

# PROTECT CHILDREN FROM PESTICIDES!

## Visual Facilitator's Guide



Food and Agriculture  
Organization of the  
United Nations



International  
Labour  
Organization

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of brands or products, whether or not they are patented, does not mean that they have been approved or recommended by FAO or ILO, or that they have a preference for that product over others of a similar type.

The opinions expressed in this material are those of the author (or authors) and do not necessarily reflect the views or policies of FAO or ILO.

FAO and ILO encourage the use, reproduction and dissemination of the information contained in this material. Unless indicated to the contrary, the material can be copied, downloaded and printed for purposes of private study, research and teaching, or for all other non-commercial uses. This is under the condition that FAO and ILO are recognised as the sources and co authors of the material and it is clearly established that the views, products, or services depicted are not in any event sanctioned by FAO or ILO.

Any requests for the translation, adaption, and any other commercial use of this material must be made via the site <http://www.fao.org/contact-us/licencerequest> or addressed to [copyright@fao.org](mailto:copyright@fao.org).



## Preventing and reducing children's exposure to pesticides

**Aim:** Participants are enabled to reduce children's exposure to pesticides

**Objective:** By the end of this module participants will be able to:

- Identify how children are exposed to pesticides, including through work and chores
- Describe the negative health effects of pesticides and why children are at a greater risk
- Identify what they can do to reduce the exposure of children to pesticides in their community
- Share the information with others

### Sessions

**Session 1:** How are children exposed to pesticides?

**Session 2:** What are the negative effects of pesticides on health and human development?  
Why are children at greater risk?

**Session 3:** What can we do to reduce children's exposure to pesticides in our community?

Depending on the needs of the participants, the sessions can be led in the order they appear in this book or in the sequence 2,1,3, focusing first on the symptoms and damaging effects of pesticide exposure and then on the sources of exposure and corresponding protection methods.

Before beginning each training session, it is important to familiarize yourself with the illustrations and the corresponding text.

# **PROTECT CHILDREN FROM PESTICIDES!**

## **Visual Facilitator's Guide**

*Preliminary version*

# Session 1:

## How are children exposed to pesticides?

### Session objective

The participants are able to identify where and how children are exposed to pesticides, in particular through work and chores.

### Instructions for the facilitator

To facilitate the session, first guide the farmers to think about the cycle of pesticide use: from its purchase through to its preparation, application and storage or disposal, and from the start to the end of the working day. Encourage participants to think about where these activities take place and where the various members of their families are at these times. With this in mind, ask participants:

*Where might children be exposed to pesticides?*

Potential answers include: On the farm, at home, in shops, through the food they eat, water they drink or the environment, on someone's back, in the womb.

### Key messages to keep in mind

Children may be exposed to pesticides several times during the course of a day and in different places. The more they are exposed, the more they are in danger. Child workers are at even greater risk of exposure to pesticides.

**Session 1:**

**How are children exposed to pesticides?**

## Sale and purchase

Encourage the participants to think about the different steps in the use of pesticides. It begins with the sale and purchase of the pesticide.

- Exposure occurs when products are spilled and during the loading, unloading, storing and displaying of pesticides.
- Children are exposed by ingesting products, through respiration, or when a pesticide comes into contact with the skin.

Continue the discussion asking the participants:

*How does children's involvement in domestic work and work in the fields increase their risk of being exposed to pesticides?*

### Key message:

Purchasing, selling and transporting pesticides can be dangerous. Children must not participate.





## Preparation

Children may be exposed during the preparation of pesticides, for example by mixing them.

- Handling concentrated pesticides can be extremely dangerous, especially for children.
- When mixing, the liquid can get splashed on the children's skin or in their eyes.
- Pesticides can get spilled on clothing and then come into contact with the skin.
- Children may breathe in particles or dust that comes from highly concentrated powders and granules used in the preparation of a pesticide.

### Key message:

Preparing pesticides is dangerous. Children must not be involved and must be kept at a distance during the preparation process.





## **Application**

Children are exposed when they spread pesticides by hand.





**DANGER**



## **Application**

Children can be harmed by pesticides, even when applying pesticides using a backpack sprayer.

Often, children have not received training on how to safely use this equipment, which greatly increases the risk of exposure.





**DANGER**



## Working in the fields

Children who work in the fields are exposed when they work in places where pesticides have been applied.

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

### **Key message:**

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.





**DANGER**



## **Cleaning**

Even after application, children can still be exposed to pesticides. For example, when cleaning containers or equipment used to apply pesticides (they can never be completely “clean”).





## **Washing**

Even after application, children can still be exposed to pesticides. For example, through washing clothes that were worn:

- while pesticides were applied;
- during the preparation of pesticides; or
- in the fields just after pesticides were used.



DANGER



## Reusing pesticide containers

Children can also be exposed through the reuse of pesticide containers to transport food or water.

### **Key message:**

Reusing pesticide containers for food or drink is extremely dangerous to the health of those who eat or drink from them.





**DANGER**



## Reusing pesticide containers

Children can also be exposed by reusing pesticide containers to collect or store food and water.

