

Sawyer Water Filter Training for Sustainability

Best Practices For Sustainability

The information below is a collection of best practices that Sawyer's international team have observed NGOs use to achieve sustainable and long life projects using our Hollow Fiber Membrane filters. As always, the context of each project varies, and the information below may not fit well, but Sawyer is happy to help you develop a successful training program that meets your needs if you contact us.

Part 1: OVERVIEW for the Trainers (Page 1 & 2)

- We have found it a best practice to train recipients on filter use in individual homes rather than a large community group. This training can be done directly or by utilizing trained lay representatives who can train and support recipients locally.
- If individual home training is not possible, group training can still be successful, but the trainers will need to make sure the recipients are paying attention and can properly demonstrate how to use the filters.
- In a village setting, upon arrival, you might be greeted by a large group. It may be helpful to give a short demonstration of the filter before dismissing them back to their house or asking one recipient from each household to gather into a smaller more management group.

Hands On training is the KEY to success!

- It is **VERY important that at least one family member demonstrates ALL the necessary steps needed to operate the water filter before the trainer leaves.** When the trainer is the only one who demonstrates how to use the filter, the trainees most likely will not absorb all of the training. It is a common experience for trainers to take over certain aspects of the training when a recipient is struggling with a step. This may seem helpful in the moment, but the recipients are less likely to remember how to use the filters until they can operate the filters by themselves without assistance.

It is helpful to review the "how water becomes contaminated" poster and think through the items below to adapt the training language to the local culture – (<http://bit.ly/2supWdd>)

- It is sometimes hard to communicate the need for safe drinking water to the recipients. We found it a best practice to identify appropriate cultural language for "Contaminated" water to ensure the recipients understand the importance of the filter during training.
 - "Clean" water might mean "clear" in some countries.
 - "Dirty" water might mean "brown."
 - "Safe" or "Healthy" water might be a good term.
 - "Contaminated" water is used in Fiji and means that even "clear" water can have harmful germs.
 - Rural villagers might believe the myth that "clear" water is "safe" water.

WASH/Hygiene - Many sicknesses can be avoided by simply washing your hands with soap and water. It is best practice to review this with trainees when showing them how to use the filters

- Wet your hands with clean, running water (warm or cold), and apply soap.
- Lather your hands by rubbing them together with the soap. Be sure to lather the backs of your hands, between your fingers, and under your nails.

- Scrub your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
- Rinse your hands well under clean, running water.
- Dry your hands using a clean towel or air dry them.

Follow Up! - Continuing education and refreshing recipients training is another key to long-term sustainability of the water filter

Behavior change is required for sustainability. If follow ups are not possible in your project’s context, it is recommend to deploy filters into community groups that can help each other or designate a “Champion” who firmly understands how to use the filter as a point person to help others that may be struggling to remember steps.

- **Following up with families within the first 2 to 3 weeks greatly increases the sustainability of the filters.**
- **During follow up visits it is important to have families DEMONSTRATE that they are using their filters properly.**
 - They should show you the filter system.
 - They should demonstrate how to filter water.
 - They should demonstrate how to clean the filter.
 - **Reinforce cleaning the filter after every bucket or at the end of each day.**
 - **Reminder: It is best to clean the filter RIGHT AFTER they filter a bucket.** If cleaning is done later, dirt particles can dry in the filter, causing pre-mature clogging. Cleaning right after a filtered bucket ensures that the filter will dry clean.
 - When they demonstrate cleaning the filter, you will get a good idea if they are cleaning the filter on a regular basis. **Do NOT just ask them how their filter is working**, as most people will tell you everything is good, even when it may not be. **They need to demonstrate that their filter is working** and that they are cleaning it properly. You will be able to coach them once you see them demonstrate all aspects of filter usage and cleaning.

Recommended Follow Up Schedule:

- It’s a best practice to do the first follow up at the two-week mark. This is short enough that the filter can be easily cleaned if proper care hasn’t been used but long enough that behavior change will be apparent.
- If issues are found and a second follow up is needed. A follow up 8 weeks after the the installation will show if behavior change occurred.
- The follow up lengths can be changed based on your project’s context, but a 2 week, and 8 week follow up have been found to be the best possible time periods for most projects.

