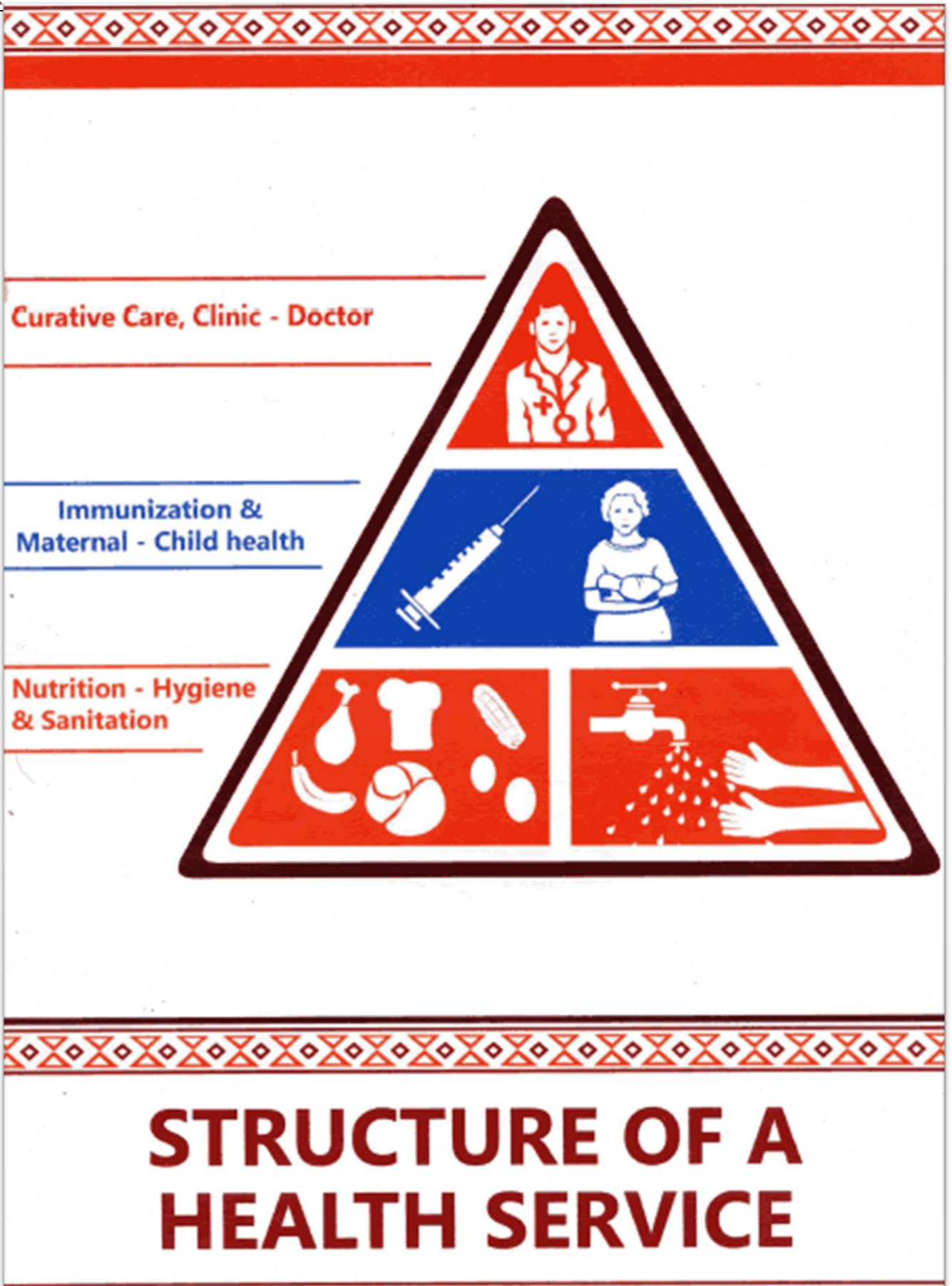


# **TIKONDANE PROJECT**

**22 steps out of poverty for subsistence farmer**



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**The Tiko course starts with hygiene and sanitation**





