

# Permaculture Network In Malawi

Issue # 50: Zone Zero

July-December 2005

## *In This Issue*

Reduce – Reuse – Repair – Recycle	2
Composting Toilets	3-4
Pulusa – The Magic Cleaner	5
Plan What to Eat	6
Handouts	7-8
Members Share: Sophie Bergstein	9
Network News: Competition Results	10
Permaculture S.A.	11
Letters to the Editor	11
Preparing Food – Save Your Energy!	12-13
Organizations	14-15

## **50<sup>th</sup> Issue!**

*The Permaculture Network in Malawi is pleased to present the 50<sup>th</sup> issue of the Network's newsletter.*

*We would like to thank all of the people over the years that have helped to make this possible: our members, sponsors, contributors and committee members.*

*Let's keep up the great work and continue to get the messages out to where they count!*

## **Zone Zero**

What are Permaculture “Zones”?


Zones help us to think about how we are using our energy and resources. They also help us to reduce the amount of energy that we are putting into our systems. Permaculture uses Zones 0 through 5. For instance: Let's say that we have a borehole, the borehole in this case would be Zone 0. This borehole has standing water at the end of it and we would like to take advantage of this resource to help us grow some food.

- The area with the standing water is **Zone 1**. This is the area in which we might do the most work or plant things that would need the most watering and care. It may also be the area that we put things that we would be using on a daily basis. This helps to reduce our energy by not having to walk a long way or carry things a great distance.
- **Zone 2** is less work, care, and watering by choosing plants that don't need as much care such as fruit trees or drought resistant perennials.
- **Zone 3** is even less work and mostly relies on rains for its moisture – such as the ‘munda’ in Malawi.
- **Zone 4** might include free-range animals and trees that take almost no care at all.
- **Zone 5** is an area that should be left as wild as possible. This should be an area that is not touched by humans and it is reserved for nature to do its own thing. This might include a living fence or natural boundary around your property. It provides habitat for beneficial creatures.

So as you can see, Zone 1 tends to be highly intensive in terms of your input and what you get in return, but as you move outwards towards Zone 5 your systems become less and less work by allowing nature to do more of the work for you.

Zone 0 is generally your home, your immediate living area, your office, or a point from which you are starting, such as in the borehole example.

Zone 0 refers to all of the energy and resources that make up the house, office, borehole, etc. Some energy and resources leave zone 0 and enter into the other zones (such as people, water, organic matter, heat, etc.). What you do (or don't do) with your Zone 0 resources will affect the rest of your Zones as well.

In this issue we will discuss many of these Zone 0 concepts such as energy conservation, grey water management, recycling ideas, resource management (i.e. NOT waste management!), and other Permaculture design ideas. 

<p><i>From Our Zone</i> 0 to Yours!</p> <p><b>Receive the newsletter electronically</b></p> <p>If you would like to join the Permaculture Network in Malawi's e-mail group, or get the newsletter electronically, contact the Nordins at: <a href="mailto:nordin@eomw.net">nordin@eomw.net</a></p>	Contact information for Permaculture Network		
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* Access to yahoo accounts are hard right now, please use all e-mail addresses to reach us!			

## Reduce – Reuse – Repair – Recycle The four laws of Zone Zero

The basic cycle of nature is a process where everything feeds another part of the cycle - in other words, there is never any 'waste' everything is a resource that supports another part of the cycle.


Think of a wooden chair, when it breaks you can repair it. If you have to repair it several times, you usually can. Once it gets to the point where it can't be repaired, you can reuse the wooden parts to make something else. When you can't make anything else out of it, you can recycle it in your compost pile and it will become soil again.

Now think of a plastic chair. You usually can't repair it very well, and you can't put it in your compost to become soil again - it is 'waste'.

One of ways that we can live more sustainably with our environment is by:

- \* REDUCING what we 'take' from the nature cycle;
- \* REUSING what we take from nature as many times as we can;
- \* REPAIRING broken items as many times as we can;
- \* RECYCLING our resources often called "waste" so that they return to the system.

The world is getting full of garbage and soon we will have no place left to throw it. Many people don't even think twice about throwing plastic items out of a bus window or on the ground. THINK AGAIN! Try to think about what you are buying, what you are taking from nature, and what happens to it after you are done with it.

We've included a handout of the cycle in the middle of this newsletter to help you describe the idea to your friends as well. 

## Waste Not, Want Not...Using a Composting Toilet

The following information has been adapted from the *Humanure Handbook* by Joseph Jenkins.  
*The Humanure Handbook, Jenkins Publishing, PO Box 607, Grove City, PA 16127, USA*

Feces and urine are examples of natural, beneficial, organic materials excreted by the bodies of animals after completing their digestive processes. They are only "waste" if we discard them without putting them to use for us. When recycled they are resources, and are often referred to as manures, but never as waste, by the people who do the recycling.

When a potato is peeled, the peels aren't kitchen waste—they're still potato peels. When they're collected for recycling as a resource no waste is produced. Those of you who separate your organic material for recycling are creating no organic waste—a small but highly satisfying achievement.