Part 2: Teaching filter assembly and use

Partially preassembly of the filter kit – Follow the steps below before arriving at the village to help speed up the training process.

- Pre-drill buckets with holes.
 - Drill a hole about 1 1/2 inches from the bottom of the bucket using the provided hole saw bit.
- Attach the hose to the bucket coupling.
- Install the bucket coupling washers and nut just like they will fit on the bucket (the bevel side of the washers should be facing each other).
- Attach the grey threaded filter coupling to the hose.
- Attach the filter to the threaded coupling.
- Attach the hanger to the filter.

When you arrive at the village ask someone to get enough water to FILL the water filter bucket.

- The more you fill the bucket, the better the flow rate of the filter and it may take time to get water.
- Note: **The head man or contact person in the village should receive 1 or 2 drill bits** to be used in the village should buckets need to be replaced. **Each family does not need to receive their own drill bit.**

Demonstrating Daily filter use:

Family member must demonstrate all aspects of filter use.

- Fill the bucket with un-filtered water.
 - If the water has a lot of sediment, you can use a T-Shirt to strain out the larger particles.
- **Teach recipients to wash their hands before handling the filter.**
- Remove white cap and lower the filter.
- **Teach the family member that both buckets need to be rinsed on a regular basis as part of regular sanitation. Do not run soapy water through the filter.**
- Filter enough water to have enough clean water to demonstrate cleaning the filter.
- Clean the filter using the syringe.
- Screw on white cap and attach the filter to the bucket with the provided filter hook. **(Have the family member demonstrate this process.)**

Demonstrate Cleaning the Filter – There are a few different options, but **we recommend teaching trainees to leave the filter attached to the bucket and use the syringe.** Teach them also how to use the cleaning coupler.

Filter Cleaning Option 1: Filter attached using the syringe.

- Use the back flush syringe and draw a full syringe of **FILTERED** water.
- **Explain that you DO NOT USE UNFILTERED WATER TO CLEAN THE FILTER.** Make sure the family understands this.
- Unscrew the white cap from the filter.
- Place the tip of the syringe onto the tip of the water filter.
- Give a firm push with the palm of your hand on the syringe to back flush the filter.
- Repeat back flushing at least three times, or until water runs clear.

- **Note: Teach the family to clean the filter after EVERY bucket (20 liter bucket), or at least at before bedtime while the filter is still wet.** Frequency of cleaning builds good habits ensuring the filter will last for years. Also cleaning when the filter is wet will be more productive than cleaning a dry filter.

Filter Cleaning Option 2: Blue cleaning coupler.

- Find a clean plastic bottle that will thread onto the cleaning coupling.
- Fill the bottle with clean, filtered water.
- Remove the white cap and screw the coupling onto the filter threads.
- Screw the filter with the attached coupling onto the plastic bottle.
- Squeeze forcefully and repeat as necessary until the filter is clean.
- **Note:** If the bottles are hard to find or the trainee is having a hard time using this method, teach the trainee to loosen the bottle to let air in occasionally to keep the bottle from collapsing.

Filter Storage:

- Make sure the family stores the filter in a safe place.
- Make sure they keep the filter supplies in a safe place.
- Keep filter supplies out of reach of children and animals.

Additional Notes

Enhanced back flush using the Cleaning Syringe (Syringe):

- Detach the filter from the grey hose coupling.
- Draw clean water up into the syringe.
- Push water through in the forwards direction to loosen up any dirt.
- Turn the filter around and backflush the filter again to flush out any loosened dirt.
- Continue alternating backwards and forwards until the water comes out clear during a backflush.

Clogged Filters - If your filter is still flowing slowly after backflushing.

- Soak the filter in warm, clean water (not hotter than you can put your hand into) for about an hour.
- Follow the enhanced back flush using warm, clean water.
- Note: REMEMBER to backwash FORCEFULLY! When using the syringe, do not be gentle, it will only form paths of least resistance instead of blowing out the particulates that may be trapped in your filter.
- If you are in an area where mineral deposits have built up in the filter, soak the filter in vinegar, then backflush the filter with clean water.