WASH Training Manual for Community Health Workers in Arid Regions

Riruta United Women Empowerment Programme (RUWEPO)

Table of Contents

One Day Training Schedule

9:00 AM – 9:50 AM	Unit 1: Introduction
9:50 AM- 10:30 AM	Unit 2: Community Health Workers
10:30 AM- 11: 15 AM	Unit 3: Water-Borne Diseases in Arid Regions
11: 15 AM – 11:45 AM	Break
11:45 AM – 1:00 PM	Unit 4.1: Water Treatment
1:00 PM – 1:45 PM	Unit 4.2: Water Storage
1:45 PM – 2:15 PM	Break
2:15 PM – 3: 30 PM	Unit 4.3: Hygiene
3:30 PM – 4:00 PM	Wrap-Up and Clean- Up

Preparation

This training has been developed for the non-profit Riruta United Women Empowerment Programme's Water, Sanitation, and Hygiene program for the arid regions of Kajiado West in Kenya. This is a one-day training that will cover the background on the challenges of living in an arid region, the negative health outcomes that can occur from these challenges, the importance of having trained community health workers, and how water, sanitation, and hygiene education can help reduce the rates of negative health outcomes. There will also be a review of common household level activities for treating water. In situations where there is a lack of a reliable and safe centralized water source, community members must ensure that they take the steps to protect themselves from preventable water-related diseases.

The material will be presented to the trainees via an in-person presentation and there will be activities and discussions throughout the training to allow for engaged education. The trainees will keep the worksheets after the training for reference. There is also a Resource Guide for Trainers, which provides more background education on the topics for the trainers. Trainers will need to review the Resource Guide prior to conducting the training. A practice run of the training should be conducted before holding an official training for community members.

Materials Needed for In Person Presentation:

- Venue for Training
- White Board
- Pens
- Worksheets for the Activities (found at the bottom of the manual)
- Projector & Screen or Blank Wall

For Activities:

- Water Bottles for Each Trainee for Activity 5
- 1 Water Bottle with Clean Water
- 1 Water Bottle with High Turbidity Water
- Filtration Cloth for Each Trainee for Activity 5
- 5 Unsuitable Water Containers for Water Storage (see below for pictures)
- 5 Suitable Water Containers for Water Storage (Have at least one of plastic, glass, enameled metal, and fiberglass)
- Tools To Dig With (see below for pictures)
- Gravel, Stones, or Dirt for Tippy Tap Demonstration (see below for pictures)
- 2 Pieces of At Least 5 Feet Long String Each (see below for pictures)
- 2 Forks Sticks At Least 5 Feet Each (see below for pictures)
- 2 Straight Sticks At Least 5 Feet Each (see below for pictures)
- 1 Bar of Soap
- Nails or Other Sharp Tools to Make a Hole in the Water Container (see below for pictures)

Introduction

Objective:
Trainees will be introduced to the topic of the training, to the trainer, and get to briefly introduce themselves to the others in the training.

Introduction Activity: 20 minutes

[For Trainers]: During the introduction, the trainees will begin with a quick introduction of themselves. The introduction activity will last for 20 minutes. The instructor will read the two **Say** sections below. The first section provides a brief introduction for the topic of the training followed by a brief introduction of yourself and then the trainees. State your name, background, and other information to the group to get everyone comfortable, then begin at one side of the room and go in a circle until everyone is introduced.

Say: Today we are going to be discussing and practicing some common household methods that can reduce water-borne diseases that can occur in arid and semi-arid lands. Water-borne diseases are diseases that are occur when there is a lack of safe water sources and unhygienic or unsanitary practices when consuming water. We will be talking about water, sanitation, and hygiene, which is commonly referred to as WASH. We will have discussions, use worksheets, activities, and have some demonstrations throughout the day. Please feel free to ask questions at any point of the session today. We will first begin with a small activity.

Say: We will be spending a large portion of the day together so we will begin with introduction so that we may all quickly know each other's names and backgrounds. I will begin by introducing myself. Then we will go around the room and have everyone say their names, what their professional backgrounds are, and if they have worked as community health workers before.

1.1. EFFECTS OF ARID CLIMATE ON WATER-BORNE DISEASES

Objective:
Trainees will understand the issue of lack of safe water in the context of arid regions. They will share and discuss common water sources that are used in the community to identify where there are sources of concern.

Activity 1: 15 minutes

[For Trainers]: This activity will need 15 minutes. Begin by reading out loud the paragraph after **Say** to introduce the topic of the activity. Then follow by asking the question after **Ask**. To encourage discussion, allow for trainees to volunteer to speak and then call on participants. In this discussion have the trainees provide information on what they have seen been the most common sources of water during the arid season After the activity has been completed, move on to the Section 1.2., which includes a short **Say** section to wrap-up the Introduction unit.