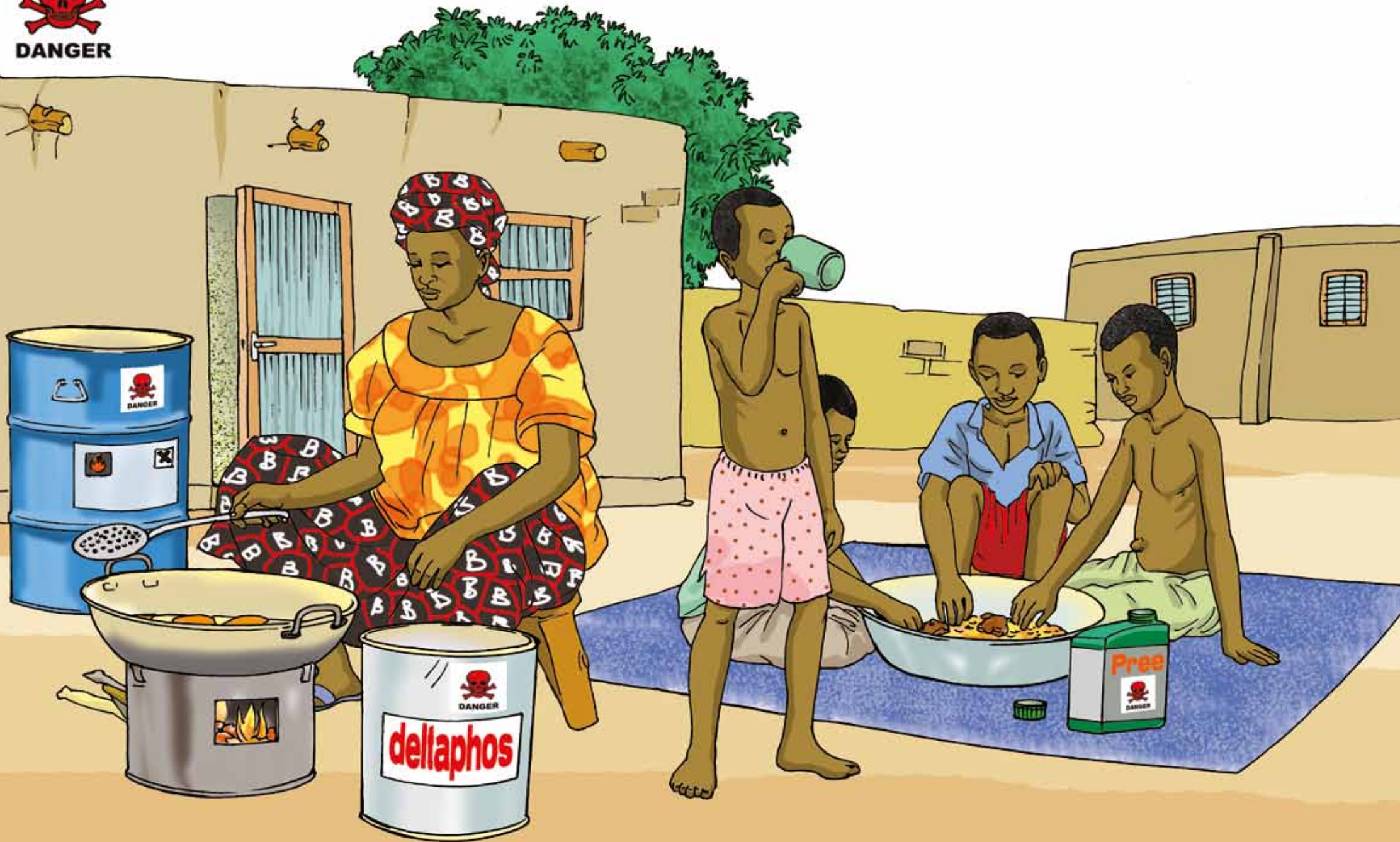
### **Key message:**

Reusing pesticide containers to collect and store food and water is extremely dangerous.





DANGER



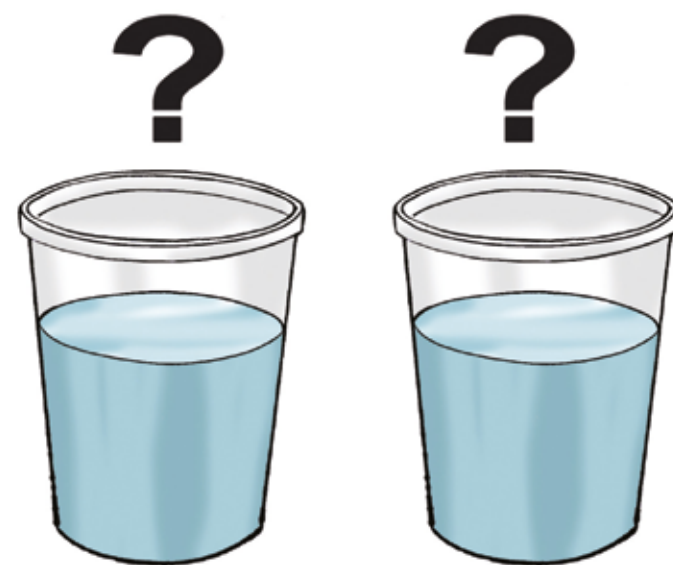
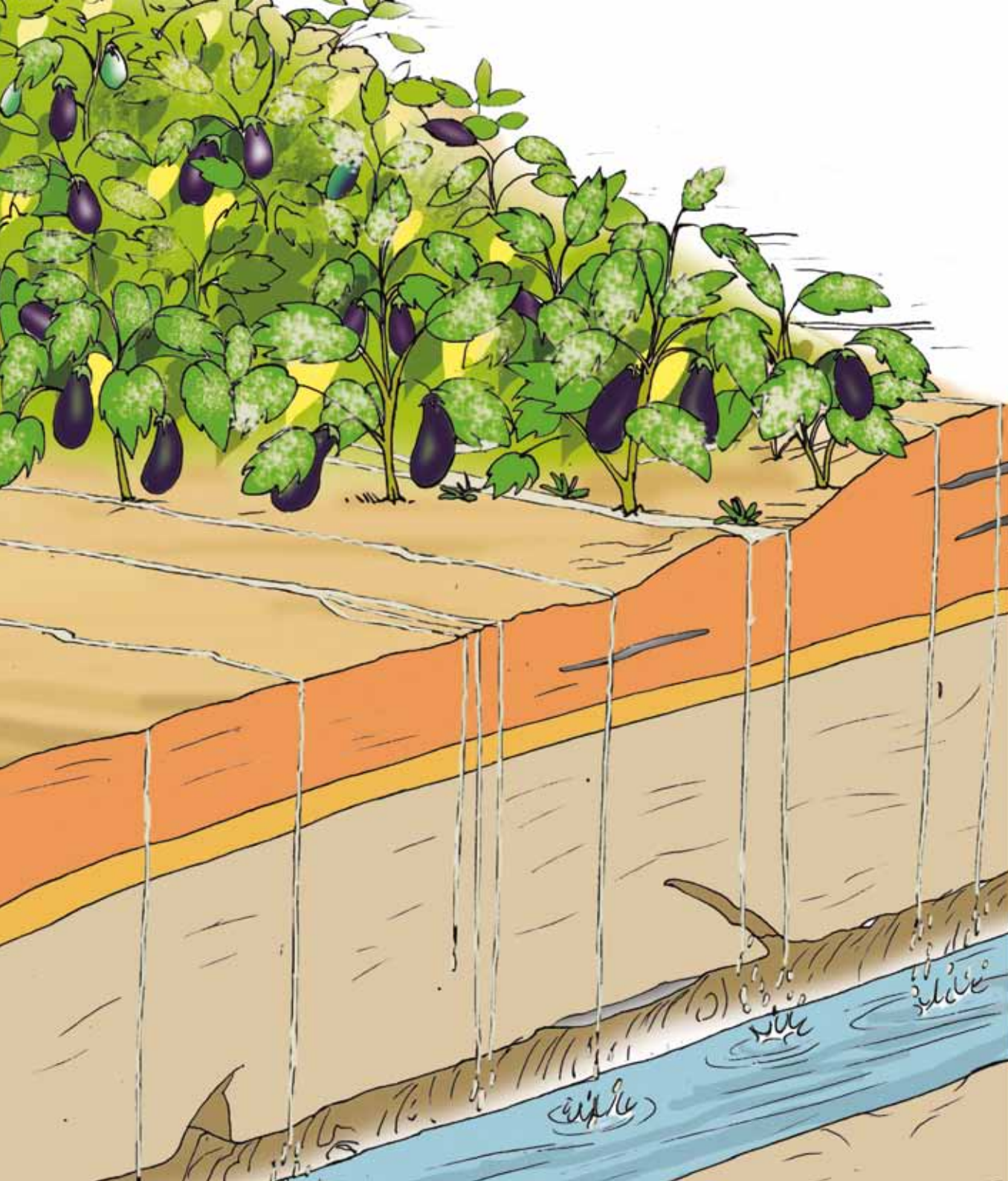
## Environment

Children can be exposed through their environment; pesticides used on crops can enter into the underground water source. When it is then taken out of wells, it is hard to know if it is contaminated or not.