STEP ONE



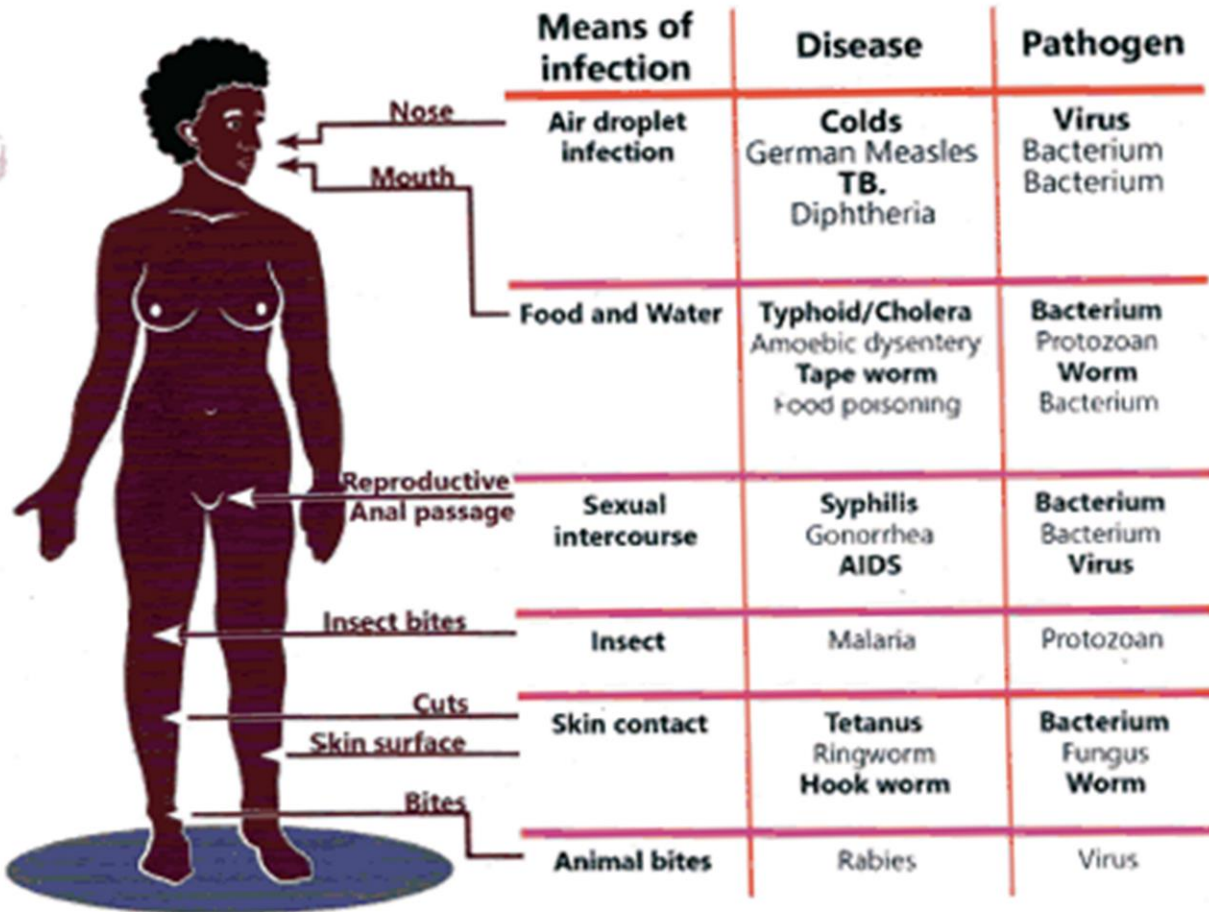
# THE FIVE KINGDOMS

- MAFUMU ASUNU -

**Is disease due to witchcraft or to science?**

**Answer: to science, the writers of the bible did not have a microscope, science came later**

**STEP TWO**



# HOW