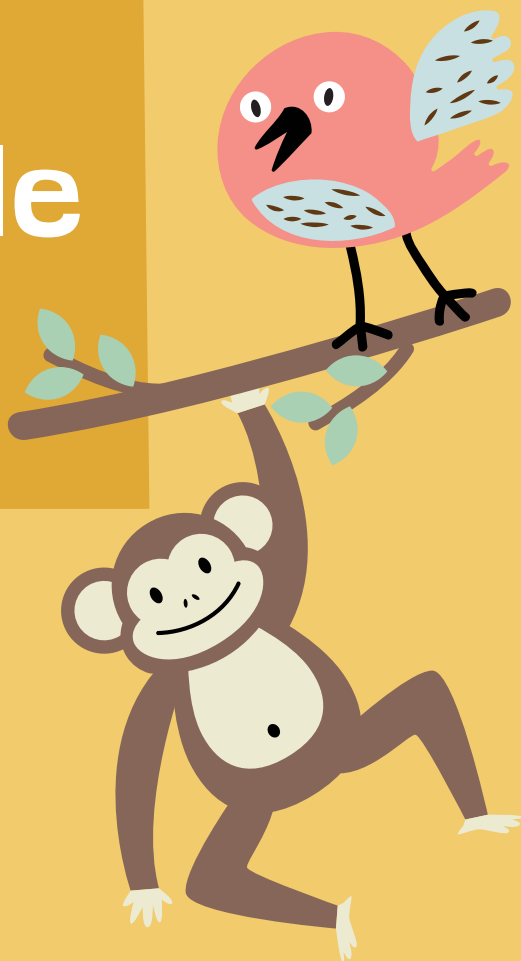


# Where trees grow, people grow



Vi Agroforestry



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### VI AGROFORESTRY

Vi Agroforestry is a Swedish development organisation, fighting poverty and improving the environment through agroforestry. We do this together with smallholder farming families and farmers' organisations in the Lake Victoria basin in East Africa. The foundation of Vi Agroforestry's work is sustainable agriculture and agroforestry – growing trees alongside crops and livestock. It provides increased access to food, access to sustainable energy sources and more income. Sustainable agriculture contributes to the mitigation of climate change and protects against the negative effects of climate change. Since its inception in 1983, the organisation has helped planting over 100 million trees and improved the livelihoods for 1.8 million people.

### DISCLAIMER

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# 1 Agroforestry

## What is agroforestry?

**Agroforestry is the practise where you plant crops and trees together. You can also include animals in the farm.**

Trees help to improve the climate of the farm for crops, people and animals. Trees also absorb the air we breath out (carbon dioxide) from the atmosphere making it less harmful.

Some tree leaves can be food for farm animals to animals or even vegetables to the household. The leaves can be used as fertiliser since they add nutrients and manure to the soil when decomposing. The animals in turn, will give manure that can be used when planting new trees or crops.

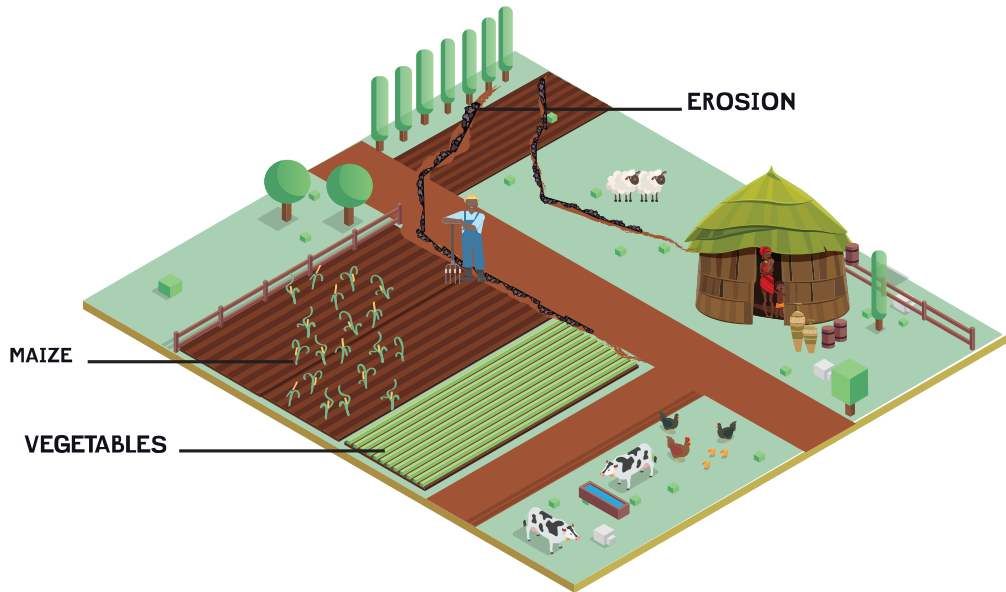
**Trees, and how they can benefit the other farm components, are the main focus in agroforestry systems.**

**It is important to remember that agroforestry is a system where the different components (trees, crops and animals) are benefitting from each other in several different ways.**

