☑ Utilization, processing, preparation

Now that you understand the importance of nutrients, have seen that there are plenty of foods available, and have increased access to them, it is time to improve the way we use them. Some ideas have already been given such as creating local products to increase access and using local foods in your own meals – but how? First let's look at how much we should prepare to eat.

How much should I eat?

Each person's plate of food should look similar to the Malawi Food Guide Poster – this is generally true for an adult or child or chronically ill. The amounts will differ for different sizes of people, and the choices you make for food groups will differ when you are sick, or you may choose to prepare them differently. Each of the following examples has the same balance of food groups:

Food Group	Grams	Approximate servings of local spoon "*Chipande*"	
		Adult	Child
Fruits	300	3-4	1 ½
Vegetables	400	3-4	1 ½
Legumes & Nuts	100	2-3	1
Animal Foods	135	1	½
Fats & Oils	50	3-4 tsp	1 ½ tsp
Staples	500	5-6	3
Water	2-4 L	8-12 cups	5 cups

A more detailed table is in the appendix

- → **Adult Meal:** 2 spoons staple, 1 spoon legume, 1 piece fruit and 1 spoon vegetable
- → **Child Meal:** 1 spoon staple, ½ spoon legume, ½ piece fruit, and ½ spoon vegetable

Eating Less to get More energy: Children & Chronically Ill

One food group that might change in terms of balance on the plate is the Fats & Oils food group. The size of this serving will depend on your energy needs and the amount of food that you are able (or not able) to eat. Fats and oils are very concentrated in energy, so if you need to get more energy into your body, it is an easy way to do it. They also may need to take longer to eat, such as eating half now and half in an hour or so.

One way to get more Fats & Oils is to eat more servings from that group. Another way is to choose foods from other food groups that are also high in fat. From Legume and Nut group you might choose soybeans or groundnuts; or Foods from Animals you might choose milk products. Using the example from the child and adult

- → **chronically ill person** 1-2 spoons staple mashed, 1 spoon legume mashed, 1 piece of fruit made into juice, 1 spoon vegetable mashed, plus 1 tablespoon sunflower seed paste or groundnut paste (*chiponde*).

There are many different 'right' ways to eat! The most important thing is that there is a variety of different foods from all the food groups in your diet!

Reduce food wastage when preparing foods

There is a lot of food that gets wasted in Malawi, especially in the months right after the harvest season within the villages. But the practice also takes place all year at workshops and other meetings. Huge plates of food are piled on each person's plate that would be impossible for even the biggest person to eat! The menu planned for meetings and workshops should follow the Malawi Food Guide for both the types of foods served and the amounts on each person's plate. This will take some gentle guidance from the facilitator to work on getting the right balance of servings on each plate.

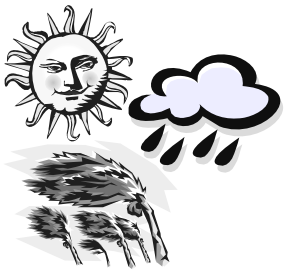
Preserve nutrients from plant foods

The current cooking demonstrations in Malawi mostly focus on porridges for children and a few other basic cooking skills. There is a lot more creativity that can be used in food preparation demonstrations! We need to help people create creative meals and snacks based on all the 6 food groups. Before beginning any food demonstration, basic knowledge and skills on preserving the nutrients in the while preparing is important.

- **Choosing high nutrient Foods:** Just by choosing certain foods over others will allow you to get more nutrients into your diet. By just looking at a food, you can tell something about its nutrition. Choosing *dark* and *bright colored* plant foods often means that you are choosing plants with lots of nutrients. Choosing foods that have *less processing* generally means there are more nutrients. The orange flesh of pumpkins are higher in nutrients than the pale green flesh of mphonda (a local type of gourd, or squash). The dark green leaves of limanda (a local hibiscus) are higher in nutrients than the pale green leaves of cabbage. The darker brown colour of whole grains and sugars ('brown' bread, 'brown' sugar', 'brown rice') have more nutrients that processed.
- **Seeds and Skins:** Often the nutrients are highest in the seeds, outer skins, bran, and germ of foods. These are NOT always edible, so make sure that you know what you are eating! When you eat the skins, make sure you wash the food well. Most people *CAN* eat: most potato skins (cooked), apple skins, mango skins, tomato skins, pumpkin seeds, melon seeds – there are more!
- **Use what you don't eat:** If you choose not to eat the skins and seeds, make sure you plant the seeds and compost whatever you don't want to eat! There are many seeds right in your kitchen that we could be putting in our gardens, flower beds, or pots:

Now that you have chosen the foods you want to eat, kept the most nutritious parts for our bodies, and have put the rest back into nature either as seed or compost, we are ready to think about how we will prepare the food to eat.

There are three energies that destroy nutrients in our plant foods, and they are easy to remember because it is the 3 things that plants have to have to grow!



