



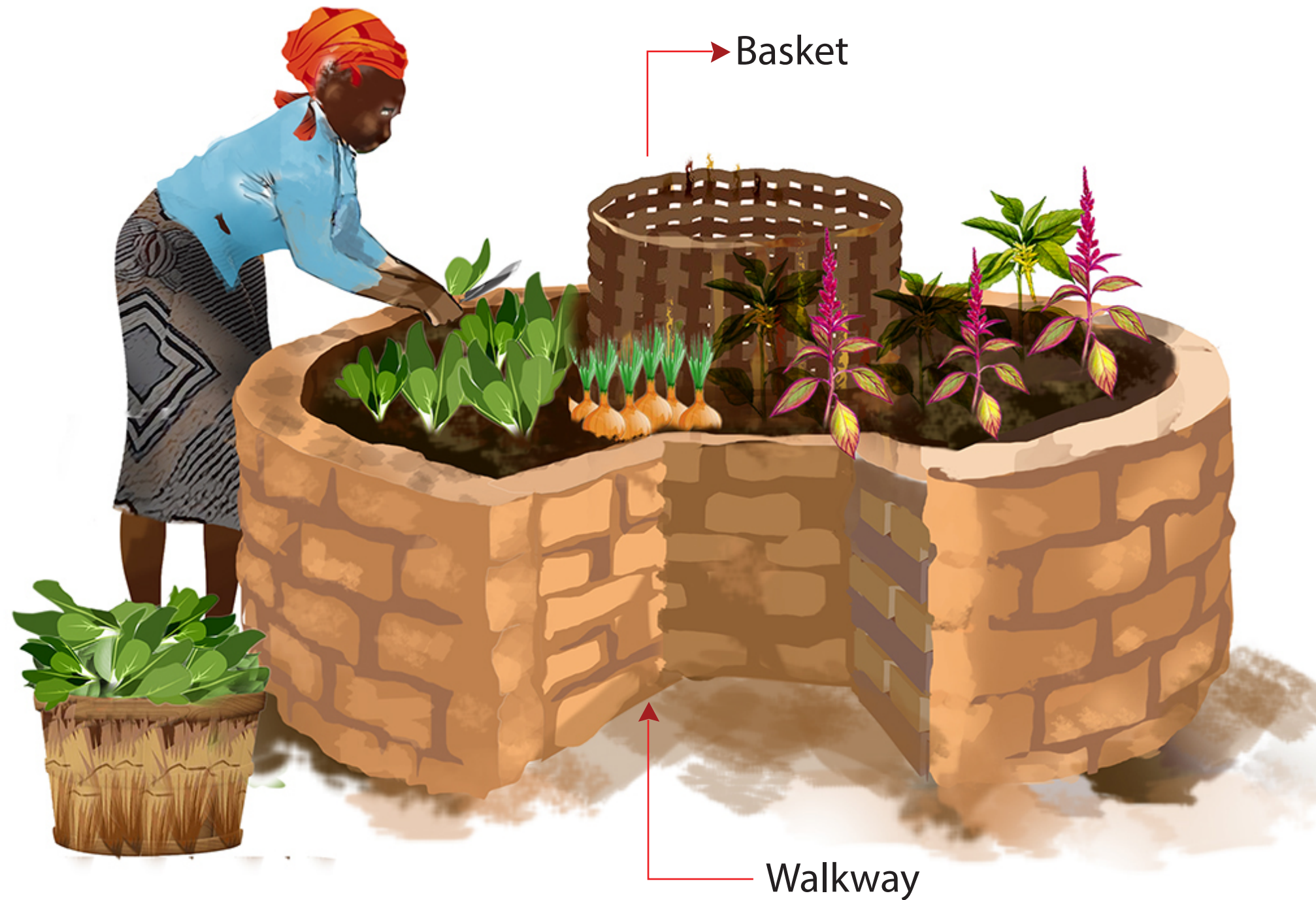
*A manual for users and trainers
(Why, Where, What, When & How)*



The Keyhole Garden



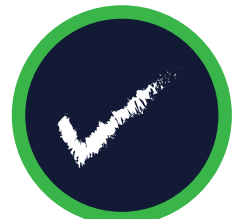
What is a Keyhole Garden (KHG)?




Please Note



What is a Keyhole Garden (KHG)?

 A keyhole garden is a circular raised garden bed with a walkway and a centrally placed basket for watering and composting.

 It is called a keyhole because the walkway and the basket at the centre of the garden make it look like a keyhole when seen from above.

Less water consumption

- No need to fetch water so often
- Stores water due to its composting structure
- Maintain moisture and facilitate soil fertility through the composition process
- The compost ensures a perfect distribution of the water
- The small structure prevents water from evaporating

Benefits of a Keyhole Garden

Less water consumption



Less water consumption



Less labour intensive



Eat more vegetables



Plant 4 different types



Right next to home



Cheap, easy to build



Benefits of a Keyhole Garden



A keyhole garden is the perfect amendment to the regular traditional gardening activities. It is a tool that can be used to contribute to dietary diversity by ensuring the availability of vegetables around the year.