Say: Arid climates can lead to a lack of reliable and safe water sources. This can lead to people getting water from sources that are cannot be trusted to be safe for consumption and use. Water is an essential and basic need, so it is incredibly important that everyone has access to safe water. When this is the case steps should be taken that allow household members to make their water supply suitable for consumption.

Ask: What are common sources of water that community members use during the arid season?

Possible Answers:
Boreholes
Wells
Groundwater
Unreliable people and organizations

1.2. IMPORTANCE OF WASH EDUCATION

Say: Proper WASH knowledge, attitudes, and practices can influence the rate of preventable diseases and infection that occur in communities with low access to safe and reliable water sources. Working to provide community members with the proper knowledge leads to a reduction in the prevalence of these diseases. The increase in knowledge and change in behaviors and practices reduces the consumption and use of contaminated water. We will have some demonstrations and activities where we practice household level interventions for making water safe for use.

Community Health Workers

2.1. NEED FOR TRAINED COMMUNITY HEALTH WORKERS

Objective:
Trainees will get to know about and discuss the need for community health workers and what the expectations are for community health workers. They will also get to spend time discussing what they think the role of a community health worker is. They will see an emphasis on the importance and benefits of bringing community members into the role of teachers.

Activity 2: 30 minutes

[For Trainers]: This activity will need 30 minutes. Begin by reading out loud the paragraph after **Say** to introduce the topic of the activity. Then follow by asking the question after **Ask**. During this activity trainees will discuss what they think the value of community health workers are when it comes to the water, sanitation, and hygiene practices of their communities. Have trainees answer the question in a small group for 15 minutes then return to the full group to discuss the main points from each group for another 15 minutes. Bring back the points of understanding nuances of the culture, the language, the needs, and be a familiar face to the community making the message more impactful. After the activity has been completed, move on to the Section 2.2., which includes a short **Say** section to wrap-up the Community Health Workers unit.

Say: Community health workers are vital to many health programs around the world. They work to fill in the gap that can be left when there are not enough health care professionals and educators available. They are also able to connect with the community because they share their background. They understand the nuances of the needs of the community while being a familiar face to the community.

Ask: What benefits do you think being a community health worker will have to the water, sanitation, and hygiene practices of your community?

2.2. EXPECTATIONS OF THE COMMUNITY HEALTH WORKERS

Say: After this training, you will be able to educate community members on the need for ensuring that the water that is used by community members is always safe. This training provides background and simple household techniques that can be used by anyone to lower the number of water-borne diseases that are experienced. Community health workers can promote WASH education through one-on-one sessions during home visits or can hold small teaching sessions for groups of community members.

3.1. F-DIAGRAM

Objective:
Trainees will become familiar with the F-Diagram. They will be introduced to the F-Diagram and complete a worksheet that illustrates the route of feces to new host and where WASH interventions can be implemented to reduce the risk of disease.