- Sun or Heat – this 'kills' the nutrients so that they don't work.
- Water – water 'steals' some nutrients, so eat/drink/use any water left.
- Air – this 'steals' some nutrients and you can't get them back.

The longer time the foods are in sun (heat), water, or air, the more loss there is. Knowing this, we can look at ways to protect the nutrients while preparing them to eat or to store for later.

- Raw: The best way to get the most nutrients from plant foods is to harvest the food and then eat it immediately. Many foods like nuts, seeds, fruits, and vegetables are delicious this way. Another benefit to eating food raw is that we use no fuel energy to prepare them. *If you are eating plant foods raw, you want to make sure first of all that it can be eaten raw, and then make sure that it is clean before you eat it.* If you are not using pesticides or other chemicals on the plant you can just pick leaves or fruits, rinse them, and eat them. For root crops you can rinse them off with clean water. Just wash the foods enough to clean off any dirt, if you soak a plant food in water, the water will take some of the nutrients. Try not to soak the plant food too long, but if you do need to soak the food for some reason, be sure to utilize the water because there will be nutrients in it. If the food and soaking water is clean you can drink the water or use it in cooking, if it isn't clean you can feed the water to your plants.

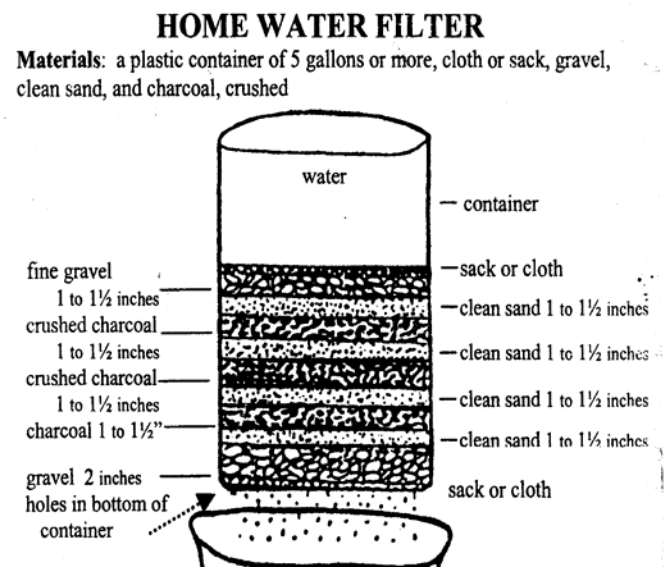
- Cut pieces large – As you are preparing your plant foods, the more you cut it the more the food will come into contact with air, heat and sun / heat. Try to keep the pieces as large as you can while balancing the food preparation time and the size of the mouths (children vs. adults).
- Limit cooking time - If we decide to cook a food instead of eating it raw, it means that we usually add heat and water. Try to use as little water as possible for your recipe, using methods such as steaming or stir-frying. Try to get used to eating your vegetables so that they have a little 'crunch' to them. For example, it you are eating vegetables that were boiled in a lot of water for a long time, then sat around waiting for the nsima to finish cooking, you aren't going to get many nutrients from them!
- Avoid baking soda with fruits, vegetables and beans**.** Adding baking soda to these foods will kill the vitamins, minerals, and proteins in the food. Try to get used to these foods cooked without baking soda, or limit the number of times you use baking soda in these foods.
- Germinating and Fermenting to improve the nutrients. These are 2 food preparation methods used in Malawi that improve the nutrients in the foods. Malawians commonly germinate maize and millet, then pound it into flour to cook porridge, or with slight fermentation to make thobwa (a non-alcoholic drink). Milk is also allowed to ferment to make chambiko, which is similar to yogurt. These processes help to either create nutrients

or to assist with absorption for some nutrients. *(This is not referring to the longer fermentation process which coverts some of the nutrients into alcohol.)* Germinating and fermenting can be used with many foods – legumes, nuts, and practically any edible raw seed can be germinated and eaten. Do NOT use raw seeds that are NOT edible raw, such as some large beans (kalongonda or mucuna which are found in Malawi and are very poisonous!).

Food & water safety

In addition to protecting nutrients in plant foods, we need to make sure our food is safe to eat. This is especially important for people with reduced immune systems such as young children, the elderly and people living with HIV/AIDS.