Benefits

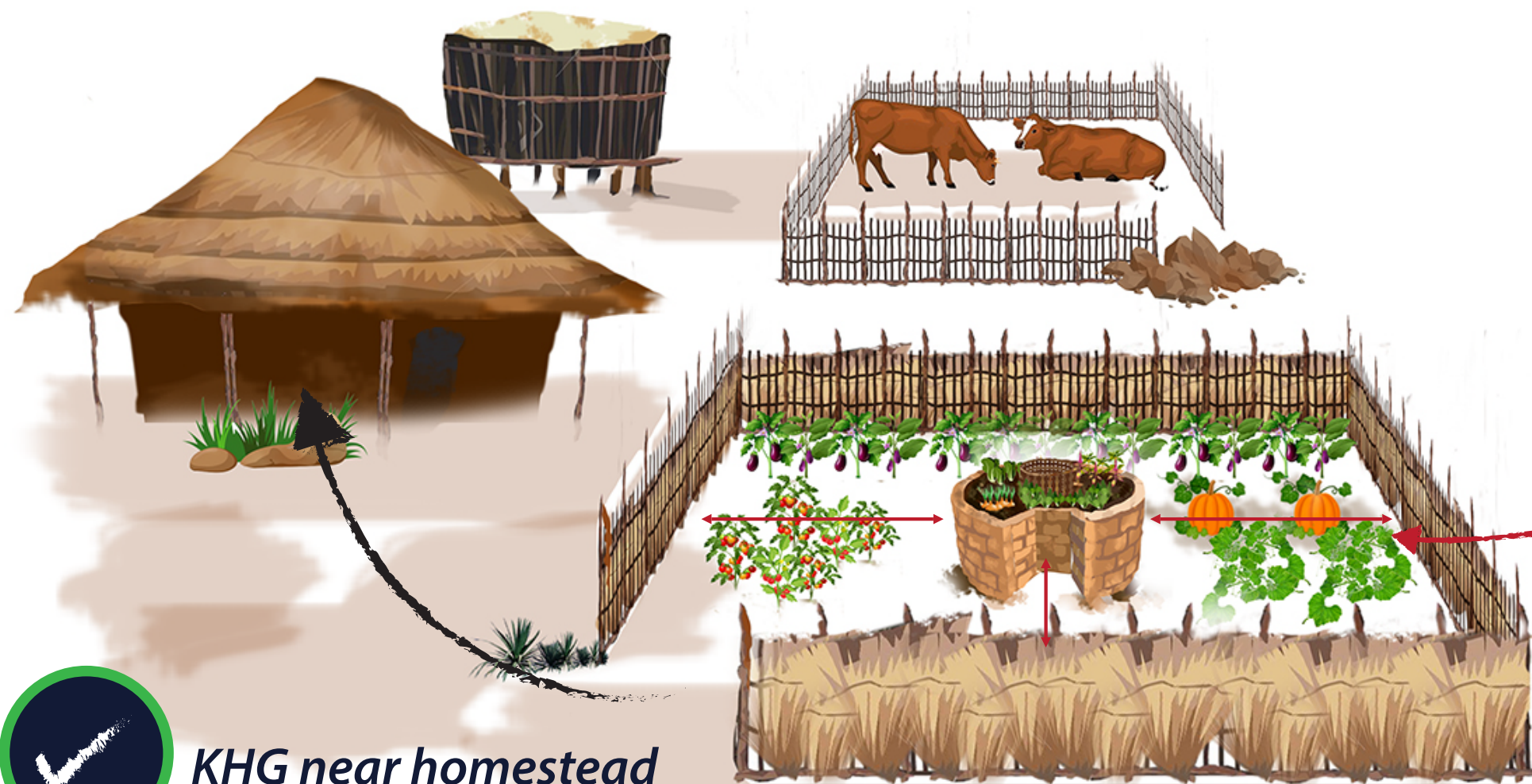
- Retains moisture in dry season and has a **low level of water consumption**. **Less labour intensive**, making it suitable for physically disabled or chronically ill family members.
- Produces relatively **high quantities of nutritious vegetables** using a very small piece of land.
- Allows for **four different types of vegetables** to be planted at the same time, contributing to household dietary diversity.
- Doesn't need much space – **can be constructed within the homestead**. **Cheap, easy to build** and maintain.

Site selection for the Keyhole Garden

Please Note





1.5 meter



KHG near homestead

Site selection for the Keyhole Garden

 The KHG should be located right within the homestead. The construction site should be away from light obstruction but close to the house for easy crop management.

 The site should be big enough to accommodate the KHG and space to build a sizeable fencing around it for protection against livestock and theft.

The space for the garden should be:

- **Big enough**
(4 meters in diameter)
- **Free of obstacles**
(No big rocks or trees should be located on the chosen site to allow an easy preparation phase)
- **In an open space**
(To allow the crops to get some sunlight energy for improved growing and healthy vegetables)