Activity 3: 35 minutes

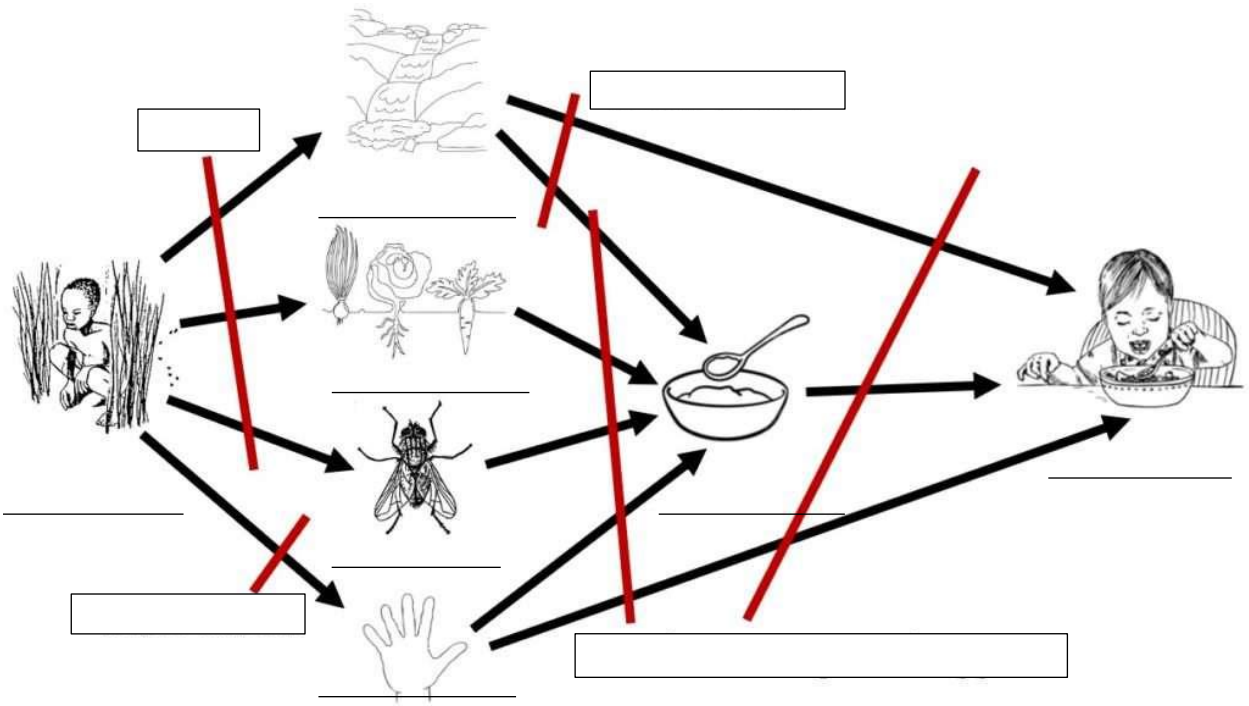
[For Trainers]: This activity will need 35 minutes. Begin by stating the **Say**. Provide a sheet with the copy of the F-diagram below (printable copy on page 18) with the word choices for them to label the diagram on the blank lines under the pictures. A copy with the answers can be found in the Resource Guide for Trainers. Allow for 10 minutes for them to complete the worksheet. After the worksheet has been completed you will review the correct answers with the group. Give the correct answers and review the links of the diagram from open defecation to the new host for 10 minutes. Return to the sheet and have everyone work in pairs and a group of three if needed. Ask at which sanitation or hygiene methods can be used to decrease the impacts of the water-related diseases throughout the diagram in the four white text boxes for 5 minutes. After this part is complete, review the correct answers with the group for 10 minutes by having the trainees give their answers before you give the correct answers. After the activity has been completed, move on to the Section 3.2., which includes a short **Say** section to wrap-up the Water-Related Health Outcomes in Arid Regions
unit.

Say: In this section, there will be an introduction and review of the F-diagram, which shows how feces can travel from open defecation to a new host. You will be given a sheet with the F-diagram sheet for you to fill out and then it will be reviewed to go over what the common ways fecal matter transmits. The diagram shows five common sources of transmission route for feces that begin with the letter “F” in the English language, and at which point WASH interventions can be used to interrupt the pathways to reduce transmission of disease. When living in an arid region or in an arid season, finding safe water can be a challenge. There are many aspects to making sure that water is safe. Finding the proper water source is incredibly important as open defecation from both humans and animals causes contamination of water for human consumption and use in many ways. Properly treating and storing of water is also another important step in ensuring that water is safe for use. Sanitation and hygiene practices also need to be used to minimize the risks of water-related diseases. Household levels activities are vital when there is a lack of centralized water sources.

Say: When community members have to resort to water from sources such as boreholes, wells without cement bases, and rivers which are not known to be safe water sources they are at risk of

drinking water contaminated with feces. Common diseases that occur are cholera, diarrhea, and dysentery and affect children under the age of five especially. Infection from *fluids* usually involves drinking or cooking with water contaminated with fecal organisms.

Inthe *fingers* pathway, a person ingests the organisms (usually during eating) if they have come into contact with feces and have not washed their hands properly afterwards. This contact can occur from defecation, from cleaning a child's bottom, from touching dirty surfaces or eating food prepared in an unhygienic manner. *Flies* and cockroaches often thrive on excreta. If they land on food they can transfer fecal matter that can be subsequently ingested by a person. *Field* (or soil) infection can occur by the ingestion of unwashed raw vegetables and fruit grown in soil contaminated with feces. Contaminated soil may be transported by feet or shoes for long distances.[1]



Word Bank for lines:

Feces Fields Fluids Flies Food New Host Fingers

3.2. REDUCING NEGATIVE HEALTH OUTCOMES WITH EDUCATION

Say: Providing community members with best practices for WASH can be beneficial in many ways. The knowledges, attitudes, and the practices of the community members can also have great impact on the health outcomes they may face. For example, cultural ideas and perceptions can take precedent over the proven and effective methods for safe WASH practices. When community health members can reinforce proper WASH methods and procedure it can help reduce the practices of community members that result in diseases.