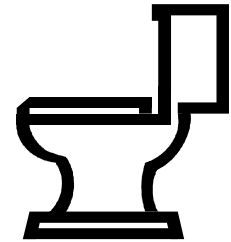
Regardless of the benefits or the hindrances of one's education, **we find no waste in nature.** One organism's excrement is another's food—it's that simple. Everything is recycled through natural systems so waste doesn't exist. Humans create waste because we insist on ignoring the natural systems that we are dependent upon. We are so adept at doing so that we take waste for granted and have given the word a prominent place in our vocabulary.



We have: kitchen "waste", garden "waste", agricultural waste", human "waste", municipal "waste", "bio-waste" and so on. Yet the long term survival as a species

requires us to learn and live in harmony with our host planet. This also requires that we understand natural cycles and incorporate them into our day to day lives. As we progressively eliminate waste from our living habits, we can also progressively eliminate the word "waste" from our vocabulary.

By dumping soil nutrients down the toilet, we increase our need for synthetic chemical fertilizers. Today, pollution from agriculture, caused from siltation



(erosion) and nutrient runoff due to excessive or incorrect use of **fertilizers, is now the "largest diffuse source of water pollution"** in our rivers, lakes, and streams. Chemical fertilizers provide a quick fix of nitrogen, phosphorus, and potassium for impoverished soils. However, it's estimated that 25-85% of chemical nitrogen applied to soil and 15-20% of the phosphorus and potassium are lost to leaching, much of which can pollute groundwater.

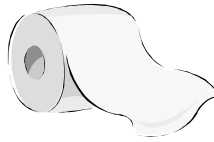
Farmers know that animal manure is valuable. They know that animal manures are digested crops, and that crops are soil, water, air, and sunshine converted into food, and the best way to use that manure is to put it back into the fields from where it originated.

Humanure is a little bit different. It shouldn't simply be flung around in a fresh and repulsive state. It should undergo a process of bacterial digestion first, usually known as composting, in order to destroy possible pathogens. This is the missing link in the human nutrient recycling. The organic matters our bodies excrete can be composted much the same as any apple core or potato peel—by being added to a compost pile.

There are essentially two ways to do this, we will concentrate on the less expensive, and simpler method which is to use one's toilet as a collection device, much the same as any compost bucket, and then compost the contents in a separate compost pile on a regular basis.

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This simple technique can be done without unpleasant odors, and the toilet is very comfortable situated inside one's home. This method of collecting humanure and composting it is sometimes called bucket systems, as the manure is carried to the compost bin in buckets or other waterproof vessels (such as clay pots). People who utilize such simple techniques for composting humanure take it for granted that humanure recycling is one of the regular and necessary responsibilities for sustainable human life on this planet.

"How it works is a model of simplicity."

How it works is a model of simplicity. One begins by depositing one's organic refuse (feces and urine) into a plastic bucket, clay pot, or other non-rusting, waterproof container that holds about 20 Litres (5 gallons). Food scraps may be collected in a separate container, but can also be deposited into the toilet container. The contents of the toilet are kept covered with a clean, organic cover material such as rotted sawdust, peat moss, leaf mould, rice hulls, or grass clippings, in order to prevent odors, absorb urine, and eliminate any fly nuisance. A cover is kept on the toilet when not in use and a hinged toilet seat works well.

When the bucket is full, it is carried to the composting area and deposited on the pile. Since the material must be moved from the toilet room to an outdoor compost pile, the toilet room should be handy to an outside door. It is best to dig a small area in the top of the compost pile and put the fresh material there, in order to keep the new humanure in the hotter center of the compost pile. After adding the new humanure, cover it with compost and additional bulky organic matter such as straw, leaves, or weeds, in order to eliminate odors and to trap air as the pile is built.

The bucket is then thoroughly scrubbed with a small quantity of water, which can be rain water or graywater, and if desired, pulusa or other biodegradable soap. A local *tsache* (broom of dried grass) works well for this. The soiled water is then poured on the compost. After rinsing the bucket it is put back in the toilet. The inside of the bucket should be covered with an inch of sawdust (or other material) so that the feces / urine has a nice bed of organic matter to fall onto.

You will need *at least* 2 compost piles kept contained in bins or, alternatively, pits. Make sure that animals are not able to dig through it. Use one pile until it is about 1 metre tall; then switch to another pile while allowing the first pile to sit *without being disturbed* for at least 6-8 months before using it (some people recommend 1 year for stabilization of the compost mixture). As you are making your compost pile, use a good mix of organic material, including kitchen scraps. Compost must be kept moist. A dry pile will not work, so occasionally add grey water to both piles.

When people who don't understand compost try to picture a humanure compost pile they imagine a giant heap of crap, draining all manner of noxious, smelly liquids out the bottom of the compost bin, and leaching into the groundwater. **However, a compost pile is not a pile of garbage or waste.** It's a living breathing mass, a biological sponge which requires quite a bit of moisture. It's not likely to create a leaching problem unless subjected to very heavy rains while uncovered. The finished compost does not have to be dug deeply into the soil or buried in trenches. It can either be used as a mulch, or it can be dug into the top layer of your garden soil. You can even roll naked in it if you want to (no I haven't tried this—yet). 🌍

For more information in Malawi contact:

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[amoschigwenembe@wateraid.malawi.net](mailto:amoschigwenembe@wateraid.malawi.net)

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## Pulusa - The Magic Cleaner by Kristof Nordin

Reusing grey water is one of the most important practices that occurs between Zones 0 and 1. Grey water is any water that has been used for purposes such as washing dishes, cars, floors, laundry, or bathing. Many people's grey water runs into a soak away pit and is never used more than once. In places that don't use soak away pits, many people waste valuable grey water by throwing it onto bare soil after only one use.

