

Topic 7: Putting your design plan into action

This topic will walk you through 5 steps of putting your design plan into action:

- Step 1: Plan the design: observe, assess, think, discuss
- Step 2: Helpful tools
- Step 3: Prepare the areas
- Step 4: Putting in the plants, trees & animals
- Step 5: Caring for the plants, trees & animals

Step 1: Plan the design: observe, assess, think, discuss

Before doing anything, you need to think about the area and find the best place to put your plants, trees and animals. This was covered under Topic 6 of Planning your design.

Remember NOT to start anything without a design plan in mind!

Step 2: Helpful tools

This depends on what your design plan is. You will need to think about what types of plants, trees and animals you are putting into your guilds. Here are a few materials that may be helpful when putting in your design:

- ✓ Mulch (dry leaves, dry grass or any other dry plant items, feathers, wood shavings, etc.)
- ✓ Seeds, seedlings, and animals for the guild
- ✓ Something to make planting stations or swales – a strong sharp stick or bone, an old metal rod, a hoe, a machete, a hand shovel, etc.
- ✓ Water – it can be left over from washing dishes or clothes – and a method to pour it gently on the soil – drip irrigating, watering can rose, etc.
- ✓ Materials for constructing animal pens or fencing if needed
- ✓ Be creative and find uses for your resources – make do with what you have!



Step 3: Prepare the areas

Now you've made you plan, you have the tools you need to put your design plan into action, so it is time to prepare each area for its plants, trees and animals. Guilds can be any size, but it is often works the best to start small until you learn, and then to increase the area steadily.

Even if you don't prepare and plant a large area now, there are things you can do improve those non-planted areas such as mulching, composting, allowing natural species to grow, outlining pathways so people aren't walking on future planting sites, etc.

Preparing seeds for planting

Decide if you need a nursery bed for your seeds or not. Many seeds can be grown without a nursery bed. Some seeds do best scattered directly on the surface, such as very small seeds. Other seeds prefer to be under the ground. Other seeds prefer to grow in the rotting fruit that it came from. If you are using open pollinated seeds the plants or trees will reproduce and spread on their own. If you don't like where the new seedling is growing, you can either move it to another spot, move it to a pot to share with someone, or cut it out for mulch if you have a lot of them. Here are a few guidelines for starting seeds, the appendix has hints for specific varieties:



Picture from Positive Health, 2003, Neil Orr

- ✓ **Mimic nature:** Think about the way that particular seed reproduces itself in nature and mimic it. In general, seeds need to be planted to a depth of 3 times of its size.
- ✓ **Moisture:** New seeds will need to be moist every day to sprout well, so be sure to put your seeds somewhere that will naturally have water, or that you can irrigate easily every day.
- ✓ **Identification:** If you don't know what a seed looks like as a seedling, you will probably want to start it somewhere with a label so you can identify it and move it to the right place when it gets older.

Here are some simple ideas to start new plants or trees:

- ✓ Use truncheons or suckers;
- ✓ Move 'volunteer' seedlings from compost piles, mulch, or other area;
- ✓ Use direct planting or broadcasting in the place you want it to grow, you may need to protect the area to keep birds from eating or scratching up the seeds;
- ✓ Sprinkle some seed in a small corner of your garden for future transplanting, label the area if you need to and protect it;
- ✓ Use a clay pot, or any other container that it will be easy to move the seedlings out of. These containers can be placed anywhere convenient such as on a porch, wall, near a kitchen or anywhere that it will be easy to remember to water them.

Clear the areas carefully

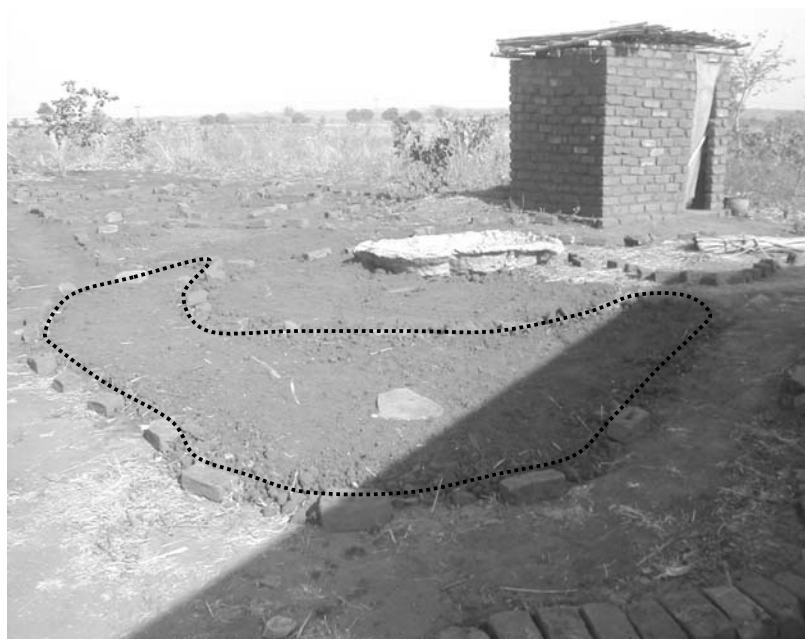
Review topic four's Soil Health concepts on clearing the land carefully. A few key points for preparing your area are:

- ✓ **Start new areas in stages:** Make a rough plan for the whole area, but you do *not* have to start the whole area at once! Start with a small area and put in the plants and animals, then move on to the next area. This way you will be eating very quickly! In areas you are not preparing to establish now, you could still layout rough pathway areas add your mulch or make compost piles on the future planting areas. This way people won't walk all over your future beds (hopefully!) and the planting areas will start having improved fertility and structure from the mulch and nutrients under the compost pile.

- ✓ Trim, don't 'clear'. Use a hand slashers to trim plants and trees back or, if necessary to cut them out completely. Keep the roots in the ground to rot, cover the stem area with lots soil and mulch to help it rot. When doing this try NOT cut out everything in the area! Look at the plants and trees that are already growing and work around them whenever possible.
- ✓ **DO NOT BURN** the area or the things that you cut out. Burning is harmful to the soil, air and humans. Use all the organic matter by putting it under the soil or on top of the soil. This even means thick branches, they will rot slowly. Review composting if needed.
- ✓ Do not dig if you don't have to! Do you need to dig the whole planting area? Probably not, but it depends on how degraded the soil is. Remember, in nature seeds just get thrown on the ground and then they grow. We can mimic this when we plant, BUT to do this we also have to get our soil as good as nature keeps hers. Also remember that digging into the soil exposes the soil to erosion and disturbs the work of the insects and microorganisms that are trying to maintain healthy soil; so don't disturb the soil if you don't have to. The idea is to just think before you dig.
 - ➔ Don't Dig: If you are planting in an area where the soil is already soft, such as in a sweeping pile, or where water is currently being thrown, or where you already have a guild, you probably don't have to dig much, if at all.
 - ➔ Dig a little: If the ground is very hard, you may need to loosen it before planting, or you might choose to just dig small holes for the size of the plant or tree you are putting in, or another choice might be to put an animal khola there for a while to improve the area and to start somewhere else. If you choose to dig, be sure to put in enough diggers and ground cover so that you don't ever have to dig again!

The first area is done!

Cover it up & don't walk on it! Now you have your design laid out and you've dug where you need to dig for planting. Cover the area with mulching (see earlier chapter on soil for ideas). Avoid walking inside the guild beds, stay on the pathways. Once you've planted the first bed (which will be covered in the next section), you can move onto the next area.



This bed was dug because the soil had been swept for many years. The bed was covered in mulch after the soil was loosened. The side beds were only dug in the direct spot a plant or tree was planted and the pathway was not dug at all. *A dotted line was drawn around the edge of the bed to help see the bed in print.*



Step 4: Putting in the plants, trees and animals

Now you need to put the plants, trees and animals in the right places to match your design plan. Your design plan may change as you start to implement your plan.

Hints for having food every day

- ✓ Start as soon as possible so that you can start having food as soon as possible.
- ✓ Plant in stages such as planting 10 amaranth today, then 10 amaranth plants next month, etc. so you always have new amaranth to eat. Or, start a guild this week, then another next week, then another the next week, again so that there is always a staggered harvest.
- ✓ Plant things with varying harvest times – For example there are pigeon peas that are ready in 3 months, 6 months or 9 months, and there are different varieties of beans with different harvest times. See the appendix on getting to know your plants for harvest times.

Transplanting Seedlings

If you want to move something to a different spot, here are some general guidelines:

- ✓ Three leaves: it is best to wait until the plant has at least 3 leaves on it before moving it. If the plant is an older plant or truncheon, trim off most of the leaves except for 1 so that the plant uses all its energy and water to re-root itself instead of feeding the leaves.
- ✓ Protect the roots: Try to scoop out the dirt around the roots. Use a small spoon, your fingers or a stick to loosen the area around the seedling's roots, then scoop down deep enough to try to take all the roots without damaging anything.
- ✓ Hole a bit bigger than the roots: The hole for the new seedling should be just a bit bigger than the ball of soil and roots on the seedling. If the soil is very degraded, add a handful of mature compost manure to help the feed the seedling as it re-roots itself in its new home.
- ✓ Remove plastic: If you started your seeds in a plastic tube – remove the tube before planting the seedling as it will interfere with proper root growth. Reuse the plastic if possible.

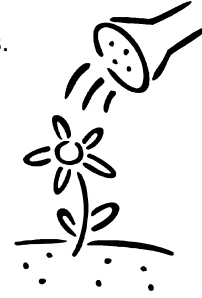
Spacing for plants, trees and animals

In your plan you considered this, now that you are actually putting items in, think about it again.