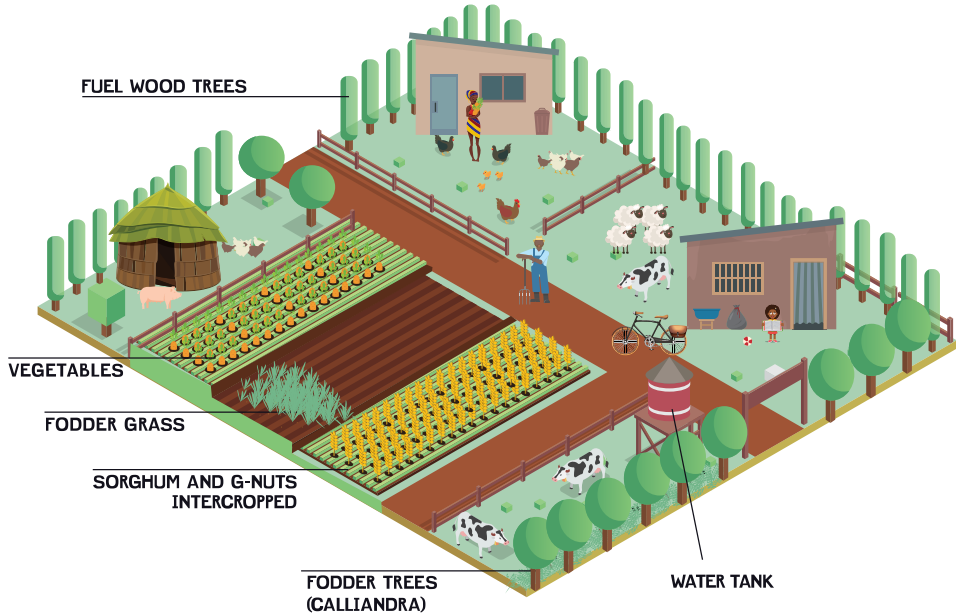


Agroforestry is one the Sustainable agricultre land management (SALM) practice. SALM method helps farmers reduce impacts of climate change, increase resilience and increase harvests and incomes. see below images of before and after.

## Before SALM



## After SALM



# Importance of trees

**Trees are an important part of our surroundings. They provide wood for building, firewood and pulp for making paper. They provide habitats (homes) for all sorts of insects, birds and other animals. Many types of fruits and nuts come from trees including avocado, oranges, cashew nuts, apples and paw paw. Different parts of the trees can even be useful for medicine.**

**Our environment; the plants, the humans and the animals cannot live without the trees. I can't live without trees and you can't live without trees.**

Trees also help to keep our air clean and our environment healthy. We breathe in oxygen and breathe out carbon dioxide. Trees breathe in carbon dioxide and breathe out oxygen. We're perfect together. The environment, animals, plants and people cannot live without trees



**You and I breath  
in oxygen and breath  
out carbon dioxide.  
The trees breath out  
carbon dioxide and  
out oxygen. We are  
perfect together!**

**But we don't just  
love trees for  
practical reasons.  
Trees can also be  
very beautiful—  
tall enough they  
seem to touch the  
sky and so big  
around you can't  
even hug them.**



# Common Agroforestry Trees



How many of these trees have you seen?

## Sesban Tree (*Sesbania Sesban*)



## Calliandra Tree (*Calliandra Calothyrsus*)



## Southern Silky Oak Tree (*Grevillea Robusta*)





# Common Agroforestry Trees

## Neem Tree (*Azadirachta Indica*)



## Moringa Tree (*Moringa Oleifera*)



## Gum Arabic Tree (*Acacia Abyssinica*)





# Common Agroforestry Trees

## **Egyptian Balsam** (*Balanites Aegyptiaca*)



## **Beach Oak or Whistling Pine Tree** (*Casuarina Equisetifolia*)



## **Yellow wood** (*Podocarpus Falcatus*)



# Common Agroforestry Fruit Trees



Do you know fruits are a good source of vitamins and keeps you healthy? Can you spot your favorite one?

## Pawpaw (*Carica Papaya*)



## Mango (*Mangifera Indica*)



## Avocado (*Persea Americana*)



# Common Agroforestry Fruit Trees

## Orange (*Citrus X sinensis*)



## Banana (*Musa*)



## Pineapple (*Ananas Comosus*)





## Why do we need trees?

**Trees are interacting with crops and animals in different ways. Crops and animals need varying exposure to sunlight and here trees can play an important role.**