Household Level Activities for Safe Water

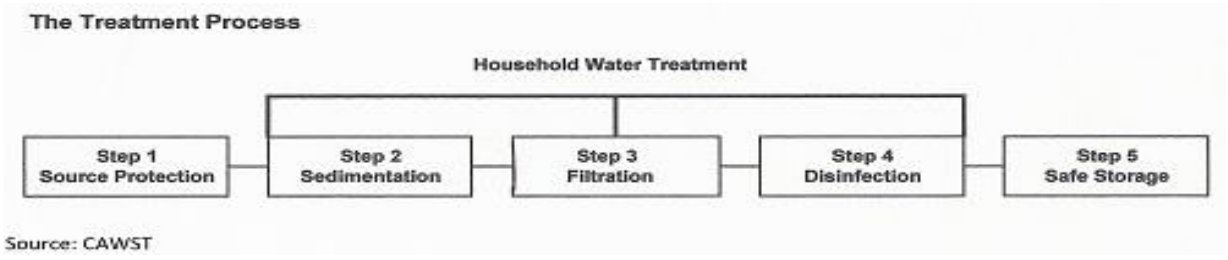
4.1. WATER TREATMENT

Objective:
The trainees will also be provided with demonstrations of filtration, disinfection, and safe water storage methods.

Activity 4: 50 minutes

[For Trainers]: This activity will need 50 minutes. Begin by reading out loud the paragraph after **Say** to introduce the topic of the activity and to give a brief lesson on the different water household water treatment methods. Then follow by asking the two questions under **Ask** for a discussion on the water treatment practices of community members. Give 10 minutes for them to discuss the questions in small groups of 2-3 and then come back together to discuss them as a large group. Once the discussions are complete, move to the Filtration activity next.

Say: It is important to ensure that the available water is safe to use. The lack of reliable water sources results in community members having to find water in other places where the safety of the water cannot be ensured. Community members, especially the household leaders, must work to ensure that they take precautions to make sure that the water they are collecting and storing are going to be safe for them and their children. The following are relativity easy methods that can be done when resources may be scarce. Though this is not a comprehensive list of all water treatment methods there are two relatively easy methods that include resources that most community members should be able to access. One of the methods of household water treatment and safe storage can be summarized in a five-step treatment process. The treatment process includes source protection, sedimentation, filtration, disinfection, and safe storage. Today we will review filtration, solar disinfection, and safe storage as they are methods that can be done at the household level.[2]



(A Layman's Guide to Clean Water, n.d.)

Ask: Question 1: What negative water-treatment and storage practices do community members practice?
Ask: Question 2: What positive water-treatment and storage practices do community members practice?

Filtration:

Activity 5: 15 minutes

[For Trainers]: This activity will take 15 minutes. Begin by reading out loud the paragraph after **Say**. Give everyone a water bottle and a clean cotton cloth. For this activity everyone will be given a cotton cloth, cup, water bottles that have been prepared with small amount of dirt and sand. Begin by reading out loud the **Say** section below.

You will give the demonstration first. Begin by folding the cloth at least three times, then place the cloth over the top of the cup. You will then pour into the cup water from one of the water bottles with the dirt and sand. You should see that the dirt and sand on the cloth and not in the cup. After you have completed the demonstration announce that everyone can also begin the activity.

Say: The debris and the contaminates can be filtered out before disinfection by using a few different types of filters. A clean cotton cloth that is tightly woven and fine can be used to filter water through.[3] For this activity everyone will be given a cotton cloth, water bottle with water containing dirt and sand, and a cup. This will be used to make a filtration system. I will first show a demonstration and then you will all complete this also. After we have completed this part of the activity we will move on to discussing disinfection.

Disinfection:

Activity 6: 5 minutes

[For Trainers]: This activity will take 15 minutes. Begin by reading out loud the paragraph after **Say**. Show the difference in for the clean water bottle and the turbidity water bottle.

Say: One of the of effective ways to eliminate bacteria, parasites, and viruses is to boil the water.[3] The Center for Disease Control and Prevention suggests the following guidelines when boiling water:

<u>If the water is cloudy:</u>[4]

1. Filter it through a clean cloth, paper towel, or coffee filter OR allow it to settle.
2. Draw off the clear water.
3. Bring the clear water to a rolling boil for 1 minute (at elevations above 6,500 feet, boil for three minutes).
4. Let the boiled water cool.

5. Store the boiled water in clean sanitized containers with tight covers.

If the water is clear:[4]

1. Bring the clear water to a rolling boil for 1 minute (at elevations above 6,500 feet, boil for three minutes).

2. Let the boiled water cool.

3. Store the boiled water in clean sanitized containers with tight covers.

Say: We will not have a demonstration for boiling water, but we will now look at the difference between cloudy and clear water. After this we will move on to discussing the steps of second type of disinfection: solar disinfection.