- ✓ New discovery: Maybe you will find something already growing and want to work around it instead – go ahead and be flexible and change your design plan.
- ✓ Enough space: Did you leave enough space for each item or do you need to alter your design plan? Items can just touch each other when fully grown, or they might take up different parts of the 'space' in terms of roots or plant height. Some may even touch each other a lot, such as with climbers and supporters.
- ✓ Thin out later: Another approach is to put in a lot of seeds or seedlings and then cut some out when they grow taller. This approach is not appropriate for all species, but can work well for leaf vegetables, legumes that are used as green manure, shrubs, fast growing species, and other similar cases.

Step 5: Caring for the plants, trees and animals

Guilds are much easier to care for than other types of agricultural systems. The guild system holds moisture, adds to soil fertility, digs, suppresses weeds, and works to balance itself overall. Plus, your creative design aims at capturing resources that were previously wasted, so you may not be adding to your work load, you might actually be reducing it!



Watering

Listen to your plants and trees and let them “tell” you when it needs water! Plants and trees primarily drink through their roots, so try to get the water into the soil, not scattered all over the place – review topic five’s Water Management concepts for details. Here are some other hints:

- ✓ Small seeds will need to be kept lightly moist until they start to grow. This type of watering will be about once a day with just enough water to keep the area around the seed wet.
- ✓ Young seedlings will need a bit less water than new seeds and as they grow bigger they will generally need even less water. They may only get water 1 time in the evening, or even every other day, but a little bit larger amount of water to sink down to their roots.
- ✓ Plants and trees will tell you when they need water by their leaves. They may get watered three times a week, or monthly, depending on their size, species and time of the year. They will get a larger amount of water to reach even deeper root depths. If their leaves start drooping (i.e., sagging, folding up) without returning to healthy looking again, give your plants water. Not all drooping leaves are a sign that water is needed. For example, at the hottest part of the day some types of leaves droop just to conserve water, but then by the end of the day when the sun goes down they return to a healthy looking. Another example is right after transplanting, some plants may droop for a day or so.
- ✓ Animals almost all need clean water available very frequently, again, it depends on the species and variety.

Weeding – not needed ! Trim instead

With a guild system you shouldn’t ever have to weed a large area. Weeding is replaced with ‘trimming’ back plants and trees and putting those trimmings on the ground as mulch or in the compost pile. Most “weeds” are actually a food, medicine, protector, attractor for predators, digger, or some other use, so be careful as you trim the area. You might want to always keep at least one plant and tree of every species, even if you don’t know its use yet. Someone will come along someday that does know!

Digging – not needed!

The guild area isn’t dug ever again. The pathways are permanent. By including diggers and mulch the soil is dug for you. You might dig a small spot for a new seedling, but you should only have to make the hole big enough for that plant or seed.

Adding new plants, trees and animals

Hopefully most of the species you've chosen will self-seed and/or be perennial species. Self-seeding varieties will mature, go to seed, drop to the ground in the area or be carried by the wind or animal, then grow a new plant. Keep your eyes open for where there are new seedlings growing and either leave them where they are and design around it, or, move it to a spot where you want it.

In the guild system, rotation happens naturally. Species get mixed around differently over time and the same species hardly ever grows in exactly the same spot as it was previously.

Continue feeding with mixed mulches

You will need to continue adding mulch to the area as the insects and animals in the soil eat up your mulch and turn it into rich compost (insects are great, aren't they!). You can also use compost for this feeding if you like.

Problems with diseases and insects? Re-assess your design.

If you design your landscape with a mixture of natural protectors (flowers, smelly herbs, and variety in general) you usually won't need to resort to any other treatments.

If you are getting a lot of damage, you need to re-assess your design and make changes.

Still having trouble with Insects? This topic deserves some attention because most people are currently struggling with protecting their plants, although the primary reason for this is the current design plans used in traditional plots that don't care for the soil, have inappropriate water, and put all one thing in one area. Many plots have problems at first until the area is healed again, so it may take time, even a year, to achieve a healthy balance again.

The following section on insects was adapted from Food Gardens Foundation in Johannesburg⁸. They give some ideas for dealing with insects which can be useful for a new garden that hasn't established a healthy variety of plants and trees yet.

First, most insects are *GOOD* for your garden! Be sure not to harm them!

☺ Insects such as ladybirds and praying mantis kill other insects, such as aphids. So do not harm them as they are working for you!



☺ If you find earthworms in your soil, this is great! Do not remove them or kill them. They help the soil with their manure and the tunnel through the ground digging channels for water and air to move through. Some people even make earthworm farms either for the manure or to sell the worms so other people can improve their soil, too.

Next, some insect damage is natural; A few bites out of your plants and trees here and there is completely acceptable!

