unsafe equipment and machinery, and to slips, trips and falls?

- Economic dependency on children’s work may require children to work with dangerous tools and equipment;

- children may be asked to perform tasks involving unsafe tools, equipment, or walking/working surfaces; children lack the power to say ‘no’ to an adult command;

- children often lack safety awareness as well as the work experience to make informed judgments about their own safety to protect themselves;

- children have a strong desire to help and to perform well, even if it means working with dangerous tools or equipment, or in dangerous conditions;

- children may suffer physical harm on the job but not tell anyone for fear of punishment or embarrassment;

- Children may copy unsafe practices from adults who are much more experienced.

- children are at higher risk of long term harm from a work injury because their bodies are still growing and developing; they are more vulnerable to suffering permanent harm from a work injury.
Session 2.3 What can farming communities do to prevent or reduce the exposure of children and young workers to dangerous tools, unsafe equipment/machinery, slips/trips and falls?

The risk of injury from dangerous tools, unsafe equipment and machinery, and slips, trips and falls at the work place can be reduced through:

- Total elimination of machine-related hazards and associated risk may be difficult given the nature of the tasks and range of machines, tools and equipment used to accomplish various agricultural tasks;

- However substituting materials and fixing equipment can help to reduce the hazard.

- If it is not possible to eliminate the hazard completely, the next option should aim at reducing the risk of exposure to the hazard through use of engineering controls including devices, structures or switches (e.g. machine guards, barriers, sound proofing, adequate lighting, cleaning of slippery surfaces, etc) or changing work practices to eliminate worker exposure to the hazard;

- Administrative controls aimed at promoting safe working systems and procedures should be in place to ensure the provision of adequate information, instruction and training for those using equipment, tools or machinery;

- Use of appropriate Personal Protective Equipment (PPE) such as boots, face masks, helmets, and gloves should be considered as a last resort because it is less effective, especially for children;

- Ensuring proper maintenance and storage of tools/equipment/machinery, and reducing exposure of workers to heights and uneven/slippery surfaces also reduces the risk of harm.
Notes for the facilitator

Ask participants to brainstorm and make a list of the group’s ideas on a poster.

Go through the list and ask them to identify those items that are have already been done, and what still needs to be done.

Ask participants to each identify one item from the list to follow up on immediately and to report back to the group on how it went during the next meeting or training session.

Key message

Prioritize the elimination/substitution of the hazard, and the use of technical/engineering controls to isolate the worker from the hazard. Use changes in work practices to limit exposure to the hazard.

PPE should only be used as a complementary measure after all other approaches have been exhausted.

PPE is the least effective means to improve workplace safety, especially for children.
2.3.1 Proper operation and maintenance of machinery

The risk of injury from operating machinery and equipment can be reduced by:

- Using simple and practical engineering controls such as guards, covers, barriers, feeding devices, and proper ventilation;

- Conducting routine preventive maintenance of equipment, machinery and work areas including proper storage;

- Using hand signals to safely communicate in noisy situations.

- Correctly wearing appropriate Personal Protective Equipment (PPE) such as boots, googles, face masks, helmets, and gloves.

Key message

Ensure that all guards and protective covers are in place before operating any equipment. Only allow trained operators to use potentially hazardous machines.

Never come in contact with hot or moving parts of machines, or power sources, turn off and disconnect power before conducting maintenance.

Never allow children to operate powered machinery and equipment even when power has been switched off.
2.3.2 Reducing the risk of slips, trips and falls

The risk of injury from slips, trips and falls can be reduced by:

- Using simple and practical working tools such as ladders, long sticks, ropes, and pulleys to safely reach and move objects;

- ensuring that pits, holes, gaps, and other floor openings are covered or guarded off with barriers and warning signs;

- Conducting housekeeping operations to keep floor surfaces clear and clean.

- Providing adequate lighting for indoor work spaces.

- ensuring that walking surfaces, stairs, runways and bridges are well maintained, have adequate lighting and fitted with guard rails;

- ensuring that floor surfaces that are exposed to wet or slippery substances are regularly cleaned to remove slippery substances;

- correctly and consistently wearing appropriate Personal Protective Equipment (PPE) such as boots with non-slip tread.
Session objective

The participants are able to identify how children and young workers are exposed to dangerous animals, diseases and harmful dusts when doing agricultural work, the risks of such exposures and methods to mitigate risk.