Say: Solar disinfection has been found to have many advantages. It has been found to reduce bacteria and viruses in water, reduce the incidence of diarrheal diseases, is simple to use, and there is not much additional cost for the materials used.[5]

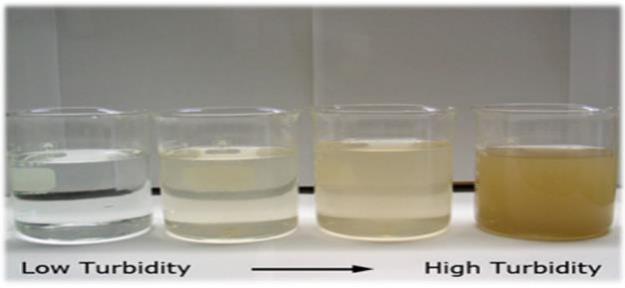
The steps to solar disinfection are simple, but they do require training from community health workers to learn the proper methods.

For solar disinfection:[5]

1. Fill a 0.3-2.0-liter plastic bottle with low turbidity water. Turbidity refers to the cloudiness of water. Be sure that the plastic bottle has been cleaned to avoid further contamination.

2. Shake the bottle to oxygenate for 20 seconds.

3. Place the bottle outside for 6 hours if it is sunny and for 2 days if the weather is cloudy. After the time has passed the water should be filtered and then is safe for consumption.



(Picture shows four cups of water with different level of cloudiness. The one on the left is clean water and the cups show a gradient of more cloudy water. Fondriest Staff, n.d.)

(International Journal of Photoenergy, 2011)

4.2. WATER STORAGE METHODS

Activity 7: 30 minutes

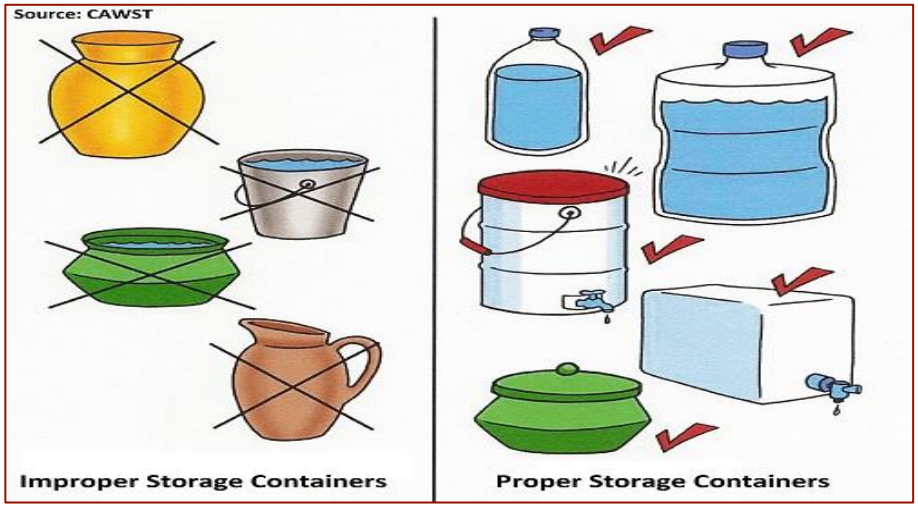
[For Trainers]: This activity will take 30 minutes. Begin by reading out loud the paragraph after **Say**. Bring out 10 different containers that could be used for water storage. Bring a sample of each of the best suitable kinds of containers which are plastic, glass, enameled metal, and fiberglass. Have 5 that are suitable and 5 that are not. Mix up the order of which are suitable, and which are not. Go through each of the cans and ask if this would be ideal for the water storage and discuss the reasons for each. Call on different trainees throughout the exercise while going through the different cans.

Say: Proper water storage is vital when there are scarce water sources. Protecting water for safe use is a very important step to sanitation and hygiene.[6]The best container to use is one that is durable and can be closed tightly to avoid any contaminants such as flies or debris from getting in. Be sure to not use a container that has previously been used to hold pesticides or any other toxic chemicals.[6]

The best water storage containers are those which are made of plastic, glass, enameled metal, and fiberglass. They should be washed with soap before they are used to ensure that the water does not get contaminated. Water containers should also not be stored in direct sunlight or anywhere near toxic substances such as gasoline or pesticides.[6]Any methods that are used to scoop the

water out should also be sanitized before use every time. Do not use bare hands to scoop out the water.[6]

The following pictures demonstrate the proper containers that should be used for water storage. They should always be in a covered container and only be used for treated and safe water.[7] Now we will review 10 containers and determine together if they are suitable for water storage or not. After this we will move on to the Hygiene section.



(A Layman's Guide to Clean Water, n.d.)