Some insects like to eat the foods you like to eat, (remember they were created with a purpose, just like you!). And some insects are great meat, too.



Many are insects are also edible and are a good meat!

✓ Share a little with insects.

Assesses how badly the insect is damaging your harvest and decide if you are willing to share.

- ✓ Grow something Different. Some insects (like worms in the soil that damage the roots of plants) will live in the soil only for as long as you grow the same type of plant. If you stop growing that type of plant for a while in that place – and grow something different – that insect won't want to live there any more. In a few months you can plant that plant again.

Still having insect and disease problems? Try these treatment ideas:

The following recipes were adapted from FAO Malawi's Principles of Home Gardening booklet, 2004 Pilot Manual⁹. It is a compilation of local knowledge from a variety of sources.

Smelly and/or soapy water:

- ✓ Use local smelly plants like mpungabwe, chanzi (both types of basil), kuthawa njoka (makes snakes run), or introduced species such as Delia, Tephrosia, marigolds or other flowers, lemon grass, garlic, hot peppers, etc. Pound a few handfuls of the plant's green or flower parts and mix with a full watering can of water (about 10 litres of water). Take care to wash your hands after crushing the plant as some of them are very strong (such as hot peppers!). Another option is to use more crushed plant material with grated soap pieces to make a thicker mixture that will stick onto the plants when brushed onto the affected area.
- ✓ Leave the mixture overnight or (longer) and then sprinkle the water onto and around the affected plants using a watering can with a rose or by dipping a bunch of leafy branches into the mixture and sprinkling on the affected area.
- ✓ Continue using the mixture for a number of days until the insect damage stops.
- ✓ Avoid watering the leaves with other water during the treatment or the treatment will just wash right off. You can use the smelly water for watering purposes.

Smelly Mulching:

- ✓ Use any of the smelly plants as a mulch and sprinkle it through your affected beds.

Smelly Diet:

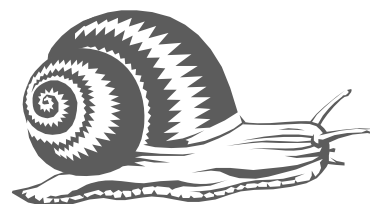
Including smelly plants in your gardens is *NOT* a waste of space, in fact, many of the protectors for your garden are also protectors for your body! For example hot pepper, garlic and lemon grass, all have nutritional and medicinal value. Here are some uses for these plants:

- ✓ Hot pepper: usually cooked with other foods, or made into hot sauces or powders. It can also be eaten raw fresh if you can tolerate it. It has medicinal value such as prevention of ulcers in humans; relief from colds, coughs and flu; provides warmth to the body either applied on the skin or by drinking as a tea or soup.
- ✓ Garlic: can either be eaten raw or cooked, and is good for coughing and general improvement of body immunity. Garlic is a natural antibiotic and can be used externally on wounds or eaten.
- ✓ Lemon grass: Good flavor for drinking tea for spicing foods (rice, potatoes, meats, salads etc). Can be used as a cough remedy when boiled in hot water to make tea.



Snails and Slugs:

- ✓ Pick them off by hand: Check early in the morning for snails and slugs as they come out to eat your plants at night. Remove them and feed them to your chickens, ducks, fish, or other animals.
- ✓ Shallow dishes of stale beer: Use old saucers or broken pieces of pot and fill with stale beer. Put these in the areas that the snails are eating. Snails like beer, and will climb into the dishes and drown.
- ✓ Sharp mulch: Sprinkle broken egg shells, or other sharp things like rough stones, or crush an old broken clay pot around your plants. Snails and slugs don't like this, as the sharp edges hurt their 'feet'.
- ✓ Attractors: Snails like to eat certain flowers, Marigolds are one example. Interplant flowers snails like to eat so they eat the flowers instead of your food.



Drawing from Positive Health, 2003, Neil Orr. See appendix for contact details.

Other worms (like eelworms) and insects damaging roots:

- ✓ Flowers and other smelly plants: To discourage these types, plant marigold flowers, nasturtium, garlic, or onions throughout your gardens if you already haven't. Try using the smelly mulches or smelly water.



Drawing from Positive Health, 2003, Neil Orr. See appendix for contact details.

Cutworms:

These worms eat the stem of the plant near the soil. The worms hide in the soil near the plant.

- ✓ Find by hand: Dig with your fingers, find the worm, and feed it to your chickens.
- ✓ Protect the stem with collars: You can also make small round 'collars' in the shape of a circle from stiff paper or cardboard from food packages. Place these around the plant's stem to protect it from this worm.

Aphids (Plant lice):

Usually you will see ants around as well. Sometimes aphids are seasonal and will go away themselves after the season is over. If you feel like the aphids are damaging your plants, you can discourage them by:

- ✓ Encouraging ladybirds (ladybugs) who love to eat aphids!
- ✓ Smelly soapy water (see first treatment idea above): Use a soft cloth or sponge dipped in the smelly soapy mixture (garlic, hot peppers and soap recipe works particularly well) and gently wipe the aphids off. Repeat this three days later, and again three days after that.



