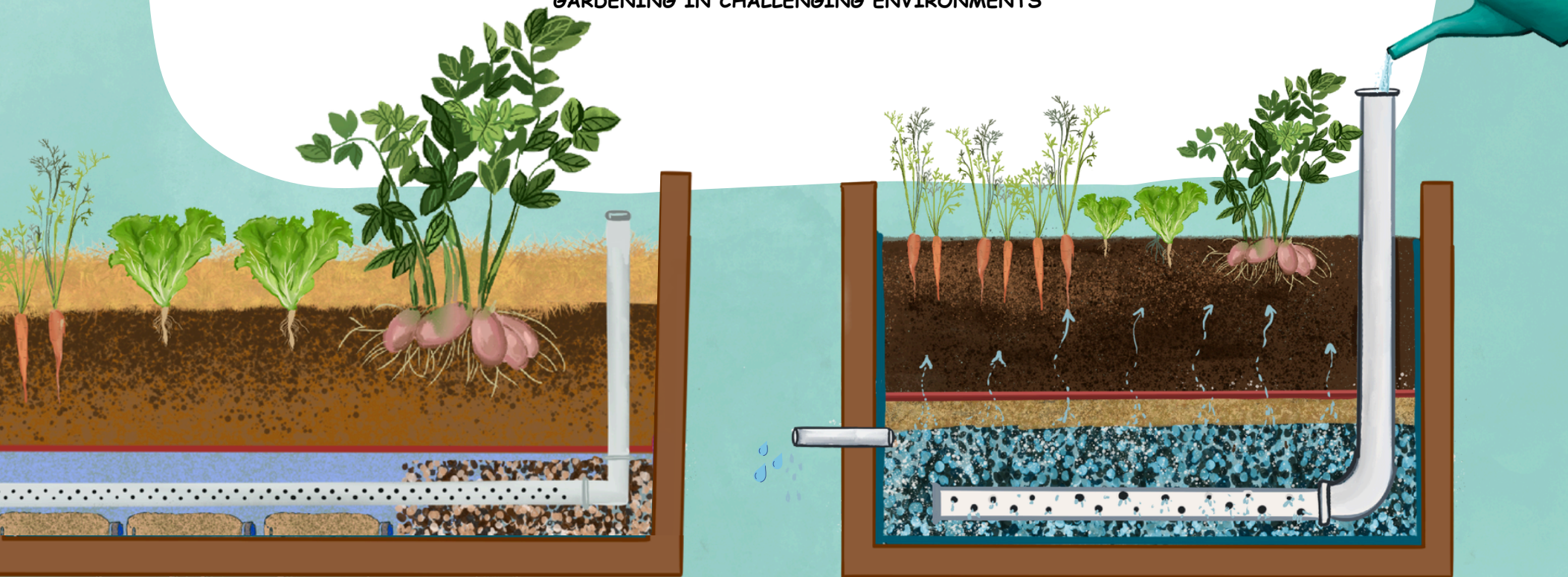




Fambidzanai
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Centre

WICKING BEDS