One of the best ways to make the most of water is to harvest the rain from your roof into containers (such as clay pots, tanks, or drums), and then to use that water for all your cleaning purposes, and then apply the grey water on your garden to help your plants to grow. Much grey water actually picks up things that are beneficial to your garden, such as pieces of food, tea leaves, coffee grounds, and even phosphates from soaps. The problem comes when we begin working against nature again by adding "non-natural" things to our water.


Any trip through a grocery store these days will reveal several isles of cleaning products, solvents, cleansers, anti-bacterial washes, de-odorizers, odorizers, and the list goes on. The majority of these products are highly toxic to the environment. If they are poured down our drains or thrown out with our grey water, then they seep into our soils and often contaminate our drinking water.

One way to avoid this problem is to avoid these products. There are often natural substitutes to these dangerous chemicals that work just as well and have been used for many years without harming the environment. One of these natural cleaning alternatives is called "Pulusa". Malawians have used this product for many years, but these days you seldom see it any more.

Pulusa is made by sifting wood ash until all of the larger pieces are removed and you are left with only a fine grey powder. This powder can be used to clean pots and pans, countertops, stoves, bathrooms, and anything else that you need a mildly abrasive cleaner for. It is the natural equivalent to "Vim", and it cleans just as well if not better. This makes sense since soap is made by running water through wood ash and the resulting product is called "lye". Lye is what gives soap its ability to cut through grease and clean things. Our ancestors knew this hundreds of years ago, but we seem to be forgetting many of the important lessons that they have been passing along to us.



The wonderful thing about Pulusa (besides its cleaning ability) is that when it returns to our gardens with the grey water it is non-harmful, non-toxic, and actually beneficial (since it contains potassium or "potash").

Finally!—A product that you can feel good about using and don't have to worry about spoiling the environment for generations to come! Give Pulusa a try. If you don't know how to make it, ask an older Malawian, chances are they still remember. 

# Planning What to Eat with the 6 Food Groups by Stacia Nordin

What types of things do you do in your Zone 0? Most of you will include eating in your list. Have you ever thought about what you should eat to be healthy? What you eat affects not only your health and your finances, it also affects our environment. The most important point to remember as you plan what to eat is to:

***Eat a wide variety of foods from all the Food Groups, selecting mostly locally grown foods.***

This is true for anyone, anywhere in the world. Each country or region creates its own food groups depending on the needs of that region. Below are some tables that describe each of the Malawi 6 food groups (see poster in this issue) and then we provide a table that suggests one way of putting the food groups together into a day's healthy diet. There are MANY different healthy diets, start practicing to try to have each food group every day!

## The Malawi 6 food groups & number of servings needed for an adult:

Food Groups:	Main Nutrients:	Examples of Foods:
<b>Fruits</b> 3-4 mitanda	<b>Carbohydrate &amp; Vitamins</b> (Water & Fibre)	Sweet or tangy fruits that are often eaten raw: → <b>Fruits</b> (except for ones in the fat group or the vegetable group): Papaya, Guava, Lemon, Tangerine, Banana, <i>Mchisu</i> , Grededilla, etc. → <b>Honey &amp; Sugar Cane</b>
<b>Vegetables</b> 3-4 mitanda	<b>Vitamins &amp; Minerals</b> (Protein, Carbohydrate & Fibre)	→ <b>Greens:</b> <i>Bonongwe, Chisoso, Luni, Mwamunaaligone, Limanda, etc.</i> → <b>Fruits:</b> Pumpkin, Tomatoes, Peppers, <i>Zimpwa</i> , Eggplant, <i>Msaka, etc.</i> → <b>Roots:</b> Onion, garlic, etc. → <b>Mushrooms</b> → <b>Flowers:</b> Pumpkin flowers, <i>chitata, etc.</i>
<b>Legumes &amp; Nuts</b> 1-2 mitanda	<b>Protein &amp; Carbohydrate</b> (Minerals, Vitamins, Fat, Fibre)	Legumes are seeds in a pod: → <b>Beans &amp; Peas:</b> Hyacinth bean ( <i>Khungudzu</i> ), Grounbeans ( <i>Nzama</i> ), Soybeans, Pigeon pea ( <i>Nandolo</i> ), Peas ( <i>Nsawawa</i> ), <i>Mucuna (Kalongonda)</i> → <b>Nuts:</b> <i>Mtedza</i> , nuts of the <i>mbula/mfula</i> , cashew, macademia, etc.
<b>Animal Foods</b> 0-1 chipande	<b>Protein &amp; Fat</b> (Minerals & Vitamins)	→ <b>Flesh, Blood:</b> Mice, Chicken, Pigeon, Pig, Goat, Fish, <i>Ngumbi</i> (termites), Caterpillars, birds, etc. → <b>Eggs</b> → <b>Milk &amp; Milk Products:</b> Milk, <i>Chambiko</i> , Cheese, etc.
<b>Staples</b> 5-6 mitanda	<b>Carbohydrate</b> (Protein, Minerals, Vitamins)	Seeds without a pod and starchy roots: → <b>Grains:</b> Sorghum, Millet, Rice, Wheat, Maize, etc. → <b>Starchy Roots:</b> Yams ( <i>Chilazi mpama, viyao</i> ), Sweet Potatoes, Irish Potatoes, Cassava, <i>buye</i> , coco yams, etc.
<b>Fats &amp; Oils</b> 3 Tbsp. oilseeds/fruit or 3 tsp. cooking oil	<b>Fat</b> (Minerals, Vitamins, Protein)	Foods that feel "fatty" in your mouth: → <b>Oilseeds:</b> Pumpkin seed, Sesame seed, Sunflower seeds, Cooking Oils → <b>Fruits:</b> Avocado pear, Coconut flesh, Olives, etc. → <b>Animal Fats:</b> Butter, Lard, etc.