Site preparation for the Keyhole Garden

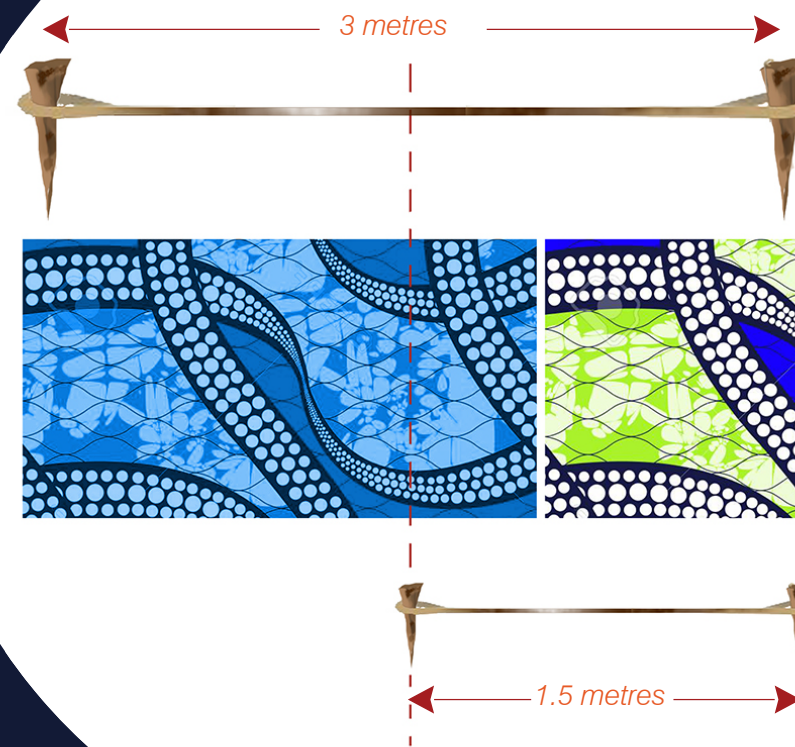
1



2



3

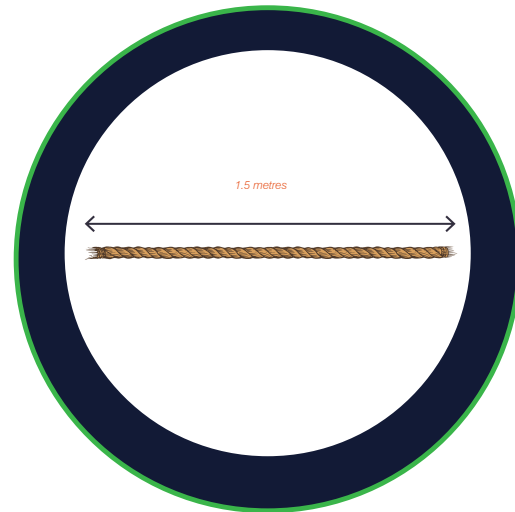


Please Note



1.5 metres

Site preparation for the Keyhole Garden



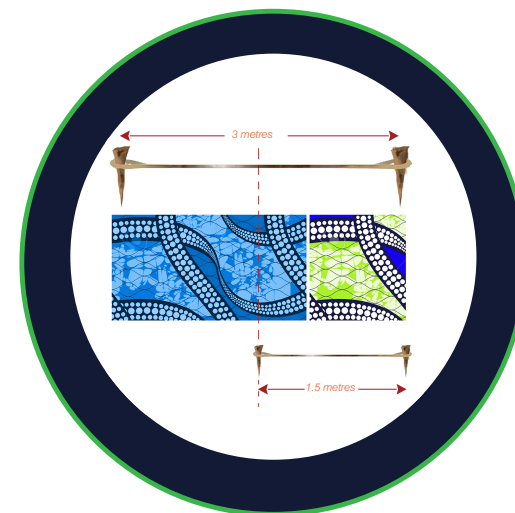
Prepare a rope, two meters length - equivalent of two pieces of Chitenge material. Afterwards, measure and mark the site for the keyhole garden using the measured rope.



Level the place to have a stable wall structure and allow for even distribution of water and nutrients within the KHG.



Clear and clean the site.



Measure at least 1 meter (Chitenge width) between the KHG wall and fence.

Construction of the Keyhole Garden (i)