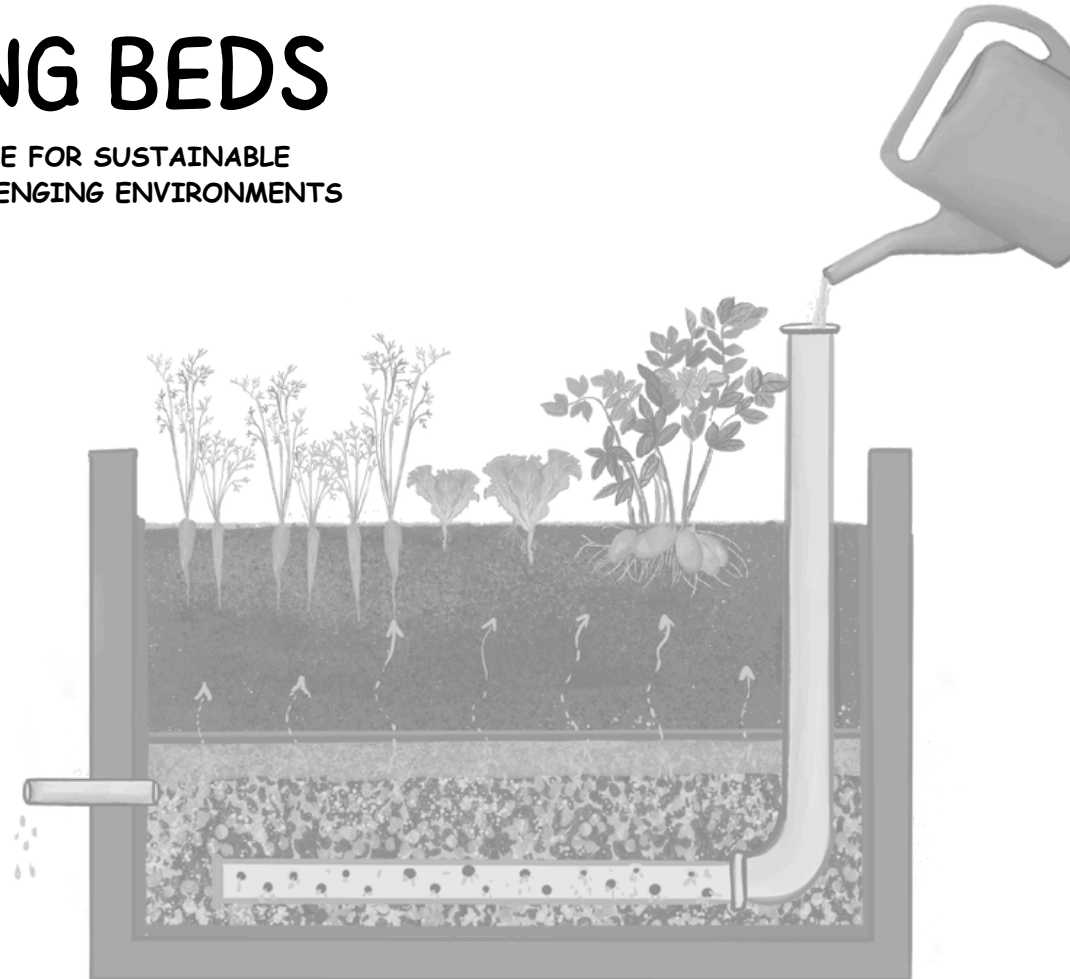
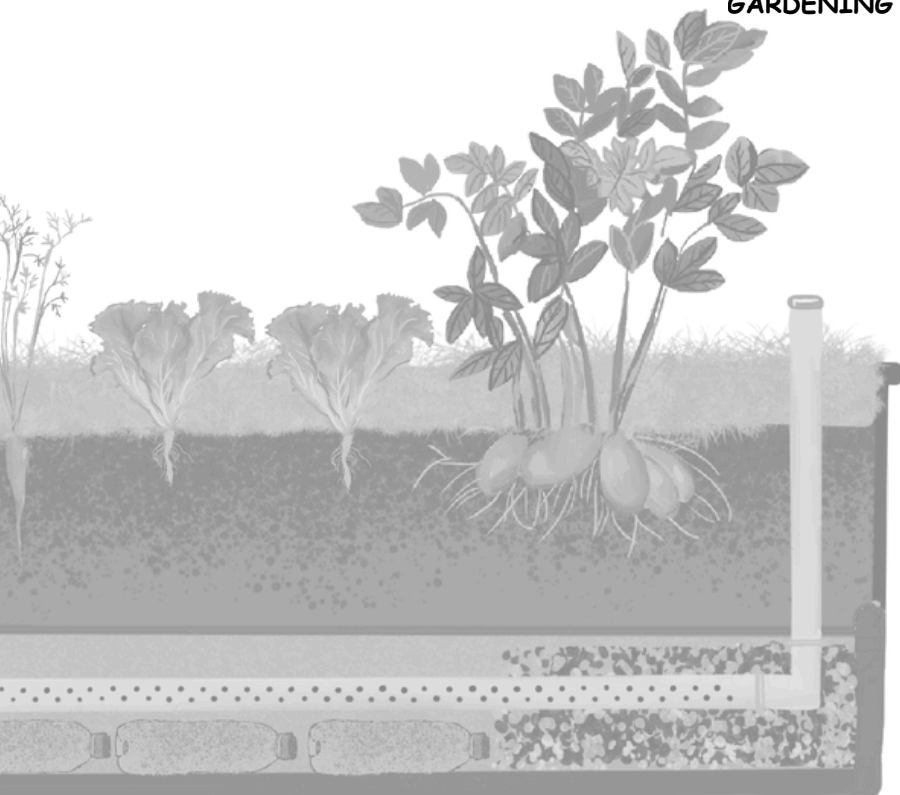
A PRACTICAL GUIDE FOR SUSTAINABLE
GARDENING IN CHALLENGING ENVIRONMENTS





