

HOW-TO GUIDE:

Organic Farming

A Community Project



Organic Farming

WHY ORGANIC FARMING?

Organic farming is a great way to provide healthy meals for children and adults which includes fresh fruits and vegetables. It is a cheap and easy way to access fruits and vegetables free of man-made additives and substances, as it does not require expensive chemicals or machinery.

ABOUT ORGANIC FARMING

Organic farming is a process that is entirely natural, free of pesticides, chemical fertilizers and weed-killers. It is also a process that works in harmony with nature and all the processes and ecosystems associated with farming. As such, organic farming produces entirely clean, chemical-free foods through natural processes such as crop rotation, green manure, compost and biological pest control.



CAN YOUR COMMUNITY SUCCESSFULLY RUN AN ORGANIC FARM?

Before you commit to organic farming, you must make sure you are able to provide good conditions and care to your fruit and vegetables and that you know what this project means for your community.

It is important that the community:

- Is committed and willing to follow through with the project.
- Is ready to not use any chemicals when farming.
- Is aware of their needs as a community and how this project can meet those needs.
- Do you have a plot of land that is community-owned and accessible to the majority of the community?
- Are people able to give the farm consistent attention?

It is extremely important that the site:

- Should be away from contact with chemicals through the air; water or in the ground.
- Contains healthy soil (the Ministry of Agriculture can help by running a soil test).



PHASE I: COMMUNITY CONSULTATION

Do you want to grow your own chemical-free fruits and vegetables? Do you have the interest and energy to plan and follow through with the project? To answer these sorts of questions, it is very important to meet as a community and discuss the way forward. Before making the final decision, the community should have a clear idea of what the farm means to the community, and the possible positive and negative consequences of implementing the project. This is where people can share views of support or share concerns about the project.

In addition to community member concerns and questions, try and answer the following questions:

- Why do you want to implement this project?
- Is this what the community needs?
- Are community members able and willing to put in the time to maintain the farm?
- Is there space to set up the farm? Does everyone agree on this space?
- What are the benefits of the farm to the community? Is the project useful for the community's needs?
- What are people's personal goals for the organic farm?
- What are the community's environmental, economic and community goals?
- What crops will you plant in your garden?
- How many people will participate and gain from the garden?
- Is there an older person in the community who is aware of chemical-free farming practices?
This person will be very helpful as a guide through the farming cycle.

After all questions and concerns have been addressed, decide whether or not the community will move forward with the project. If the community has decided the project is not appropriate at this time, consider thinking of other options to meet the community needs. If the community supports the organic farming project, choose a project leader or chairperson to guide the project. Choose the location, assign responsibilities to members (including nominating someone to purchase the materials), and decide on the expectations of the community and the results you wish to achieve from the project.

Community Cohesion

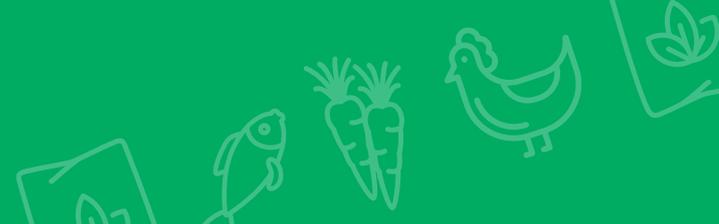
It is important that the majority of the community supports this initiative before it is implemented. A community working together and supporting each other will ensure a project's success and sustainability. Also when beginning new practices it is easier to work in a group to ensure there is support and fellowship in terms of sharing of ideas and best practices.

Proposal Writing

Once you have decided on all the major details of the project, assigned responsibilities, shared expectations, and gained community commitment, you are ready to begin. Do this by putting all the planning into words. It is very important to plan and put things down in writing as this makes the project more official and makes it easy to follow through and be successful. In your proposal you need to include:

- Why you are choosing this project and what it means to your community.
- Project goals.
- Timeline.
- Crop rotation cycles and groups.
- Role and responsibilities.
- Where materials will come from.
- When you will produce a progress report.
- Total cost.

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PHASE 2: CONTACT THE MINISTRY OF AGRICULTURE FOR SUPPORT

Ministry of Agriculture

The best step a community can take once it is ready to continue with organic gardening is to contact the nearest Ministry of Agriculture Office. The Ministry of Agriculture has Extension Officers around Fiji. This is important as the Extension Officer provides support, training and guidance for the project. It is therefore very important to link up with an Extension Officer before starting your project.