- ✓ For plant foods this means making sure there are no poisonous chemicals on them and that they are free from bacteria such as found in fresh manure (human or animal). By not using pesticides, herbicides and other dangerous chemicals, and by washing our food with clean water (and soap if you are unsure of the cleanliness of the food) we can help reduce the risk of getting sick from plant foods. Growing your own food gives you more control over what is put on the food!
- ✓ For animal foods there is a higher risk of getting sick because bacteria live well in these foods (milk, fish, meats, poultry, etc.). It is important that these foods are handled safely and cooked and stored properly to reduce the risk of contaminating them.
- ✓ For water this means assuring the water is free from bacteria and other harmful organisms. Water should be naturally filtered when the rain falls and sinks slowly through the various layers under the earth. Unfortunately water is often contaminated from runoff and erosion which brings in manures and chemicals to the water supply. There are many simple ways to purify water, some that take low fuel and others that require fuel. These include:
  - boiling,
  - leaving clear plastic bottles filled with water in the sun for a day,
  - using a solar cooker at 1 litre per hour *(see solar cooking section)*
  - using water filters made from sand, and
  - using certain plants (such as Moringa (Chamwamba) seed) to bind harmful particles in the water.



Source: Central University of Venezuela in Solar Cookers International pamphlet adapted by Charles & Ruth Dow.

☑ Energy used in Food Preparation

Food preparation in Malawi currently takes a lot of time, human energy and fuel energy, but this does not have to be the case! There are improved stoves, briquettes from paper and/or leaves, food warmers or basket cookers that keep the food cooking by holding in heat, and there are many foods that can be eaten raw (after they have been washed). There are many other benefits for saving energy in food preparation such as reduced smoke, more time available for other activities, preservation of trees and electricity, and less waste of resources such as using waste paper for fuel. The following are short descriptions of a few types of energy saving options. Contacts for organizations working on efficient energy use are found in the appendix.

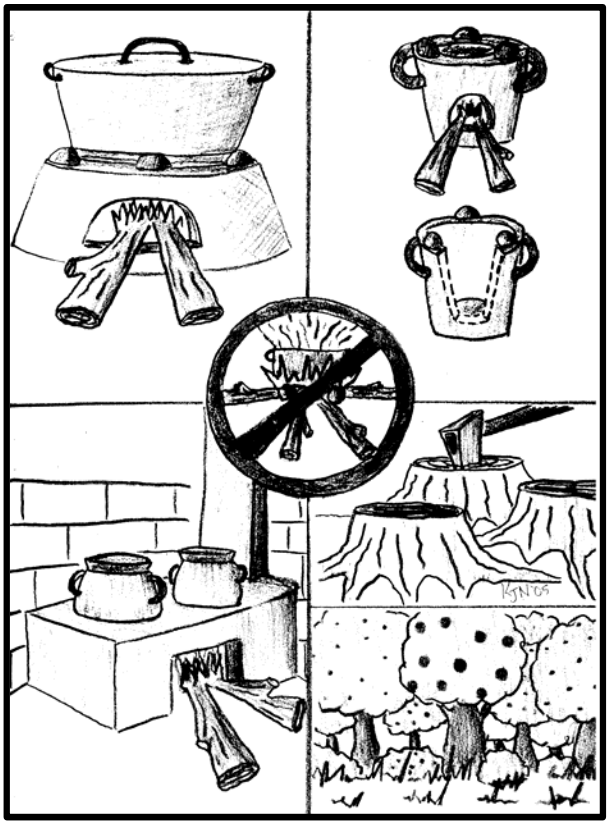
Fuel-efficient wood stoves

One problem in Malawi is the *way* that wood is burned – burning wood can be done sustainably if we are careful not to overuse the supply. Right now when people cook on a 3-stone fire, a lot of the heat is lost because of the amount of wind stealing the heat and pushing it away from the pot. When people cook, they often do not cover the pot which allows more heat loss.

There are many styles of improved wood stoves, the basic idea of any of the improved wood stoves are:

- ✓ to control the amount of air flowing toward the wood so the wind doesn't steal the heat. Some air is needed or the fire will go out, these stoves balance the amount of air just right;
- ✓ to guide the flames to the centre of the pot's base instead of beside or around the pot – this puts all the fire's energy right where you need it; and
- ✓ to hold the heat for as long as possible by insulating the walls of the stove.

To make a clay stove similar to the top two pictures, the same skills for making a clay pot is used except the sides are made thicker. See the appendix for more details and resource contacts.

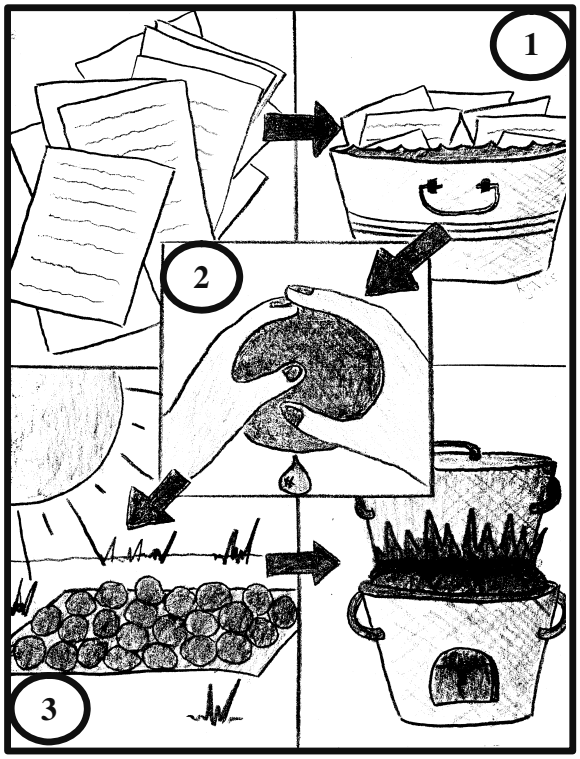


Art by K. Nordin. Full page handout in appendix

Paper Charcoal "Briquettes"