Notes for the facilitator

Agricultural work usually involves working or coming into contact with people, animals, insects or infectious parasites.

This may result in exposure to harmful organisms or substances such as bacteria, parasites, viruses, dangerous animals, poisonous insects and toxic plants.

This may cause serious injuries and illnesses, such as bites, stings, pricks, trampling, kicks, knocks, bruises and anemia, zoonotic diseases or malnutrition (caused by worms).
3.1.1 Dangerous animals

Agricultural workers may come into contact with dangerous animals and poisonous insects in their natural habitats or when they stray into plantations and farms looking for food or shelter. When these dangerous animals are accidentally or intentionally disturbed they may feel threatened and could attack anyone within the vicinity causing minor or severe injuries.

Agricultural workers can get exposed to dangerous animals and insects:

- When carrying out farming operations such as land clearing, weeding, pruning, harvesting and post-harvest handling, etc. where they may get bites or stings from ticks, mites, spiders, scorpions, bees, wasps, etc.

- When passing or working in, on or near fields, trees, forests, grassy areas, ponds, rivers, ditches, caves, etc. where they risk being bitten by snakes or face attacks from dangerous animals such as elephants, primates, big cats, crocodiles and hippos.

- If one comes close to or handles animals that have young ones or while carrying out operations such as treating or restraining among others.

Notes for the facilitator

Guide the participants to think about the various farming activities or operations in the fields, farm buildings, structures and facilities where workers may come in contact with dangerous animals, snakes or insects.

Be sure to consider the different types of farming activities and working environments throughout the production cycle.

The facilitator can probe further by asking which tasks children and young workers typically carry out and may be exposed to these hazards?
3.1.2 Zoonotic diseases

Some diseases that normally exist in animals can be transmitted to humans through:

- touching or handling infected animals;
- touching or handling by-products of infected animals (feces, hides, placenta, saliva);
- breathing air contaminated by pathogens;
- consuming products from infected animals;

Notes for the facilitator

Guide the participants to discuss various farming operations in the fields or at home where children and young workers may be exposed to dangerous diseases from animals.

Explore the different types of agricultural activities or working environments that may expose humans to animal diseases.

The facilitator can ask participants what they see wrong in the illustration.

Examples of important diseases that can be transmitted from animals to humans (zoonotic) in Uganda include highly pathogenic avian influenza; ebola, rift valley fever, crimean congo haemorrhagic Fever, marburg, brucellosis; bovine tuberculosis, rabies and anthrax.
3.1.4 Vector-borne diseases and parasitic infections

Agricultural workers may be infected through bites from insect vectors and/or coming in contact with different parasites.

Exposure may be through the following ways;

- Bites and stings by mosquitoes, flies, fleas and ticks during farm operations.
- Touching water infested with freshwater snails.
- Touching soil or eating meat contaminated with tapeworms.

Notes for the facilitator

Guide the participants to discuss various farming operations where children and young workers can be exposed to bites by disease vectors or parasitic infections.

Explore the different types of farming operations or working environments which present the risk of exposure to vector-borne diseases and parasitic infections.

The facilitator can probe further by asking how involvement of children and young workers in farm work may increase the risk of exposure to disease vectors and parasitic infections.

Some of the common Vector-borne diseases and parasitic infections in Uganda include malaria, elephant disease (by mosquitoes), river blindness (by black flies); sleeping sickness (by tsetse flies); kal Azar (by sand flies), bilharzia (by fresh water snails) and Trachoma.
3.1.4 COVID-19

COVID-19 stands for corona virus disease identified in 2019. It is an infectious disease caused by new strain of coronavirus that had not yet been identified in humans. Its first outbreak was in Wuhan, China, in December 2019.

COVID-19 spreads through small droplets from the nose and mouth, when an infected person coughs, sneezes, speaks or breathes, without covering their mouth/nose. These droplets remain in the nearb environment (air and on nearby surfaces) for some time.

One may therefore one may get exposed in one of the following different ways;

- touching one’s eyes, nose, mouth with unwashed hands after touching COVID-19 contaminated surfaces/objects such as shared farm equipment, market vending stalls, vehicles, door knobs;
- inhaling contaminated droplets by either being in close to a COVID-19 patient (~2m) or in a poorly ventilated space containing COVID-19 contaminated aerosols/droplets e.g. a warehouse, processing plant, vehicle;
- being in physical contact with a COVID-19 patient e.g. a congested market place.

