

KITCHEN IDEAS FOR BESONGABANG

September 13, 2014

Here are photos of typical kitchens. 3 stone fire on the ground. Dirt floor. Corrugated tin walls. Cameroon has lots of wood and forests so supply of wood is not a problem. However, we still believe it is beneficial to conserve: Good for the forests. Less work. Less pollution. The rainy season is intense with 20 inches of rain/month at the peak of the rainy season (equal to the total annual rainfall in the San Francisco Bay Area) and many rainy days during 10 months of the year. Mostly people cook in the kitchen sheds and occasionally outside.





Letter to our local team in Besongabang:

I want to discuss some ideas for the kitchen with you.

Below are a series of ideas for our kitchen. I would like your thoughts on each one.

We will have water in the kitchen. We are exploring 3 options for water:

1. An elevated storage tank with pipes to 2 faucets in the house: one at the kitchen and another at a bathing and face washing area. Some key parts of this remain to be figured out, especially how to disinfect water when it may be pumped at random times in varying quantities.
2. Water in a small slow sand filter fed into a secure storage container.
3. Water disinfected with chlorine and stored in a secure storage container.

This kitchen shows Option 3 (the simplest, fastest and cheapest).

- Option 3. Secure water storage: 5+ gal (20 liter) container with tight lid and a spigot. For this system we have 3 containers: one for secure storage, one for disinfecting water and one for waste water. The secure storage has a lid and a spigot. The others just have a lid.
 - Secure container with tight lid & spigot. The tight lid keeps insects, animals and dust out of the water and keeps anything from falling into the water. The spigot avoids dipping cups and hands into the water and opening container which allows things to get into the water.
 - To purify water we fill one of the 5 gallon containers with lid and add bleach (4 milliliters of Eau de Javel/20 liters of water) and leave it there for ½ hour. It is then disinfected. When the water is disinfected we pour it into the secure container with spout and refill to disinfect another batch. We have easy use of the water in the container with spout. When it is empty we refill from the disinfection container and start the cycle over. *Feedback from the village suggests we may need several of these containers so that they can disinfect more than 5 gallons (19 Liters) at one time. Sample family of 7 uses 185 gallons (700 liters) of water per day.*
 - Dirty water we throw into the 3rd bucket. When this bucket is full (or whenever we want) we empty it into the garden or a grey water sand and plant filter.

Kitchen

The features of our kitchen are:

- **Stove with chimney.** This takes the smoke out of the kitchen. Improves health. More pleasant to work in. Keeps the kitchen cleaner and brighter. The chimney is located outside of the kitchen so it keeps the kitchen cooler. *Feedback from villagers: they like this.*
- **Stove at waist height.** This is easier to work at. Don't have to bend over for pots. Don't have to bend over to add wood and tend to the fire. *This was discussed with villagers. Some like this idea. Some prefer sitting while cooking. They will get a chance to check it out more and give further evaluation and feedback when the first demonstration or "idea house" is built. Likely we*

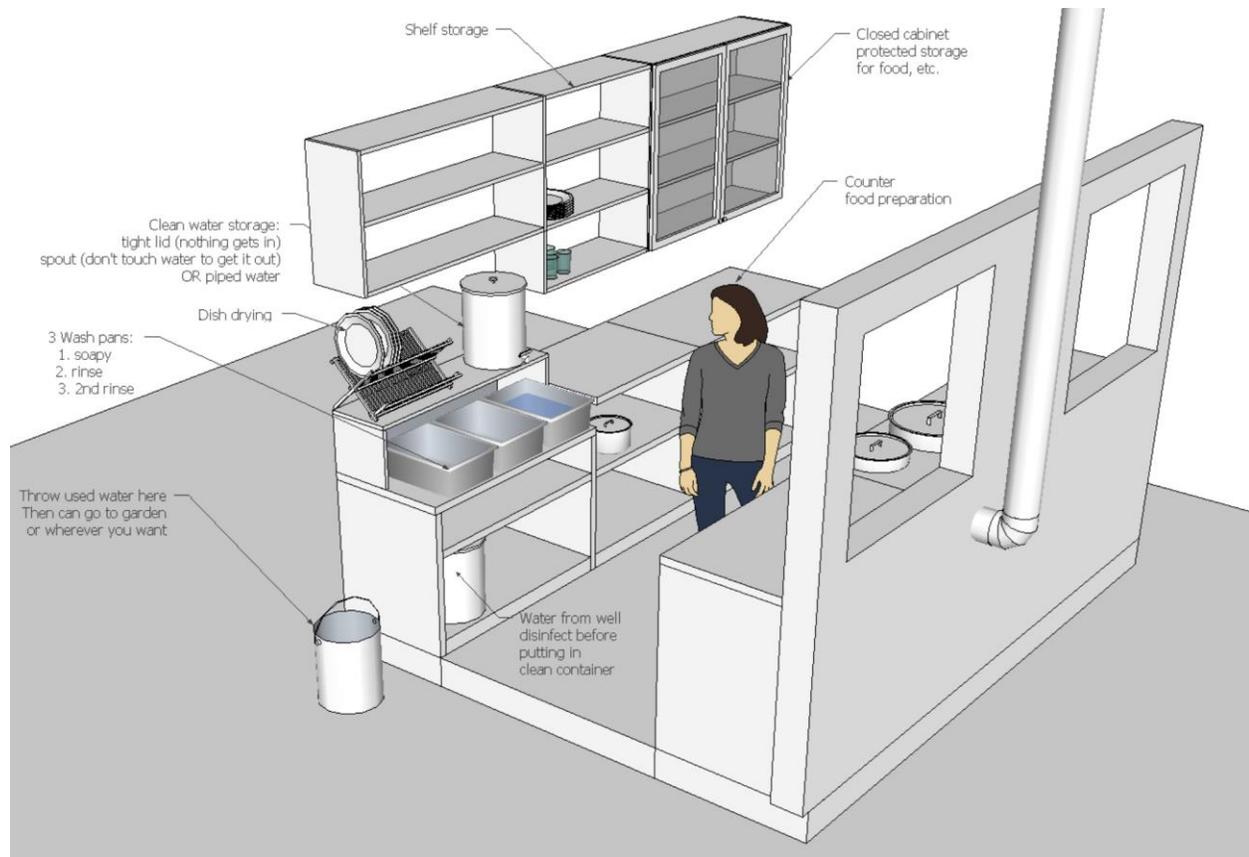
will end up with some houses with one option and some with the other, and maybe some with both (e.g. a movable gasifier stove, or ??).