\* Source: Permaculture Nutrition training manual, Draft 2003, Stacia & Kristof Nordin, [nordin@eomw.net](mailto:nordin@eomw.net)

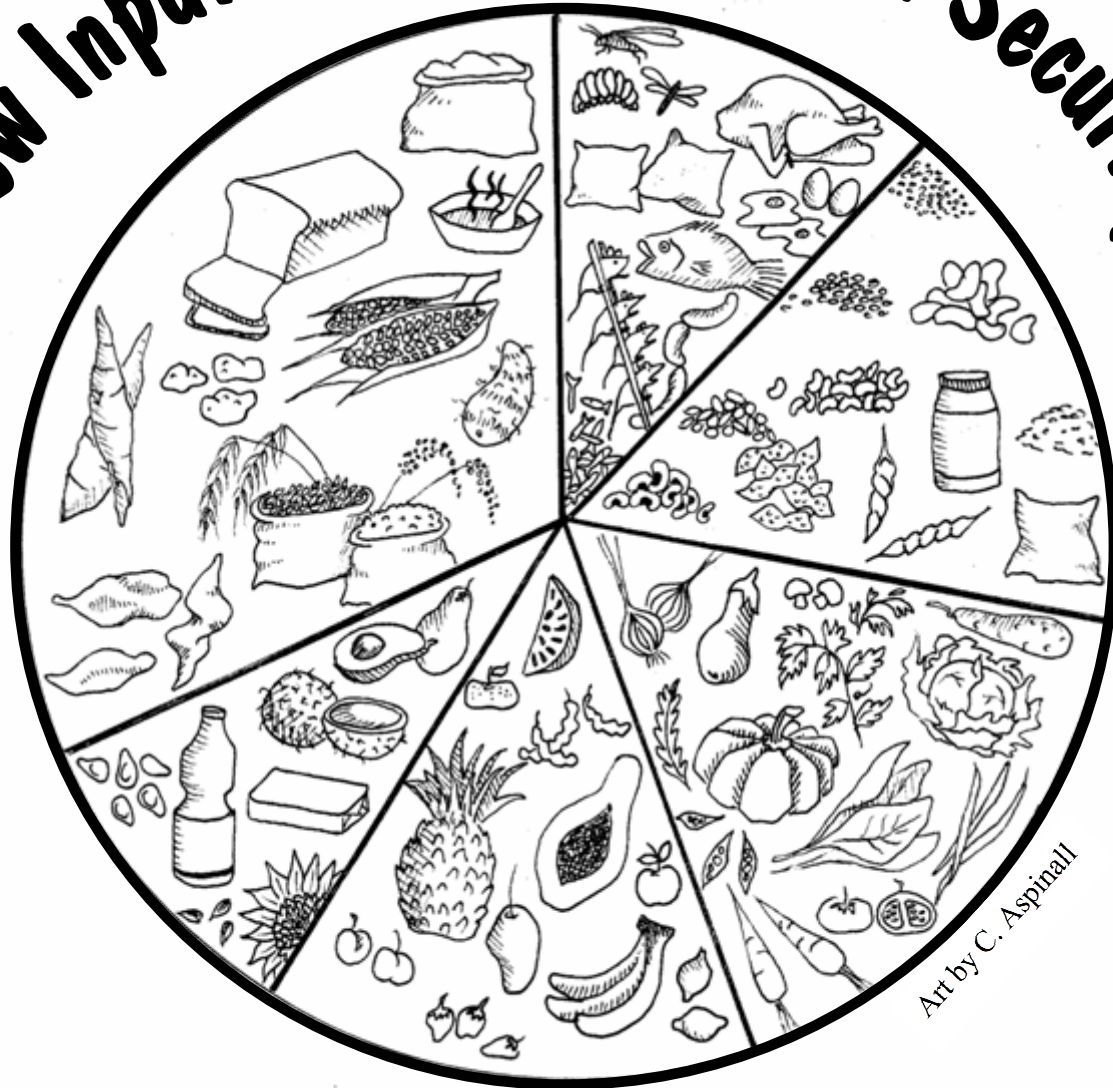
## Example of 1 day's healthy diet for an adult:

Food Groups:	Fruit	Veg	Legume /Nut	Animal Food	Staple	Fat	Other
<b>Breakfast</b>	1 banana (honey in tea)	1 chipande nkواني/herbs	-	1 egg	2 chipande cassava	1 tsp. oil	1-2 cups herbal tea
<b>Snack</b>	250 cm sugar cane	-	½ chipande roasted nuts	-	-	-	1-2 cups water
<b>Lunch</b>	1 guava (honey in drink)	1 chipande mushroom/herbs	1 chipande nyama ya soya	-	1.5 chipande boiled green bananas	½ of an avocado	1-2 cups herbal drink
<b>Snack</b>	-	1 cucumber	-	1 cup chambiko (like yoghurt)	-	1 Tbsp. Seeds	1-2 cups water
<b>Supper</b>	1 chipande pineapple	1 chipande zimpwa (eggplant)	1 chipande nzama (beans)	-	1.5 chipande boiled sorghum	-	1-2 cups water

\* Source: Permaculture Nutrition training manual, Draft 2003, Stacia & Kristof Nordin, [nordin@eomw.net](mailto:nordin@eomw.net)

The Manual is Finished! (See issue #49 for an overview)

# Low Input Food & Nutrition Security



Art by C. Aspinall

## Growing & Eating More Using Less

Limited copies of this manual (on CD or paper) are available through:

World Food Programme Malawi  
Post Office Box 30571, Lilongwe, Malawi  
phone: (+265) (0) 1-774-666  
fax: (+265) (0) 1-773-785  
e-mail: [wfp.lilongwe@wfp.org](mailto:wfp.lilongwe@wfp.org)

# The Nature Cycle



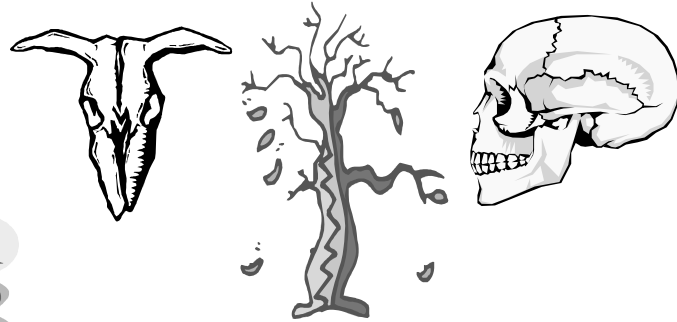
## LIFE

As the cycle of nature is strengthened, life begins to sustain and renew itself. As life passes on to death, it not only continues the cycle, but enriches and nurtures it.



## PLANT USE

All living things use plants and trees for food, shelter, fuel, building supplies, medicines and more! Plants give nutrients back to the rest of the nature cycle.



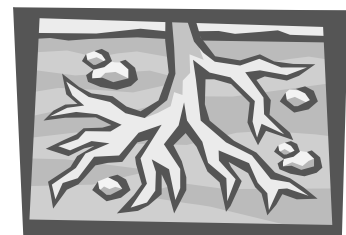
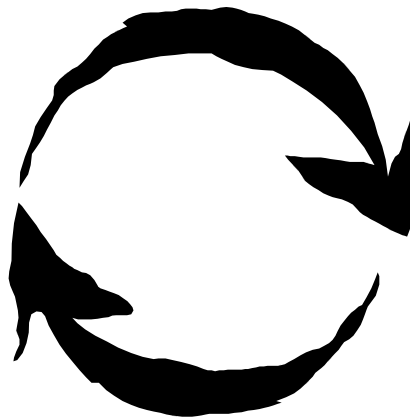
## DEATH

All things in nature eventually die. This process of death is not the end of the cycle, it is only the beginning. Without death there would be no life. Humans are not exempt from this cycle, we are part of it.



## DECOMPOSITION

When organic matter dies, insects, animals and micro-organisms break it down into smaller parts. This decomposition releases nutrients into the soil.



## NUTRIENTS

As decomposition releases nutrients they are changed into a form that can be used by plants. The plants absorb these nutrients through their root systems.



## PLANT GROWTH

The healthier that the cycle of nature is, the healthier the plants will become. This allows them grow up strong, fight off pests and disease, and produce offspring with these same traits.



## SUN, WATER, AIR

Some of the nutrients must combine with other things before they can be used. Plants use nature's gifts of sun, water, and air to convert their nutrients into energy. This energy allows plants to grow.

Source: *Permaculture Nutrition Training Manual, Draft 2003. Kristof & Stacia Nordin [nordin@eomw.net](mailto:nordin@eomw.net)*  
 Full page handout also available in appendix

(This page is from the Low Input Food & Nutrition Security Manual, S.Nordin/WFP, 2005)



## Members Share: Some ideas from a town garden

By Sophie Borgstein, Blantyre, P/Bag 414, Chichiri, BT3. [eborg@malawi.net](mailto:eborg@malawi.net)

I am not a gardener as such, but love seeing things grow, and am ever interested in conservation, re-cycling and steering well clear of chemicals. We wanted to share with other members of the Permaculture Network some of the ideas that we regularly put into practise in our town garden.

