

Shea and Moringa Soap Making Toolkit

Created by the Food Security Task Force

Peace Corps Ghana

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Introduction

The purpose of this toolkit is to provide a few of the startup tools to do a soap making demonstration for a group or individual at your site. It is designed for trainees that are already interested in soap making as an income-generating project.

Directions and Training Material

Implementation Plan (P3): These are suggested steps to take in using this toolkit to start an effective behavior change project in your community.

Safety Sheet (P4): Read this before handling the caustic soda.

Directions (P5): These are the directions you can use to make the soap. They are short and straightforward and can ideally be copied for the group so that they can refer to it when you aren't around.

Tips (P6): This is a set of tips for each step of the directions.

Cost of Soap Making (P7): This can be used to write a grant if you choose to continue with the project.

Business Training (P8): This will guide you through doing a brief business skills training with the group.

Soap making is a product of value addition, so it should be emphasized for the trainees that they need to make a profit.

Feedback (P9): This is a form for you to give us feedback on the toolkit. It will be valuable for improving upon this toolkit and others, so please fill it out and leave it in the bucket.

What Is Included in the Toolkit Bucket

- Caustic Soda Powder: Your Food Security Rep should be able to tell you where to find caustic soda in your region, if you want to continue with a soap making project. In the larger cities, it's available in small bags. It is used to make batik. There is enough caustic soda to make a batch of soap using the 500mL measuring cup included in the toolkit.
- Measuring Cup: The measuring cup is 500mL and represents one of the black cups on the directions sheet.
- Plastic Sheet
- Rubber gloves
- Fragrance

What You (or the trainees) Need to Provide

- Wooden spoon
- Large plastic basin
- Wooden box for soap mold (or any other box is fine, if you are making a full batch (one bowl of shea butter and two liters of palm/coconut oil), then the box should be at least 1.5'x1'x6")
- Metal pot
- Firewood
- Knife to cut the soap
- 2 liters of palm oil
- 1 bowl (= 2 liters) of shea butter
- Moringa powder

Implementation Plan

These are suggested steps to take in using this toolkit to start an effective behavior change project in your community.

Week 1: Introduction

- Read everything included in the kit beforehand.
- Meet with the group and make sure they are interested in the soap training. Tell them what material they will be expected to bring to the training, what you will provide, and show them the material in the toolkit. This soap is comparable to key soap (not omo or dish soap).
- Use the flip book of soap making directions with pictures (*if available*) with the group so that they will know what to expect. This is also something you can go through with your translator beforehand so that the training goes smoothly.

Week 2, Day 1: Prepare for Demonstration (Done by the volunteer without the group.)

- Buy materials listed on the Introduction sheet.
- Mix the caustic soda with the water and let it sit somewhere where kids won't get to it. If you can, meet with the group the day before and show them the caustic soda powder before you pour it into the water. It is okay to let the caustic soda sit for much longer than overnight (even months are okay).

Week 2, Day 2: Demonstration

- Do the soap demonstration with the group.
- Go through the flip chart with drawings and tips. The tips are intended for the volunteer and should be used whenever problems arise.

Week 3: Business

- Have this training within a week after doing the demonstration (if you wait too long, the soap will be too hard to cut).
- Use the business training and discussion questions to talk about soap making as a business with the group.

Month 2: Follow-Up

- You should meet with the trainees again and see if they are making the soap and/or having any challenges that you might be able to address. If they are making it, ask the group the same business and discussion questions you did with them at the last training. Mainly, how can they make more money with this? (Sell it somewhere else, use better packaging) If they aren't making it, why not?

Caustic Soda Safety Sheet

Caution

Caustic soda in all forms is a highly corrosive material that can cause serious burns to the eyes and skin. Eye contact of only a few seconds can cause permanent damage, even blindness; short contact with the skin may cause marked irritation or chemical burn.

In all cases of bodily contact with caustic soda, begin washing **immediately** with large quantities of flowing water. Before working with caustic soda, all personnel should know where the nearest eyewash fountain and safety shower are located.

SPECIAL PRECAUTIONS FOR DILUTING CAUSTIC SODA SOLUTION:

1. **Always** add caustic soda solution to water with constant agitation. **Never** add water to the caustic soda solution.
2. The water should be lukewarm 80°–100°F (27°–38°C). **Never** start with hot or cold water.

The addition of caustic soda to liquid will cause a rise in temperature. If caustic soda becomes concentrated in one area, or is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists or boiling or spattering, which may cause an immediate VIOLENT ERUPTION.

**Source: Dow Chemicals*

The caustic soda sold here is the same found in the states, so the same precautions should be followed and the warning should be taken seriously. Since we typically don't have a hazmat emergency number to call or running water, so keep a bucket of water nearby whenever you are dealing with caustic soda, and wash anything that has been touched by caustic soda in the same bucket.