Another way to reduce the amount of wood that we use is to not use wood! You can use paper or a mixture of paper and dried leaves to make a charcoal-like products. The method we explain here is what we use at home, for workshop cooking, and demonstration. There are also commercial-size presses that are available in Malawi, see the appendix for resources.

1. Soak the paper in a bucket of water until they are soft, this usually takes a half day, we let them soak overnight. Thicker paper takes longer to soften.
2. When the paper is soft, pull out a large handful and squeeze the water out and form it into a ball or whatever form you want them in.
3. Let the paper balls dry in an airy place, preferably in the sun to speed up the drying time, but it doesn't have to be. We put ours on flat woven baskets *(lichero)* so that we can move them around easily in case of rain. After 1-3 days, depending on the drying conditions, the balls should be dry. They become very light weight when they are done. Store the paper charcoal in a dry are in an old bag or basket until you need them.



Art by K. Nordin. Full page handout in appendix

To use the paper charcoal, you can use an *mbaula* stove (metal frame with clay lining), or just on a typical 3-stone cook area. The paper charcoal produces more ash than cooking with wood, so using a type of stove that has holes for the ash to drop away from the fire is helpful. Start a small hot fire with small twigs, or break up one of the paper charcoal balls into smaller pieces, or any other method how you usually start a wood fire. Starting the charcoal burning will take some practice. About 10 paper charcoal balls about the size an adult will make with their two hands can burn for 30 minutes to an hour, depending on the conditions.

There are many things that you can cook with paper charcoal, but we recommend cooking things in a covered pot because of the amount of ash they produce. Do not use the paper charcoal for grilling food directly on the fire – there may be chemical inks on the paper. Enjoy!

Basket Cookers / Food Warmers / Food Coolers

T. Phiri's Basket cooker, Kasungu

One way to reduce the amount of wood we burn is to use less time for wood cooking. We can eat more foods raw, but not everything can be eaten raw. Basket cookers work by holding the temperature of an item for a long time, so you have to initially make the food the temperature that you want to keep it. This could be to keep hot food hot or to keep cold food cold – so these Food Warmers are also Food Coolers!

- ✓ **Cold Food 'Cooler':** If you want cold beer, you have to put cold beer in the basket.
- ✓ **Hot Food 'Cooker':** If you want hot food, you have to heat it first. The heat will keep cooking the food, so you generally put the food into the basket when it is partially cooked.

The basic idea is to put the item to cool or heat into an insulated basket or box. For the basket cooker shown in this picture, use a *dengu* (woven basket) and line the bottom and sides of the basket with clean, dry material – this could be dried banana leaves, clean used paper, dried grass, or scraps of cloth. Leave a space in the middle of the dry material for the pot or other item to sit. You can adjust the dry material to fit different sizes of pots.

Make an insulated cover, again using dry material. You can use an old sack, cloth, or anything that will hold the dry material. The cover will be tucked into the inside edges of the basket to trap as much heat as possible.

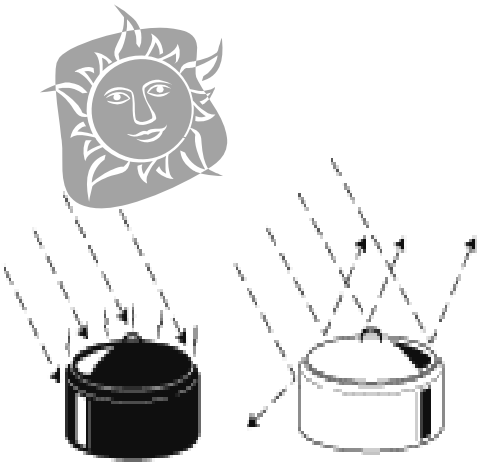
To use the basket for cooking, put your food on the fire until it is slightly cooked. For grains, cook the food on the stove for about 2-4 minutes. For beans, soak them overnight first, then cook them for about 15 minutes. Remove the pot of food from the stove and quickly put it in the basket and put the cover on. That's it! As with all new technologies you will just a little practice and you are set! The food will continue cooking and stay hot for several hours – we've kept hot food hot for up to 6 hours using the basket.