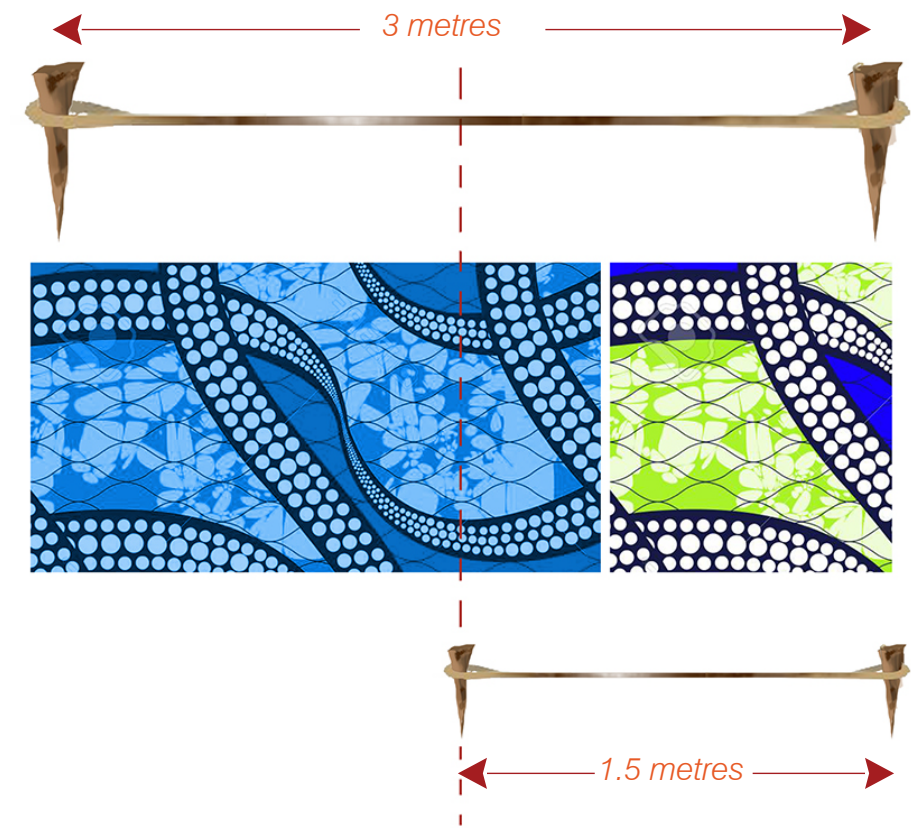
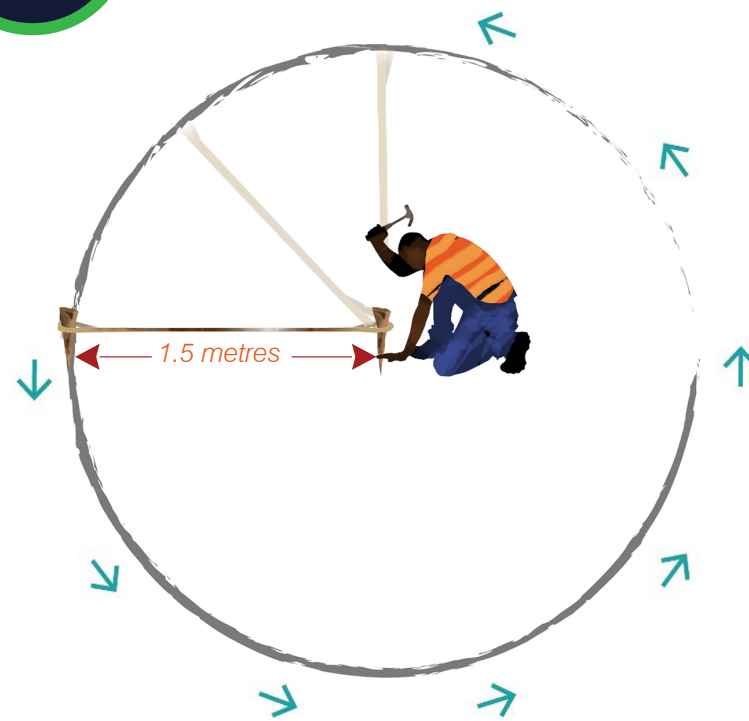
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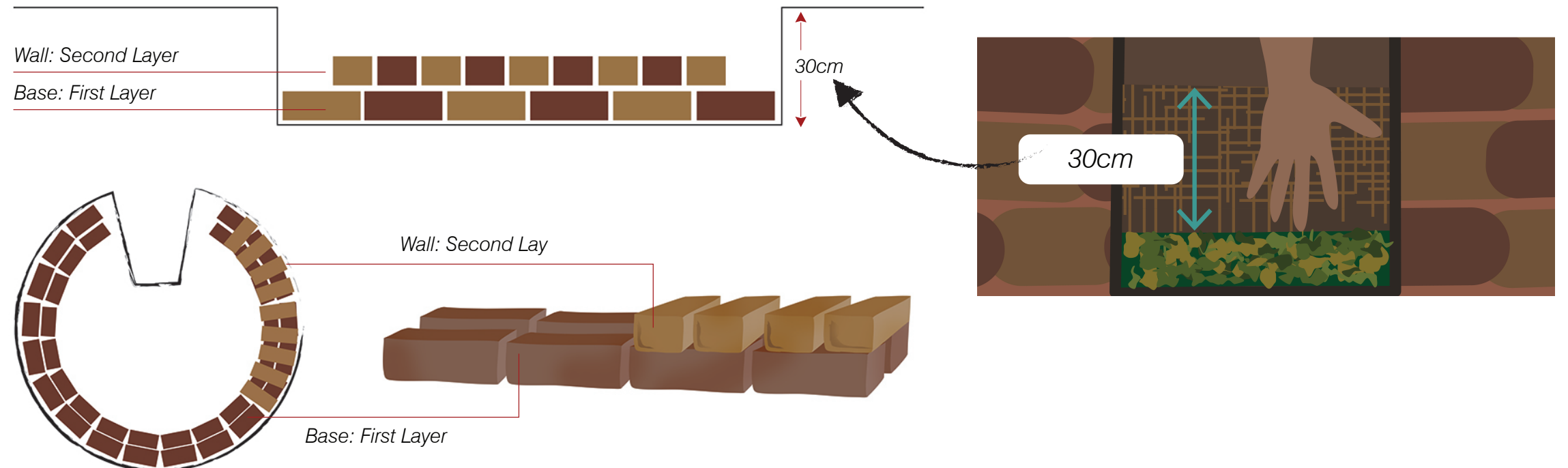
Materials needed:

- 550 pan/mud bricks
- Anthill soil paste
- Water
- Basket
- Tools

1



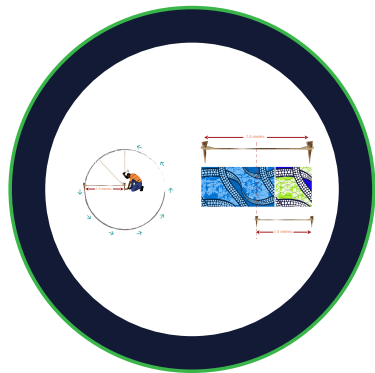
2



Construction of the Keyhole Garden

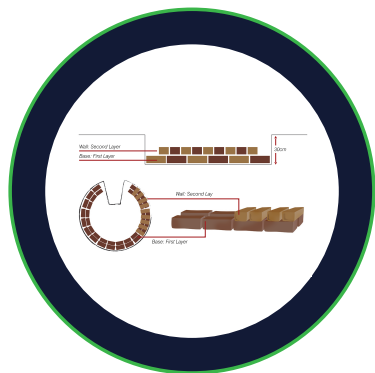


Check material: 550 pan/mud bricks, Anthill soil paste, Water, Basket, Hoes, Shovel, hammer, wooden stick, pick axe, rope, and spirit level



Measure the rope to the size of the length of the chitenge wrapper (2 meters in length). Fold the 2 meters rope in half and tie one of the two pegs on either ends of the rope. Insert one peg into the ground at the centre of the cleared site.

Hold the free hooked peg to the rope, pull the rope along the ground surface, pressing the tip sharp end of the peg on the ground firmly and move round along to form the circular drill.



Dig the 30 cm deep foundation and start construction works by laying bricks in width shape. The foundation has to start with a layer of bricks in width shape.



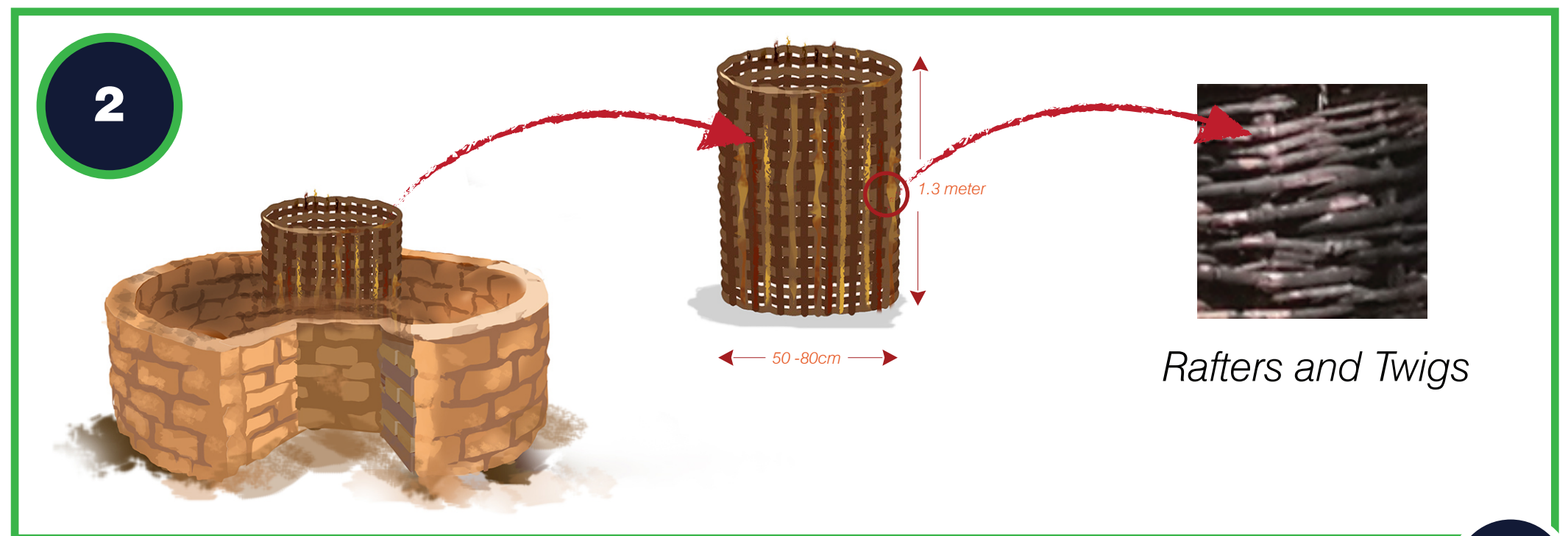
To measure 30 cm it is possible to use the hand - equivalent to the distance from the fingertips to the arm wrist of an adult person.

Construction of the Keyhole Garden (ii)

Please Note



Using anthill soil and mud bricks is sufficient, but pan brigs and cement will make the Keyhole Garden long lasting.



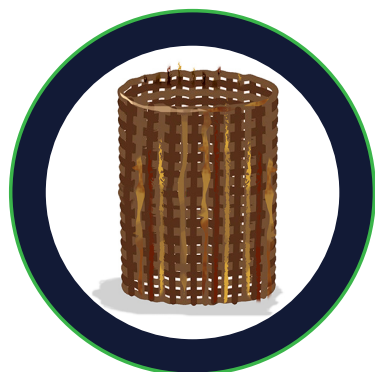
Construction of the Keyhole Garden



Construct the 1 meter wall structure from foundation by mixing anthill soil with water.

