

Healthy Village Facilitator's Guide

Supsup Garden



Ministry of Health and Medical Services, Solomon Islands

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Table of Contents

1. What is a supsup garden?	1
2. Why is the supsup garden important?	1
3. Benefits of the supsup garden	2
4. Where can you make a supsup garden?	2
4.1 Ground bed	3
4.2 Raised bed	3
4.3 Containers	4
5. Types of soil to be used in a supsup garden	4
5.1 Soil nutrition.....	5
6. How to make compost	6
6.1 Where to make compost.....	6
6.2 Compost materials.....	7
6.3 Putting compost materials in layers	8
6.4 Looking after your compost	9
6.5 How to make liquid fertiliser	9
7. How to grow vegetables on beds	11
7.1 Build a simple raised bed.....	11
7.2 Prepare soil	12
7.3 Planting seeds and seedlings	13
7.3.1 Germination of seeds	13
7.3.2 Pricking stage	14
7.3.3 Transplanting stage.....	14
7.4 Mulching.....	15
8. Types of vegetables and fruits grown	15
9. How to take care of your garden	16
10. Basic tools needed	17
Glossary of Terminology	18

1. What is a supsup garden?

- A supsup or backyard garden is a small area of land beside the house where you grow vegetables, fruits, beans, root crops and other eatable plants.
- Supsup gardening is a way to easily provide family members with **fresh and nutritious foods to strengthen the immune system**, therefore to prevent malnourishment, infectious diseases and lifestyle diseases.
- lifestyle diseases also known as non-communicable diseases (NCDs) and are common in the Solomon Islands.



2. Why is the supsup garden important?

- Solomon Islanders usually grow vegetables, fruits and root crops in bush gardens, which can be more than one hour walk from the village.
- Bush garden produces (cabbage, bananas, etc.) can be **more accessible** to families, if it takes **less time and efforts** to bring them to the kitchen at home.
- Instead, people tend to go to local stores to buy processed foods such as noodles, taiyo and bread, because they are more accessible and require less time to prepare.
- There are often **fertile lands** situated **close to the villages**, but they are either used for cash crops like coconut, cocoa and kava plantations, or they are not used at all.
- Families will be able to continually eat healthy foods once a supsup garden is started around their houses.



3. Benefits of the supsup garden

Practicing supsup gardening:

- Allows easy access and intake of fresh healthy nutritious foods.
- Increases the chance to avoid consumption of unhealthy processed foods.
- Offers an opportunity to acquire farming knowledge and skills.
- Facilitates passing of wisdom and local customs from one generation to another.
- Saves hours to walk to and from the bush garden.
- Saves time and money to travel to the market.
- Requires only a small area around the house for farming.

Goal - people to become more “healthy, wealthy, wise and happy”



4. Where can you make a supsup garden?

- A supsup garden is usually set up around your house. It is also called a backyard garden or kitchen garden.
- Before starting a supsup garden, you must do a transect walk around your house and see the area of land.
- Identify the size of the land area, types of soil, vegetation, topography - whether it is steep or flat, wet or dry, and with enough sunlight or shades.
- After gathering such important information, you can start planning for your type of vegetable beds and vegetables to plant.
- Vegetables, fruits, beans, root crops and other eatable types can be planted in ground beds, raised beds or containers, depending on the availability of lands and resources.

4.1 Ground bed



- It is easy to make a ground bed if you have a space around your house.
- You do not need any money to buy materials like timbers, nails or containers.
- It is important to know that weeds will grow in the walk way and crawl into the beds.
- In addition, children and domestic animals will most likely walk on the beds.
- It is good to encourage community to fence all domestic animals like chicken and pigs.
- Proper drainage of rain water between beds will avoid breeding mosquitoes.

4.2 Raised bed



- You can make a raised bed if the soil does not drain well or rainwater could wash away the seedlings.
- There is no need for a raised bed if the soil is well drained.
- The bed should be at least 15-25 cm above the soil level and 75 cm wide.
- It is important to cultivate the soil until it feels soft.
- You should avoid puddles under the beds to prevent mosquitos breeding.