BACTERIA ENTER

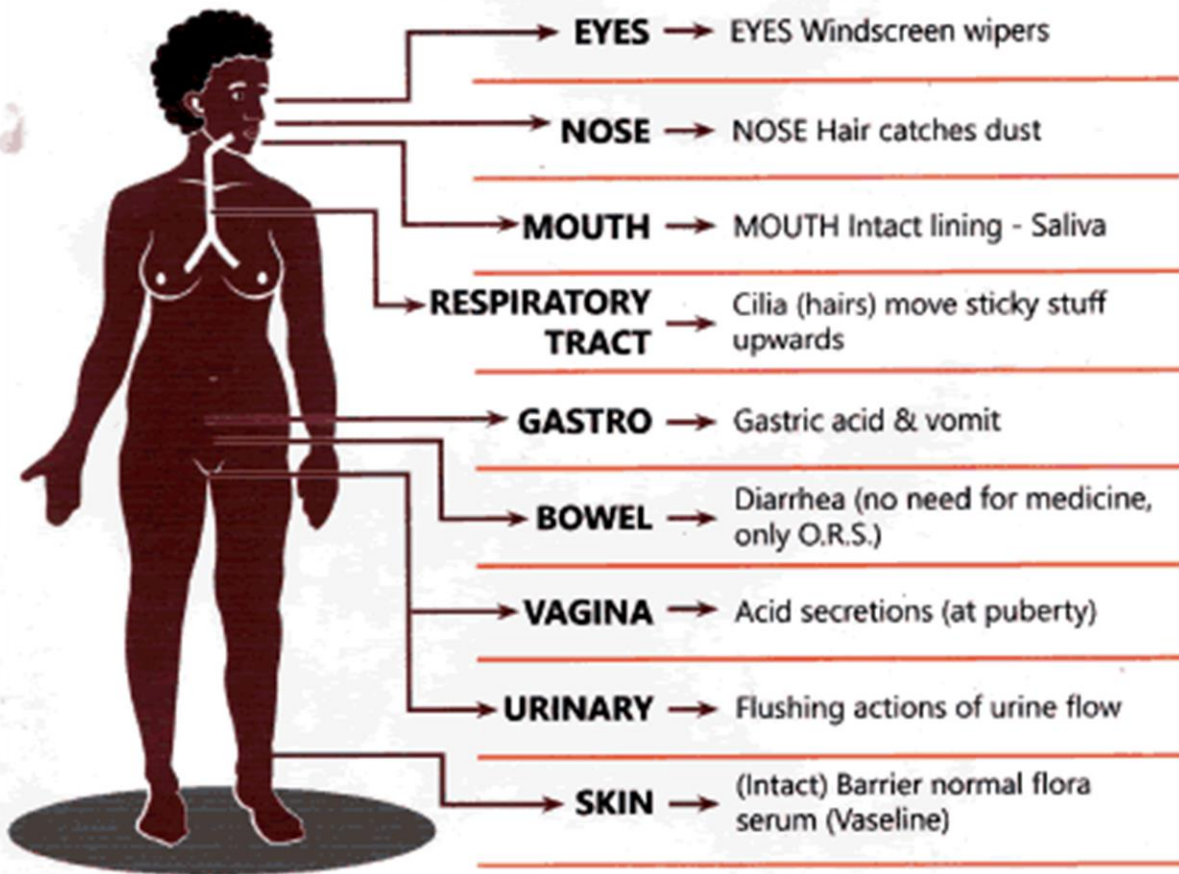
Bacteria and the body have been fighting forever.

How do Bacteria/microbes try to enter the body?





**STEP THREE**



# HOW OUR BODY CONTROLS BACTERIA

How does the body keep the microbes out?