### **Key message:**

The use of dangerous pesticides can contaminate the water source and make it undrinkable.





## Environment

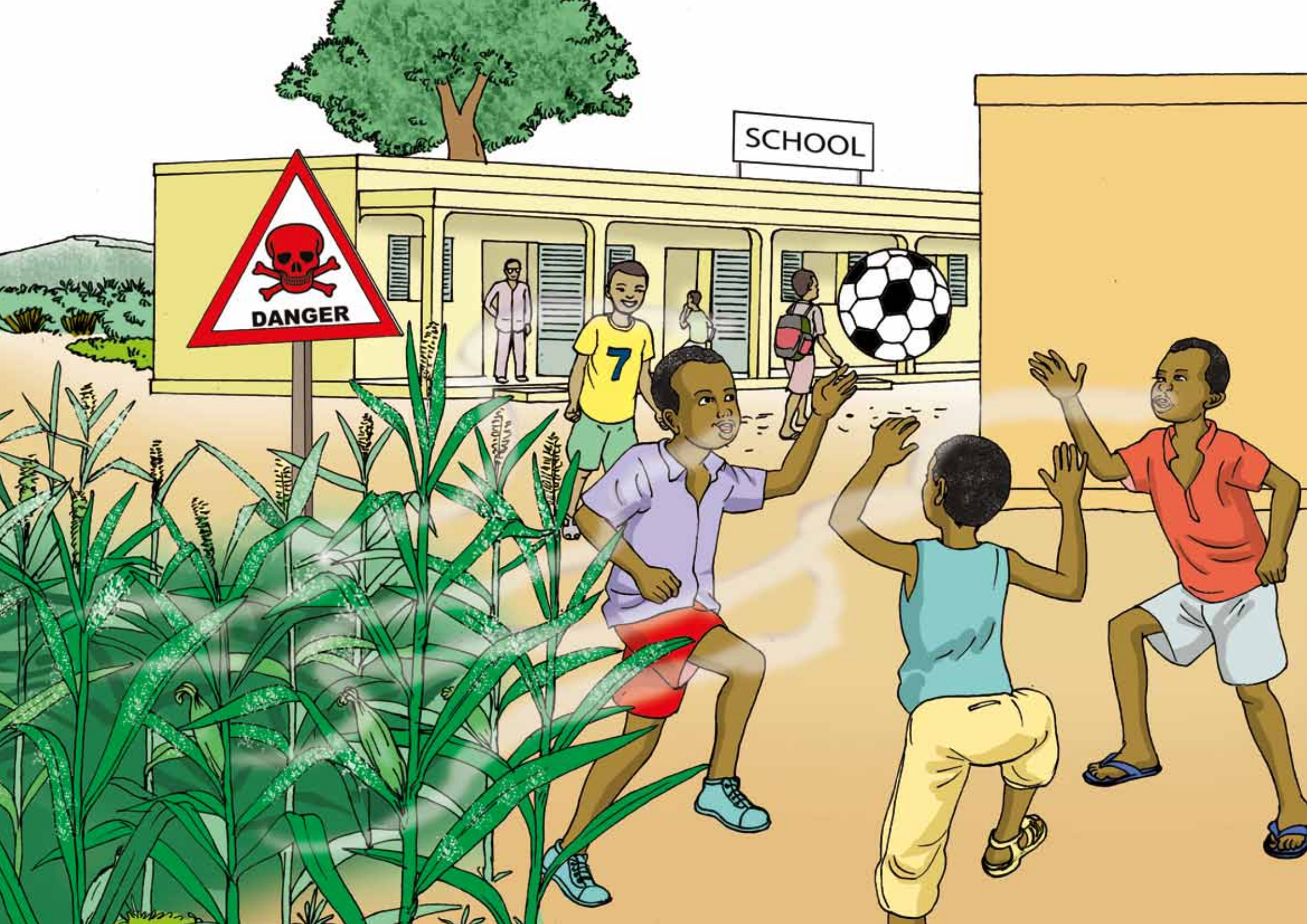
Pesticides can be transported on the wind and be dangerous to those in the area: adults at work but also children working, playing or on their mother's back.

Schools and play areas must not be close to fields when pesticides are used, and farmers should avoid using pesticides on windy days.

### **Key message:**

Children must not be in or near the fields when pesticides are applied.





## In the womb

Children can be exposed to pesticides even before their birth when they are in the womb.

They are also exposed through breastfeeding.

Extra precautions must be taken to ensure that pregnant women and nursing mothers are not exposed to pesticides.

### **Key message:**

Pregnant women and nursing mothers should not be exposed to pesticides. They and their children are at greater risk.





**DANGER**





## Session 2:

**What are the negative effects of pesticides on human health and development?**

**Why are children at greater risk?**

### **Session objective**

The participants have a better understanding of the link between pesticide exposure and negative health and developmental effects, and in particular the risks to children.

### **Key messages to keep in mind**

Children are more sensitive to pesticides than adults. Some negative effects of exposure can be seen immediately, but other effects may become visible at a later stage.