- Add caustic soda TO THE WATER, and not the other way around.
- Keep the caustic soda DRY when storing it. Even leaving the bag open can cause it to absorb water in the air and solidify.
- Always wear rubber gloves, glasses, long sleeves and pants when handling the caustic soda.
- If some caustic soda does get on your skin, immediately rinse it with water. Keep a bucket full of water nearby you can put your hand into. And you can use the bucket of water to clean off any plastic cups or gloves you used that might have caustic soda left on them.
- The water that you pour the caustic soda into should be lukewarm.
- Pour the caustic soda powder and water slowly. If you are pouring a lot, do a little at a time, and use the wooden spoon to stir it. The caustic soda will raise the temperature of the water.
- For spills of the powder (hasn't been added to the water yet), pour some vinegar on it. But if it is a spill of the liquid (caustic soda is already added to water), don't use vinegar.

Best Practices (if you end up doing a project with it)

Buy a 50L bucket with a lid (about 16 cedis). Fill it to the 40L mark with water (the plastic ones have liter marks on the inside), and slowly pour the entire 25L bag of caustic soda powder (or use a plastic cup) into the bucket just after opening.

Directions

Supplies: plastic basin, wooden spoon, rubber gloves, plastic sheet, metal pot, firewood (or other source of heat), measuring cup (500ml, one pure water), wooden box, metal cutter, plastic bucket

Ingredients: caustic soda, water, palm oil, shea butter, moringa powder, perfume (optional)

Step #1: Pour the caustic soda into (important- the caustic soda should be poured INTO the water) the water in a plastic bucket. Wear rubber gloves. Let it sit overnight. Stir with the wooden spoon if the caustic soda isn't dissolving.



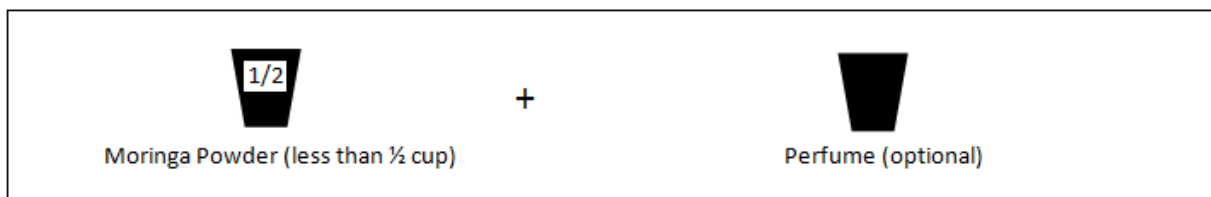
Step #2: Measure the shea butter and palm oil (you can use an equal portion of coconut oil if it's available where you are) and put it into the metal pot. Heat the butter and oil until the foam on top is gone. This will get rid of the orange color of the palm oil and make the soap white (or green if you added moringa).



Step #3: Let the oil cool for at least 15 minutes. Pour the heated oil into the rubber basin.

Step #4: Add the moringa powder (dried moringa leaves, grinded with mortar and pestle).

Step #5: Add fragrance. You can use either essence from bottles (also used for food) or natural from fruit. (Don't use perfume from a bottle, it has alcohol that will react poorly with the caustic soda.)



Step #6: Rub shea butter on the inside walls of the wooden box and place it on top of the plastic.

Step #7: Pour the caustic soda water into the rubber basin. Wear rubber gloves.

Step #8: Stir it in one direction with a wooden spoon until the mixture is no longer watery (about 10 minutes if the oil was really hot), don't wait until it is too thick because it won't pour smoothly.

Step #9: Pour the mixture into the wooden box. Let it sit for at least two hours, and then cut the soap. Let the cut soap sit for one week before using or selling it.

Tips

The tips correspond with the step #s on the Directions page.

1. Read the Caustic Soda Safety Tips Sheet before doing anything. Use the plastic bucket that came with the toolkit to leave overnight. If you don't have a wooden spoon, use a plastic one (caustic soda is corrosive to aluminum, so don't use a metal spoon). Letting the caustic soda sit overnight is a minimum, it can be kept for weeks or more like that.
2. The shea butter should be measured when it is in solid form. One 'flat bowl' of shea butter will fill four cups. Heating time will vary depending on the intensity of heat, but with a strong fire, it will take about 45 minutes for the oil to become 'clear'. You can still make the soap without waiting that long, but the participants often will like the color better if you wait. You can test the color of the oil by dipping a white piece of paper into and seeing if the orange color is gone.
3. Let the oil cool before putting it in the rubber basin. You can stir it, transfer the oil to another pot, or pour water on the ground where the pot is sitting to make it go faster. If the oil is still smoking, it isn't cool enough to pour. When you think the oil is cooler, pour a very small amount of caustic soda water into the oil. It might start to bubble, and if it does, it is best to stir it with the wooden spoon and let it cool for a longer time.
4. To dry moringa leaves, take them off the branches and let them dry in a bucket in the shade for a few days. Turn the leaves every few hours. The more moringa you add, the greener the soap will be.
5. You have to use 'essence' instead of perfume. The perfume will react with the caustic soda, so it is better to use the small or large bottles of fragrance. Feel free to experiment with local herbs (like lemon grass). You can pound it like moringa, or add it to the oil when it is cooking and sieve it out.
6. If you don't have a level surface, use boards to put the box on, and set the plastic sheet inside the box instead of underneath it. If you don't have the wooden frame, you can use a cardboard box and put the plastic sheet inside the box.
7. In trainings, it is best to do this step yourself to demonstrate the precautions of using caustic soda. Add the caustic soda last, and use the gloves. You'll have measured out four cups worth of water and one cup of powder, so pour the entire bucket slowly into the basin.
8. The consistency should be similar to a smoothie. You should stir it for no more than ten minutes.
9. The longer you wait for it to dry, the better. But if you are holding a training and want to share out the soap that day, sometimes it will dry enough to be able to do that. If it is dry enough (it is dry enough if it will keep its shape when you remove the box), remove the wooden box before cutting it. You can use a butter knife to cut the soap, or a machete. Be careful not to cut the plastic so that you can use it again. You can also use a cut and sanded piece of sheet metal. Stress that they must still wait one week before using the soap.