Key message:

Be careful!!! Some people become infected, only experience mild symptoms but they can still infect others! Remember!!! If you have been exposed to someone with COVID-19, you may become infected, even if you feel are well.
3.1.5 Harmful dusts

Farming operations generate potentially toxic dusts from straw, bagasse, husks, molds, bacterial residues, pesticide residues, wood shavings, flour, fecal matter, animal hair, feathers, pollen, fungal spores, and fine soil.

The risk of exposure to harmful dusts is higher when working in enclosed areas, handling very dry materials or under windy conditions.

Examples of sources of human exposure to harmful dusts include:

- land clearing, ploughing, weeding;
- harvesting, cleaning, drying, sorting;
- primary processing, bagging, milling, packaging;
- charcoal burning and cooking and
- transportation and storage of farm produce.

Notes for the facilitator

Guide the participants to discuss various farming operations in the fields or at home where workers can be exposed to potentially harmful dusts.

The facilitator can probe further by asking how involvement of children and young workers in farm work may increase the risk of exposure to harmful dusts.
3.2.1 Effects of attacks by dangerous animals

Effects of snake bites include local reactions such as redness and swelling around the puncture marks at the site of the wound. Systemic effects associated with venomous snakes include panic, nausea and vomiting, increased salivation and sweating, and laboured breathing which could lead to respiratory failure. The effect of venom on blood coagulation can cause blood loss due to external bleeding from body orifices and internal bleeding into organs leading to death in severe cases.

The toxic effects of sting or bites by scorpions, bees, spiders, wasps, etc may include evidence of an embedded stinger, redness and swelling around the sting site, pain, blistering and localized itching. Other systemic effects may include panic, increased salivation and sweating, and possibly fatal shock or eventual respiratory failure.

Effects of attacks by elephants, crocodiles, hippos, big cats, etc are usually severe including deep cuts, fractures, loss of blood, etc or death.

3.2.2: Effects of diseases (Zoonotic/vector borne)

Health effects of exposure to diseases and parasites transmitted from animals to humans or by disease vectors vary depending on the type of disease. The common signs and symptoms include skin lesions, fevers, cough, anemia, paralysis, diarrhea, pneumonia, neurological problems, blindness and death.
3.2.3 Effects of COVID-19

After exposure, it takes 1-14 days (and an average of 5-6 days) for one to start experiencing the negative effects (in terms of symptoms and signs) of COVID-19 infection. These effects may be mild or severe.

Mild effects may include; Fever, dry cough, general body weakness or tiredness or fatigue, loss of taste or smell, nasal congestion, conjunctivitis (also known as red eyes), sore throat, headache, muscle or joint pain, nausea or vomiting, diarrhea, chills or dizziness.

Severe effects may include; shortness of breath or difficulty in breathing, Loss of appetite, Confusion, Persistent pain or pressure in the chest, high temperature (above 38°C).

Although one can get infected and become seriously ill or die, the most at risk persons are;

- adults aged 60 years and above and
- people with underlying chronic medical conditions such as high blood pressure, heart and lung problems, diabetes, obesity, and cancer among others.

Key message:

Please note!!!
People of all ages who experience fever and/or cough associated with difficulty in breathing or shortness of breath, chest pain or pressure, or loss of speech or movement should seek emergency medical care IMMEDIATELY!
3.2.4 Effects of harmful dusts

Inhalation of harmful dusts can cause short-term breathing problems, but prolonged exposure can develop into chronic obstructive pulmonary disease, asthma, organic dust toxic syndrome, and acute allergic alveolitis (farmer’s lung).

Why do children and young workers face greater risk of harm?

- Economic dependency on children’s work may require children to work with dangerous animals while being exposed to harmful diseases and dusts;
- children may be asked to perform tasks involving dangerous animals, diseases and harmful dusts;
- children lack the power to say ‘no’ to an adult command;
- children often lack safety awareness as well as the work experience to make informed judgments about their own safety to protect themselves;
- children may copy unsafe practices from adults who are much more experienced. For example, they may continue working in extreme weather conditions without understanding they are at higher risk of harm;
- Children may be poorly or harshly supervised, without regard for their increased risk of injury. Children are at higher risk of long-term harm from a work injury or disease because their bodies are still growing and developing; they are more vulnerable to suffering permanent harm from a work injury or disease;
- young workers are particularly vulnerable to harm from zoonotic and vector-borne diseases as their immune systems are not as strong as adults.
3.3.1 Dangerous animals

The elimination of risk of injury from both large and small wild and domestic animal or birds is one of the major challenges in agricultural production systems particularly in outdoor environments.