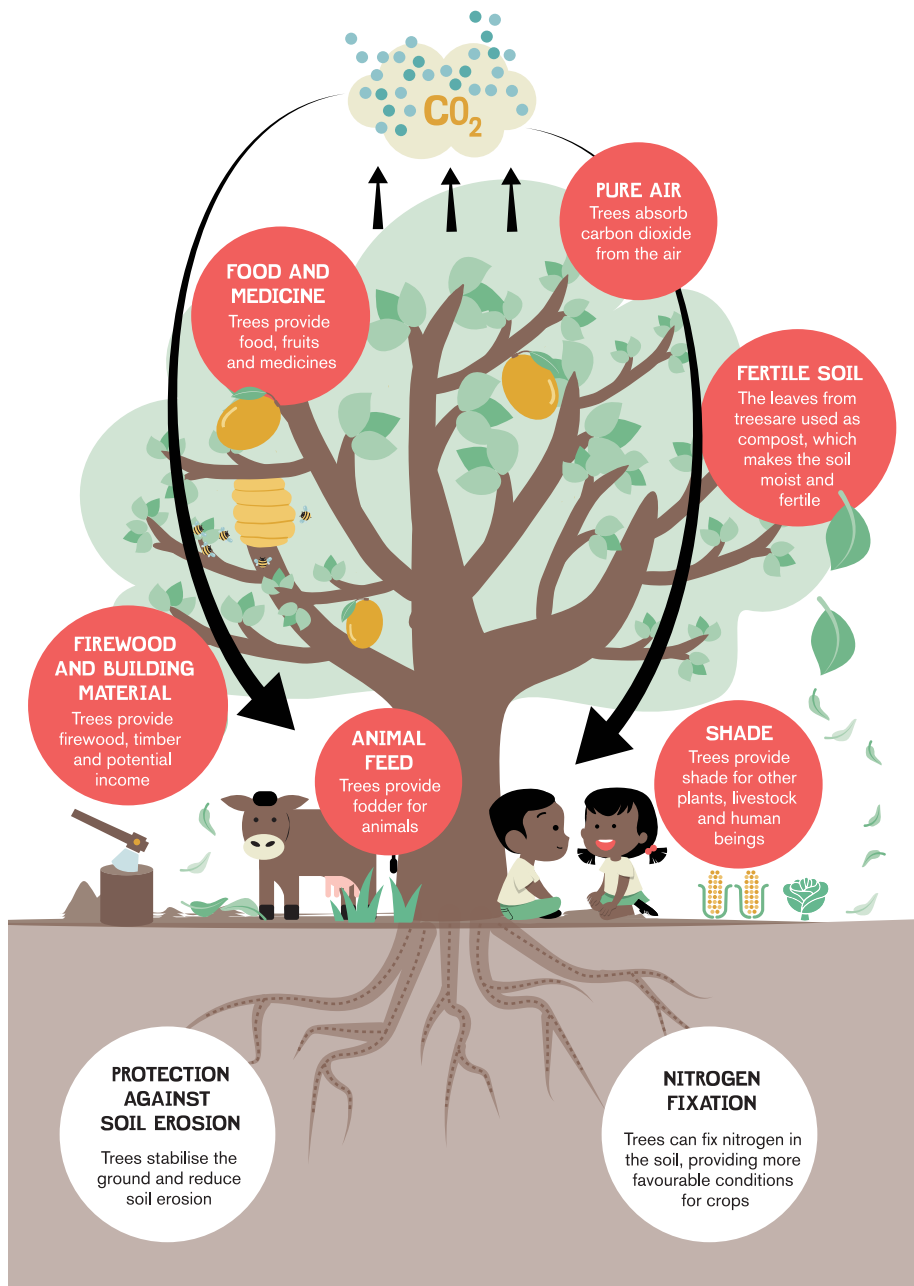
Tree leaves can be food for animals to animals or even vegetables to the family. The animals in turn, will give manure that can be used when planting new trees or crops. The leaves can be used as fertiliser since they add nutrients and organic matter to the soil when decomposing. Some trees give medicines or pesticides that can be used for animals and crops.

### **DID YOU KNOW?**

**if trees are managed correctly they can improve our environment. Trees are also important for people, animal and plants**





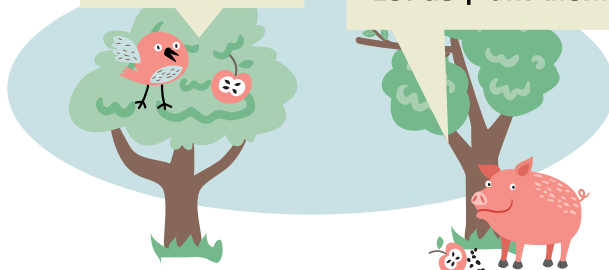


# How to plant a tree

## ONE DAY

I have found a seed.

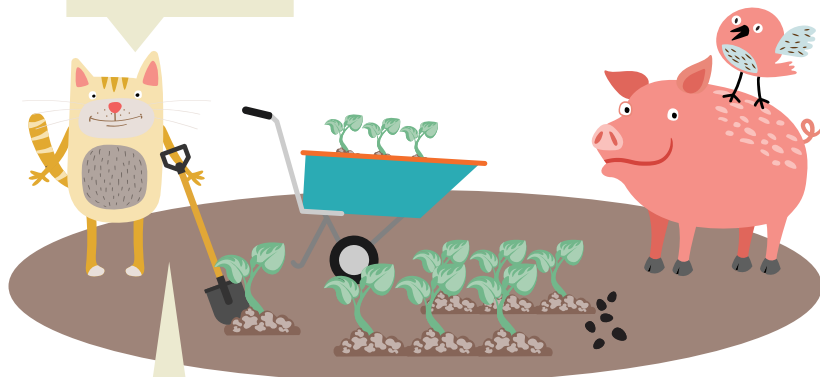
Oh I also found a seed the other day.  
Let us plant them.



## AT A TREE NURSERY

What are you doing today?

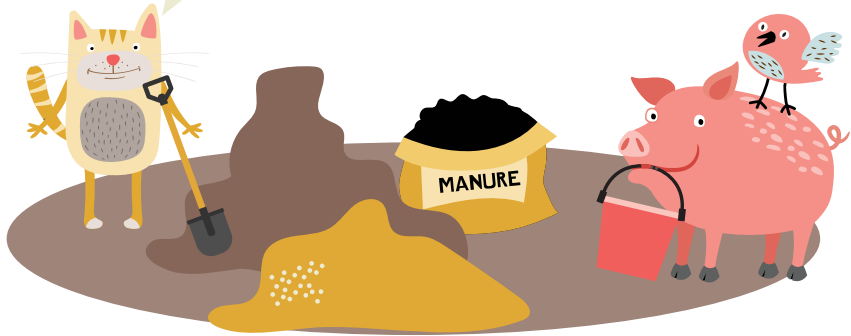
We found some seeds can we plant them with you.



Of course I will teach you how to do it.

## MAKING A SEED BED

First we need to make a seed bed. Help me to mix 3 buckets of soil with 1 bucket of sand and 1 bucket of compost or manure.