## **Session 2:**

**What are the negative effects of pesticides on human health and development?**

**Why are children at greater risk?**

# Body-mapping exercise

**Aim:** Identify symptoms of pesticide exposure (short- and long-term)

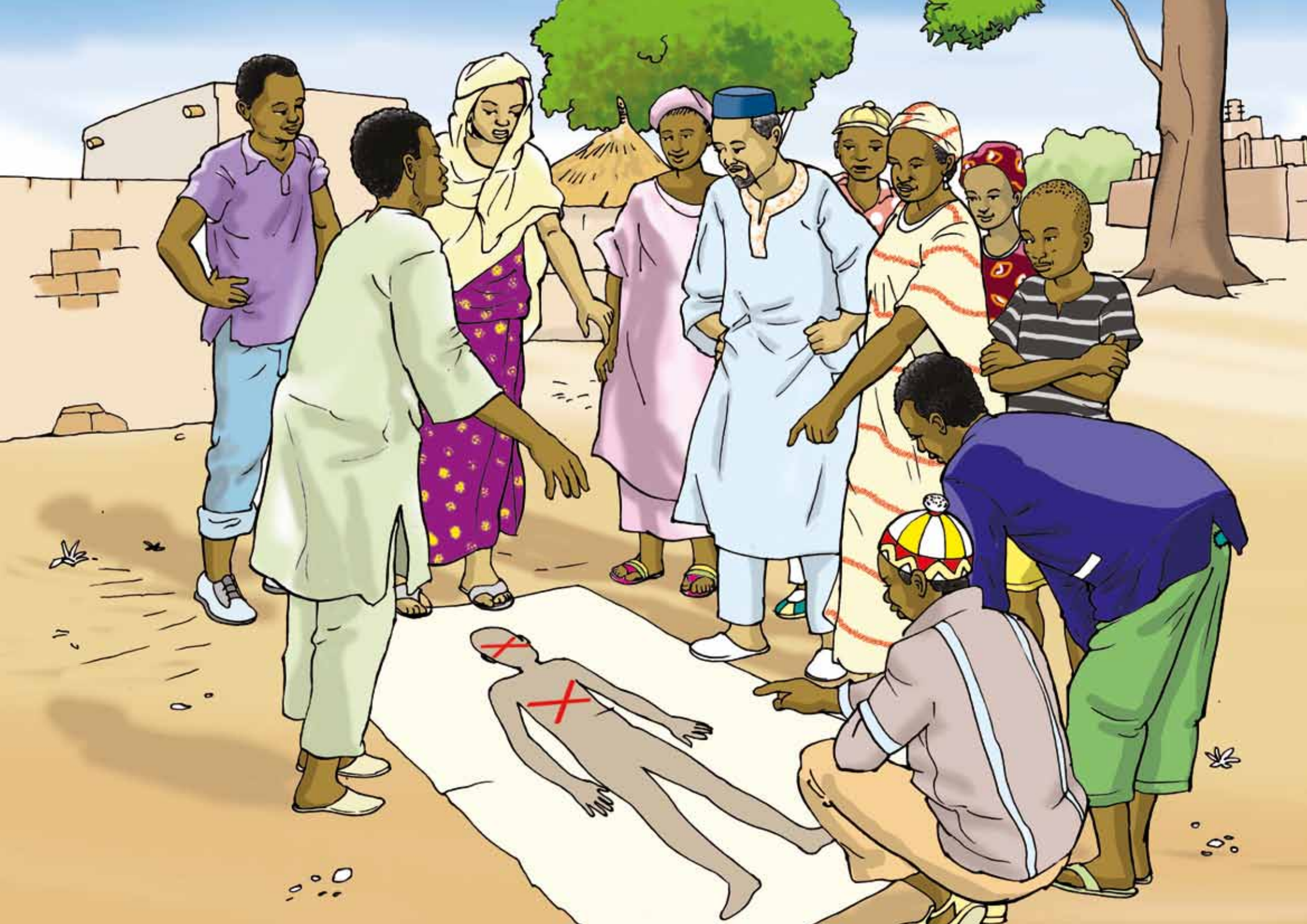
## Instructions

1. Draw a map of a body on a poster (or several and divide participants into small groups).
2. Each participant should mark an X on the body map to show any symptoms of ill health that they or others have on the farm or at home.
3. Participants can use different colours of their choice to identify different symptoms if they prefer.
4. As participants apply the X, they explain briefly why they placed the X in the particular place and if relevant why they chose a particular colour.
5. Make sure that there is someone in each small group that can briefly note down what is said around the body map and can report back everyone's views.
6. The facilitator, or an invited health professional, helps participants make the link between these symptoms and pesticide exposure.

## Discussion points

From the results of this exercise, the discussion may continue around the following points:

1. Do children who work on the farm or at home experience similar symptoms of ill health? What symptoms might only present themselves later in life when they are young adults or have their own families?
2. Could participants organize a body mapping session with children working on the farm or at home to find out if they have similar symptoms of ill health?



## Immediate effects

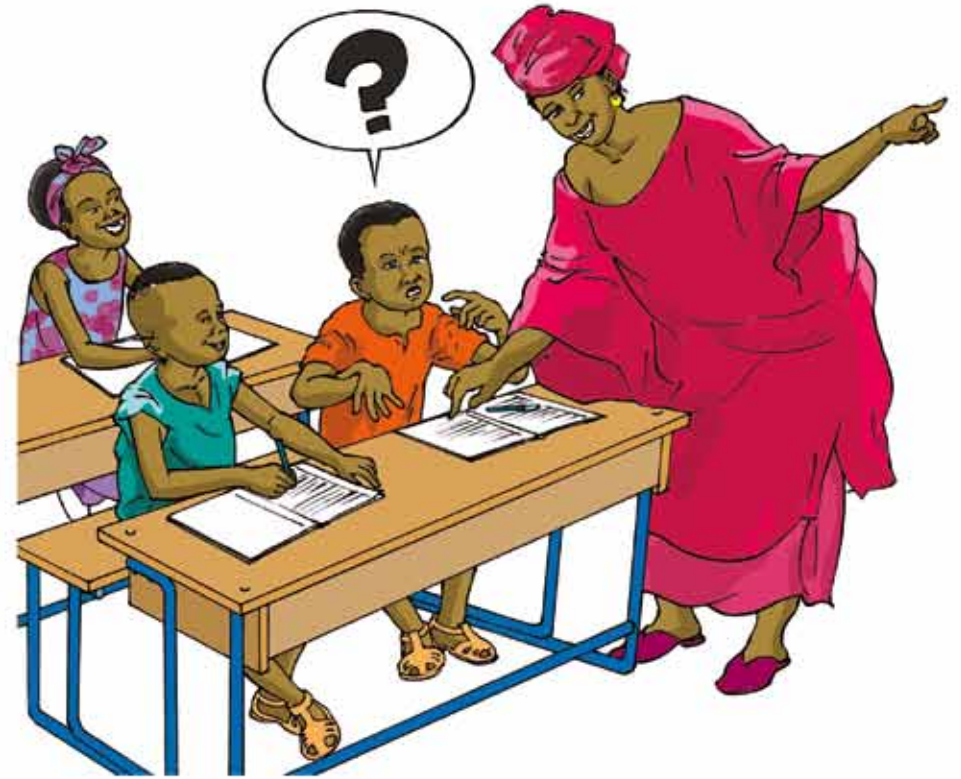
Remind participants that children and adults can be exposed to pesticides through the air, the mouth, the skin and the eyes. The effects of exposure can be very serious.

Discuss with the participants the negative effects that can be detected soon after pesticide exposure:

- 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.

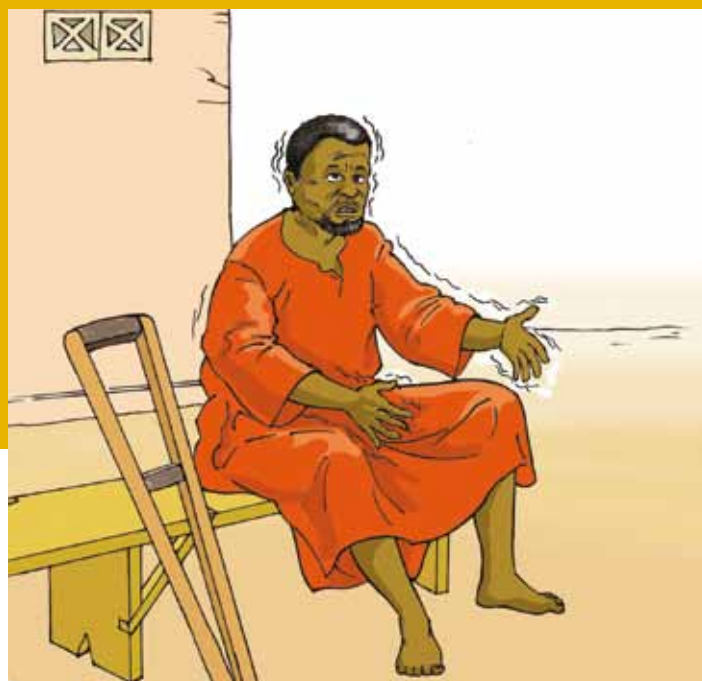




## Long-term effects

Discuss with the participants the negative effects of pesticide exposure that take longer to appear:

- Reproductive disorders
- Respiratory disorders (difficulty in breathing, emphysema, asthma)
- Nervous/neurological disorders (paralysis, tremors, changes in behaviour, brain injury/damage)
- Cancer
- Abnormal blood conditions
- Cirrhosis of the liver
- Kidney failure



## Increased vulnerability of children: their behaviour

Ask participants: Why, in your opinion, are children more at risk than adults?