However, use of appropriate engineering controls (e.g. containment facilities/devices such as cattle rushes, fences, gates, cages, etc) can significantly reduce the likelihood of injury by minimizing contact between workers and animals.

Administrative controls aimed at promoting safe working systems and procedures should be in place to ensure the provision of adequate information, instruction and training on safe use of containment facilities/devices and proper handling of animals/birds as well as use of appropriate PPEs.

Limit children’s exposure to domestic or wild animals by:

- Gaining a proper understanding of behaviours of domestic and wild animals in order to reduce risk of injury;
- ensuring that storage facilities and sheds are fenced off to keep animals out of areas where there are children;
- limiting children from working in situations where they are likely to come into contact with dangerous animals.
3.3.2 Zoonotic and vector-borne diseases

The risk of illnesses due to zoonotic diseases and vector borne diseases can be reduced by:

- handling and eating fresh and properly cleaned or cooked food;
- treating and vaccinating animals and/or humans against zoonotic diseases;
- using appropriate personal protective equipment (e.g. mosquito nets, insect repellents, gum boots, etc);
- avoiding environments where contact with zoonotic and vector-borne disease is likely;
- properly disposing of infected carcasses and animal byproducts;
- practicing good sanitation and hygiene by frequently washing hands with clean water and soap;
- maintaining a safe distance from persons or animals presenting signs of illness.
3.3.3 COVID-19

If you have been exposed to COVID-19 or you develop any of the mentioned symptoms, endeavor to do the following;

- Isolate yourself as much as possible and call the Ministry of Health toll free line on 0800-100-066 or 0800-203-033 or dial 919.
- Cooperate with contact-tracing procedures to stop the spread of the virus.
- Wear a face mask to protect others, including if/when you need to seek medical care.
- Stay in a separate room from other family members, and if not possible, ensure to wear your face mask at all times and keep the shared house/room fully ventilated;
- Wash your hands frequently with soap and water or use an alcohol-based sanitiser.
- If testing is not available, stay home and away from others for 14 days and monitor for any symptoms.
- Stay positive by keeping in touch with friends and family by phone or online,
- Keep exercising at home.

Key message:

Protect yourself and others by maintaining a physical distance of 2 meters from each other, wearing your face mask properly, keeping rooms well ventilated, avoiding crowds and close contact, regularly cleaning your hands, and coughing into a bent elbow or tissue. Do it all!
Sneeze or cough into a tissue or your elbow

Wash your hands with soap and water regularly

Wear your mask

Keep physical distancing of 2m
3.3.4 Harmful dusts

Elimination of dust from agricultural settings is nearly impossible, particularly in outdoor environments. However, engineering controls can be used to reduce the level of dust and other suspended particulate matter in enclosed environments such as storage sheds, warehouses, silos, and machinery shops by using proper ventilation methods such as fans, windows, plastic sheeting, exhaust ducts, and piping.

Avoiding carrying out tillage operations when the soil is very dry, and drying grains/produce on clean surfaces or raised racks, will reduce exposure to dusts. The use of appropriate PPE can further limit human exposure, but remember that PPE is rarely designed for use by children.

Key message

The respiratory systems of children are still developing, making them more vulnerable to harm. Those below 18 years of age also breathe in more air than adults in proportion to their weight. Therefore, additional attention to their exposure to dusts should be made.
MODULE 4

Agro-chemicals

Insecticides  Herbicides
Rodenticides  Insects  Bacteria
Bactericides  plants  Fungi  rodents
Fungicides  Larvicides
Session 4
INTRODUCTION

Session objective

The participants are able to identify where and how children are exposed to agrochemicals, effects of such exposure and important mitigation measures to put in place.

Notes for the facilitator

Guide the participants to brainstorm on the cycle of pesticide use starting from when it is purchased, how it is prepared, how it is applied, stored or disposed and at the time of the working day these tasks are performed.

Encourage participants to think about where these activities are done and where other family members are when this is taking place. In particular you should ask: Where might children and young workers be exposed to pesticides?

Additional notes

A pesticide is any substance or mixture of substances intended to be used for preventing, destroying or controlling pests.

Children may be exposed to agro-chemicals (pesticides, fertilizers, veterinary drugs) through a single or continuous low/high doses.