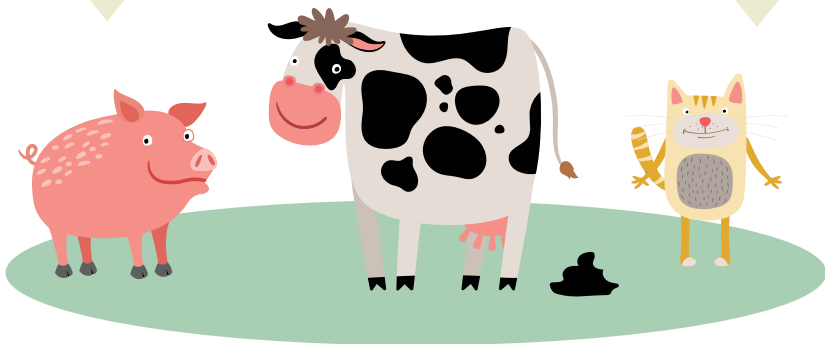


## COLLECTING MANURE

Can the cow dung really help our seeds to grow?



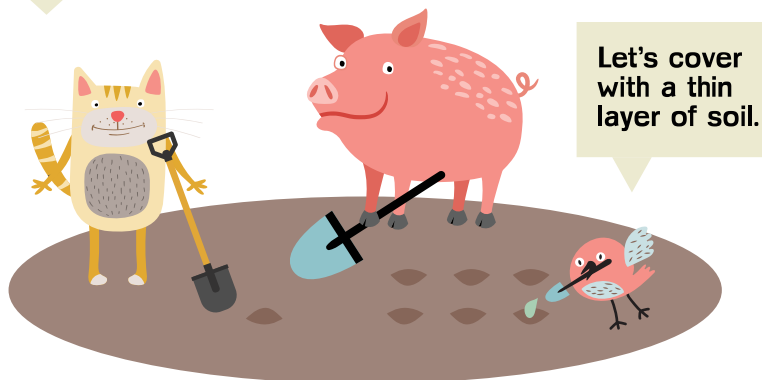
Yes, seeds love animal manure. You will see!





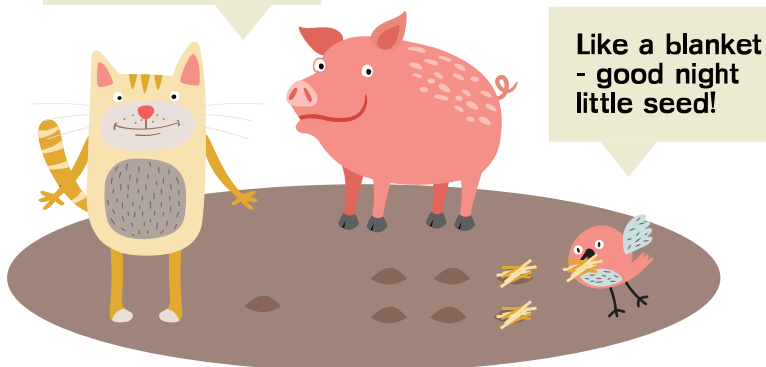
## TIME TO PLANT

Don't forget to leave some space between your seeds so we can easily uproot for planting to the field



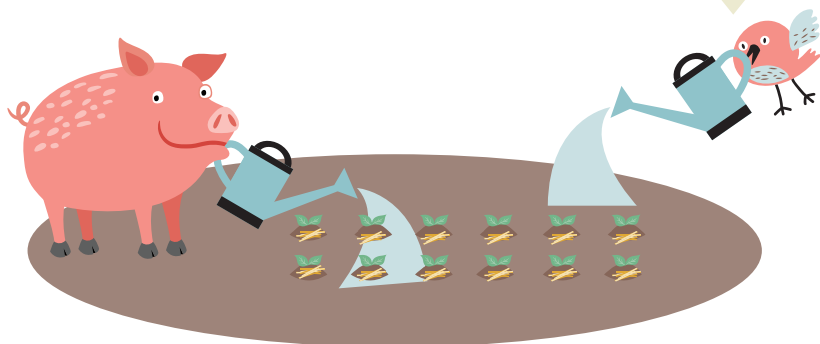
## AT THE TREE NURSERY

We should also cover with some dry grass.



## THE NEXT 4 WEEKS...

It's important to give our seeds water every morning and evening.



## WEEDING

It is important to weed the seedlings regularly.

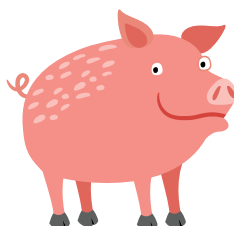


When you have separated the seedlings and plant in small bags.

...and mine is so big.

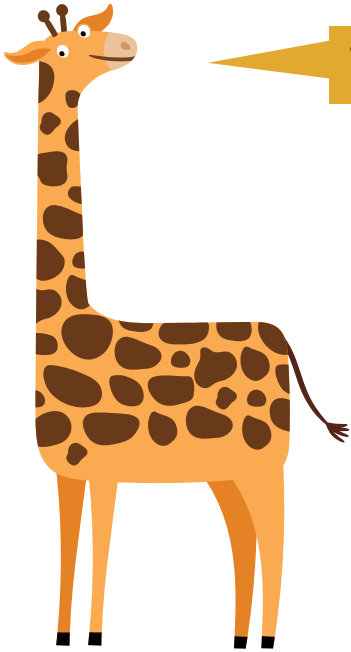


Look at my seedling, it is so beautiful!



## 2

# Climate change



**What is climate change?**

**Climate change is a long-term change in the expected patterns of average weather of a region (or the whole Earth) over a period of time. Climate change causes abnormal variations to the climate, and the effects of these variations on other parts of the Earth.**



### **DID YOU KNOW?**

**Trees and forest play a vital role in regulating the climate. Uncontrolled cutting down of trees is called deforestation and it can have serious effects. When rain falls on a forest, new clouds are created. If huge areas of trees are cut down, clouds do not form, rain does not fall and the land and climate becomes drier. The Carbon dioxide builds up and adds to the global warming which is making the Earth become hotter.**

## What causes climate change?



Burning coal, oil, petrol and gas in houses, factories and vehicles as well as cutting down and burning trees and vegetation without planting new.