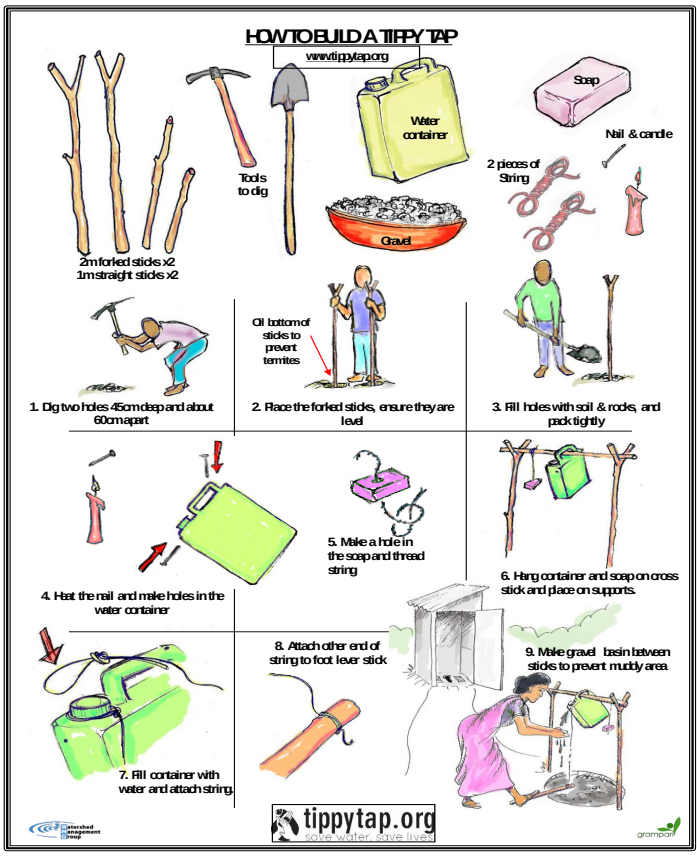
4.3. HYGIENE

Activity 8: 1 hour

[For Trainers]: This activity will take 1 hour. Trainees will assist with building a Tippy Tap and then a few will be chosen to do a hand washing demonstration at the Tippy Tap. Begin by reading out loud the paragraph after **Say**. Pass out the sheet below on pages 22 (in English) or 23 (in Swahili) and the copy of the Handwashing Guide on page 21 everyone. Break everyone off into groups of 3. You will lead a demonstration with different trainees coming up to do different aspects of the process. Follow the instructions of the Tippy Tap sheet. Once it has been set-up,

move on to have the trainees do a demonstration of washing their hands. Select 2-3 trainees to come up to wash their hands in front of everyone after reviewing the handwashing sheet from the WHO that is included.

Say: The tippy tap can be used in rural areas that do not have running water for a hands-free way to wash hands. They are hygienic, save water, are low cost, there is no waste, simple to set-up, and promote handwashing.[8] They are operated by a foot lever and there is only need for the user to touch the soap, which helps reduce having to touch communal handles.[8] The water from the tippy tap that falls to the ground falls back into the plants of the water table below. We will build a tippy tap together. We will also use it for handwashing after its construction.



Say: Hand washing is an effective method in reducing the rate of transmission of disease from feces to mouth. Hand washing should be implemented after using the latrine and before and after making and eating food. Proper hand washing requires a safe source of water and some hand soap. When there is a shortage of water there are specific methods that can be used to save water, but also ensuring that proper hygiene practices are being used. One way to do this is with the use of a tippy tap for handwashing.[8] We will go through a demonstration of how to build one.
The hand-washing guide below from the WHO has highlighted nine important steps to proper handwashing. The guide recommends washing hands for a total of 40-60 seconds. During this time soap should be used to wash the palms, back of the hands, in between fingers, under fingernails, and the wrists.[9]

The steps below follow the hand-washing diagram on the following page that serves as a visual aid.

The steps are as follow:[9]
0. Wet hands with water.

1. Apply enough soap to cover all hand surfaces.

2. Rub hands palm to palm.

3. Right palm over left dorsum with interlaced fingers and vice versa.

4. Palm to palm with fingers interlaced.

5. Backs of fingers to opposing palms with fingers interlocked.

6. Rotational rubbing of left thumb clasped in right palm and vice versa.

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.

8. Rinse hands with water.

9. Dry hands thoroughly with a single use towel.

10. Use towel to turn off faucet.

11. Your hands are now safe.

Say: We will now go to build the tippy tap followed by the hand-washing demonstration.

Wrap Up

This is the end of the training. Give the trainees time to ask any questions they may have and provide contact information for any follow-up questions that may have. Allow for the trainees to take all three worksheets and hand out the care packages to the trainees before dismissing them and cleaning up the room.