Drawing from Positive Health, 2004, David Patient and Neil Orr. See appendix for contact details

Cabbage Worms & Moths:

The moth lays eggs on the cabbage leaves, and the worms emerge later to eat the leaves.

- ✓ Instead of Cabbage, grow Mlozi (the local perennial vegetable that tastes just like cabbage)!
- ✓ Mix flour and salt, and place it in an old sock. Shake the sock over the leaves – top and bottom of leaves – lightly.
- ✓ Cut tomato leaves into small pieces. Place these on the leaves being eaten, as well as around the plants.
- ✓ Mix one teaspoon of salt in 2 litres of water. Mix well. Spray or sprinkle over the leaves.

Animal management (protection from thieves, goats, etc.)

In some situations, you may need to protect your plants from chickens, dogs, pigs, cattle, goats, monkeys and other animals, such as humans!

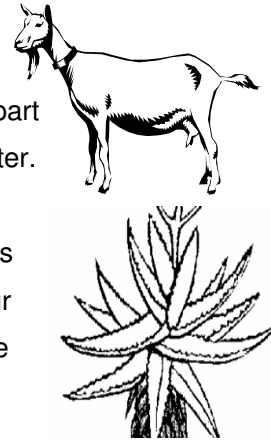
Some of these problems actually stop people from planting – but this does *not* have to be the case! Here are some ideas for dealing with these pests.

- ✓ Having your plants near the house may help, as you can see what is happening as people at home can easily chase animals away.
- ✓ Certain spiritual plants are believed to prevent thieves from stealing. Including these plants may assist while at the same time adding roots and organic matter to the soil.
- ✓ The power of people! Community policing and rules for keeping animals controlled can also be very effective and has been proven to work in parts of Malawi.



Goats seem to eat anything and everything!

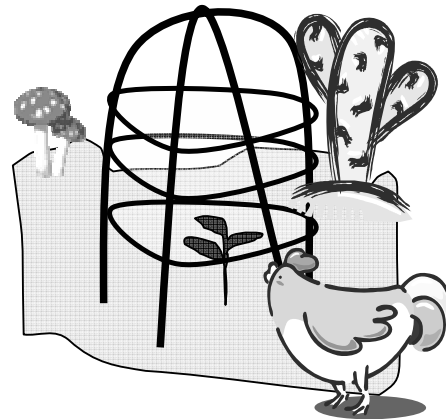
- ✓ One idea is to collect some aloe leaves and wipe the bitter green part of the aloe leaf on your hedge or stick fence as the aloe is very bitter.
- ✓ People also report that goats do not like the taste of their own manure. Getting the smell of goats manure on the plants and trees may help prevent them being eaten by goats (be sure to wash your foods well before you eat them of course!). You can either add the goats manure to a bucket of water and let it sit for a few days before applying to the plants, or rub fresh manure on the trees and plants (be sure to wash your hands or to use plastic bags on your hands!).



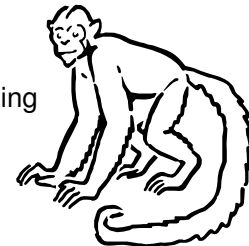
Drawings from Positive Health, 2003. Neil Orr. See appendix for contact details.

Chickens usually only harm small seedlings and newly planted seeds. Chickens can be *helpful* around mature plants because they eat insects and they dig the top of the soil. To prevent chickens from hurting small seedling you can:

- ✓ You can strategically place rocks, broken bricks, thorny branches, or other item around the place where new seeds and seedlings are. Place the items so that chickens will have a hard time scratching the young seeds.
- ✓ Another idea is to make a wire basket or frame using the same skills children make their 'galimoto' (car) toys by taking scrap pieces of wire and tying the wires together. Put the wire basket over your small seedlings until they are large enough to withstand a chicken scratching around it, then move the basket to a new seedling.



Monkeys are clever animals. Some strategies for dealing with them include hiding the food by inter-planting things closely together and including all sizes and types of plants. Another idea is to spray plants with hot peppers so when monkeys eat the foods it burns their mouth and learn that your food is hot. If you find other strategies that work spread the word so we all can learn!



Drawing from Positive Health, 2003, Neil Orr.



Testing your understanding of caring for plant and animals

1. State 3 reasons why is there less watering in a guild than a typical system.
2. Why will there be less weeding, digging, replanting and fertilizer use in a guild system?
3. Name 4 ways to work with insect damage, diseases, and animal interference.

Topic 8: Monitoring and Evaluating the Model

It is important to know if the Model is working or not and what needs to be done to make our impact more effective. This tool is a guide for the types of questions to ask, who to ask, and what to look at during your baseline and subsequent evaluations.