Encourage them to think of the ways in which children behave that can increase their risk of exposure to pesticides. For example:

- 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 younger children or older children who have not completed school.





## Increased vulnerability of children: their bodies

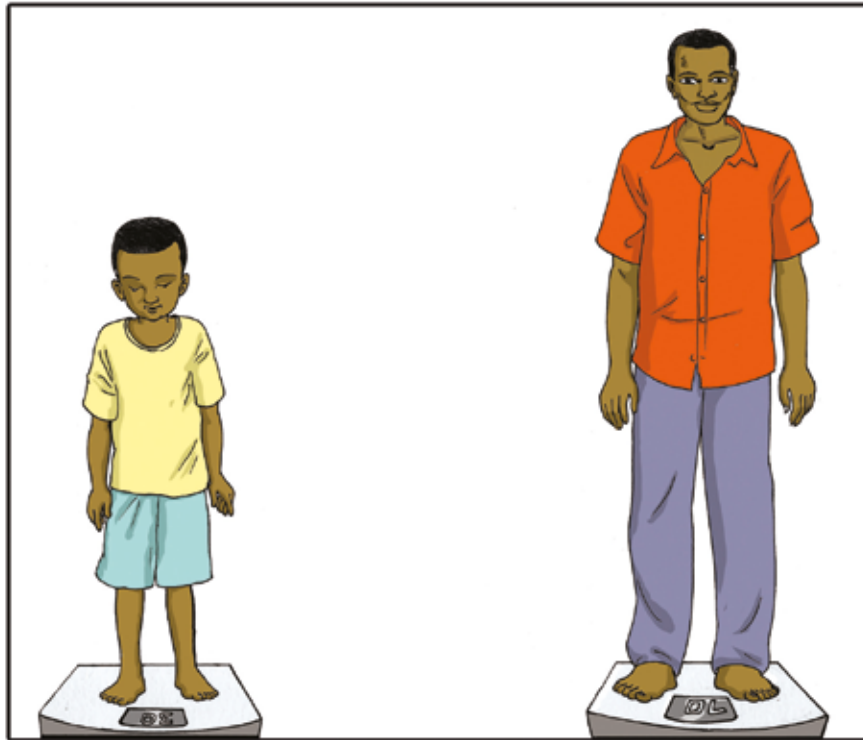
Ask participants to reflect on the biological differences that can increase children's exposure to pesticides. Remind them that the effects are different among children because their bodies are smaller and still growing.

Children have a greater capacity to absorb toxic substances:

- They breathe more air than adults (and therefore 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.

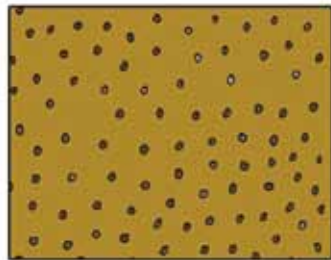
The body of a child has a reduced capacity to eliminate toxins (because its organs are still not fully developed).

Encourage participants to reflect on the reasons why the damaging effects of pesticides can be more serious for children.

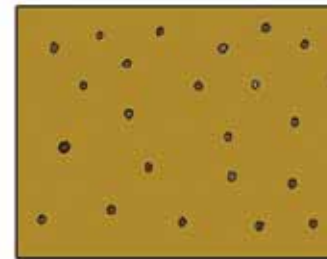


30 Kg

70 Kg



A child's skin is more porous





# Session 3:

## What can we do to reduce the exposure of children to pesticides in our community?

### Session objective

The participants are able to identify what they can do to reduce children's exposure to pesticides in their community and how they can share the information with others.

### Instructions for the facilitator

Ask participants to brainstorm ideas, and make a list of the group's ideas on a poster. Go through the list and ask them which items are already done, and which ones still need to be worked on. 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 the next week/in the next session.

Alternatively, ask participants to:

- draw a circle with the various places and events where children are exposed to pesticides.
- draw or write about ways of protecting children at each stage.

The following illustrations give examples that you can use as needed to start the discussion.

## Session 3:

**What can we do to reduce the exposure of children to pesticides in our community?**

During this session, encourage participants to reflect on the stages in the use of pesticides: from the initial purchase, preparation and application to the storage or disposal of the pesticide at the end of the working day. Use this cycle to guide participants to identify actions needed to protect children.

Start with the purchase of the pesticide at the place where pesticides are sold.

Examples:

- Keep children away from pesticides.
- Do not allow children to mix or prepare chemical products, work (or help their families) where pesticides are sold or assist in the transportation of pesticides.
- Encourage shops/kiosks selling pesticides to display a sign saying “No children – hazardous substances”.





Do not permit children to mix, spray or manually apply agrochemicals such as pesticides.







Avoid the use of chemical pesticides on the fields and at home, and use less hazardous pest control measures instead.

In the community, actively encourage people to avoid using chemical pesticides and seek alternative solutions.