High risk of fatality is associated with exposure to a high dose. Children, young workers and women are particularly vulnerable to negative effects of agro-chemicals.
Session 4.1 How are children and young workers exposed to pesticides?

4.1.1 Pesticide body entry points

Pesticides can enter our bodies through the skin, mouth and nose. The risk of poisoning increases with a single high exposure or many low exposures of concentrated or diluted pesticide.

4.1.2 Pesticide exposure sources

Common sources of exposure of children and young workers to agro-chemicals include;

- the sale, purchase, repackaging and transportation;
- the preparation or mixing of agro-chemicals;
- the application (even when applying using a backpacker sprayer);
- the cleaning of equipment, clothes and any PPE used.
Sources of pesticide exposure continued

- working or playing in fields during or after application of agro-chemicals;
- reusing pesticide containers;
- drinking water or inhaling air contaminated with agro-chemical residues;
- unborn children may be exposed to agro-chemicals through their mothers;
- breast feeding children can be exposed to agro-chemicals through breast milk.

Key messages

Touching the plants when weeding and doing other tasks or just breathing the air where pesticides were used exposes them to the dangers.

Because children are smaller and their bodies have not yet fully developed, they should wait longer than adults before returning to fields after pesticides have been used.

Reusing pesticide containers for food or drink is extremely dangerous to the health of those who eat or drink from them – containers can never be fully clean!

Extra precautions must be taken to ensure that pregnant women and nursing mothers are not exposed to pesticides.
4.2.1 Short-term/acute health effects

Acute, health effects of pesticide poisoning normally occur shortly after exposure and the signs and symptoms usually show within 24 hours.

Common signs and symptoms of acute poisoning include:
- headaches and dizziness;
- irritated eyes;
- blindness;
- difficulty concentrating;
- nose bleeds;
- allergic reactions;
- nausea and vomiting;
- other symptoms include skin problems (rashes or irritations, dermatitis, burns) and breathing difficulties.

Most people suffering from acute pesticide poisoning may not be aware because the symptoms may appear as a general feeling of sickness, skin irritation or sudden and otherwise unexplained serious illness.
4.2.2 Long-term or chronic/delayed health effects of exposure to pesticides

These are effects that usually occur from repeated exposures and may appear long after the initial exposure. Some of these effects include:

- reproductive disorders - negative effects in sexual function and fertility of men and women;
- exposure to either parent before conception, during pregnancy or during breastfeeding may adversely affect the developing foetus or young baby;
- respiratory disorders (difficulty in breathing, emphysema, asthma);
- nervous/neurological disorders (paralysis, tremors, changes in behaviour, brain injury/damage);
- cancers (e.g. leukaemia) have been associated with occupational exposures to pesticides, particularly herbicides;
- abnormal blood conditions;
- cirrhosis of the liver;
- kidney failure.

Some effects tend to be specific to certain pesticides. The information provided in chemical safety data sheets, pesticide labels and other health and safety materials should always be consulted for each particular chemical.
4.2.3 Why are children at a greater risk than adults?

**Their behavior:**

- Young children typically play on the ground, put things in their mouths and are attracted to colourful containers;
- Children are less able to assess risks, and their judgment is not fully developed.
- Often, children don’t know how to read the labels, especially those who have not completed school.
- Children often lack safety awareness as well as the work experience to make informed judgments about their own safety to protect themselves.

**Their bodies:**

- they breathe more air than adults (and therefore inhale more dust, toxic vapours, droplets of spray);
- in relation to their body weight, children need to eat and drink more than adults;
- the surface area of a child’s skin per unit of body mass is greater than that of an adult, and the skin is more delicate. Both these factors can lead to greater absorption of toxins;
- they are still growing and developing more vulnerable to suffering permanent harm from exposure to pesticides or agro-chemicals.
4.3.1 Hierarchy of pesticide risk controls

Given widespread use of chemicals in agriculture, there is need for rigorous control to prevent serious health risks to employers, workers and the general public. This calls for sound management of chemicals and systematic application of the full hierarchy of risk controls to minimize the risk of exposures, thus:

- **Elimination** involves physically removing the hazard source. For instance stopping the use of toxic chemicals or dangerous equipment.

- **Substitution** involves replacing the hazard source. For instance reduce exposure by replacing a more toxic chemicals with less toxic chemicals; by using the same chemical substance in a less hazardous form or using chemicals less frequently.