## Impacts of climate change

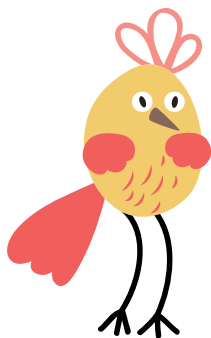
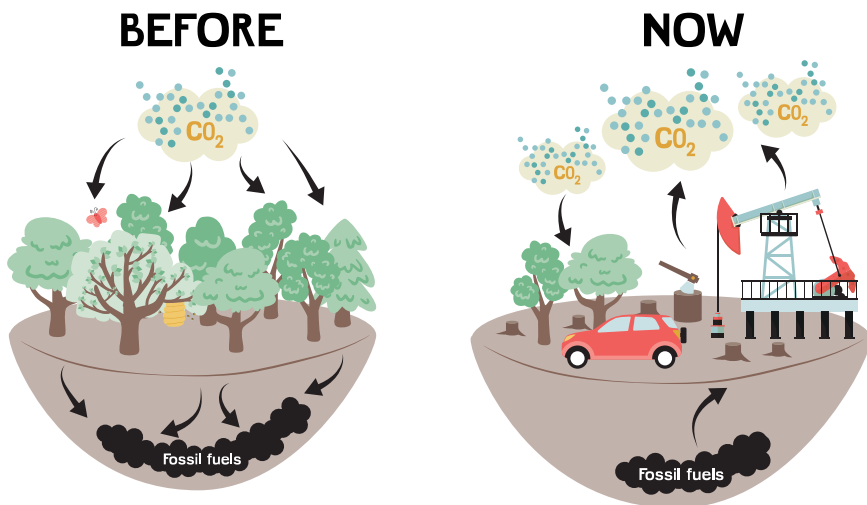
- More common droughts and floods
- Less rain in total and more unpredictable rains
- Increased mean temperatures
- Fish, livestock and crop yields decrease (especially highland crops)
- Increased pest attacks and disease incidences such as malaria, parasites and others.

## What are the solutions?

- Climate change can be reduced by reducing greenhouse gas emissions, e.g. by using renewable energy instead of nonrenewable energy sources
- Absorbing greenhouse gas emissions, e.g. through tree planting
- Awareness creation
- Adaptation strategies for farmers and other land users
- Better weather forecasting and warning systems for floods, droughts, cyclones, disease outbreaks etc.



All of us have a role to play in protecting the environment, because we are all affected by climate change.



**This makes it very important for everyone, in all countries, to act NOW to mitigate further damage and learn to adapt to change in climate.**

As children we can also adopt ways of protecting the environment by reducing on pollution of water, air and land that may arise. The types of adaptation measures will depend on the impact of climate change in particular regions and economic sectors. Increased capacity to adapt reduces our vulnerability to the effects of climate change.

## **3** Clean and Safe Environment

### **Reduce, reuse and recycle**

After consuming products, it is important to dispose the remaining material and used packages in a litter bin or a designated garbage area so that they do not contaminate our soil, water or air. This is because environmental contamination affects not only us but for many generations to come. There are ways we can reduce the amount of garbage, by reusing the material from used products, or by recycling them. Certain items are extra harmful to our health and our environment; bulbs, batteries and electronic equipment contain heavy metals that are harmful to humans and animals.

#### **Reduce**

We must reduce the garbage we produce by avoiding unnecessary consumption and by choosing products without a lot of plastic and metallic packages or other material that are energy consuming to produce. Paper packages are better than plastic or metal because they are degradable. When you go shopping, you should bring your own basket or bag instead of buying new plastic bags.