WICKING BEDS

A PRACTICAL GUIDE FOR SUSTAINABLE
GARDENING IN CHALLENGING ENVIRONMENTS





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With thanks to
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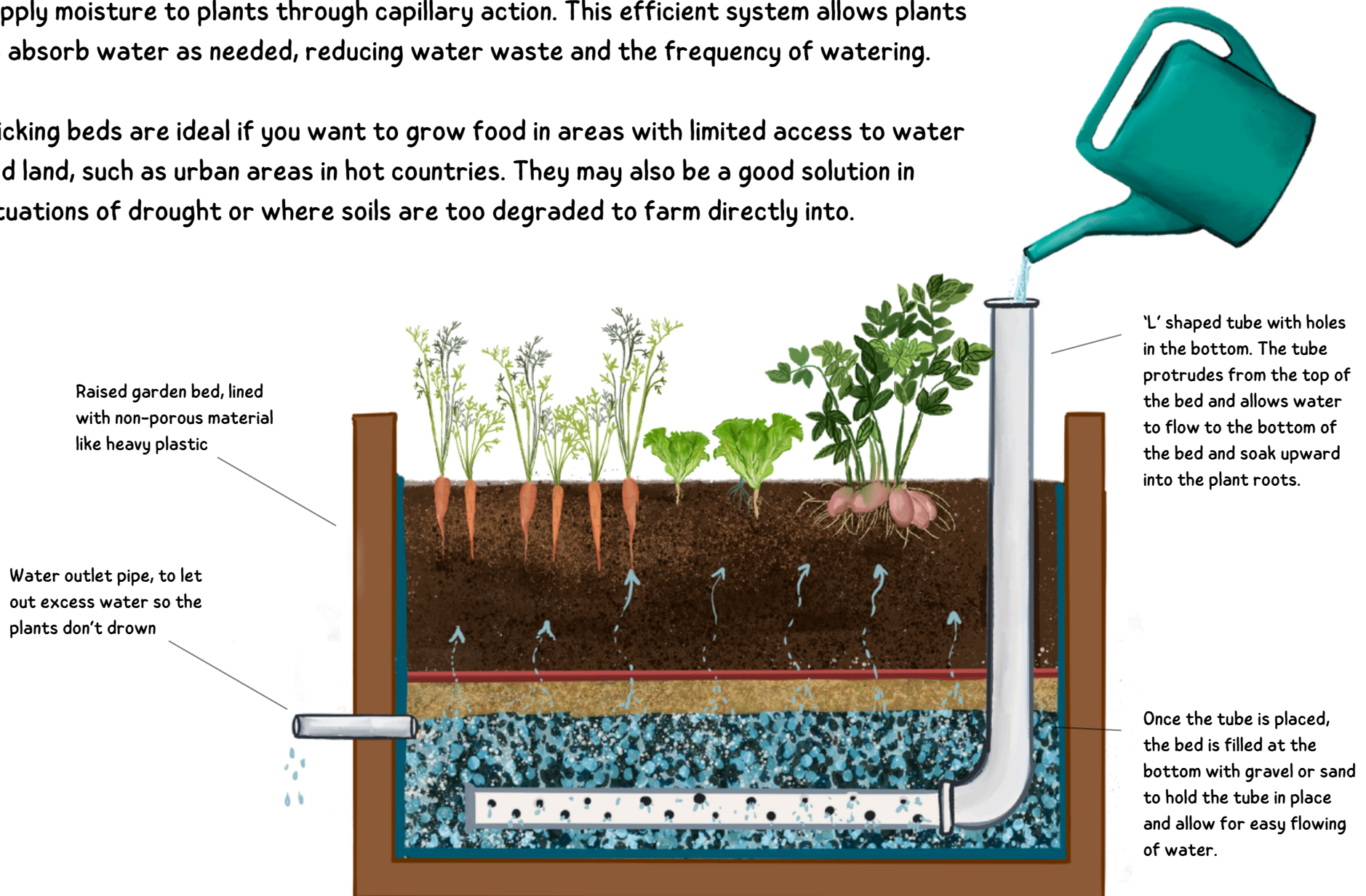
PART ONE