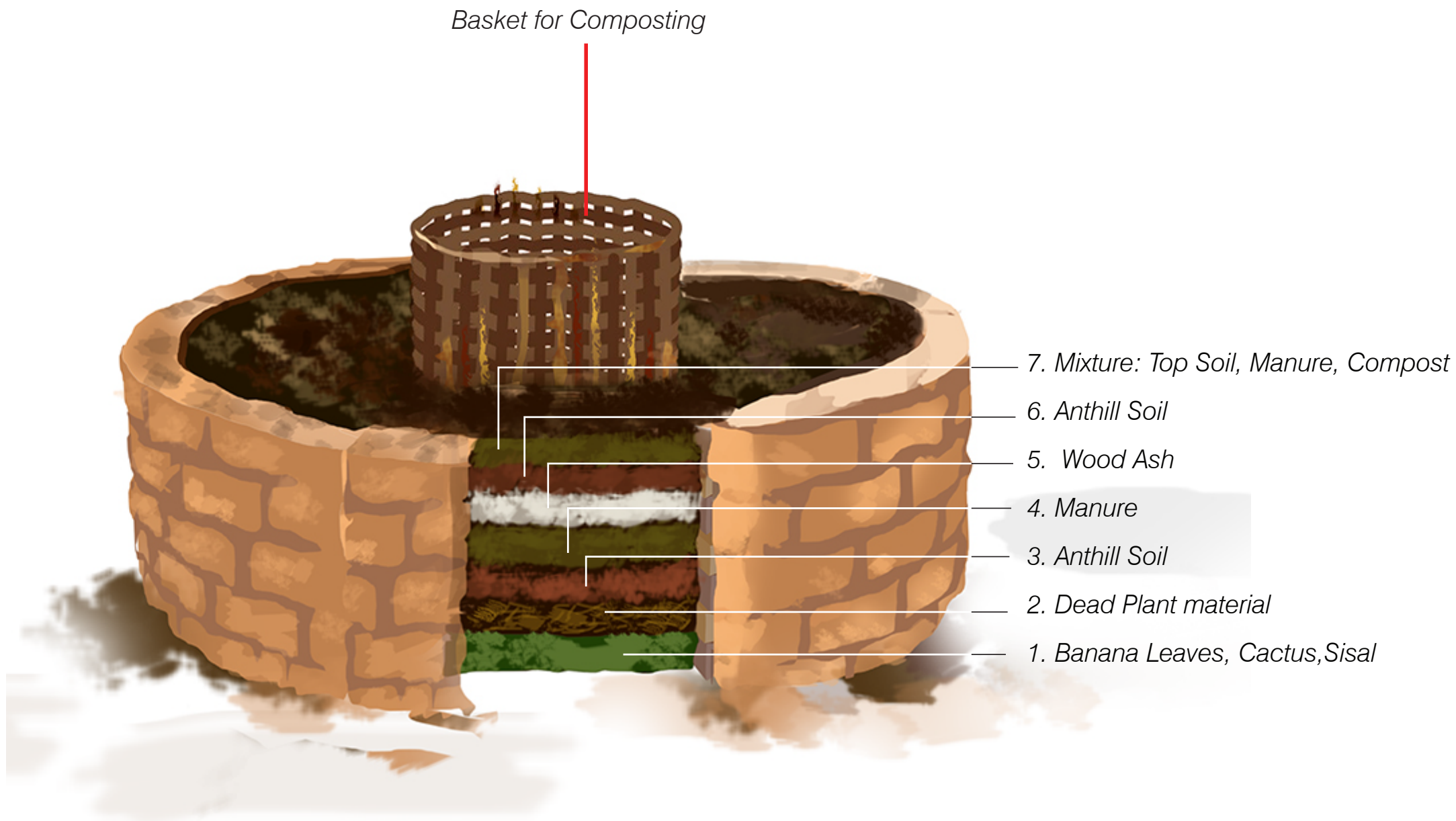


Make the basket frame using at least 12 big twigs or rafters inserted in a circle measuring 50 – 80 cm in diameter and 1.3 meters high. Acquire the smaller twigs around the frame.



Place the basket at the center of the KHG during filling. The Basket in the KHG is used for composting organic matter and helps in allowing water and nutrient elements flow to all parts of the KHG.

Layers and Soil Fertility in the KHG



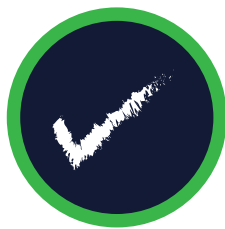
Please Note



No Plastics



Layers and Soil Fertility in the KHG



After constructing the KHG and allowing 1 to 2 days to dry, fill it with the required materials:

1. Banana leaves, cactus, sisal	5. Wood ash
2. Dead plant material	6. Anthill soil
3. Anthill soil	7. Mixture: top soil, manure, compost
4. Manure	



Apply manure and compost in the garden during construction and when practicing crop rotation. To maintain soil fertility, add some more dry manure and topsoil when the levels drop down.



Aluminium and Lead should never be used because they are harmful to the environment.