Solar Cookers

There is plenty of sun in Africa and much of it is under-utilized. Using the sun to cook is very simple and can be made from a wide range of materials. Solar Cookers International provides great information on their website (see contact details in the appendix) and provides permission to share their information. They explain that most solar cookers work on basic principles: sunlight is converted to heat energy that is retained for cooking.

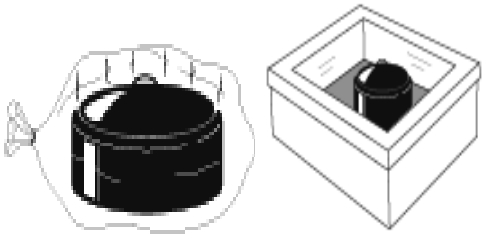
1. The sunlight is the "fuel". A solar cooker needs an outdoor spot that is sunny for several hours and protected from strong wind, and where food will be safe. Solar cookers don't work at night or on cloudy days.

2. Convert sunlight to heat energy: Dark surfaces get very hot in sunlight, whereas light surfaces don't. Food cooks best in dark, shallow, thin metal pots with dark, tight-fitting lids to hold in heat and moisture.



Converting sunlight to heat energy using a dark or black color. © Solar Cookers International 2005. http://solarcookers.org/basics/how.html

3. Retain heat: A transparent heat trap around the dark pot lets in sunlight, but keeps in the heat. This is a clear, heat-resistant plastic bag or large inverted glass bowl (in panel cookers) or an insulated box with a glass or plastic window (in box cookers).

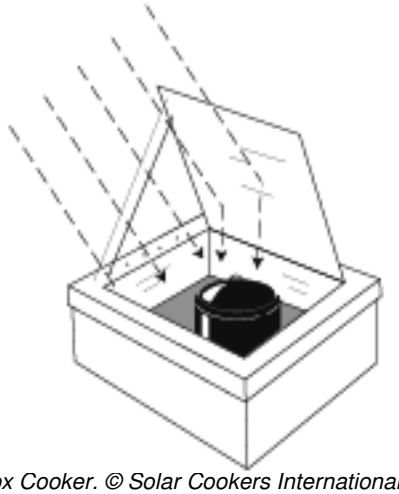


Retaining heat using a clear bag or insulated box with a clear lid. © Solar Cookers International 2005. http://solarcookers.org/basics/how.html

4. Capture extra sunlight with shiny silver: One or more shiny surfaces are used to reflect extra sunlight onto the pot, increasing the amount of sunlight hitting the pot. Shiny surfaces can be made from a sturdy support such as cardboard or tin sheet and covered with anything silver such as found on the inside many types of food packaging or aluminum foil. Attach the silver material with glue, tape, stapler or other creative local idea. Several design ideas are included below.

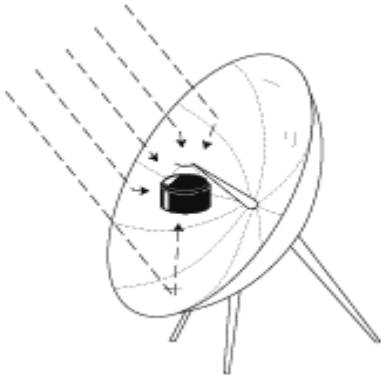
The three most common types of solar cookers are heat-trap boxes, curved concentrators (parabolics) and panel cookers. Hundreds — if not thousands — of variations on these basic types exist. Additionally, several large-scale solar cooking systems have been developed to meet the needs of institutions worldwide.

- ✓ Solar box cookers cook at moderate to high temperatures and often accommodate multiple pots. Worldwide, they are the most widespread. The bottom part of the cooker is made like the basket cooker (see previous topic). Cover the insulation material with a black cloth or other dark material if possible. The top of the box or basket will be covered with glass or other clear material. Add a reflector to the top to direct sun into your box / basket cooker.



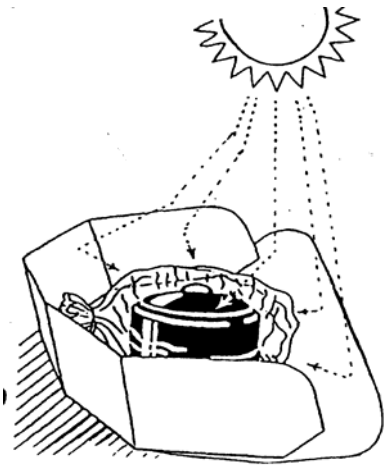
Box Cooker. © Solar Cookers International 2005. http://solarcookers.org/basics/how.html

- ✓ Curved concentrator cookers, or "parabolics," cook fast at high temperatures, but require frequent adjustment and supervision for safe operation. They are especially useful for large-scale institutional cooking. Several organizations in Malawi have this type of solar cooker such as Wildlife and Environmental Society and SOS Children's village in Lilongwe. They can be made out of local materials – generally some type of sturdy metal for the legs and pot holder, and shiny metal for the parabola.