BUILDING YOUR WICKING BEDS

What are Wicking Beds?

Wicking beds are water saving garden beds that use a water reservoir at the base to supply moisture to plants through capillary action. This efficient system allows plants to absorb water as needed, reducing water waste and the frequency of watering.

Wicking beds are ideal if you want to grow food in areas with limited access to water and land, such as urban areas in hot countries. They may also be a good solution in situations of drought or where soils are too degraded to farm directly into.



Benefits of Wicking Beds



Water Efficiency:

Wicking beds use up to 50% less water than traditional garden beds, making them ideal for areas with scarce water resources.



Versatility:

They are suitable for a variety of climates and locations, but best suited when you cannot otherwise grow directly into the soil. They are suitable for urban settings and refugee camps, and poor soil conditions or rocky areas. They are also ideal for very hot climates where water evaporates quickly from the topsoil.



Improved Plant Growth:

Consistent moisture levels lead to healthier plants and higher yields.



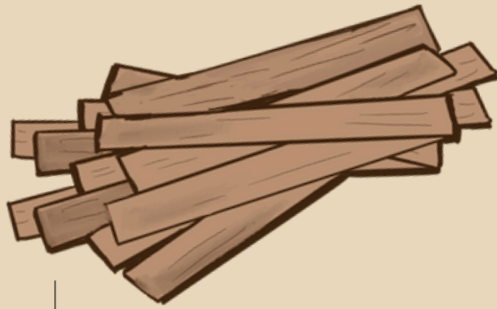
Less Maintenance:

Reduced need for frequent watering and weeding.



Materials Needed

Always use locally available and recycled materials to reduce costs and environmental impact.



Materials to make the raised bed frame, for example wood, or bricks



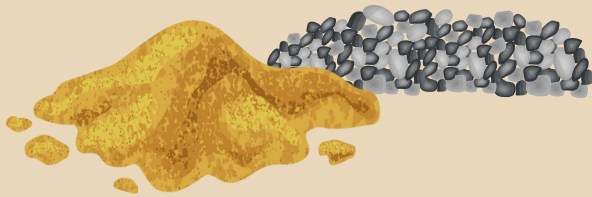
Pond liner, or thick, heavy-duty plastic sheeting



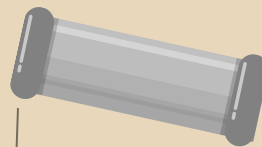
Soil and compost to add to the raised bed



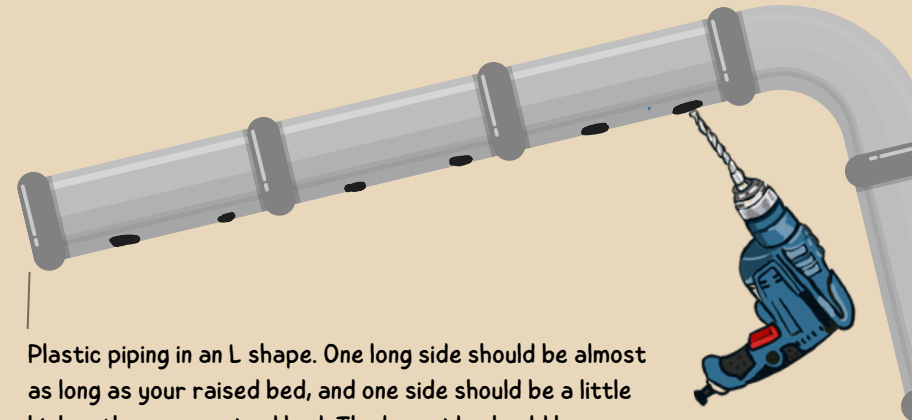
Biodegradable materials for mulching to help retain water, like clean brown cardboard or straw