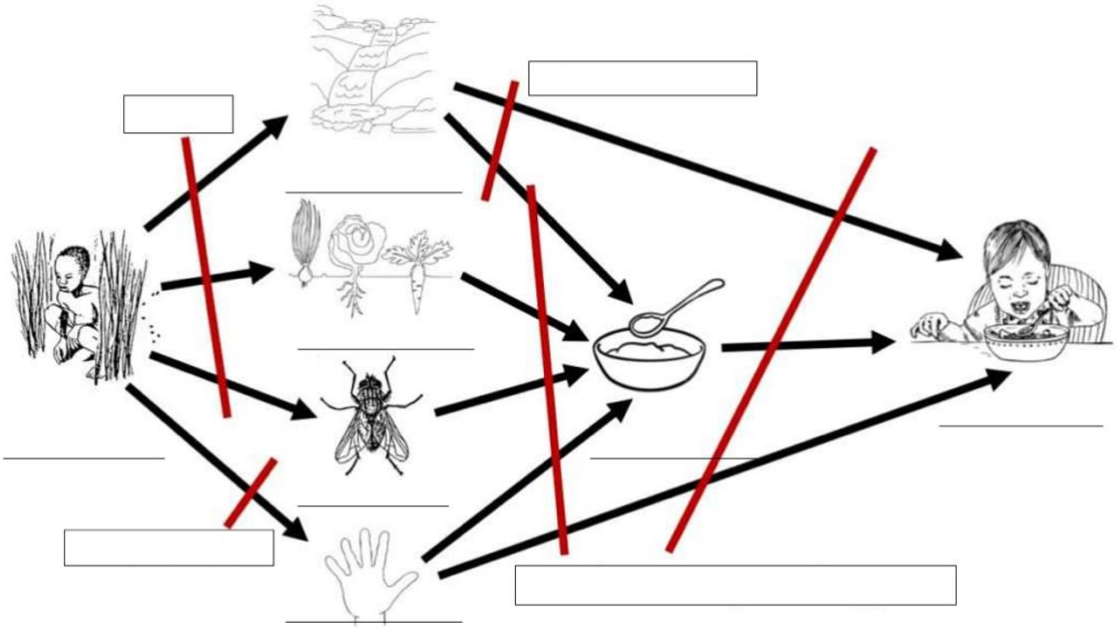
F-Diagram Worksheet

Fill in the lines with the words below.

Word Bank for lines:

Feces **Fields** **Fluids** **Flies** **Food** **New Host** **Fingers**

Fill in the white text boxes with which sanitation and hygiene behavior practices and interventions you think would reduce or eliminate the harms of open defecation. You can repeat practices or include multiple for one box.



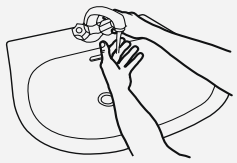
Handwashing Guide from the WHO

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0

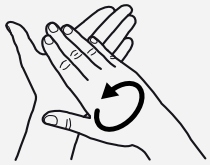


Wet hands with water;

1

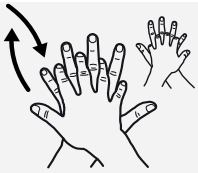
Apply enough soap to cover all hand surfaces;

2



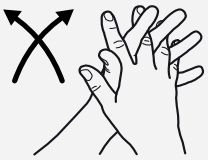
Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

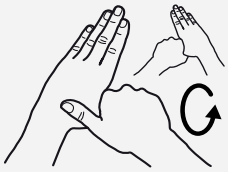


Palm to palm with fingers interlaced;

5

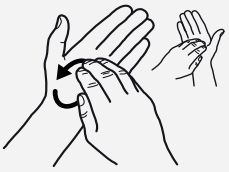
Backs of fingers to opposing palms with fingers interlocked;

6



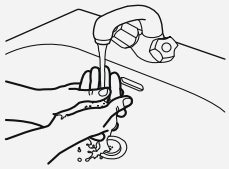
Rotational rubbing of left thumb clasped in right palm and vice versa;

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

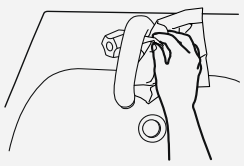


Rinse hands with water;

9

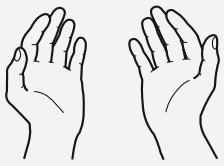
Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11