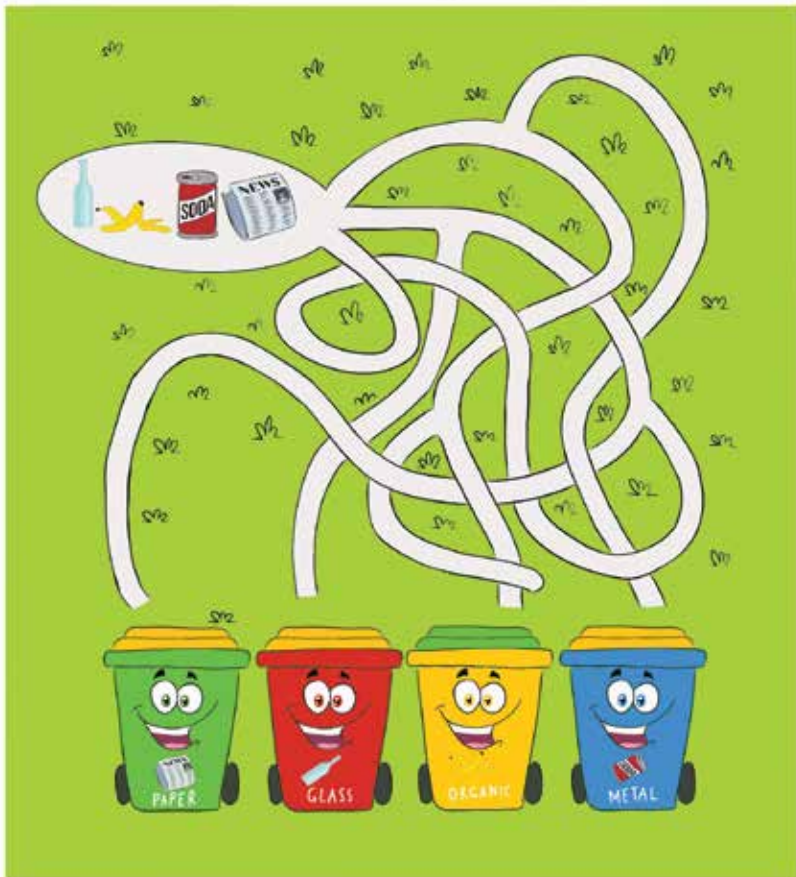
#### **Reuse**

If you have left over paper, plastic or metallic containers from consumed products you can still reuse them. Milk packets can be reused as tree seedling tubes and tins can be made into kerosene lamps. Different types of accessories like necklaces and earrings can be made out of used packets, containers etc

## Recycle

It is possible to recycle most types of packages, containers and used products. Plastic, paper, bulbs, batteries, metal, glass, carton and organic waste should be separated before disposal. Then they are recycled to make new products. Organic waste is easy to recycle for individual households. By preparing a compost the organic waste turns into new, fertile soil that can be used in a field or a nutritional garden for growing crops and vegetables.

**Help the trash find its way to the correct bin**





## 4 Nutritional garden

### Making a kitchen garden

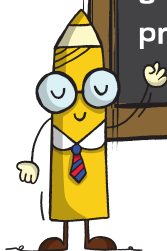


Do you know what is a kitchen garden?

No i don't know, can you please tell me...

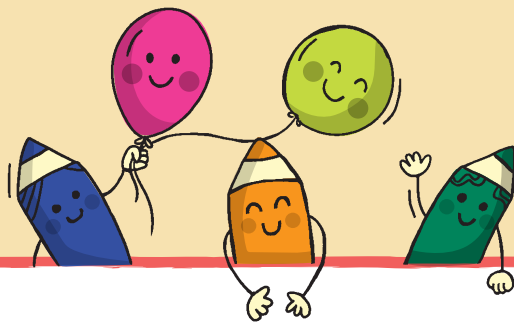


The nutritional garden is usually a small plot, 1-2 m wide and 5-10 m long, located within or near the homestead. Using perforated tins or gunny bags is suitable method to increase the area of the nutritional garden. Fruit Trees planted near the house can also provide good shade to sit in



The plot should be prepared with double dug seedbeds and soil fertility maintained through applying manure before planting new vegetables. The plot needs to be watered and weeded regularly. In a nutritional garden different types of fruit trees, vegetables and herbs are grown together. The nutritional garden can help provide a more nutritious diet which is vital for proper growth of children and for maintaining good health.





## COLOUR & NAME THE VEGETABLES



1. \_\_\_\_\_



5. \_\_\_\_\_



2. \_\_\_\_\_



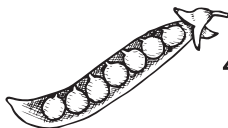
6. \_\_\_\_\_



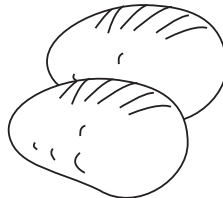
3. \_\_\_\_\_



7. \_\_\_\_\_



4. \_\_\_\_\_



8. \_\_\_\_\_



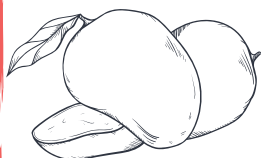
## COLOUR & NAME THE FRUITS



9. \_\_\_\_\_



12. \_\_\_\_\_



10. \_\_\_\_\_



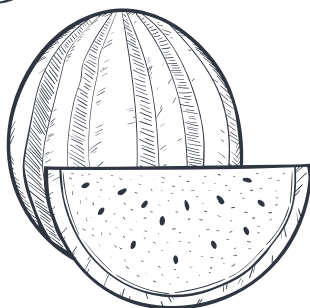
13. \_\_\_\_\_



11. \_\_\_\_\_



14. \_\_\_\_\_



15. \_\_\_\_\_

## Benefits of having a nutritional garden



- The nutritional garden can supply fruits and vegetables throughout the year.
- Fruits and vegetables are nutritious and contain several vital vitamins and minerals which are important for all people's health.
- Garden products can provide regular cash income.
- The nutritional garden does not require a big piece of land(should be possible to irrigate it all year around).
- It is close to the homestead and easy to manage.

To increase the area of the nutritional garden, planting in gunny bags is an alternative. A plastic pipe with small holes or a pile of small stones should be placed in the middle of the bag for water to reach the whole sack.

Soil and manure should be mixed and vegetables are then planted on top and in small holes made on the side of the gunny bag. Wastewater from the household should be reused to have a continuous production in the nutritional garden throughout the year.