4.3 Containers

- If there is not enough land, you can use:
 - Planters or flower pots
 - Old unused tires
 - Sacks or bags
 - Large tins
 - Large coconut baskets
 - Old buckets



5. Types of soil to be used in a supsup garden

- Use thick humus soil, which is the best organic (natural) material made in the forests.
- Humus soil retains water, gives good structure and holds the nutrients needed for good growth of the plants.
- Also, black top soil (soft dark coloured soil) and compost soil are recommended.
- DO NOT use dry soil heated by the sun. Dry soil is dead (bad) soil which will never grow healthy plants.



Black top soil



Compost soil

5.1 Soil nutrition

In supsup garden, when the soil is used repeatedly it becomes infertile (no food for plants). You can refresh the soil and improve its fertility using the following methods:



Composting – rotten organic materials



Liquid fertiliser – water plant food



Crop rotation – growing different crops in a cycle (e.g. kumara → beans → taro)



Leguminous plants – natural soil enrichment (ground beans and peanuts)

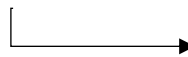
6. How to make compost



Cut ingredients into small pieces



Place them in layers



Water them

6.1 Where to make compost

Compost can be prepared in a pit, a box, a bin, a sack or a large container.



Pit Compost



Box or Bin Compost

6.2 Compost materials

You can use organic matters including the following:

Chopped green leaves or grass



Food waste and kitchen peels



Maize stalks (Corn stalks)



Sea weed



Rotting logs



Animal manure



Sawdust



Chopped old coconut husks



Soil

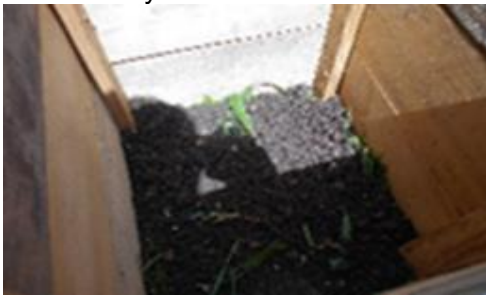


6.3 Putting compost materials in layers

1. Green leaves or grasses (bottom)



2. Add a layer of soil



3. Add a layer of brown leaves



4. Add water



5. Add a layer of kitchen peels



6. Put old coconut husks



7. Sawdust (top)



8. Water Again



9. Repeat 1-8 once more

6.4 Looking after your compost

- Cover compost with a plastic for 3 days.
- On the third day, remove the plastic, water and turn compost materials.
- Repeat turning compost every 4 days.
- Compost should be ready after 3-4 months.



Cover compost with a plastic



Fine compost soil ready after 3 – 4 months

6.5 How to make liquid fertiliser

- There are 4 types: “Nitrogen”, “Prosperous”, “Potassium”, “Calcium” fertilisers.
- Main ingredients:
 - Nitrogen fertiliser
All types of green leaves, mostly kitchen wastes
 - Prosperous fertiliser
All types of fruits (garden or kitchen wastes), banana sap/bottom
 - Potassium fertiliser
All root crop skins/peelings, green coconut husks
 - Calcium fertiliser
All types of fish, fresh/rotten



Green coconut husks

kumara peelings

Green leaf veges prepared for Nitrogen



- Preparation

- Collect and separate all the organic materials according to their different fertiliser types, as they come through the kitchen.

Chopping fish for Calcium Liquid Fertiliser



- 5 steps to make liquid fertilisers

1. Chop or pound all materials into small pieces



2. Dissolve 500 grams of main materials in 10 litres of water



3. Mix the materials with the solution (water level must be above the material)



4. Allow the materials to be stored and process (ferment) in an airtight bucket



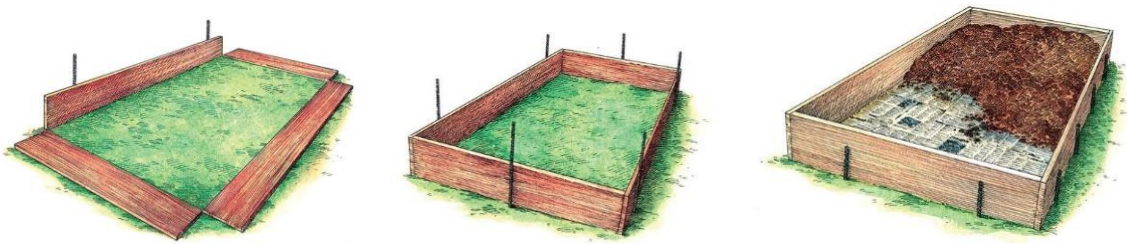
5. After 15 days the "liquid fertiliser" is ready for use