- **More efficient stove.** Uses less wood, so there is less wood to carry, less to store and more protection of the forest.
- **Can have more pots on the stove.** The stove can be built for 1, 2 or 3 pots. This means you can cook more things at once. However, if you have place for 2 pots but only use one, it is less efficient and uses more wood than if you only had a place for 1 pot. *Villagers would like more than one pot. Most with 3 stone fire have 1 pot and rotate pots on and off the fire, but sometimes make 2 fires and on special occasions more than 2.*
- **Enclosed stove** puts more heat into the pot and less heat into the kitchen making the kitchen more comfortable.
- **Cross ventilation:** windows on at least 2 walls. Some smoke will get into the kitchen even though we will have a chimney to keep smoke out and employ cleaner burning stoves that give off less smoke. This can occur during lighting or other moments of non-optimal functioning.
- **Wood storage next to stove.** Enough for 1 day. Pay attention to a space that is easily cleaned to avoid problems with insects or rodents. Wood won't stay there long as it will be emptied each day.
- **Dry storage for lots of wood.** There is a separate shed to store larger quantities of wood. The shed is designed to help dry wood and to keep it dry in the rainy season. Dry wood is easier to light and gives more heat so less wood is required for cooking. Dry wood produces less smoke. *Many people do this and have storage for one or more months' supply. To season wood it would be good to have enough for 1 year (approximate time it takes for wood to dry, but varies depending on a number of factors).*
- **Waist height counters for food preparation.** More convenient chopping, grinding, cleaning, mixing.
- **Storage for cooking pots and kitchen utensils.** Shelves above counters and also below.
- **Food storage.**
 - Screened or fully enclosed cabinets to keep out animals and insects. *Feedback: concern that screen would be fragile.*
 - Food in secure containers can be stored on open shelves. *People put food in containers now to avoid ants.*
 - Cool cabinet. If the family does not have a refrigerator we will design an insulated cabinet protected from sun and with night time ventilation to keep items as cool as possible.
- **Clean water from a spigot.** Clean, disinfected water is easily available just by turning a faucet. It is there for:
 - Drinking
 - Cooking
 - Washing dishes. For dishes we would have basins (can be inexpensive plastic basins): 1 for soapy water, a second for a first rinse (because the water rinses many dishes it cannot remove all the soap), and a 3rd for a final rinse which should get most of the remaining soap.
- **Grey water (left over from cooking and washing dishes).** There is a bucket for used water. You can throw water into it at any time. When it is full it can be recycled into the garden or a specially made sand and plant filter to use and clean grey water.
- **Dish rack to dry dishes.**

- **Smoking & Drying:** Can we incorporate drying space or cabinets using heat of the fire to dry maize or other food? Can we divert smoke into a smoking chamber?
- **Social Space & Communal Cooking.** Cooking and eating are very basic functions shared with a family, community and visitors. Being able to connect with or cooperate with others in cooking makes it more enjoyable. People in Besongabang share preparation and share food with each other. Our design should include space connected to the kitchen in a way that allows people to cook while socializing and allows several people to participate in the cooking.
- **Cooking and Eating.** Create easy access from cooking area to a place to eat but with the possibility of feeling separate (and being away from the heat).

We would like to collaborate with local craftspeople to use our shared creativity to make each of these items, for example the dish drying rack, shelves, counters, stove, etc.





Show how this kitchen connects to eating space and how others can participate in cooking. Show alternate layouts that connect more directly to space for others to participate or socialize during cooking.

These are preliminary ideas. There are lots of options and alternatives and details to be developed. Please send your thoughts and suggestions.

Huck

Note: some comments have been added based on comments from our team, consultants and people in the village.