Composting in the KHG basket

- **Why compost?**
(Compost provides essential nutrients for the growth of plants)
- **How to do composting?**
(Put organic waste into the basket to improve the soil fertility. Do not put plastic into the basket)
- **No fresh animal manure!**
(Avoid fresh animal manure in the KHG as this burns seeds and young seedlings during the decomposition process)











Planning And Planting in the KHG



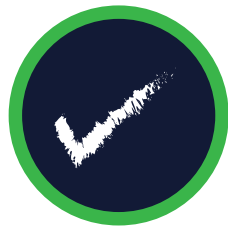
Please Note



BEST FOR PLANTING

	Swisschard	Dark Leafy Vegetables
	Amaranthus/Bondwe	
	Rape	
	Mustard Spinach	
	Carrot	Root Crops
	Beetroot	
	Ginger	
	Onion	Others
	Chinese Cabbage	
	Green Beans	

Planning And Planting in the KHG



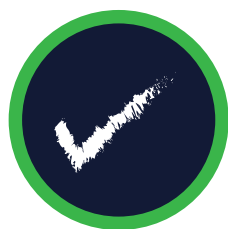
Plan to plant the recommended nutritious vegetable seeds directly in the KHG.



Plant different crops together on the same field/plot to best satisfy space, soil nutrients and pest management needs.



Do NOT plant more than four types of vegetables in the KHG at a time.



After germination, thin the plants to the recommended spacing good enough to avoid competition for water, nutrients and sunlight.

Types of Vegetables recommended

- **Dark Leafy Vegetables**
(Swisschard, Amaranthus, Rape, Mustard spinach, Lettuce)
- **Root Crops**
(Carrot, Beetroot, Ginger, Onion)
- **Others**
(Chinese cabbage, Green beans, Herbs and Spices)

Management of Crops in the KHG



Please Note



ORGANIC PESTS AND DISEASE MANAGEMENT

- Use Methods Such As Crop Rotation, Companion Planting, Mixed Cropping
- Remove Weeds By Hand
- Use Organic Substances Like:
 - Chilli Powder
 - Pawpaw Leaves
 - Tobacco Snuff
 - Red Onion
 - Garlic Powder
 - Neem/Eucalyptus Tea
 - Cow Dung Tea
 - Gliricidia
 - Tephrosia
 - Moringa Tea/powder

Management of Crops in the KHG



Weeding:

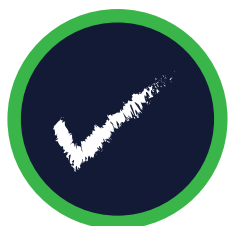
Remove all the weeds in the KHG by uprooting them using hands, garden folk or small hoe.

Weeds can also be suppressed by mulching.



Watering:

During watering, also pour water in the inner core (basket) to allow the decomposition of dead plant matter and circulation of nutrients.



During the dry season, about 2 - 3 (20 litre) containers of water per day. Avoid using contaminated water such as salty water, salty food waste and non-bio degradable substances/objects.

Pests and Diseases Management:

- **What?**

Substances: Chilli powder, Pawpaw leaves, Tobacco snuff, Red Onion, Garlic powder, Neem/Eucalyptus tea, Cow dung tea, Gliricidia, Tephrosia, Moringa tea/powder