Gravel or sand to fill the bottom of the raised bed to create a water reservoir



A smaller piece of plastic piping where excess water can escape



Plastic piping in an L shape. One long side should be almost as long as your raised bed, and one side should be a little higher than your raised bed. The long side should have holes drilled into it where water can escape upward

Step-by-Step Guide

1

Choose where to place your Wicking Bed

Think about what you will plant. Choose a location with good access and that suits your needs. Most vegetables like a sunny location, but not too hot to burn the leaves. Make sure it is an area that does not flood.



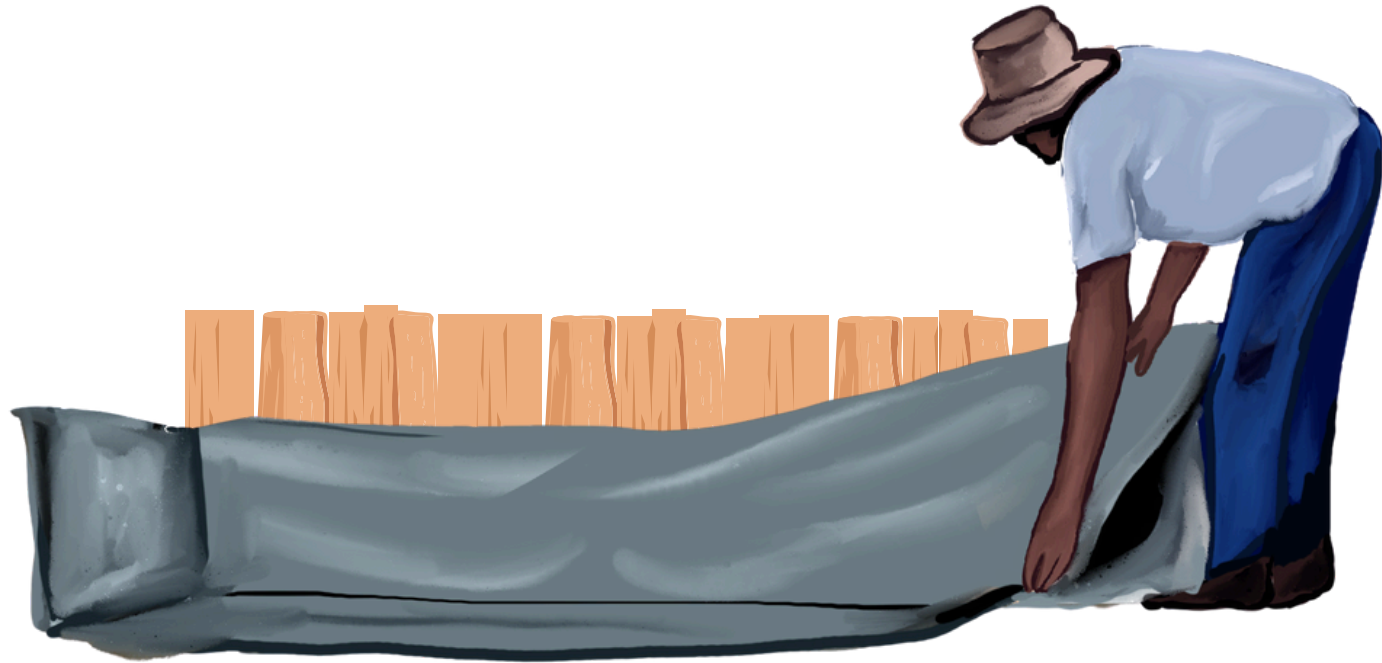
Get your building materials ready. You will need to source some reused wood, mudbricks, or another local material to build your raised bed.