Parabola Cooker. © Solar Cookers International 2005. http://solarcookers.org/basics/how.html

- ✓ Panel cookers incorporate elements of box and curved concentrator cookers. They are simple to make with many types of local materials. Use cardboard or other supportive material and cover it in a locally available silver material. Use a black or dark colored pot and if available, use a clear colored bag (something that won't melt though!) to hold even more heat. With a little practice, you can be cooking your foods very easily for free!



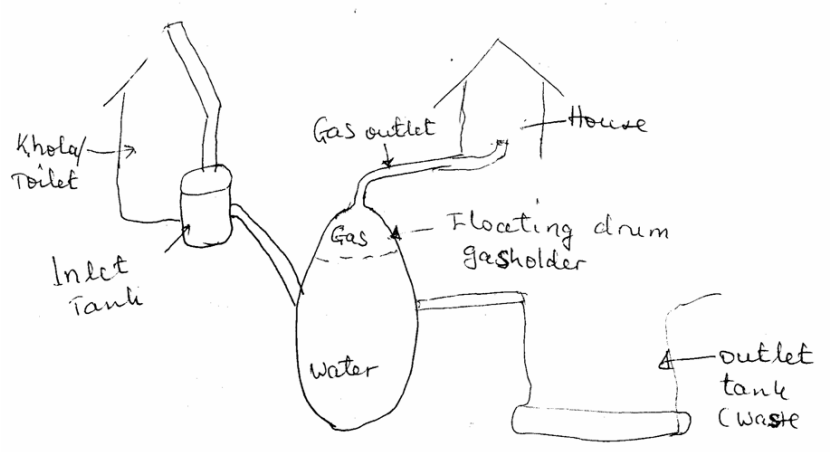
Source: Solar Cookers International, adapted by Charles and Ruth Dow

Using your cooker for food or water: Solar cookers can be used for many types of foods and also for purifying water for drinking.

Start practicing with your different recipes and see how easy it is. As a general guide, potatoes, rice, fresh beans, and some meats take about 2-3 hours. Dried beans soaked overnight take 3-5 hours. For purifying water, a general guide is about one hour in full sun per 1 Litre of water.

Biogas cooking

Just as there is plenty of sun in Africa, there is also plenty of manure, both human and from other animals! There are gases that are released from manure that can be captured and used for burning. This idea is a higher input that some of the other ideas discussed, but with all the latrine and animal pens being built by projects in Malawi, there is no reason that these could be designed with producing fuel energy for cooking at the same time.



Sketch provided by Renewable Energy Industries Association of Malawi. See appendix for contact information.

Teaching note: Creative Food Preparation Demonstrations

- **Recipes** are given in the back of this Model as ideas on what could be prepared as demonstrations. During the "Creative Cooking" sessions, always try to use locally available foods and cooking supplies. The more you adapt your cooking to what is locally available, the easier that people will be able to incorporate the ideas into their own lives.
- **Meal Planning:** Explain to people how the recipes can be put together into a meal, or just make a whole meal. Explain how the recipe can be adapted and encourage people to change the recipe around and be creative. Make as many linkages to other ideas as possible, without overdoing it!
- **Everyone can prepare food!** Men and women, adults and children should all be encouraged to participate. Often the men will sit on the sidelines, or take jobs that are 'least woman-ish', but encourage everyone to participate equally.
- **Creative Cooking:** For a more in depth guide at doing cooking demonstrations, such as planning the set up, preparing the location, and lesson plans, use the Creative Cooking manual listed in the appendix.
- **Energy efficient cooking - Use them yourself:** First you will need to become personally familiar with using improved energy methods. If you feel hesitant about trying these ideas out for yourself, contact one of the organizations in the appendix for support.
- **Energy efficient cooking - Use them with others:** After you feel comfortable with improved energy methods, then attempt to integrate the methods into all your cooking, workshops and meetings. Use them at field days and other opportunities to raise awareness.

☑ Preservation & storage

To understand preservation and storage, the concepts of protecting nutrients and food safety are important. Usually in Malawi plant foods are dried in the sun for a long time before they are put into storage. Many of these foods become contaminated with dust or animal waste and they also lose many of their nutrients during the long drying process. There are several ways to reduce how many nutrients are lost to get the most of your foods.

Store food in the environment through diversification

The lowest input way to save your foods is to keep them on the plant, tree, or in the khola (animal pen), until you are ready to use them! By spacing harvests throughout year with agricultural diversification, you don't have to dry or process anything. This is how our ancestors survived and we can revive this practice to eat different foods in different seasons, while at the same time preserving some foods for eating or for selling.

Improved Preservation

The goal with preservation is to create a food that bacteria, insects and moulds will not live in so that the foods will not spoil. Three common ways that are used to preserved foods are:

- drying (removing all the water from the food), or
- pickling or canning (making a water high in sugars, salts and/or acid), or
- freezing (decreasing the temperature).