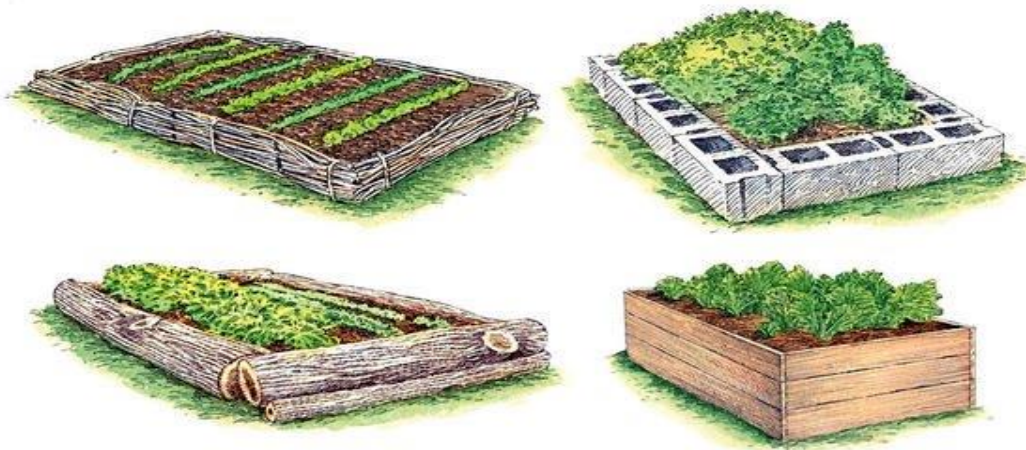
7. How to grow vegetables on beds

7.1 Build a simple raised bed

- Choose a well-drained site.
- Make layers of different organic materials, each with about 10cm thick, over soil.
- Add some water, but not too much.
- After 3 days, mix the layers.
- Continue mixing the layers every 4 days for 3-4 weeks until all is decomposed.
- Beds can be prepared using wooden boards, logs, blocks and other local materials.



Making a vegetable bed using organic materials



Growing vegetables in beds built from different materials

7.2 Prepare soil

You can prepare fertile soil with fermented compost made of rotten coconut husk.

- Rotten coconut husks provide positive bacteria, which enables efficient conversion of food and similar organic matters into fertile soil.
- If rotten coconut husks are difficult to find, keep fresh coconut husks in a pool of fresh water or rainwater for 3-4 months until they rot.
- If you do not have fine wire mesh ($\frac{1}{4}$ or $\frac{1}{2}$) to grate the coconut; use a cassava grater or just smash them with a hammer or stones until the pieces are about the same size as the soil.
- After grating rotten coconut husks, you mix it with soil.



Grated coconut husk

7.3 Planting seeds and seedlings



7.3.1 Germination of seeds

- To germinate seeds, you can use a germination box with 3 parts coconut husk to 1 part soil.
- To raise seedlings, you can use a grow box with 2 parts coconut husk to 1 part soil.
- Put the mixed soil in a seed germination box or a seedling grow box (45cm square).
- Important steps to follow when planting seeds in germination box:
 - Mix sterilised soil with compost soil in germination box.
 - Use a stick or your fingers to make small shallow rows across the surface of the soil for your seeds.
 - Thinly sprinkle the seeds in the rows, then lightly cover the seeds with soil.
 - Lightly water with fresh water along the rows where seeds are sowed.
 - Cover the germination box with an empty bag and check every day to make sure the seeds are starting to germinate and it should take 3-5 days.
 - Remove the empty bag as soon as the seedlings emerge to expose them to sunlight.
 - After seedlings emerge, keep them in the germination box until each has 2 -3 true leaves.
- If you do not have a box, do the following:
 - Cut bamboo stems to size.
 - Lay them on the ground or dig out a space to fit them.
 - Tie them together with wire, bush string or fishing line.
 - Fill the space with the soil mix.