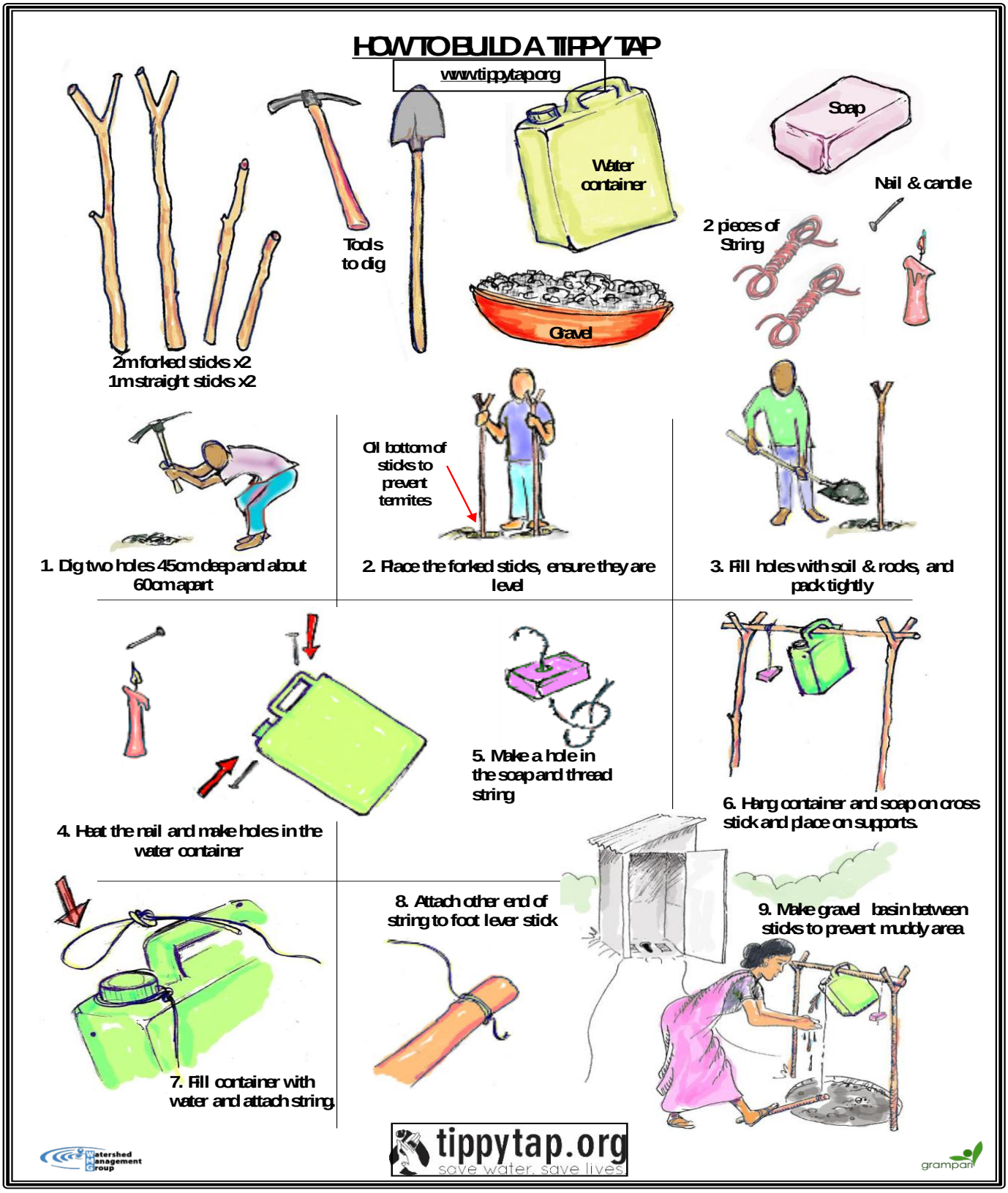
Your hands are now safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

Setting up a Tippy Tap from tippytap.org (English)



Setting up a Tippy Tap from tippytap.org (Swahili)

References

[1] Open Learn Create. (2017). 2.2 Routes for Disease Transmission Retrieved from https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=80399&section=4#back_thumbnailfigure_idm45621727663568

[2] A Layman's Guide to Clean Water. (2015). Water Storage Containers Come in All Shapes and Sizes, But Safe Storage Containers Should Always Have Certain Characteristics. Retrieved from http://www.clean-water-for-laymen.com/ways-to-clean-water.html

[3] Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), & Division of Foodborne Waterborne and Environmental Diseases (DFWED). (2022). Making Water Safe in an Emergency. Retrieved from https://www.cdc.gov/healthywater/emergency/making-water-safe.html

[5] Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), & Division of Foodborne Waterborne and Environmental Diseases (DFWED). (2022). Solar Disinfection. Retrieved from https://www.cdc.gov/safewater/solardisinfection.html

[6] Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), & Division of Foodborne Waterborne and Environmental Diseases (DFWED). (2021). Creating and Storing an Emergency Water Supply. Retrieved from https://www.cdc.gov/healthywater/emergency/creating-storing-emergency-water-supply.html

[7] A Layman's Guide to Clean Water. (2015). Water Storage Containers Come in All Shapes and Sizes, But Safe Storage Containers Should Always Have Certain Characteristics. Retrieved from http://www.clean-water-for-laymen.com/water-storage-containers.html

[8] Tippy Tap. (n.d.). The Solution- Tippy Taps. Retrieved from https://www.tippytap.org/tippy-taps

[9] World Health Organization. (2009). How to Handwash. Retrieved from https://www.who.int/campaigns/world-hand-hygiene-day