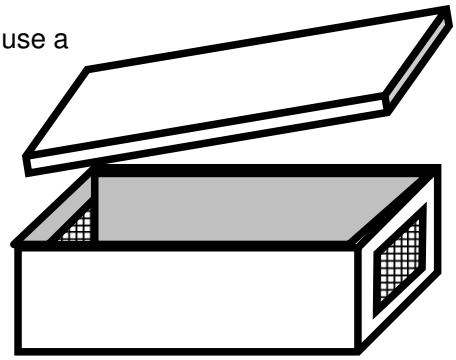
Drying foods is usually the most suitable choice in Malawi, but pickling with sugars and/or salts is also an option in some cases. With pickling and canning, food safety handling becomes very important and, unless you have your own vinegar and sugars, there will be some expense involved. Use the books Traditional and Modern Foods in Malawi and The Permaculture Nutrition training manual for detailed steps on pickling. This manual will focus on solar drying.

Solar Drying

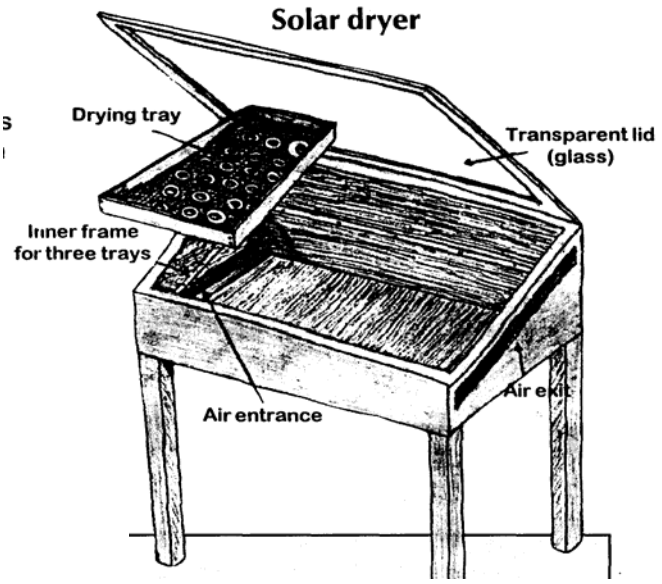
The basic idea of a solar dryer is to trap the heat of the sun in a contained area while having some airflow to remove moisture. If there was no airflow the food would cook, like we discussed under solar cookers.

- → Container. Some sort of container is used in to hold some of the heat.
- → Black. Inside the container is covered with a non-poisonous black color to absorb heat.
- → Air flow. There has to be some sort of ventilation to move the moist air out of the contained area and allow new dry air to move in.
- → Food racks. Mats or screening are often used to hold the food in the dryer so that the air can move around as much of the drying food as possible.

Box or basket dryer: To make a one type of simple dryer use a container (wooden box, woven basket, or other) that is whatever size you would like. Cover the container with clear plastic or glass. Inside the container should be dark in colour (black is the best), and there should be two screened vents on each side of the container - one for letting cool air in and one for letting heated air out. On the inside walls of the container use small nails, wooden pegs or other local materials to hold the racks. Place your food on racks and set the food in the box to dry. This is great for home use and for moving around easily from place to place to avoid rain and shade.

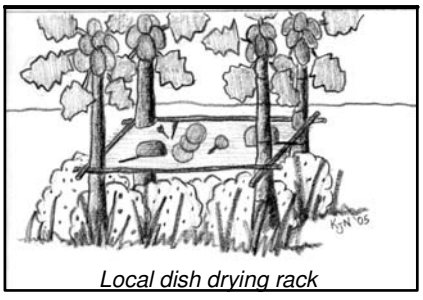


Another design shown here is similar to the one described above, but it is larger and harder to move around. It can also be made from local materials – the legs and walls can even be made with mud bricks, being sure to leave space for screened vents and using a clear lid.



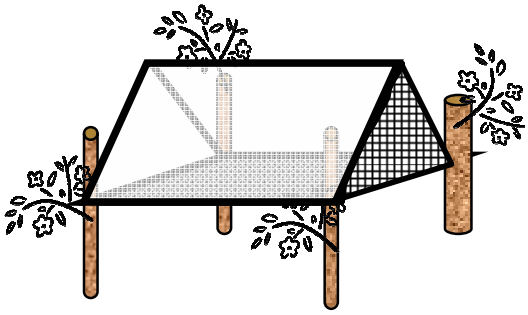
Source: How to process and preserve fruits through drying. A. Schomburg, SADC-ICRAF AF Project, Zomba, approximately done in 1999. See appendix for contact information.