**WATER:** All water from the washing machine is stored in a water butt and siphoned off for use in the garden. I use a lower dose of powder than the 'recommended' dose, and steer well clear of the brands which contain bleach which burnt my plants horribly. Bath water is also siphoned out each morning and used where necessary. No watering is done via a hose pipe, but by watering can and occasionally using a fine sprinkler - both of these give a much gentler watering, so there is no excessive run-off. You can see that all the water has soaked into the soil right there.

**COMPOST:** We always have 2 or 3 compost heaps on the go. A pit collects all the organic household waste, all the leaf sweepings, all the prunings, and branches from any cut trees. Periodically, these are used to construct a compost heap, using the large branches at the bottom (to allow in the air from below) then layers of garden cuttings, a bit of rotted down compost, kitchen scraps, and animal manure. This last I get from chicken farms or from stables keeping horses. People are usually glad to get rid of their excess manure for very little in exchange! When the manure is very dry we soak it first and make sure to pour on top of the heap all the residue liquids from this soaking. The organic matter is ready to re-use on the garden after 2-3 months - but in the meantime we have usually started off the next heap. This compost is dug into beds as needed and is a wonderful dark colour and full of texture. The heaps themselves invariably sprout many seedlings, and this is a good source of papaya, mango and grenadilla plants for our garden! Another wonderful source of manure is the city sewage works, where it is dry, easy to transport in sacks, and free (take your own shovel and sacks). If you can come round to the idea, it is a very rich source of manure and provided us with a bumper crop of pumpkins last year! Care should be taken, of course, to wash the hands after working with it (as with any manure) and to wash produce prior to preparing them.

**PEST CONTROL:** we have plenty of lantana plants, especially around the perimeter of the property (where they contribute to a protective hedge). Every 6-8 weeks some branches are cut, chopped up with all their leaves and put in a bucket. Hot water is poured over and this is left to steep for 24 hours. The juice is then used to spray/sprinkle over any plants that tend to get eaten by bugs. The residue of leaf mush can then be spread around the feet of any roses or other plants that are susceptible to termite attack. We are currently trying a new idea - planting basil at the base of rose bushes, having seen this done elsewhere with success. Termites love the roots of roses and we have a hillside full of termites here! Pennyroyal is another very pungent plant that keeps bugs at bay.

**SEEDS:** We encourage the keeping of all seeds, whether from the flowers or the kitchen; they are dried and then stored for later use (in old envelopes), or shared out amongst the staff. Equally, any tree seedlings that inadvertently grow in the garden are dug up, put into plastics (recycled sugar bags) and at tree-planting season are shared amongst the staff. These regularly include leucaena, papaya, mango as well as cassia, flamboyant and bouhenia - all trees absolutely for free!

**USEFUL PLANTS:** The garden is a mixture of flowers, vegetables and fruit trees. Some of the flowers, such as the sunflowers and nasturtiums are also used as foods. The herbs are planted amongst the flowers at the kitchen door and so are easily available for picking. Leucaena plants have been transported to the lakeshore where they grow tremendously well and are now the main source of fuel for the Dover stove there. Other useful plants include sisal (khonje) which is grown as a perimeter to the property; once grown it is an effective barrier second to none. The leaves are dried as a source of string when we need to bind things in the garden. Pinto is planted on any unused or marginal ground and provides an attractive ground cover, helps hold the soil and of courses fixes nitrogen.

**SOLAR DRIER:** Lastly, a solar drier sits in a sunny spot of the garden. This is essentially a black box with a tilted glass roof. Any plentiful foods can be sliced and dried in this, and then stored for future use. Our favourites include mango, tomato and banana - but you can dry almost anything – it enhances the flavour amazingly, and even contributes to the nutritional value. 🌱

## Network News: Seed Collection Competition Results

by Kristof and Stacia Nordin

It all started with an e-mail. The Seedsavers' Network in Australia sent an e-mail about their seed saving programme which was forwarded to the members of the Permaculture Network along with a note suggesting that it would be great if we could formalize a seed saving network in Malawi. Audrey Miller, a member who lives abroad, said that she would like to donate some 'seed' money to get the process going. Money isn't needed to collect and save seeds, but, since money was available, we thought that we could use part of the money to run a contest and provide the winners with a prize package, and then use the rest of the money towards capital for seed packaging and marketing materials.

So, in May 2005 the Permaculture Network teamed up with the Wildlife and Environmental Society of Malawi (WESM) Lilongwe branch to run a seed collection competition. An article went into the Central Region Wildlife Clubs' newsletter with instructions and a list of foods that the clubs could choose from to find (very easy species, such as *bonongwe* and *chisoso* were not included on the list). The contest aimed to:

- ✓ raise awareness of the vast diversity of traditional foods in Malawi;
- ✓ conserve the seeds and promote the use of them through sustainable agriculture; and
- ✓ start a seed multiplication and exchange.

Clubs were given advice on collecting large, healthy, mature and dry seeds. The contest ran from May to August, as this is when many of the plants and trees produce their seeds. In order to enter the competition, clubs had to submit at least:

- ✓ 1 chipande full of each seed type submitted;
- ✓ Name and other details of the seed.