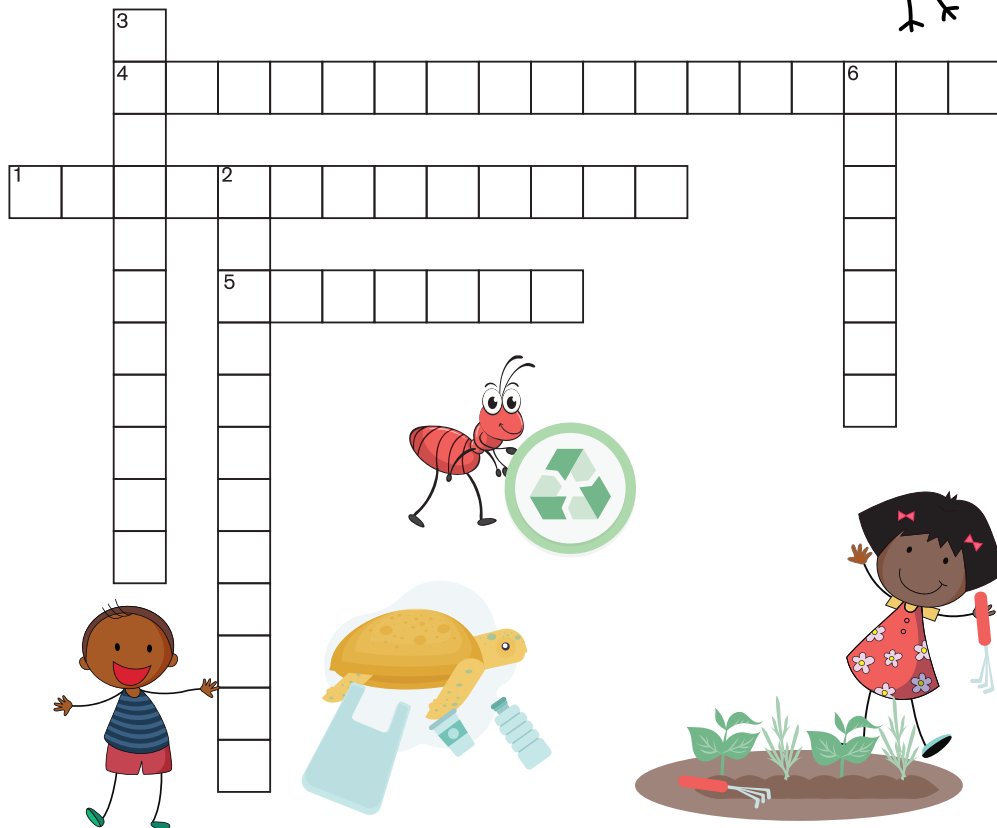
# WORD SEARCH

S	P	F	R	U	I	T	W	F	N	N	F
L	P	P	F	A	R	M	P	O	O	A	O
A	E	T	M	W	N	T	R	R	S	N	D
M	O	R	P	O	W	E	V	E	T	A	D
I	P	E	X	R	O	S	S	S	E	N	E
N	L	E	F	L	R	T	T	T	R	A	R
A	E	M	A	N	G	O	E	S	G	B	E
V	E	G	M	M	A	N	U	R	E	A	O
H	E	N	O	D	W	O	C	S	L	B	P
S	Q	D	A	I	L	Y	S	S	I	I	L
Y	X	F	A	M	I	L	Y	E	O	A	E
V	E	G	E	T	A	B	L	E	S	B	R

Tree, Soil, Fruit, Mangoes, Vegetables, People, Family,  
Grow, Fodder, Animals, Hen, Cow, Farm, Forest,  
Banana, Manure