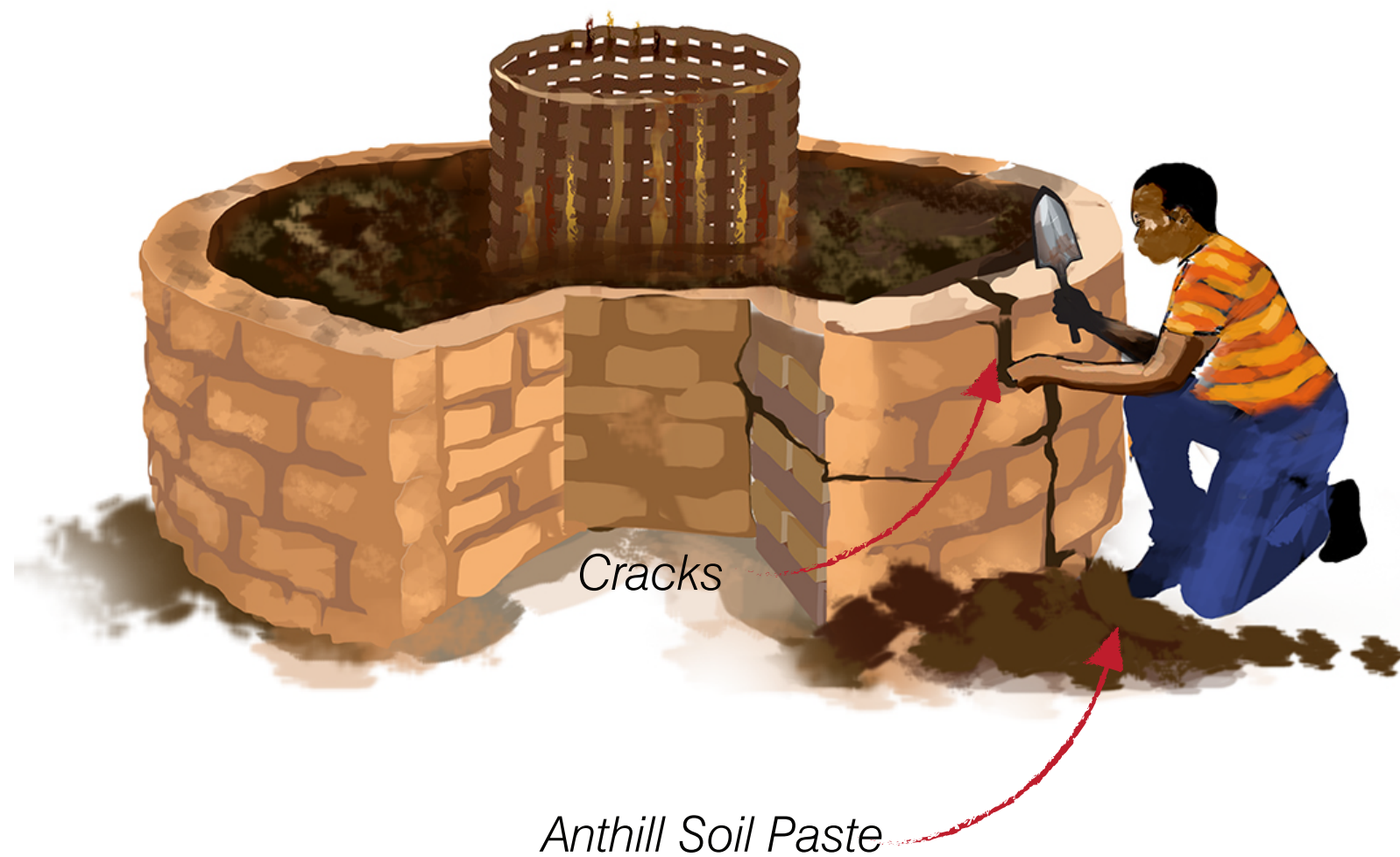
- **How?**

You can mix two or three of the above substances, soak them in water for 24 hours and make a solution strong enough to manage pests and diseases

- **Use of inorganic chemicals?**

Not recommended, because they are harmful to the environment & poisonous to humans especially pregnant women

Maintenance and Improvement of the KHG



Please Note



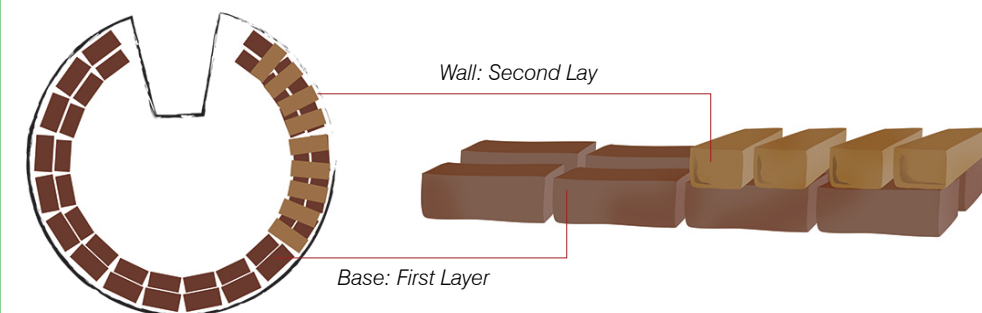
IMPROVING STRUCTURE



550 Bricks



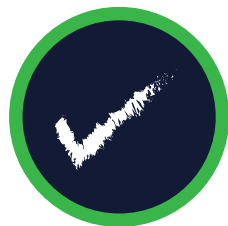
3 Bags of Cement



Maintenance and Improvement of the KHG



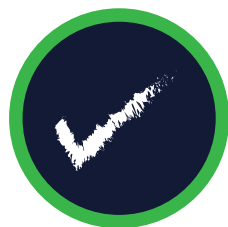
Avoid leaning on the wall during watering and vegetable picking, and growing deep rooted crops within the Keyhole Garden.



Keep the surroundings of the KHG clean and maintain the boundary fencing to keep away livestock and prevent theft.



Cracks should be repaired immediately using cement or anthill soil paste to avoid leaking of water and collapsing of the structure.



Always replace the basket when it is worn-out.

Construct a long lasting Keyhole Garden:

- **Why?**

A Keyhole Garden constructed of mud bricks and anthill soil paste might collapse after a time. While a KHG made of pan brigs and cement will survive heavy rainy seasons and last long.

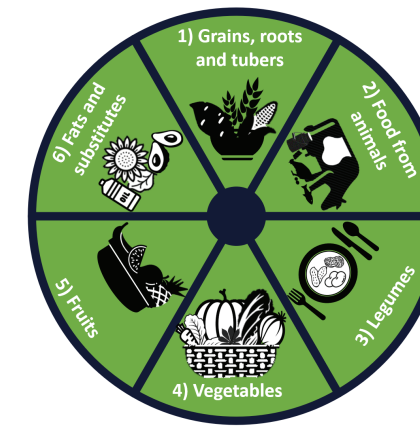
- **How?**

By building a more sustainable Keyhole Garden using the following materials:

- 550 pan bricks
- 3 packs cement
- A strong and deep foundation made of bricks laid in width shape

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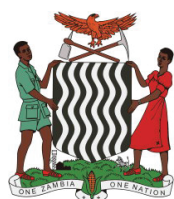
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FOOD GROUPS**

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