7.3.2 Pricking stage

- About 2-3 days after seed sowing, seedlings should be transferred from a nursery box to a seedling tray to have space and grow stronger.
- Prepare your seedling box or tray with compost soil for young seedlings to grow healthy.
 - Make a hole in the seedling tray with a flat piece of timber or hand to plant young seedlings.
- Each seedling should be gently removed from the nursery box with a dipper or pencil and planted gently in the seedling box.
 - Hold the plant by its leaves, not by the stem or roots.
 - Make sure that the root carries some soil from the nursery box.
- Water the newly planted seedlings gently to avoid removing soil under the plant.
 - Do not water regularly.
- Put the seedling tray under a shade for 2-3 weeks and always check for snails and insects.
- The plants in the seedling tray should be ready for transplanting, when they have 3 to 4 true leaves.

7.3.3 Transplanting stage



- The plants in the seedling tray or box plant must have 3 - 4 true leaves to be planted in the garden.
- Prepare your garden bed well with good soil and compost before transplanting seedlings.
 - Lay out how you will plant different vegetables such as leaf vegetables and root crops
 - Plant deep root plant like tomato along garden bed boundaries.
- Prepare holes for the new plants about 30 cm apart from each other.
 - Dig deeper holes for long rooted plants like tomato.
- Water the new plants regularly and cover them with banana skins or leaves from sunlight for 3 days until they are strong.

7.4 Mulching



- You can mulch plants using grass, leaves, shredded bark, sawdust etc.
- Mulch is very important for the following reasons:
 - Cover the soil from the sun.
 - Stop roots from becoming too hot and dry.
 - Stop losing water.
 - Stop losing soil in heavy rain.
 - Slow the growth of weeds.
 - Recreate humus as the mulch breaks down

8. Types of vegetables and fruits grown



Protective food	Body building food	Energy food
Slippery cabbage, eggplant, sweet pepper, pawpaw, shallot, chilies, okras, pineapples watercress, pumpkins, melons, cucumbers, tomatoes, Chinese cabbage, etc.	Peanuts, wing beans, snake beans, etc.	Sweet corn, cassava, taro, kumara, pana, yam, banana, etc.



9. How to take care of your garden



- Tips
 - Water the garden regularly.
 - Mulch the garden bed soon after planting.
 - Control weeds growing.
 - Control insects and pests - hand pick insects on a daily basis.
 - Use plant derived or natural pesticides, e.g. chili, tomato leaves.
 - Fertilise the soil using compost from kitchen waste or natural environment.
 - Save seeds from your harvest and plant them in your garden continually.
 - Take good care of planting materials to reuse them for a long time.

10. Basic tools needed



Gardening hoe



Gardening fork



Straight spade



Garden rake



Knife



Trowel



Watering can



Bucket



Seedling box



Seed tray

Glossary of Terminology

Compost	Compost is organic material that can be added to soil to help plants grow . It is made by decomposing organic materials into simpler organic and inorganic compounds in a process called composting.
Fermentation	It is a process in which microorganisms like yeast and bacteria break down food components (e.g. sugars such as glucose) into other products (e.g. organic acids, gases or alcohol).
Fertile	Land or soil, that is fertile, is able to support the growth of a large number of strong healthy plants.
Fertiliser	Chemicals that are added to soil to supply nutrients to make it more fertile.
Germination	It is a stage where the plant grows from a seed ; it results in the formation of the seedling.
Leguminous	They are plants used in parallel with food crops to enrich the soil with natural fertilisers (ammonium).
Mulching	Mulching a process of applying a covering , as of straw, compost, or plastic sheeting, spread on the ground around plants to prevent excessive evaporation or erosion, enrich the soil, inhibit weed growth, etc.
Manure	It is an organic matter that consists of animal faeces , used as organic fertiliser in agriculture.
Transplanting	It is the technique of moving a plant from one location to another.



Health Promoting Village Project
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