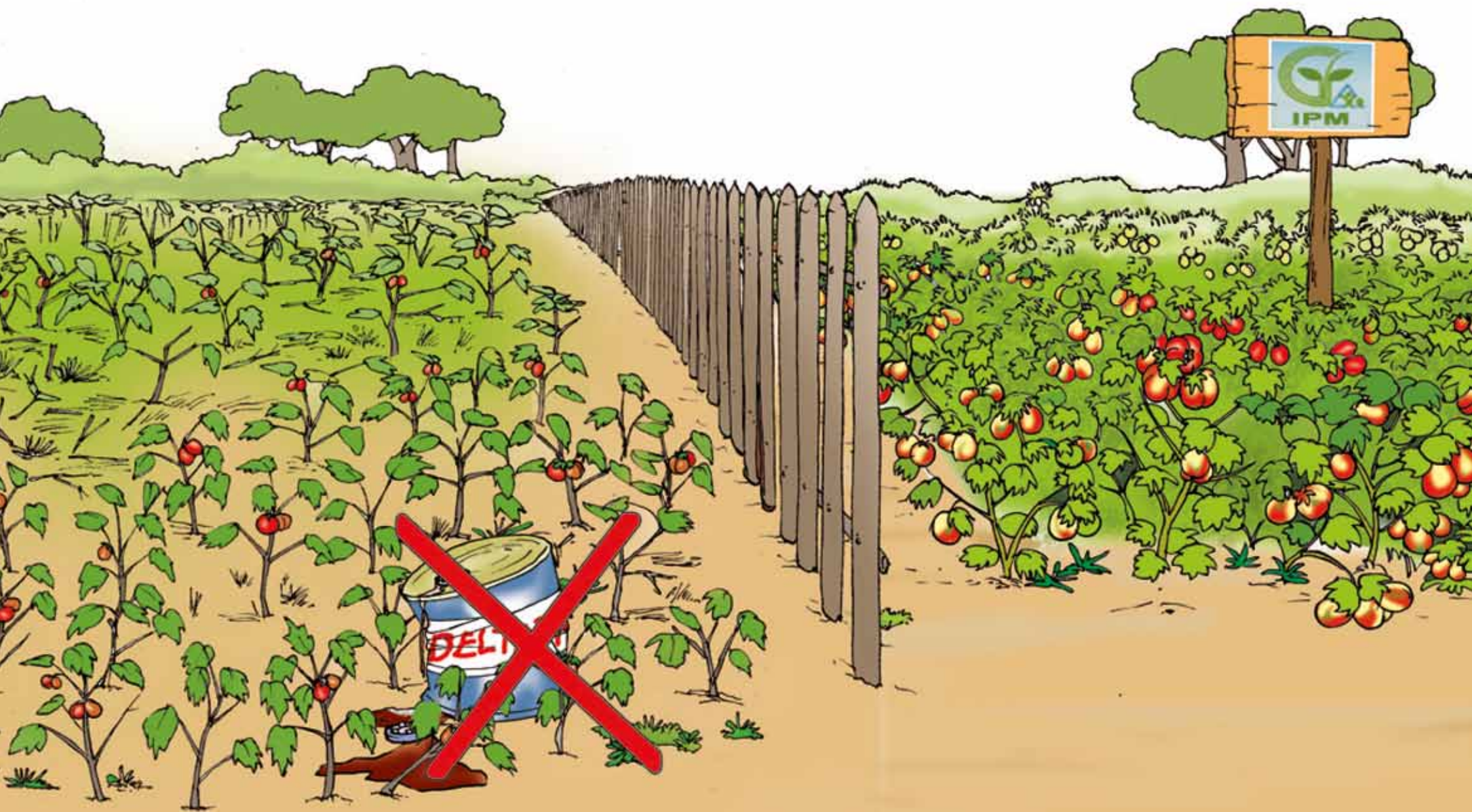
Encourage participants to discuss alternatives they already know, such as neem tree extract or other biopesticides.

**Note for the facilitator**

When this visual guide is not used as part of a programme on alternatives to pesticides, consider inviting an agricultural extension worker or IPM Farmer Field School facilitator to discuss alternatives and answer participants' questions.

**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.



Ensure that there are no children or pregnant women in the fields while you or others apply pesticides or just after the pesticides have been applied.

Ensure that adults who apply agrochemicals have adequate training, protective gear that fits, and wash carefully after using these substances.

Discuss what should go into a first aid kit for those who have been exposed to pesticides.

### **Note for the facilitator**

It may be useful to invite a local health care worker to a training session, to explain what action to take if a person has been exposed.





Do not let children clean equipment used to apply pesticides.

Do not let children wash clothes that have been worn in fields where pesticides have been applied.







Do not permit children (or other workers) to enter fields (for work or play) directly after agrochemical application; observe the re-entry period on the product packaging.

### **Notes for the facilitator**

You may choose to discuss with the participants the re-entry periods for commonly used pesticides. Using the above image, you could also discuss the best message or symbol to be used in the community, to make it clear when people must not enter an area where there is the risk of exposure to pesticides.



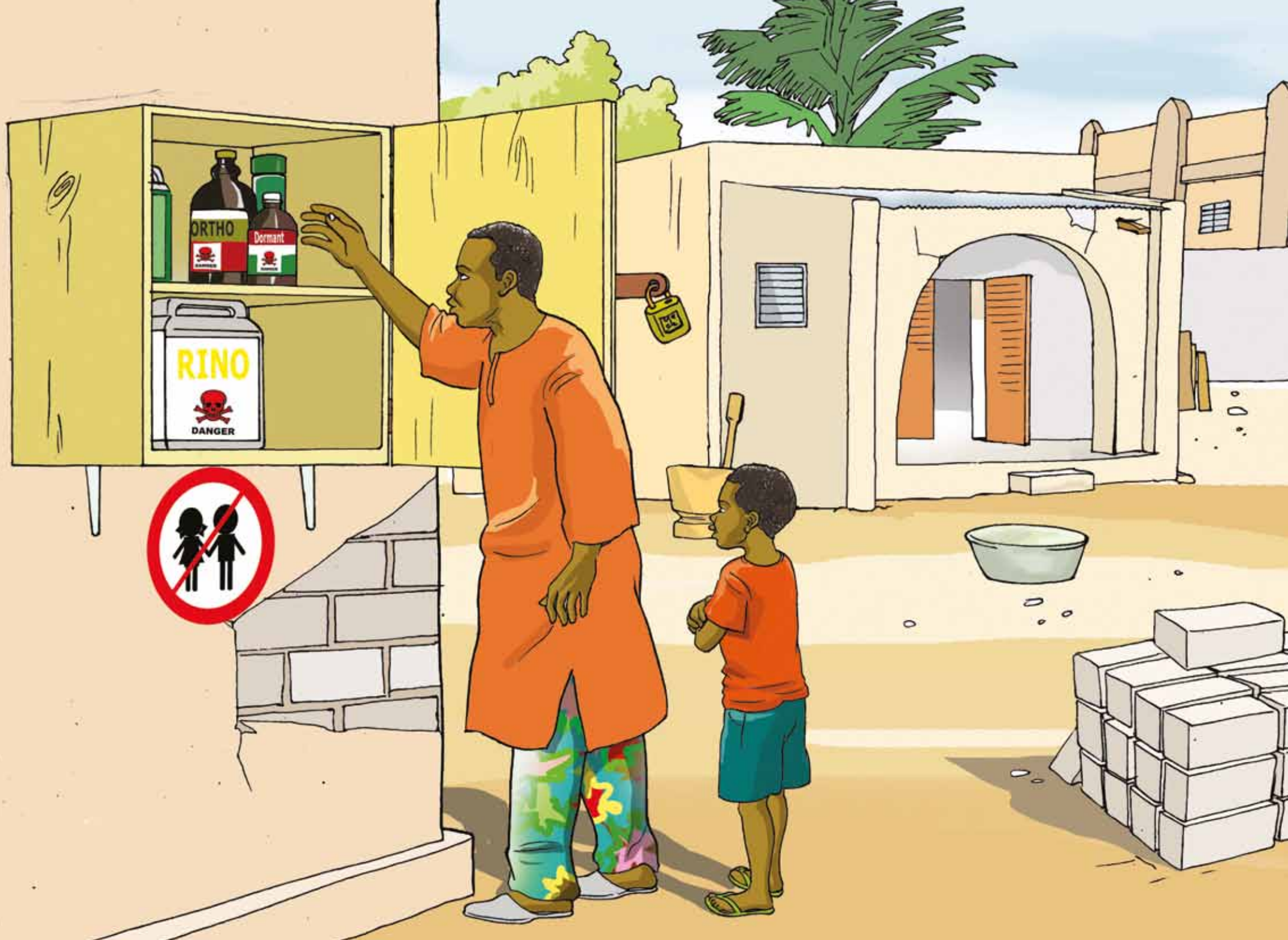
Ensure that everyone in the household and on the farm recognizes the danger symbol on pesticide containers and knows what it means.