It is the communities' responsibility to contact their area Extension Officers to support them on their project. Extension Officers are there to support the community and even individuals when needed. Examples of problems you can approach the Officer with include pest control and moving into commercial farming etc.

Ask the whole community to attend the Ministry of Agriculture's training session so that farm management becomes easy and conflict between people on how to manage it is less likely.

AREA	CONTACT
Central Division	3384233
Western Division	6661000
Northern Division	8812318

PHASE 3: LET'S BEGIN FARMING!

Step 1: Creating your plot

<p>Mark out beds</p>	<p>Dig over beds only</p> <p>Dig about 40 cm deep</p>	<p>Add compost/manure/ organic material (30 cm) Water and put back soil</p> <p>30 cm</p>	<p>Add topsoil from the paths</p> <p>topsoil</p>
<p>Flatten the top of the bed</p>	<p>Don't walk or kneel on it and squash the soil</p>	<p>"Minimum tillage"</p> <p>Protect soil structure Add compost, mulch but never dig again</p>	<p>Plant densely</p> <p>Keeps down weeds Conserves moisture</p>

Step 2: Planting your seeds

Create a line along your garden with the end of a spade and then sprinkle your seeds gently along the line. The depth of this line should be approximately twice the length of the seed. Then cover the line with soil and water slightly to let the soil settle around the seed.

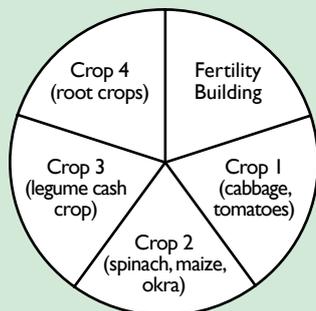
Note: At a height of 5-7cm, when seedlings have one or two sets of leaves, consider removing some seedlings to give other more space to grow. This process is called thinning.

Step 3: Farming practices for crop diversity

The health of your crops is affected by: soil type, rainfall, altitude, temperature and water intake. Make sure you know what your crops need when you buy them (ask the shop keeper or read the back of the packet), so that you can take care of them as required.

Keeping crops diverse is very important to keep the agriculture ecosystem fresh and to help economic diversity. As such, it is a good idea to alternate groups of plants in a plot. This will also help with weed and insect problems.

- 1) *Crop Rotation:* Create three or four sections in your land and give one section to each crop/family of similar crops you want to plant. Plan a general crop rotation structure, picking around four crops to plant per cycle. The example below shows different crop groupings.



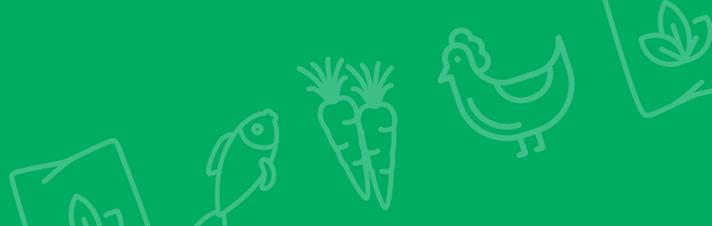
Example Of Rotation in a Lowland Area

Intercropping can be incorporated into this rotation. For example in crop 2, pumpkins can be grown between the maize and in crop 3, the legume cash crop could also be undersown in the maize as a relay crop to establish it more quickly.

- 2) *Intercropping:* Provides efficient use of land and reduces risk of disease. Intercropping is when you alternate types of vegetables to improve yields and help one another. You can put tall plants (e.g. corn) next to shorter plants (e.g. pumpkin), or plants with big leaves next to plants with small leaves or deep-rooted plants next to shallow-rooted plants.

Note: *planting certain combinations of crops can help with insect control and flavor:*

- Basil (Tamole) for tomatoes.
- Chives (Varasa) for tomatoes and carrots.
- Chili (Rokete) for root rotting for most crops.
- Coriander (Dahnia) for insect control (aphids and spider mites) for most crops.
- Garlic for insect control for cucumber, peas, lettuce and celery.
- Radish (Redisi) for cucumber beetle and rust flies for most crops.
- Eggplant (Baigani) grows best with beans, pumpkin, marigold, peas, carrot.
- Lettuce (Letisi) grows best with spinach, cabbage, basil, radish, onion, garlic.
- Pumpkin/Squash grows best with eggplant, lettuce, beans, radish.
- Spinach grows best with radish



PHASE 4: MAINTAINING YOUR FARM

Keeping your soil healthy

To keep the soil fertile and healthy, you can make use of one or all of these two practices to enrich the soil and crop growth without chemicals.