Cost of Soap Making

Supplies: plastic basin, wooden spoon, rubber gloves, plastic sheet, metal pot, firewood (or other source of heat), measuring cup (500ml, one pure water), wooden box, metal cutter, plastic bucket

Ingredients: caustic soda, water, palm oil, shea butter, moringa powder, perfume (optional)

The group can contribute to the costs of the startup material, but most can be found in the toolkit. Here are instructions and tips on how to acquire the supplies.

- Soap Box: Buy a 2x4 and have the carpenter make a box that is 1' by 1'. One side should be flush with the table. If there isn't a table or flat surface available for the training, you will have to use a board or wide piece of wood.
- Soap Cutter: This is important because otherwise the women won't cut it evenly. You can go to your local welder and ask for a scrap piece of sheet metal. The thickness should be very thin. Have it cut to 1.5'x6" with one side filed level.
- Rubber Gloves: Can be bought at any store that sells paint. They should be almost up to your elbows.
- Plastic Bucket: This is how you can store the caustic soda if you have to buy the 25L bag. Inside, there are liter marks on the bucket. This is the safest way to store the caustic soda. Make sure it is labeled or put it in a place where it can't be mistaken for drinking water.
- Plastic Sheet: Can be bought from the women selling plastic bags in the market.

Cost of Supplies (Startup/One-time Costs)

Prices based on the Upper East Region, June 2012

Item	Description/Qty	Cost
Soap Box	2"x4" of wood, 12' long (11 cedi) Carpenter's time (2 cedi)	13.00
Soap Cutter	1 piece of scrap metal cut to 1.5'x6"	3.00
Rubber Gloves	1 Pair	5.00
Plastic Basin or bucket	1 large plastic basin, about 20L	5.00
Wooden Spoon	1 Spoon, 2' long	2.00
Plastic Bucket	100L bucket with a lid, about 3' tall	16.00
Plastic Sheet	1 sheet, about 2' by 3'	0.40
Measuring Cup	1 cup, 500 mL (holds one pure water)	0.40
	TOTAL	44.80 cedi

Cost of Ingredients (Variable/Ongoing Costs)

Item	Description	Cost
Shea Butter	1 Bowls (1 bowl =2 Liters of oil, uncooked)	6.00
Palm Oil	2 Liters	5.00
Caustic Soda	4 Liters (25 kilo bag for 55 cedi added to 50L of water in a bucket, 1 Liter = 1 cedi)	2.00
	TOTAL	13.00 cedi

Business Training

How much money has the group spent on the supplies/ingredients?

- It is best to only include the supplies that will need to be replenished (ex- shea butter, palm oil, caustic soda).

How many bars of soap of soap did you make with the training batch?

How much will each bar be sold for?

- Bring 1 cedi of key soap to the training so that they can compare it. The soap the group is making has the added benefit of moringa, which is good for the skin.

Subtract costs from revenue to find the profit.

- For example, one batch of soap should be cut into squares using the metal cutter. Cut it into 25 bars. If the group sells each bar for 1 cedi each, the profit will be 12 cedis per batch (not including startup/one-time costs).

What is the profit of the soap batch?

Other Discussion Questions for the Group

What is the amount they want to sell it for based on?

How does it compare to other soap being sold?

Is that amount more than what they paid to make that batch?

How can they increase how much they charge for the soap?

If in a group, who will sell the soap?

Who will they sell the soap to?

Where is another place they can sell the soap?

How much will they make?

Soap-Making Toolkit Feedback Sheet

1. Were all of the listed materials in the kit? If not, what is missing?

INFORM YOUR FSAC REP!

2. Were you able to find all of the necessary materials which are not provided in the kit? If not, which ones?
3. Were cost estimates for purchased items roughly accurate? If not, provide correct prices and item name.
4. Were any of the PCV instructions unclear or confusing? Which ones?
5. How would you improve the participant training materials (flip book, etc.)?
6. How many participants attended training?

Introductory Presentation (Week 1)	Soap-making demonstration (Week 2, Day 2)	Cutting, Soap Distribution, Business & Marketing Training (Week 3)	Implementation by Participants (Month 2)

7. How many participants are making use of the training on their own?
8. How much money are they selling the soap for and what size are the bars? (ex- 2"x1"x4" bars are sold for 1 cedi each)

Miracle Trees