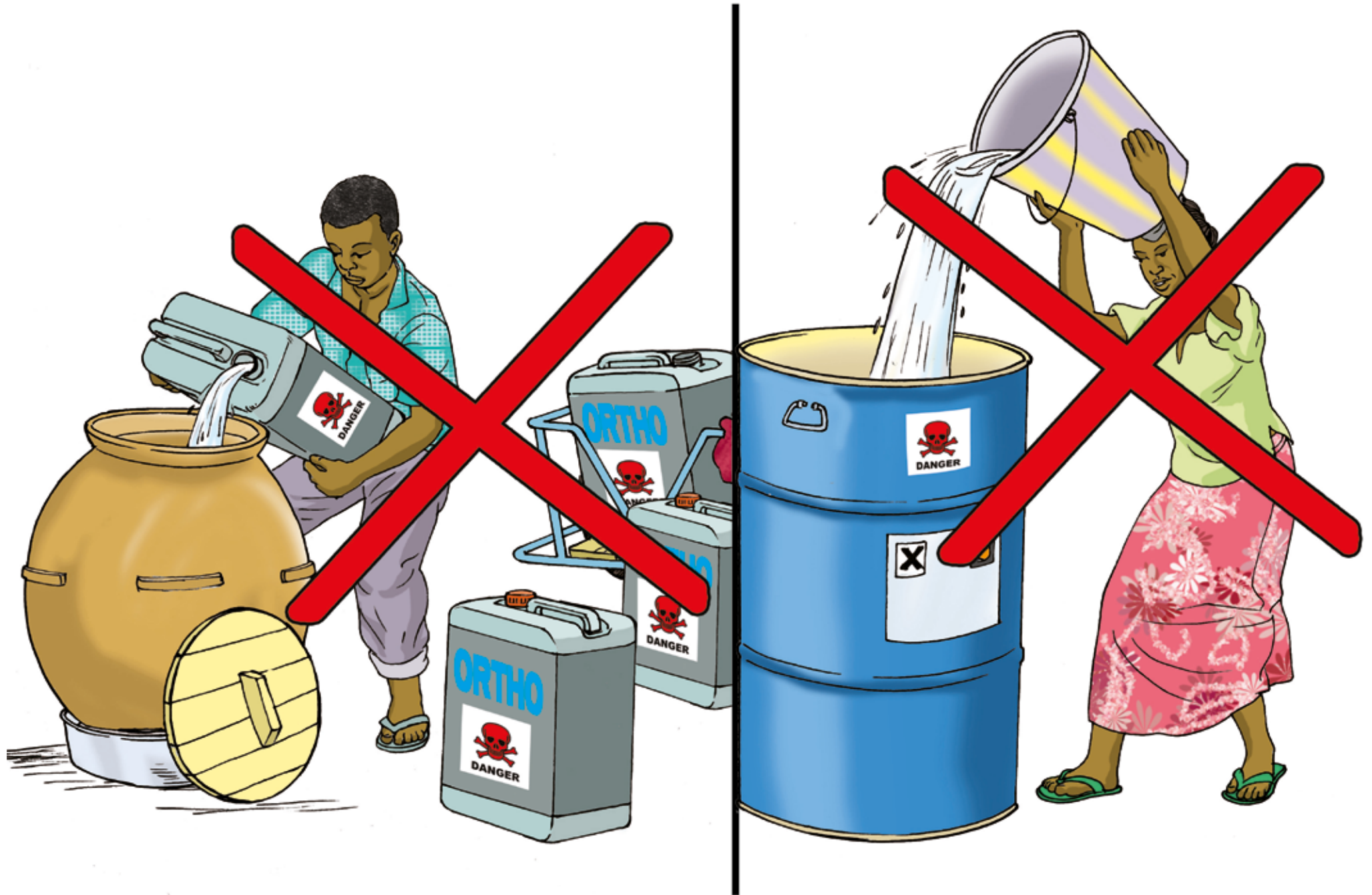
**DANGER**

Make sure that chemical containers and equipment are stored out of reach of children.





Do not let chemical containers be reused for any other purpose.

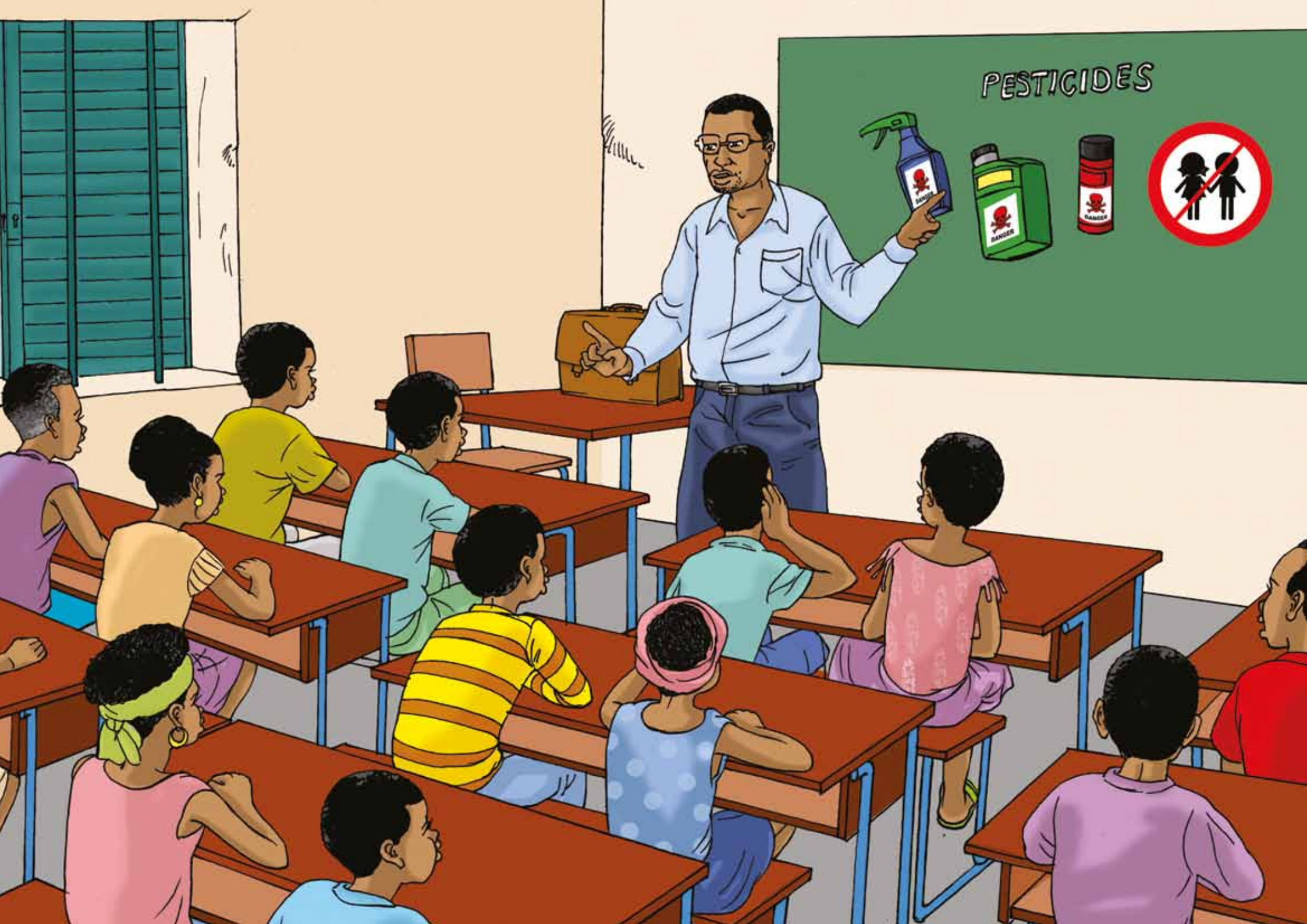


Ensure that food grown where pesticides have been used is washed thoroughly before cooking or eating.