Tandala – local drying rack. This adaptation builds on the local dish drying rack used in Malawi. A cover is made from the dryer in the shape of a tent. The tent's frame is covered with clear plastic, or in some cases a dark cloth is used if plastic is not available. Cloth won't let the sunlight in, but it can still trap some heat and keep the dust and animals off your foods. The rack where dishes usually sit is covered in dark material if possible – black plastic will capture the heat nicely or a reed mat will work to hold the food. Lastly, screening is used to cover the ends of the tent. If you don't have the screening, it can be left open, but this will allow dust and animals to enter. Integrated Food Security Project in Mulanje promotes this type of drier, see the appendix for their contact information.



Local dish drying rack

Art by K. Nordin



Dish drying rack converted to solar dryer.

Using your dryer: After getting used to your solar dryer, you can dry:

- → Vegetable and herb leaves in as little as 3 hours. Leaves will be crisp when they are dry and they will crumble easily.
- → Thicker foods, like mangoes take 1-3 days, depending on the conditions. You should still be able to bend the fruits when they are done. To test if they are done, put them in a plastic bag, if no water collects in the bag after sitting for a few hours, they are probably done.

The general process for using the dryer is:

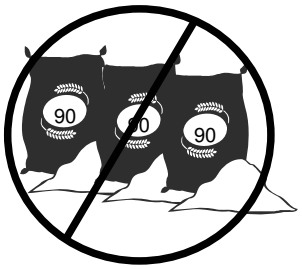
1. Wash your foods to assure that they are clean.
2. Some foods dry better when they are peeled, but remember that the peels have a lot of nutrients and decide it you can keep the peels on. You may want to try some both ways.
3. Slice the foods. The size of the food will depend on the food item and what you plan to use it for. Leafy items can be dried whole, then you can crumble them after they are dry, or crush them finely into a powder. Fruits and fruit vegetables are sliced 1-2 cm thick – they will dry to about half or more the size that you cut them, so cut them thick enough to allow for shrinkage. Most fruits are used when they are just ripe but firm.
4. Put the foods on the rack and dry them. It is easiest to put the same sized pieces of food on one tray so that all the food on each tray is finished at the same time.
5. After the food is dry, pack them in an airtight packaging so that moisture does not re-enter the food.
6. Save them to eat later or market them for sale.

Preserving for sale: income generating food products

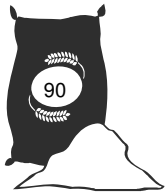
There is a lot of money that could be made from resources found in the Malawian landscape. Look in any grocery store for some ideas: herbal teas, spices, soup mix packets, dried fruits, dried or roasted pumpkin seeds, pickled mangoes and other savoury condiments, fruits juices – the list can go on an on! We need to start being creative with our products, concentrate on quality, and link to the local grocery stores so that nearly all the products on our shelves come from local producers!

Money doesn't really grow on trees or plants, but they can make us a lot of money!

Preserving foods for the year – how much should I save?



Based on the Malawi Food Guide, the following table shows how much food an adult should have for a year. This table differs from the messages that are being given on the ground. At the moment people are being told to grow and save too MUCH maize.



The current message is telling people to reserve 270 kg of maize per person per year, whereas what is really needed is about **90 kg of grains** per year (including millet, sorghum, maize, rice, etc.).

This message needs to be changed so that it is based on the Malawi 6 Food Groups!

Malawi Food Groups	Foods eaten throughout the year	Annual Total Kcal per adult	Annual Kg needs **per adult**	Annual Kg for **5 adults:**
1. Fruits	Fruits Fresh (all but a few)	54,750	109.5	548
2. Vegetables	Fresh Vegetables	46,720	146.0	730
3. Legumes & Nuts	Beans dried	35,770	9.1	46
	Beans fresh	20,258	9.1	46
	Nuts	85,410	21.9	110
4. Animal Foods	Meat, Fish, Eggs, fresh	12,921	21.9	110
	Milk, Yoghurt	15,878	18.3	91
	Dried fish or meat	24,820	9.1	46
5. Fats & Oils	Oilseeds (like pumpkin)	39,493	7.3	37
	Fatty Fruits	14,819	7.3	37
	Fats / Butter	15,567	1.8	9
	Oil	16,005	1.8	9
6. Staples	Cereals & Grains	305,688	91.3	456
	Tubers & Starchy Fruits	87,600	91.3	456
	TOTALS	775,698 needs = 766,500	545.7	**2,728**

☑ Testing your understanding of Diet Diversity

1. Define Nutrition. Explain the basic steps of Digestion & Absorption from food in the mouth to blood. Name the 6 groups of nutrients.
2. What are the 6 Food Groups? Name at least 5 foods from each food group that you have.
3. Name 3 ways you can increase yours and others knowledge of native foods.
4. How many servings should you eat from each of the food groups each day?
5. Name 3 ways you can reduce the energy you use in food preparation.
6. Name 3 things that reduce the nutrients in foods and 3 ways to keep more nutrients in food.
7. List 2 benefits of solar drying.
8. How much food should one adult have for the year from the grain group?