- 1) *Green Manure*: Green manure refers to crops grown and put back into the soil to increase soil fertility before planting crops for the crop rotation cycle. Planting these crops keeps the soil ready for new plants between rotations and prevents the takeover of weeds. Green manure crops include: peas, beans, cowpea, pigeon pea, macuna bean, winged bean.
- 2) *Compost*: This practice looks to collect green (nitrogen rich e.g. manure, fallen green leaves, kitchen food scraps) and brown (carbon rich e.g. paper, dead sugar cane, seaweed) matter and let it break down to be later used as a fertilizer. Place the matter layers in a heap and water the heap. Turn the heap over and mix every three weeks. Make sure you keep watering the heap twice a week.

Note: other organic fertilizer options include seaweed and animal manure.

Biological pest control

Although some insects are beneficial in keeping pests away, most insects and pests are harmful to plant growth.

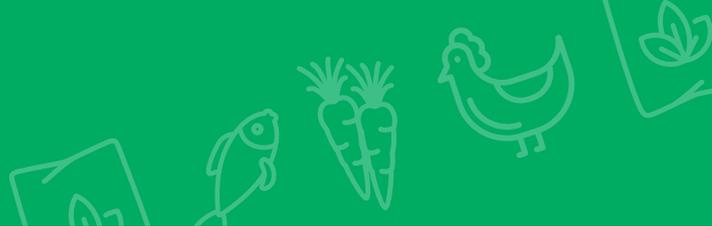
Here are some methods you could use to control pests:

- Cut the bottom of a plastic bottle and place it on a plant with the lid off.
- Make a light trap to attract and trap insects at night. Hang a lantern from a tripod made of bamboo or wood. Hang the lantern over a bowl of water with a little oil.
- Make a flytrap by painting a large board in bright orange or yellow and cover it with a sticky material like oil or glue.
- Soapy water spray: mix around one tablespoon of liquid detergent soap with four and a half liters of water. Spray on an under the leaves, and increase the soap if needed.
- Tea or coffee spray: soak coffee or tea grounds in water, let it cool and then spray on the plant.
- Oil spray: this is for chewing and sucking insects. Mix half a cup of detergent soap in water, and mix the soap and water with half a liter of vegetable oil. For your spray mixture, simply mix one tablespoon of the detergent/water/oil mix with a liter of water and shake before use.

Weed Management

The following two methods can help in controlling weed growth and improve soil structure and moisture.

- 1) *Mulching*: Add five centimeters of layers of organic waste on top of the soil. Make sure the waste is aired out so it doesn't completely block the soil from water.
- 2) *Removing*: Dig weeds up and pull them out or cut weeds short from under the surface. Try and do these things when the weeds are short and young.



PROBLEMS AND POSSIBLE SOLUTIONS

Soil pest/disease

Rotate your crops so you are not growing the same crops, and weakening the soil.

Management

Crop management and care is ongoing throughout a crop cycle. Therefore your community needs to decide on a well-managed system of when and who will water crops, weed the area, check for pests and other necessary activities.

SUSTAINABILITY AND LONG-TERM PLANNING

Expansion

Consider increasing the size of your farm to around two acres to give you more space to plant more crops.

Diversity

You could try growing new crops and seeing which crops complement one another for better growth, flavor and health.

Capital

Your community could save money to purchase objects to improve crop growth e.g. wire fencing, hosepipe and tank etc.

ADVANTAGES OF ORGANIC FARMING

Environmental Sustainability

Keeps the soil clean and healthy by avoiding artificial pesticides and herbicides and maintaining organic content.

Health

Artificial fertilizers can harm humans by entering their bodies through fruits and vegetables and eventually causing problems.

Keeping soil fertile

By farming in a way that is not harmful to the environment or its life systems, we are keeping the biological activity in our soil and therefore keeping it healthy and fertile.

Low-cost

You do not have to spend money on expensive fertilizers and weed-killers and instead are using natural and free methods to improve soil fertility and plant growth.

Profitability

If your vegetable yield is good and you have a good diversity, you could make a good profit from your vegetables.

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Notes

A large area of horizontal dotted lines for taking notes.