The baseline evaluation should be done after selecting the sites and before implementing any of the model, this will give you a picture of what the area is like now, prior to your interventions.

After working with the communities, their representatives, or extension workers, an evaluation should take place about 3 months after implementation to see what progress is being made, to identify what is working well and what is not, to see what is getting better in people's lives and their environment and what is getting worse – and why. During the follow up evaluation, focus on asking the target audience your questions, i.e. whomever it is that you were aiming for seeing behaviour changes. If you trained the people that were working with the target audience, they may want to answer all your questions instead of letting the target answer them.

For a project that looks at Food and Nutrition Security, interventions and evaluations should be allowed to continue for a minimum period of 3-5 years, depending on how closely you are able to work with each household. If you are relying on a trickle down information and skills effect, expect longer to really impact a whole community – this may take as long as 15 years.

We worked directly on the ground with communities and we found changes very quickly using the model (see page 11 “The impact of the model during the testing phase”), but for people to really take hold of the ideas, to work through implementation barriers and allow the environment and people to return to health, one-, two- and three-year evaluations are needed.

On the following pages there are suggested topics, questions, and format to follow for your own evaluations. The form could be used with a household or community site. “Site” on the form refers to whatever you list on the form as ‘Type of Site’. The evaluation needs to be tailored to your programme. All evaluators need to be trained on how to collect the information for each question such as measuring or estimating yields, water usage, dietary intakes, etc.

Sample Assessment Form – filled in

Instructions to the Evaluator: You should have been previously trained in using this form so that you understand why the information is being collected and what the objectives of the project are. Please be as accurate as possible in your information collection.

Site Name:	<i>Nordin Family</i>
Site Location: <i>(brief directions)</i>	<i>Chitedze Trading Centre 15 km west on Mchinji Road, continue 1 km west of Chitedze Agricultural Research station Take a right on gravel road, the Kasungu S123 Travel 1.5 km and ask at market.</i>
Type of site: <i>(Community school, hospital, individual, etc.)</i>	<i>Individual home</i>
Date started using model:	<i>2003 August</i>
Number of people at site:	<i>3: one wife, one husband, one child</i>
Primary contact names / positions:	<i>Kristof & Stacia Nordin, owners 01-707-213 home phone</i>

Questions	Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation	
Date of Evaluation:	<i>2003 Aug</i>	<i>2004 Feb</i>	<i>2004 Aug</i>	<i>2005 Feb</i>	
Notes about time of evaluation:	<i>Dry</i>	<i>Rains</i>	<i>Dry</i>	<i>Rains</i>	
1. Size of total Site (acres)	<i>1 acre</i>	<i>2 acres</i>	<i>2 acres</i>	<i>3 acres</i>	
2. Size of the Site using the model	<i>0</i>	<i>1 acres</i>	<i>2 acres</i>	<i>2.5 acres</i>	
Notes:		<i>added land</i>		<i>added land</i>	
Impacts on Labour, Time, Money, Health					
3. How many people are working on the model concepts at the Site, including hired labour?	<i>2</i>	<i>3 1 hired</i>	<i>3 1 hired</i>	<i>3 1 hired</i>	
4. Total time used by all people caring for the Site area per day	<i>0</i>	<i>2 hours per day</i>	<i>1 hour per day</i>	<i>30 min per day</i>	
5. How many people are benefiting from the outputs at the site? List other beneficiary types.	<i>3</i>	<i>15 neighbors, market</i>	<i>30 neighbors, market</i>	<i>60 neighbors, market</i>	
6. Have the ideas spread to other sites in the area? If so, list them	<i>no</i>	<i>no</i>	<i>yes – 1 church</i>	<i>yes – 2 neighbors</i>	
7. Illness frequency at site in <i>past 6 months</i> , include all people at Site.	Diarrhea	<i>2</i>	<i>1</i>	<i>0</i>	<i>0</i>
	Malaria	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>
	Respiratory	<i>2</i>	<i>1</i>	<i>0</i>	<i>0</i>
	Malnutrition	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
	Other:				