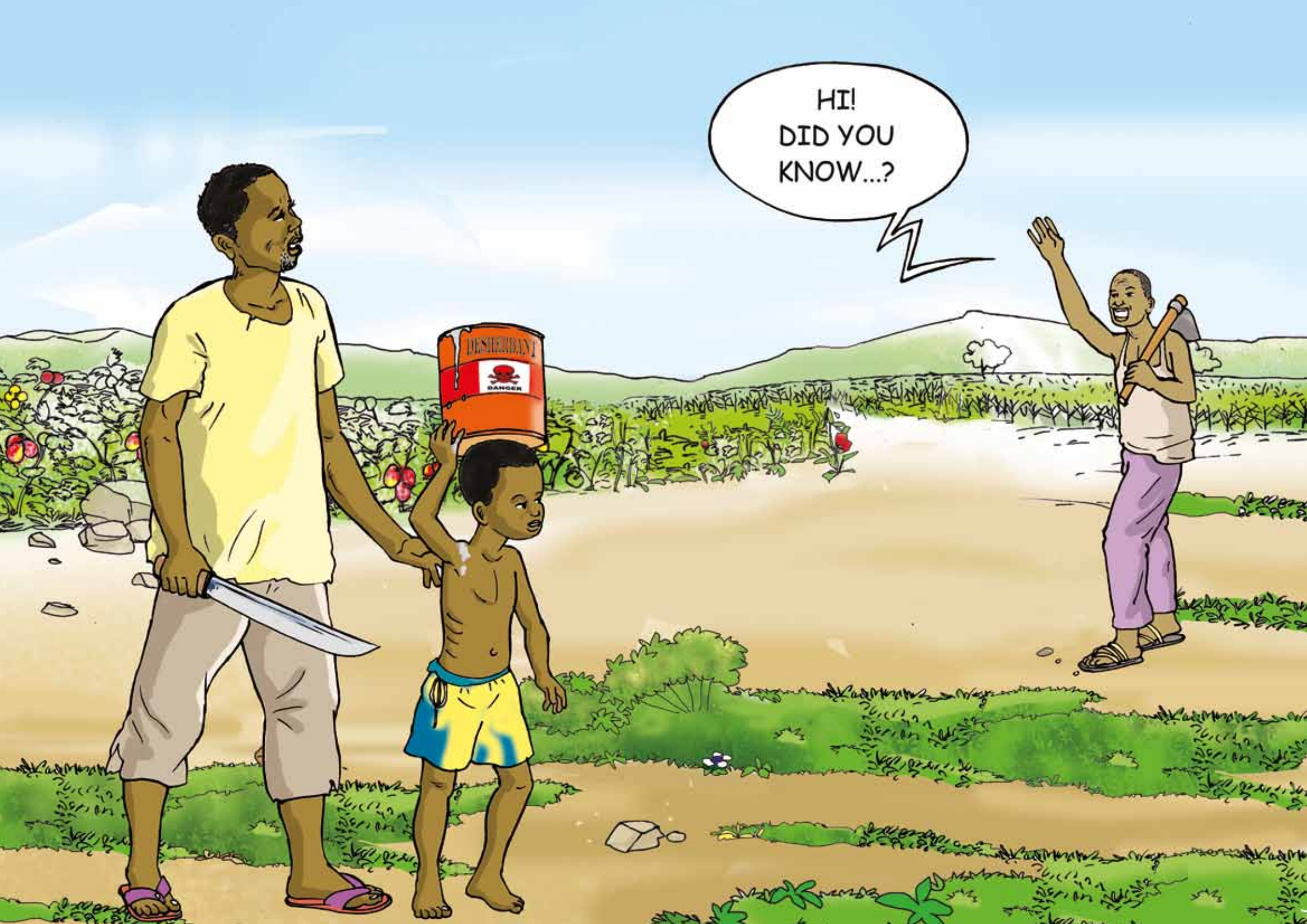


Encourage schools to teach children about the dangers of pesticides. It could be part of a science or health course, or part of after-school activities.





Share this information with your family, any workers you hire, other members of producers' organizations, and local authorities in the community.



HI!  
DID YOU  
KNOW...?

End the session by stressing the positive effects of the reduction of exposure to pesticides for people and their communities.

**Key message:**

If we protect our children from  
pesticides today,  
we will have a stronger, healthier  
community tomorrow.



**BY PROTECTING OUR CHILDREN FROM PESTICIDES TODAY,  
WE WILL HAVE A STRONGER, HEALTHIER COMMUNITY TOMORROW!**



The purpose of this tool is to assist the facilitators of Farmer Field Schools as well as other extension agents to lead discussions on the protection of children from pesticides. It can also be used to conduct similar discussions at community level.

This tool was developed by Jacqueline Demeranville (FAO), in collaboration with Elisabetta Tagliati (FAO) and Hamidou Cisse (ILO). We would like to thank Mark Davies (FAO), Theodor Friedrich (FAO), Maria Lee, and Paola Termine (ILO) for their comments as well as Marwan Benali, Clement of Rivas and Uwe Grever for their support throughout the development of the guide. Thanks go as well to Christabel Clark (FAO) for the adaptation of this tool into English. Gratitude is expressed for the technical and financial support received from the Rotterdam Convention Secretariat. The financial support received from the Kingdom of the Netherlands through FAO's Multi-Partner Programme Support Mechanism (FMM) is also highly appreciated.

The illustrations were done by Julien Batandéo. The page layout was done by Ruth Duffy.

This is a preliminary version of the training manual to be tested in the field. Please send any comments and suggestions for improvement before 31 December 2015 to:

Jacqueline Demeranville: [Jacquelineann.Demeranville@fao.org](mailto:Jacquelineann.Demeranville@fao.org)





**Food and Agriculture Organization  
of the United Nations**

Viale delle Terme di Caracalla  
00153 Rome, Italie  
Tel : + 39 06 57051  
[www.fao.org](http://www.fao.org)



**Food and Agriculture  
Organization of the  
United Nations**

**International Labour Organization**

4 route des Morillons  
CH-1211 Genève 22 – Suisse  
Tel : + 41 (0) 22 799 81 81  
[www.ilo.org](http://www.ilo.org)



**International  
Labour  
Organization**