2

Build and line the bed with sheeting

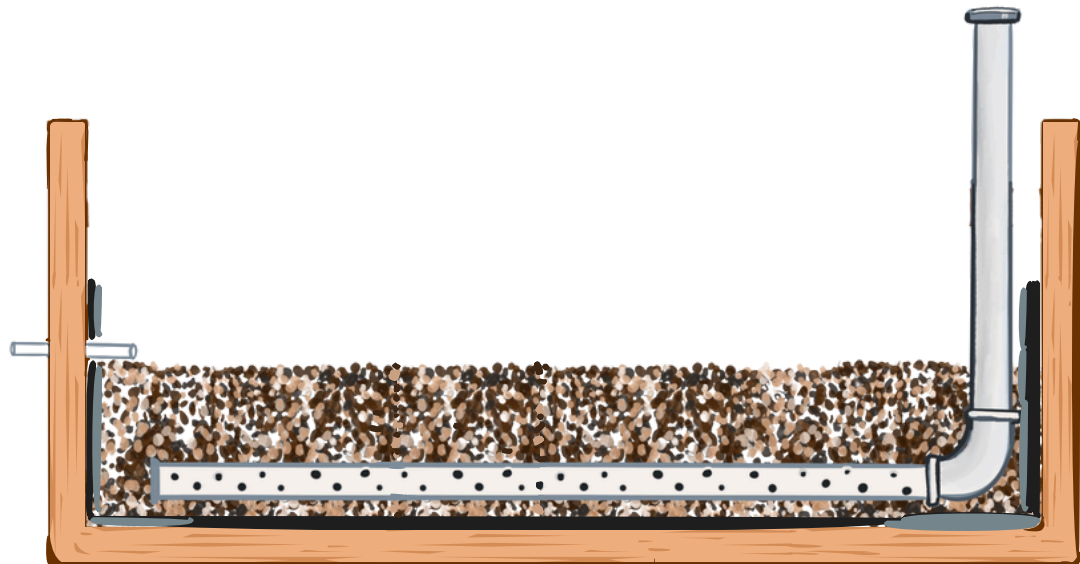
You can use readily available building materials for the outer frame of your bed, like mud bricks or reclaimed wood. Then you must line the raised bed with a hard plastic sheet so that water cannot escape at the bottom.



3

Secure the pipes and fill with gravel

Fill the trench or raised bed with gravel or coarse sand to keep the pipe in place and to create the reservoir layer.