From the 260 seeds on the lists there were 99 seed entries and 40 *different* varieties of food seeds from all 6 food groups: 14 types of vegetables; 13 types of fruits; 6 types of fats/oils; 4 types of staples; and 3 types of legume/nuts.

This was a terrific response to the competition and helps to show that even during the "hungry season" people were able to find the sources of 40 different foods! This shows us two things.

- ✓ First, there are resources available to us that we are ignoring, forgetting about, or under-utilizing that could help us in terms of food and nutrition security throughout the year.
- ✓ Secondly, there are still a lot of foods out there that were not found, so we are either losing them completely or the knowledge of these plants is slipping away from us. This was only part of a Malawi food list that includes almost 600 different foods found in the country. Let's protect these valuable resources, learn more about them, incorporated them into our gardens and diets, and start to end the "hungry season"!

All clubs participating in the competition did a great job! This was not an easy task, and we hope that it helped to raise people's awareness and knowledge of our local resources.

The seeds are currently being multiplied by Kristof and Stacia Nordin in Chitedze for sharing with others in the future. There are also plans to begin multiplying some of the seeds at WESM Lilongwe, which will then be used in the WESM's Permaculture areas. WESM Lilongwe has the names of the two winning clubs and will be arranging their prize for them very soon.

Thanks for all the effort and congratulations to the winning Clubs! Special thanks to Audrey Miller for sponsoring this wonderful competition.

If you or your organization is interested to sponsor a similar competition next year, and help to preserve and use Malawi's botanical resources please contact:

**WESM Lilongwe at 01-771-269 or at:**

[wesm-llw@africa-online.net](mailto:wesm-llw@africa-online.net)



# Permaculture is Active in South Africa

Note from Stacia: South Africa is very active in Permaculture and there are many groups doing projects and trainings. They have an e-mail list that I just joined and am finding several interesting tips and projects. The contact information if you would like to join, too is: [PermacultureSA@yahoogroups.com](mailto:PermacultureSA@yahoogroups.com) or <http://groups.yahoo.com/group/PermacultureSA>. The following is a shortened version of a conversation that was held recently on the list:

## Subject: Southern Africa Permaculture Directory

“I have been approached by the project team who are compiling the National Agricultural Directory for Dept Agric this year. I will be writing a brief synopsis of Permaculture for their new chapter devoted ENTIRELY to Permaculture, but need an extensive database of organisations, service providers, umbrella organisations, researchers, general contacts to put into this chapter. I was contacted in mid January and the Directory has to be finished by the mid-February! Please bear in mind that Permaculture includes sustainable construction and energy - so it applies to people in those disciplines too. Organic farming has its own chapter, so the info will focus on Permaculture as a design framework that encompasses food, shelter and energy, rather than only a food production system.”

**Ms A E Kruger, Project Manager**, The Permaculture Garden and Training Centre  
P.O. Box 4922, George East 6539. Ph & Fax (+12) 044-871-1405; Cell: (+12) 072-241-1514.  
[mandala01@telkomsa.net](mailto:mandala01@telkomsa.net)

*Stacia's update since that time: I submitted information on the Permaculture Network in Malawi and also forwarded the information to some of the Network members who have e-mail. I believe that the directory is finished, so anyone interested can write to Ms. Kruger for a copy (I'm not sure what type of funding they have and how many copies they might have).*

## Letters to the Editors



- **Kasese Investment's Christian R. Msiska from Livingstonia** explains in his letter about using compost on different types of vegetables which are eaten and also sold in the local market. He has 55 apple trees that will start producing this year. He started a 2 km irrigation system that is guided into 2 hectares of land for many different crops. If anyone has neem seed or Gricidia to share with Mr. Msiska – please send to him at Box 44, Livingstonia, Rumphhi.
- **Concerned Volunteers Initiative, PO Box 34, Chapananga** writes that the newsletter is helping them to improve their community in using sustainable agriculture, improving health, and working together. Their group teaches people about Permaculture and Anamed (Action for Natural Medicine) through using traditional medicines. *Sounds like great work!*
- **Samuel Mboho, Box 2, Malaomo** has started the Malaomo Permaculture Network which has 35 people. They are working on building the skills of the group through local training and welcome assistance in their work. *If you are a trainer, please write to Samuel with your advice!*
- **Mr. F. Mkinga, DAMRA (Development Action for Marginalised Rural Areas), PO Box 154, Rumphhi** writes that they are establishing demonstration gardens to use as a training centre. They are planning to spread the concept and support farmer to farmer visits to bring people together to share seeds, ideas and recipes. *They would like to link up with other Permaculture projects.*

### **IMPORTANT ACTION NEEDED:**

**Please send us your PHYSICAL ADDRESS to add to the Member database. I have tried to visit many of you recently and wasn't able to locate you! – Stacia Nordin**

## Energy used in Preparing Food by Stacia Nordin, RD

One of the most common things that we all do in Zone 0 is to prepare our food and eat it. With Permaculture we can save a lot of time preparing foods while at the same time creating delicious, nutritious combinations of food to eat. Energy saving food preparation technologies include:

- ✓ **Eating foods raw** (fruits, salads, certain nuts, certain roots like sweet cassava, juices, etc.)
- ✓ **Processing foods as little as possible** (using whole grains like whole wheat or mgaiwa flour)
- ✓ **Using fuel-efficient stoves** such as the examples given on the following pages which were taken from the Low Input Food and Nutrition Security manual (S. Nordin and WFP, see notice in this newsletter)

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.