STEP FOUR (A)



# ENVIRONMENTAL HYGIENE

How can we help the body to keep the microbes out?  
Answer: hygiene, especially environmental hygiene is needed  
in Katete/Zambia





**STEP FOUR (B)**



# DON'T SWEEP



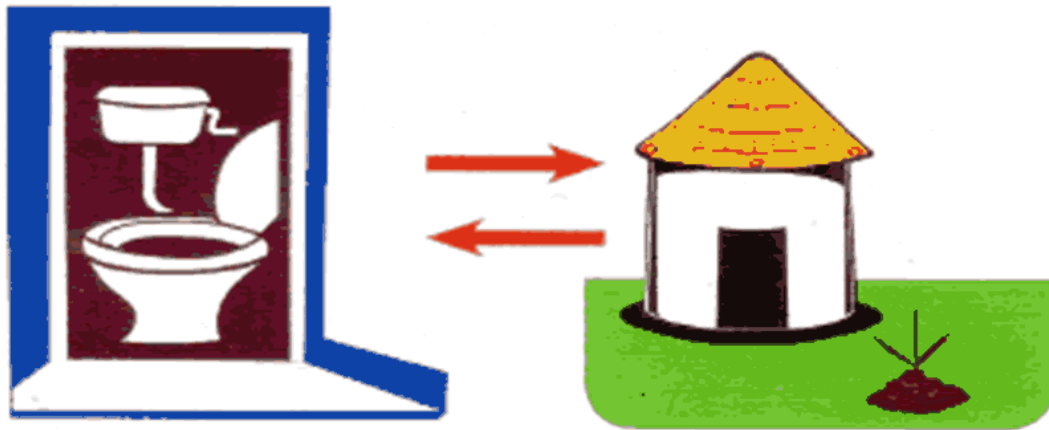
**What is bad about sand?**

**Answer: It can make us sick, it should be covered by greens, as in paradise.**

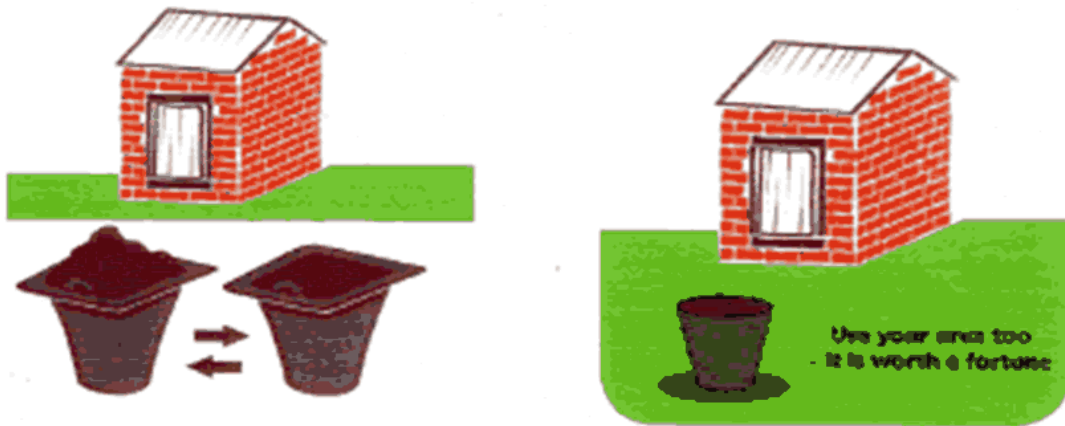




STEP FOUR (C)



By changing our toilets from standard toilets to Eco-toilets we save on water and can eat more mangoes