- **Engineering controls** involves applying measures that isolate the people from the hazard by removing hazardous conditions or placing a barrier between the worker and the hazard. Examples include a well designed system for storage and dispensing of chemicals.

- **Administrative controls** involve changing the way people work. For instance restricting access into enclosed areas that have been recently sprayed with hazardous pesticides.

- **Personal protective equipment (PPE)** is used to protect the individual worker from the hazard. Examples include helmets, gumboots, etc. Provision PPE that is suitable for the worker, appropriate for the task and affords adequate protection should be used as a last resort and not a substitute for elimination and substitution of hazard source.
4.3.2 Safe pesticide handling practices

- When pesticides are applied, ensure that there are no children or pregnant women in the fields during or after application;
- Do not permit children (or other workers) to enter fields (for work or play) directly after agrochemical application. Always observe the re-entry period on the product packaging;
- Pesticides should be safely stored out of reach of children and always under lock and key.
- Empty pesticide containers should be triple-rinsed, punctured and waste water and container disposed of responsibly.

Additional messages

- Ensure that adults who apply agrochemicals have adequate training, protective gear that fits, and wash carefully after using these substances.
- Ensure that everyone in the household and on the farm recognizes the danger symbol on pesticide containers and knows what it means.
- Learn how to administer first aid to a poisoned victim and have an appropriately stocked first aid kit within a household.

Key messages

Elimination and substitution are the most effective at reducing hazards and tend to be difficult to implement in an existing process as it may require major changes in equipment and procedures but can be inexpensive and simple to implement if introduced at the design.

Administrative controls and PPE are often used in existing processes and may be relatively inexpensive to establish but can be very costly to sustain yet less effective in protecting workers compared to elimination and substitution.
4.3.3 Important points to note:

- Genuine and less toxic pesticides should be sold or bought by adults in cool, well ventilated shops; Buy and use pesticides still packaged in containers with clear labels containing manufacturer’s instructions;

- Pesticides should be handled or mixed by adults using appropriate PPEs recommended by manufacturers;

- When possible, avoid the use of chemical pesticides on the fields and at home, and use less hazardous pest control measures instead. If pesticides are used, adults should follow the manufacturer’s instructions and use appropriate PPEs.

Additional message

Encourage households and community members to use Integrated Pest Management (IPM). Integrated Pest Management is an ecosystem approach using a combination of measures to grow healthy crops while minimizing the use of pesticides.
4.3.4 Community sensitization and trainings

- Actively encourage people in the community to avoid using toxic chemicals and seek alternative solutions that are safer.
- Integrated Pest Management (IPM) strategies include crop rotation, pest/disease resilient planting materials/animal breeds; bio-pesticides, using natural enemies to pests, push-pull technique, traps, timely planting, timely weeding, soil fertility management, etc.
- Safe handling and use of pesticides calls for proper care and attention to precautionary measures before, during and after application.
- It is very important to select the safest pest control method that will be effective and with the least risk to people, livestock, wildlife and the environment.
- Farmers/employers are encouraged to seek guidance from an extension worker on the recommended pest control methods before purchasing any pesticides.
- The user must carefully read, understands and follow the manufacturer’s instructions on how to safely use the pesticide.

Key message

If we protect our children from pesticides today, we will have a stronger, healthier and a more productive community tomorrow.
Integrated Pest Management
MODULE 5

Psycho-social risk factors

Stress  Social  Spiritual
Mental  Emotional
Session 5  INTRODUCTION

Session objective

The participants have ability to;

- identify where and how children are exposed to psycho-social stress factors through agricultural work and domestic responsibilities.
- understand potential short- and long- term effects of such exposure.
- what they can do to reduce this exposure and associated effects in their community, as well as share this information with others

Notes for the facilitator:

Guide the participants to brainstorm and identify the different farming operations starting from acquisition of inputs, production, processing and marketing.

Ask them to think of tasks performed by children and young workers that they think can affect their mental wellbeing by making them feel stressed, scared, or discouraged etc. At what time of the working day these tasks are performed.

Encourage participants to think about where these activities are done and where other family members are when this is taking place. Probe further to find out possible changes in behaviour and character/conduct of children who go through this kind of situations?
Session 5.1 How are children and young children exposed to psycho-social stress in agriculture?