Questions		Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
8. Money spent per month	on all model inputs (cost of water, labour, seed, etc.)	0	-2,000 mk	-1,000 mk	-500 mk
	on food per month	-2,000 mk	-1,000 mk	-500 mk	-500 mk
	on other Site needs	-2,000 mk	-1,000 mk	-1,000 mk	-1,000 mk
	TOTAL spent:	-4,000 mk	-4,000 mk	-2,500 mk	-2,000 mk
9. Money received per month	from model outputs (food, water, building supplies, etc)	0	+1,000 mk	+2,000 mk	+5,000 mk
	from other places	+5,000 mk	+5,000 mk	+5,000 mk	+5,000 mk
	TOTAL received:	+5,000 mk	+6,000 mk	+7,000 mk	+10,000 mk
Money Net		+1,000 mk	+2,000 mk	+4,500 mk	+8,000 mk
Notes:		<i>purchasing all food and living needs wife works outside home</i>	<i>hired labour starting to eat harvests reduced h/h costs from using local resources sold 1,000mk of harvests</i>	<i>reduced labour less water for irrigation eating more harvests & buying less food selling more harvests</i>	<i>reduced labour costs again selling additional harvests and seeds</i>
Diet Diversity Concepts:					
You may wish to have an additional sheet listing all the names of foods available at the site.					
10. Food <u>types available</u> at Site right now, including wild supply: (number of types ready for eating)	Fruits	1	2	5	7
	Vegetables	2	10	15	20
	Legumes / nuts	2	4	6	6
	Animals	0	2	3	3
	Staples	1	3	5	6
	Fats / Oils	1	2	3	3
11. Food <u>types eaten</u> at Site right now: (number of types being eaten)	Fruits	1	2	3	5
	Vegetables	2	9	10	15
	Legumes / nuts	2	3	5	6
	Animals	0	1	2	3
	Staples	1	2	3	5
	Fats / Oils	1	2	3	3
12. Food <u>amounts available</u> at Site now, including wild supply: (kg)	Fruits	1 kg	2 kg	3 kg	15 kg
	Vegetables	1 kg	2 kg	5 kg	10 kg
	Legumes / nuts	3 kg	5 kg	50 kg	100 kg
	Animals	0	1 kg	10 kg	100 kg
	Staples	50 kg	200 kg	400 kg	600 kg
	Fats / Oils	1 kg	1 kg	2 kg	5 kg

Questions		Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
13. Food <i>amounts eaten</i> at Site per day per adult: (chipande spoons per day per adult except fats = teaspoons)	Fruits	1 spoon	2 spoon	3 spoon	3 spoon
	Vegetables	1 spoon	2 spoon	3 spoon	3 spoon
	Legumes / nuts	.5 spoon	1 spoon	1 spoon	2 spoon
	Animals	0	1 spoon	1 spoon	1 spoon
	Staples	8 spoon	7 spoon	6 spoon	5 spoon
	Fats / Oils	1 teaspoon	2 teaspoon	3 teaspoon	3 teaspoon
14. Clean drinking water available (either purified or clean source)		yes	yes	yes	yes
Soil Health Concepts:					
15. Site area conserved by:	Mulching	0	.5 acre	1.5 acre	2.5 acre
	Reduced Sweeping	0	1.5 acre	2 acre	2.5 acre
	No burning organic matter	0	2 acre	2 acre	2.5 acre
	Reduced tillage	0	.75 acre	1 acre	2 acre
	Swales or other permanent structures	0	.25 acre	.5 acre	1 acre
	Trees / Plants (non-legume)	0	.5 acre	1 acre	1.5 acre
	Other:				
16. Site area using soil fertility and structure concepts:	Legumes (plants/trees)	0	.5 acre	1 acre	1.5 acre
	Compost	0	.25 acre	.5 acre	.5 acre
	Animal manure	0	0	.25 acre	.25 acre
	Manure teas	0	0	.25 acre	.5 acre
	Other:				
17. Are synthetic chemicals being used for soil fertility? If yes, list why.		yes maize	no	no	no
18. Is there any soil erosion on the site? If yes, list types of soil erosion.		yes – wind, sun & water	yes – water but very little	no	no
Water Management					
19. Is all waste water harvested? (i.e., all grey water should be used) If no, where?		yes	yes	yes	yes
20. Is all rainwater harvested? (i.e., no rainwater should leave the area) If no, where?		no – roof run off	yes	yes	yes
21. Is irrigation used? If so, what methods?		yes watering can	no (rains)	yes watering can & drip	no (rains)
22. Water amount used at site for plants / trees / animals per day (look at the watering method and help estimate litres)		100 L (20 cans)	0 (rains)	50 L (5 cans)	0 (rains)
23. Water input, when applied (am, noon, pm)		am, pm	-	am	-