4

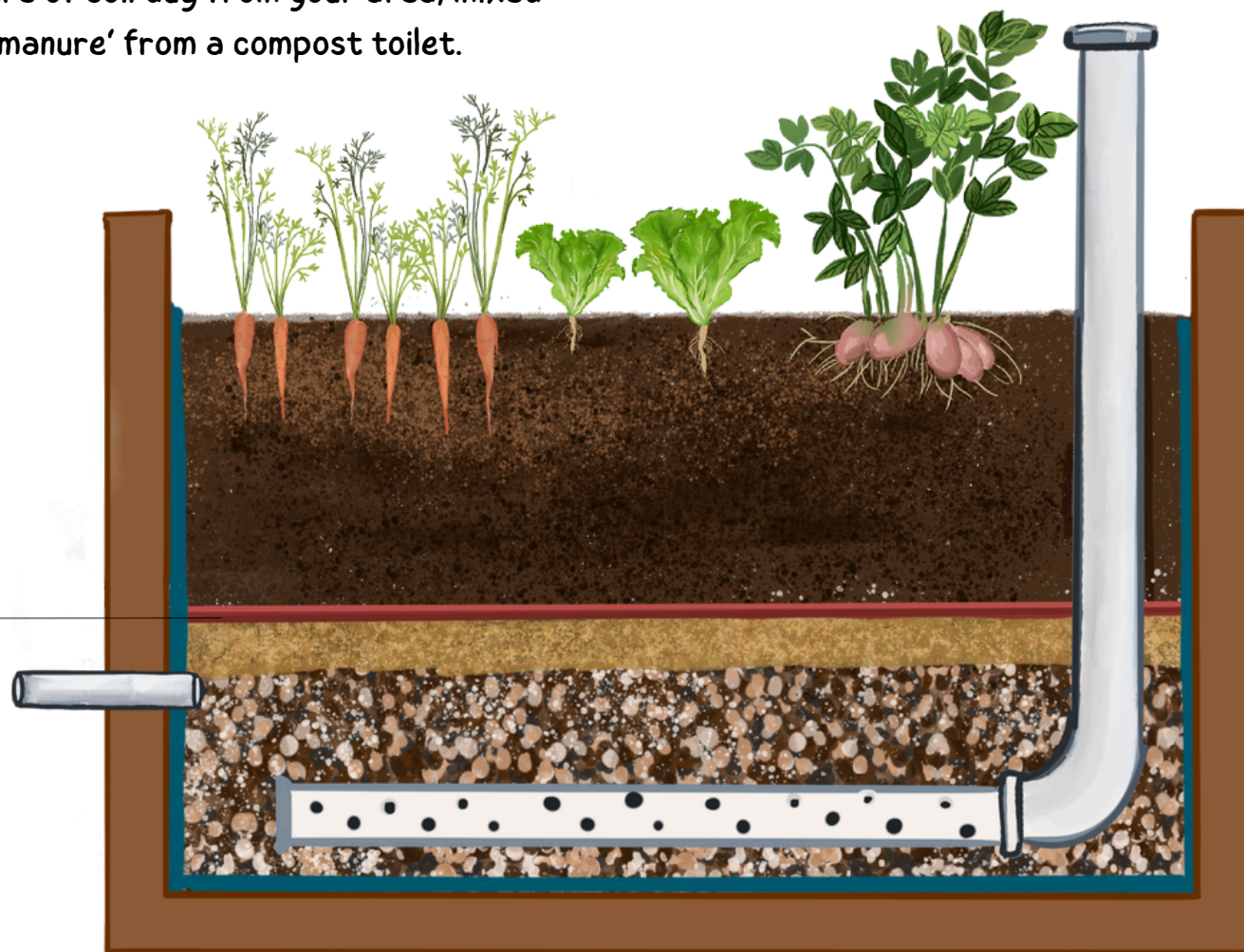
Fill the bed with growing mixture

Some people add a porous lining like a coconut coir sheeting on top of the gravel layer. This helps keep the soil and the gravel separate, so the holes in the pipe stay free flowing and water can easily escape. Then, add a mixture of soil dug from your area, mixed half with compost or rotted 'humanure' from a compost toilet.



You are now ready to plant in your wicking bed!

You may wish to add a porous lining like coconut coir matting between the gravel and the soil layer, so the two layers do not mix.



PART TWO

USING YOUR WICKING BEDS

Planting and Growing



Choose locally relevant crops:

Choose a mix of vegetables, herbs, and flowers that are well-suited to your climate. Think about what grows well together; some ground cover crops, some taller crops, and some vines.



Always mulch:

Use some 'chop and drop' nitrogen fixing plants, or locally sourced materials like straw, to mulch on top of the soil. Never leave your soil bare.



Plant diversity:

Plant many types of crops instead of just one (polycultures, not monocultures). This means that you will have food throughout the year, and a more resilient farm with more biodiversity.



Protect seedlings:

Saving and sharing local variety of seeds is cheaper for you, and helps to keep local and indigenous plants growing. You can plant seeds directly into Wicking Beds, but protect them from the heat when they are young.



Plant perennial:

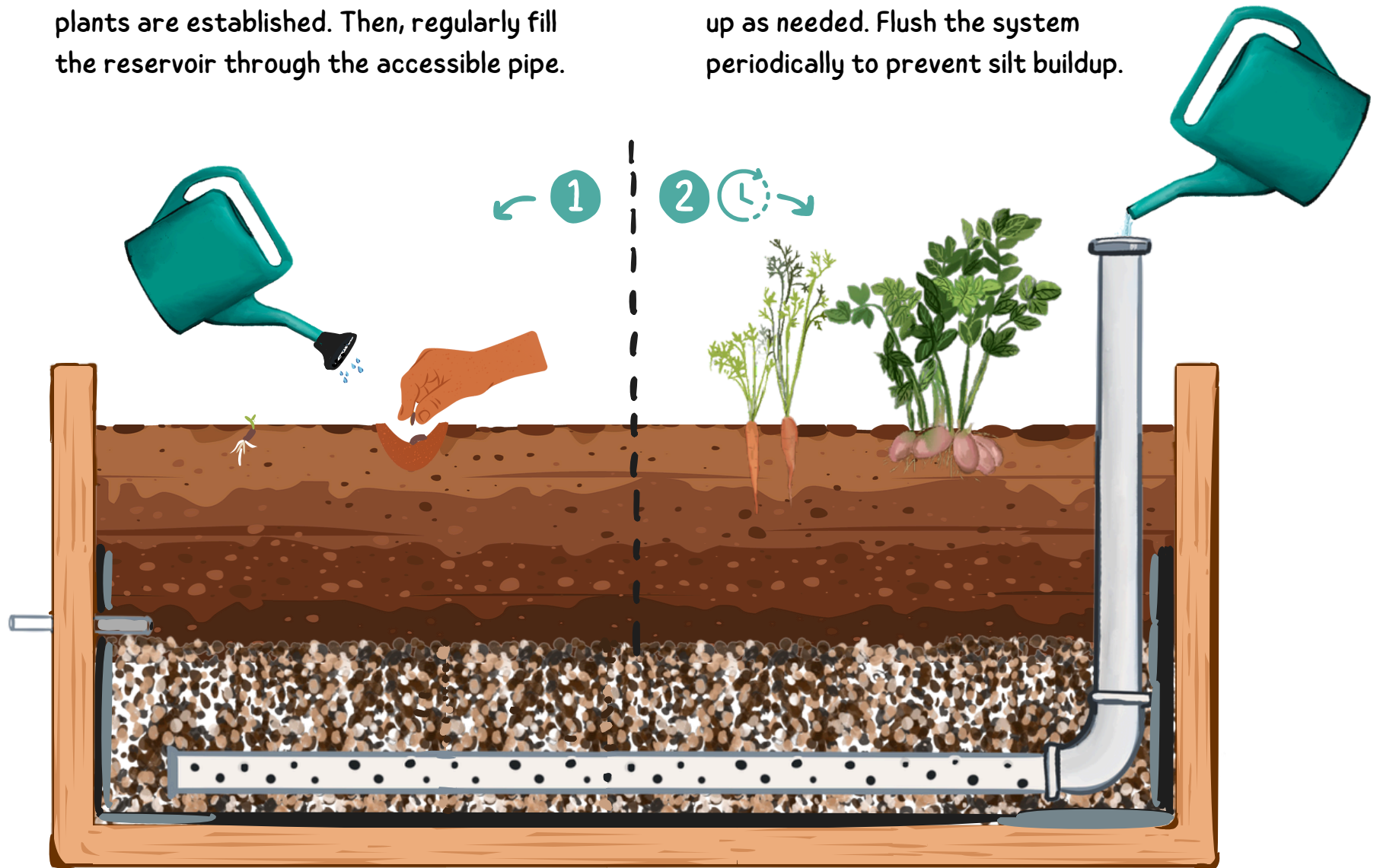
Give preference to edible crops that last year on year (perennials) instead of annual crops. This is easier for you, and better for the soil because it means less tilling.



Watering and Maintenance

Initially water the bed from above until the plants are established. Then, regularly fill the reservoir through the accessible pipe.

Check water levels weekly and top up as needed. Flush the system periodically to prevent silt buildup.



Troubleshooting and Tips for Common Issues



Regularly monitor your raised bed to adapt to changing temperatures and events.

Wild animals eating crops:

To deter other animals from eating your crops, you can put a net over the raised bed to protect it.

Outlet Pipe Breaking:

Ensure that the outlet pipe is not too long, and not hidden, to reduce the risk of people tripping and hurting themselves or damaging the pipe.

Heat damaging plants:

A shade cloth can be useful to protect plants from the hot sun.

Waterlogging:

Ensure proper drainage and avoid overfilling the reservoir. You can stick a dry stick into the water pipe to understand how high up the water level is.

Salt Buildup:

Make sure to flush the system with clean water every few months to avoid mineral buildup.