# CROSSWORD



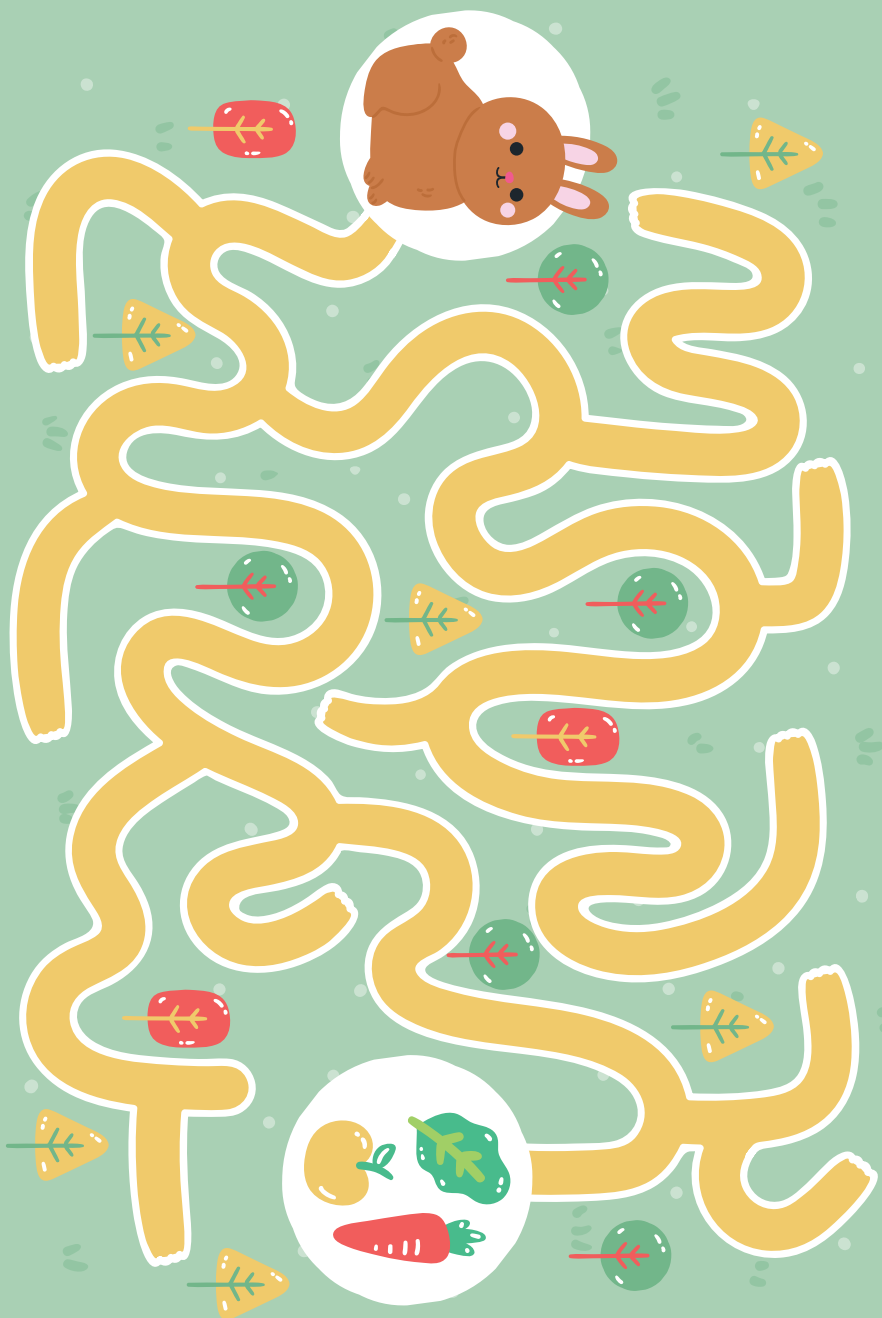
## ACROSS

1. Is a long-term change in the expected patterns of average weather of the whole Earth over a period of time.
4. What is the name given to a small plot, 1-2 m wide and 5-10 m long, located within or near the homestead.
5. What word is given when we convert waste into reusable material.

## DOWN

2. A word that means that trees are interacting with crops and animals in different ways
3. A surroundings or conditions in which a person, animal, or plant lives or operates
6. A period of dry weather, especially a long one that is injurious to crops.

Help the rabbit find its food





# Answers

## Page 21

Newspaper to the Green bin “Paper”  
Soda Can to the Blue bin “Metal”  
Banana Peel to the Yellow bin “Organic”  
Glass Bottle to the Red bin “Glass”

## Page 23

1. Tomato

2. Onion

3. Carrot

4. Peas
5. Spinach

6. Maize

7. Cabbage

8. Potato
9. Apple

10. Mango

11. Pawpaw

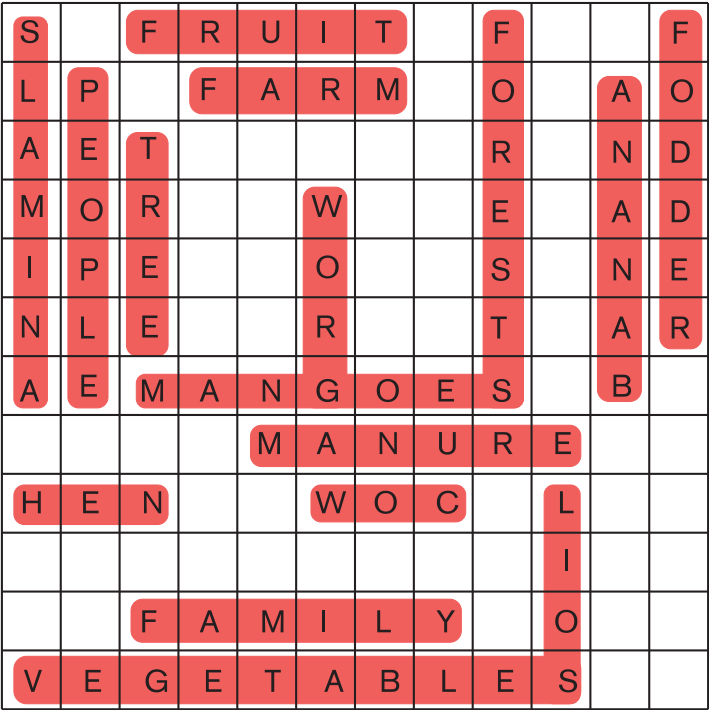
12. Banana
13. Avocado

14. Orange

15. WaterMelon

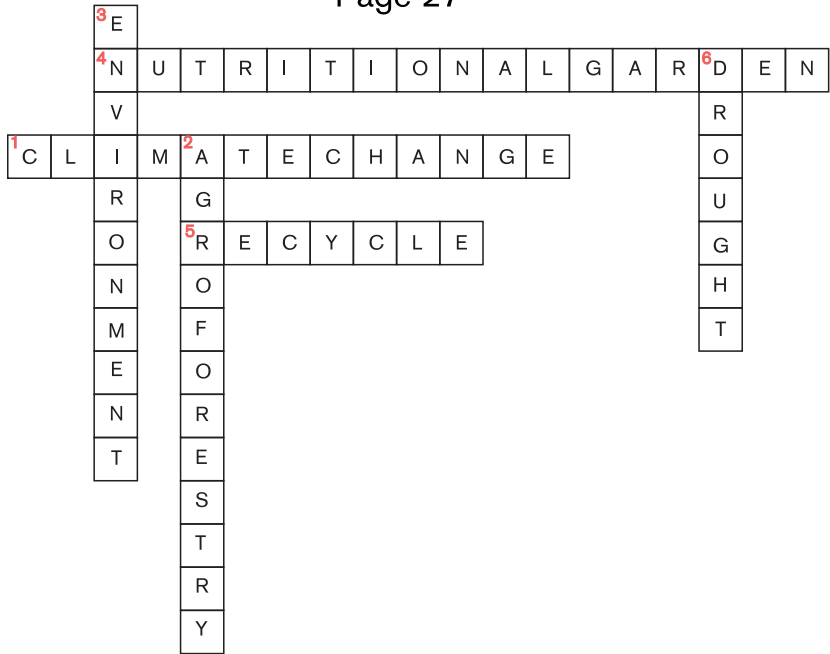
## Page 24

## Page 26



# Answers

Page 27



Page 28





Vi Agroforestry