Questions		Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
Plant and Animal Health					
(On a separate sheet of paper you may wish to list all foods grown and yields, then put totals here)					
24. Number of varieties grown over past 6 months <i>(number of types)</i>	Fruits	0	5	10	15
	Vegetables	2	10	15	30
	Legumes / nuts	1	5	10	15
	Animals	0	1	2	5
	Staples	1	3	5	8
	Fats / Oils	0	1	3	5
	non-food items	0	1	2	4
25. Yields over past 6 months <i>(kg)</i>	Fruits	0	5 kg	10 kg	15 kg
	Vegetables	18 kg	30 kg	200 kg	300 kg
	Legumes / nuts	10 kg	20 kg	200 kg	250 kg
	Animals	0	0	50 kg	100 kg
	Staples	500 kg	0	2,000 kg	100 kg
	Fats / Oils	0	0	50 kg	30 kg
	non-food items (list)	0	0	firewood	thatch
26. Is there crop damage or animal illnesses that are seriously affecting yields? If yes, what?	<i>yes, maize insect & fungus</i>	<i>yes, vegetable insect</i>	<i>no</i>	<i>no</i>	
27. Are synthetic chemicals / antibiotics, etc used on plants or animals? If yes, why?	<i>yes, fungus, pests</i>	<i>no</i>	<i>no</i>	<i>no</i>	
28. Are local, natural remedies for crop / animal damage being used? What and is it working?	<i>no</i>	<i>yes, smelly herbs on vegetables it is working</i>	<i>no</i>	<i>no</i>	
Walk through the area					
29. List Resources found that are <u>not</u> being used (organic matter, seeds, foods, water, etc.)	<i>grey water at well, sweepings, men playing bawo</i>	<i>men playing bawo</i>	<i>none</i>	<i>none</i>	
30. Note any differences seen during walk compared to answers provided:	<i>none</i>	<i>none</i>	<i>none</i>	<i>none</i>	

Sample Assessment Form – Blank

Instructions to the Evaluator:

Site Name:	
Site Location: <i>(brief directions)</i>	
Type of site: <i>(Community school, hospital, individual, etc.)</i>	
Date started using model:	
Number of people at site:	
Primary contact names / positions:	

Questions	Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
Date of Evaluation:				
Notes about time of evaluation:				
31. Size of total Site (acres)				
32. Size of the Site using the model				
Notes:				
Impacts on Labour, Time, Money, Health				
33. How many people are working on the model concepts at the Site, including hired labour?				
34. Total time used by all people caring for the Site area per day				
35. How many people are benefiting from the outputs at the site? List other beneficiary types.				
36. Have the ideas spread to other sites in the area? If so, list them				
37. Illness frequency at site in <i>past 6 months</i> , include all people at Site.	Diarrhea			
	Malaria			
	Respiratory			
	Malnutrition			
	Other			

Questions		Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
38. Money <i>spent</i> per month	on all model inputs (<i>cost of water, labour, seed, etc.</i>)				
	on food per month				
	on other Site needs				
	TOTAL spent:				
39. Money <i>received</i> per month	from model outputs (<i>food, water, building supplies, etc</i>)				
	from other places				
	TOTAL received:				
Money Net					
Notes:					
Diet Diversity Concepts:					
You may wish to have an additional sheet listing all the names of foods available at the site.					
40. Food <i>types available</i> at Site right now, including wild supply: (<i>number of types ready for eating</i>)	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				
41. Food <i>types eaten</i> at Site right now: (<i>number of types being eaten</i>)	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				
42. Food <i>amounts available</i> at Site now, including wild supply: (<i>kg</i>)	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				
43. Food <i>amounts eaten</i> at Site per day per adult: (<i>chipande spoons per day per adult except fats = teaspoons</i>)	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				

Questions	Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation
44. Clean drinking water available (either purified or clean source)				
Soil Health Concepts:				
45. Site area conserved by:	Mulching			
	Reduced Sweeping			
	No burning organic matter			
	Reduced tillage			
	Swales or other permanent structures			
	Trees / Plants (<i>non-legume</i>)			
	Other:			
46. Site area using soil fertility and structure concepts:	Legumes (plants/trees)			
	Compost			
	Animal manure			
	Manure teas			
	Other:			
47. Are synthetic chemicals being used for soil fertility? If yes, list why.				
48. Is there any soil erosion on the site? If yes, list types of soil erosion.				
Water Management				
49. Is all waste water harvested? (<i>i.e., all grey water should be used</i>) If no, what is not harvested?				
50. Is all rainwater harvested? (<i>i.e., no rainwater should leave the area</i>), If no, what is not harvested?				
51. Is irrigation used? If so, what methods?				
52. Water amount used at site for plants / trees / animals per day (<i>look at the watering method and help estimate litres</i>)				
53. Water input, when applied (<i>am, noon, pm</i>)				

Questions	Baseline evaluation	6 month evaluation	12 month evaluation	18 month evaluation	
Plant and Animal Health (On a separate sheet of paper you may wish to list all foods grown and yields, then put totals here)					
54. Number of varieties grown over past 6 months <i>(number of types)</i>	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				
	non-food items				
55. Yields over past 6 months <i>(kg)</i>	Fruits				
	Vegetables				
	Legumes / nuts				
	Animals				
	Staples				
	Fats / Oils				
	non-food items (list)				
56. Is there crop damage or animal illnesses that are seriously affecting yields? If yes, what?					
57. Are synthetic chemicals / antibiotics, etc used on plants or animals? If yes, why?					
58. Are local, natural remedies for crop / animal damage being used? What and is it working?					
Walk through the area					
59. List Resources found that are <u>not</u> being used <i>(organic matter, seeds, foods, water, etc.)</i>					
60. Note any differences seen during walk compared to answers provided:					