### 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.

For technical details and dimension on building these types of stoves contact:

**Programme for Biomass Energy Conservation in Southern Africa (ProBEC)**

Box 438 Mulanje

[ifspmulanje@malawi.net](mailto:ifspmulanje@malawi.net)

tel: 01-466-279

fax: 01-466-435

(Pictures removed)

### 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.

(picture removed)

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.

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!

(pictures removed)

### Basket Cookers / Food Warmers / Food Coolers

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! 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.

(continued on the next page)

*(Basked Cookers / Coolers - continued from the previous page)*

To 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 a general guide is:

- For grains, use 1 cup washed, drained grain to 2 cups water and boil the food on the stove for about 2-4 minutes.
- For beans, soak them overnight, then boil them for about 15-30 minutes.

Remove the pot of food from the stove and quickly put it in the basket and put the cover on. Grains will take about 2 hours to finish and beans will take about 4 hours to finish (which gives you time to sell your excess produce at the market!). 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. That's it! As with all new technologies you will just a little practice and you are set! 🌍

## *Renewable Energy Industries Association of Malawi (REIAMA) – Saving Energy in Zone 0!*

Renewable Energy Industries Association of Malawi (REIAMA) is advocating efficient and sustainable use of renewable energy technologies. Technologies include:

- ✓ **Solar energy:** using energy from the sun
- ✓ **Hydro-electricity:** harvesting energy from water
- ✓ **Wind energy:** using windmills
- ✓ **Bio-gas:** capturing energy from biological decomposition, such as from decomposing manures or plant matter

REIAMA endeavours to protect the environment and significantly contribute to reduction of green house gas emission. REIAMA brings water, electricity and light to remote villages/communities where there is no grid (*Escom*) extension in an effort to assist the Government of Malawi to uplift the living standards of rural people.

### **For further information please contact:**

The Executive Director, REIAMA, Private Bag 233, Lilongwe  
 Physical Address: Area 3, Hashim bldg, Mandala Rd - near Total Land Care  
 Phone: (+265) 01-750-551  
 Fax: (+265) 01-750-554  
 E Mail: [reiamas@sdnp.org.mw](mailto:reiamas@sdnp.org.mw)

Create the better world you and your children (the generation to come) want to see!

## *Rainwater Harvesting Association of Malawi*

It can be very easy to set up systems for harvesting rain in your home, office, school, health centre or other Zone 0. One idea is to collect water from your roof – and it can be done on any type of roof! Many people in Malawi find creative ways to use clay pots or other containers to do this, but there is still a lot of water that isn't being harvested! If you need ideas for harvesting your rainwater, contact the Permaculture Network in Malawi and/or the Rainwater Harvesting Association of Malawi at:

c/o Land Resources Conservation Dept (MoA), Area 3 near Total Land Care, p/bag 49, Lilongwe  
 Information officer – Macpherson Nthara; [macphersonnthara@yahoo.co.uk](mailto:macphersonnthara@yahoo.co.uk); 09-293-074 m.n  
 Secretary – Dr. Maloza Banda (at Bunda College); 08-854-123 m.b.





**Permaculture Network in Malawi**

Newsletter Editors, Kristof & Stacia Nordin  
 Crossroads Post Dot Net X-124,  
 Lilongwe, Malawi

*“See the world through the eyes of  
 Permaculture”*

*Place Stamps Here*

**To:**

\* If your mailing label includes **“Payment Due!”**  
 please send your membership fee for the years written on your label.

*Now is the best time to Start!*

*Tiyeni! Join the Permaculture Network!*

- **Benefits** include newsletters with advice on Permaculture, nutrition, local food & medicinal plants, resources, creative ideas, and contacts of people in Malawi who are also trying to live a sustainable life.
- **Membership Fees** are 400 mk for the calendar year. If you are able to pay more it allows us to sponsor people who can't afford the fees, to copy additional materials, and to take on more extensive projects.
- **Sponsorship:** If you can't afford the fees, or can only afford part of the fees, write us explaining why you are unable to pay, why you want the newsletter, and what you are doing with Permaculture – you need to write to us at least once a year.)
- **Payments:** We accept Malawi Kwacha check, postal order (**addressed to Stacia Nordin**), or Malawian postal stamps. Include your name, address, all contact details, profession & specific permaculture interests.
- **Submissions to the Newsletter:** Get your voice heard and send your message to the editors so it can be heard around the world! Each newsletter contains: Letters to the Editors, Resources & Member News. The other articles are based on a theme that is posted in the previous issue (see below). We welcome submissions and would love to receive a letter / article from YOU!
- **Contact information for Newsletter Submissions and/or Payments:**  
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 Crossroads Post Dot Net X-124, Lilongwe, Malawi.  
 Contact us at [nordin@eomw.net](mailto:nordin@eomw.net) or 01-707-213 (h) or 09-333-073 (s) or 09-926-153 (k)

*Next Issue's Theme:  
 Never a Drought with Permaculture!*