Agricultural work is generally hazardous and it is both physically and psychologically and emotionally demanding due to a lot of uncertainties. Some of the common triggers of psycho social stress among agricultural workers and farmers may include the following:

- Climate/weather shocks.
- Produce price fluctuations.
- Pests and diseases.
- Low yields.
- Poor quality inputs.
- Unpaid debts/loans.
- Long working hours.
- Extended isolation periods.
- Unfavourable contract terms.

Additional notes for the facilitator:

Psychosocial risks go hand in hand with the experience of work-related stress. Work-related stress is the response people may have when presented with work demands and pressures that are not matching with their knowledge and abilities and which challenge their ability to cope.

Stress has an affect on decision making and the behavious and may therefore increase the vulnerability to other hazards especially among children and young workers.
Agricultural workers facing work-related stress can experience behavioural, medical, and psychological problems in the short and long term.

- **Changes in behavior** tend to be the earliest and most obvious signs of stress, and may include (i) greater alcohol and drug abuse; (ii) increased cigarette smoking; (iii) accident proneness; and (iv) violence.

- **Psychological consequences** include (i) family problems; (ii) sleep disturbances; (ii) sexual dysfunction; and (iv) depression.

- **Medical problems** include (i) hastening the appearance of disease; and (ii) worsening the impact of illness.

Psychological stress can affect farming households in a number of ways namely:
- the ability of parents to work and sufficiently provide basic needs for their children such as school fees and scholastic materials;
- children from severely affected households may be forced to engage non-age appropriate tasks (child labour) so as to provide for the family by either combining work and schooling or dropping out of school;
- stressed children tend to have poorly school attend and/or register low academic performance. In worst cases, stressed children may engage in substance abuse or commit suicide.
5.2.1 Domestic violence

- Increased stress amongst farmers could lead to increased domestic violence.

- Young workers, especially girls, can be particularly vulnerable to sexual assault, especially when carrying out agriculture tasks in isolation (i.e. cattle herding) or in an environment where gender and worker’s rights are less protected.
5.2.2 Additional consequences on children

- Children who are required to perform monotonous work, isolated from their peers, or are exposed to poor working conditions and unreasonable job demands can suffer harm to their development, confidence, communication skills, and self-esteem, sometimes leading to anti-social behaviour.

- Children who work outside their family farm and for an employer can be exposed to workplace abuse, whether verbal, physical or sexual. This can lead to mental and behavioral disorders.

- Children are less able to assess risks to their emotional health, and their judgment is not fully developed.

- Children may suffer from psycho-social stressors from work but not tell anyone for fear of punishment or embarrassment.

- If the stressor is intense or frequent enough, children exhibit a wide range of responses, from internalizing all their fears and frustrations and becoming depressed, to externalizing everything and being hyperactive, inattentive, and causing problems with family members and in school. Children exposed to sustained levels of stress have much higher rates of unhealthy behaviors.

Key message

Psycho-social stressors, including work-related stress, violence, harassment, and bullying are significant challenges to worker health and safety. Children exposed to psycho-social stress at work may not be able to attend school or reach their full potential due to long-term adverse effects on their development and self-esteem.
Session 5.3  
What can farming communities do to prevent psycho-social stress and reduce its effects?

5.3.1  Community sensitization and training

- Exposure to psycho-social hazards among farming communities can be minimized through better work organization. This can often be achieved through promoting joint decision making, formation or strengthening of producer/marketing groups/associations as well as promoting the access and provision of financial and insurance services.

- When communities are sensitized and trained on group dynamics, safe and sustainable agriculture practices, rights of the child and how to deal with work related stress, they will be more productive and able to live harmoniously.

5.3.2  Education and implementation of measures to eliminate domestic and gender based violence

- It is important that all community members, young and adults are sensitized on the importance of gender equity and the dangers of domestic and gender based violence.

- When feasible, implementing measures to eliminate domestic and gender based violence is important. For example, an employer ensures that all staff are sensitized on gender equity and hold a zero harassment tolerance at the work place, including a mechanism to report wrong-doings.
- Manage stress
- Climate smart agriculture
- Gender equity
- No child labour
5.3.3 Access to adequate and quality education

All boys and girls should attend school for as long as possible. When children fully and adequately participate in education, including vocational trainings, they acquire skills to become productive and support the livelihood and resilience of their families and communities.
The purpose of this visual tool is to assist field school facilitators (FFS/JFFLS) as well as other extension agents to lead discussions on the protection of children and young workers from occupational safety and health risks in agriculture. It can also be used to conduct similar discussions at community level among farming families or households.

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