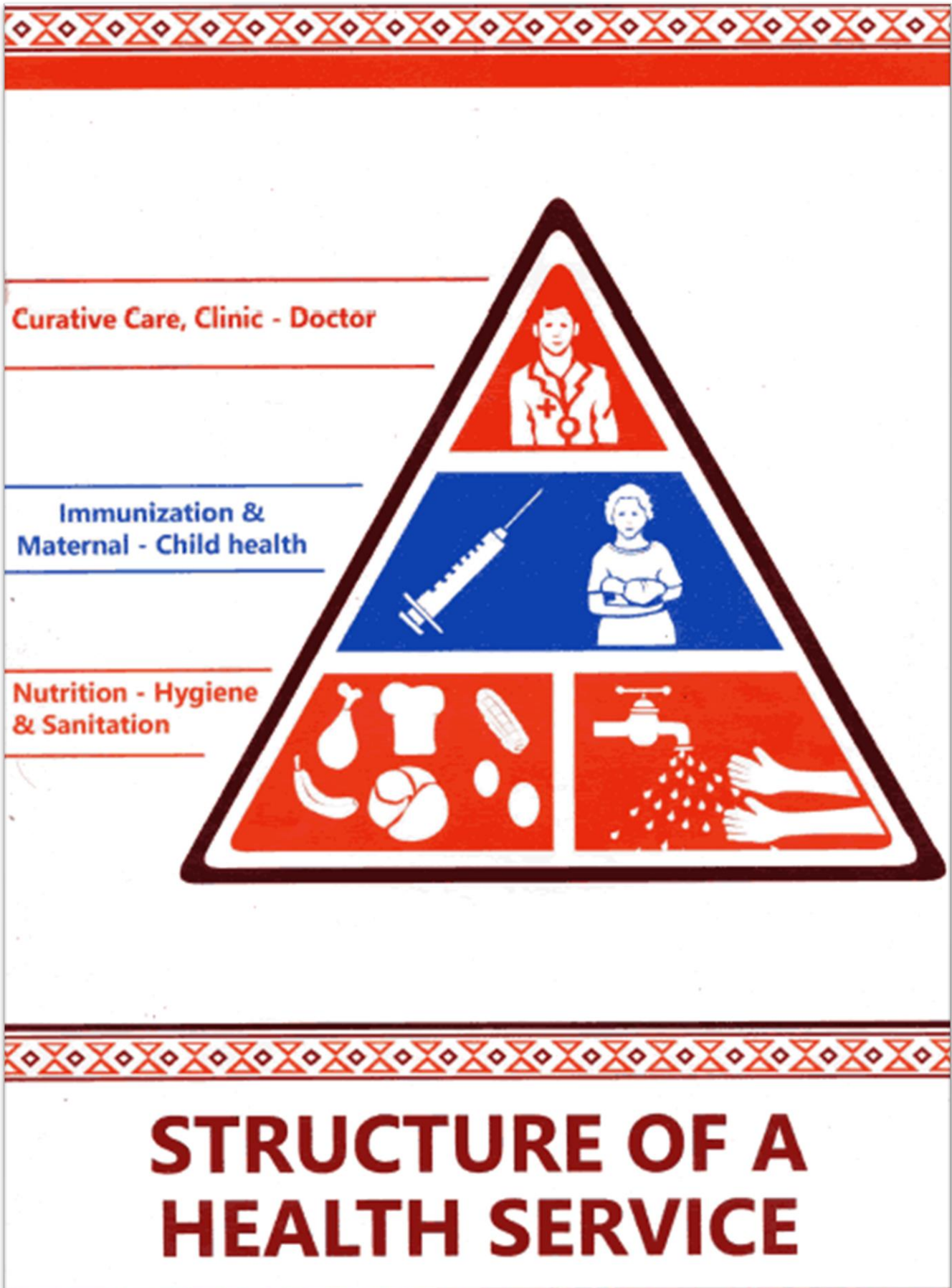
Change the full bin with an empty one and when it stops smelling use manure for your Berkeley compost heap.



# CLEAN WATER (AND ALSO FERTILIZER)

**What is needed to keep our land green?**

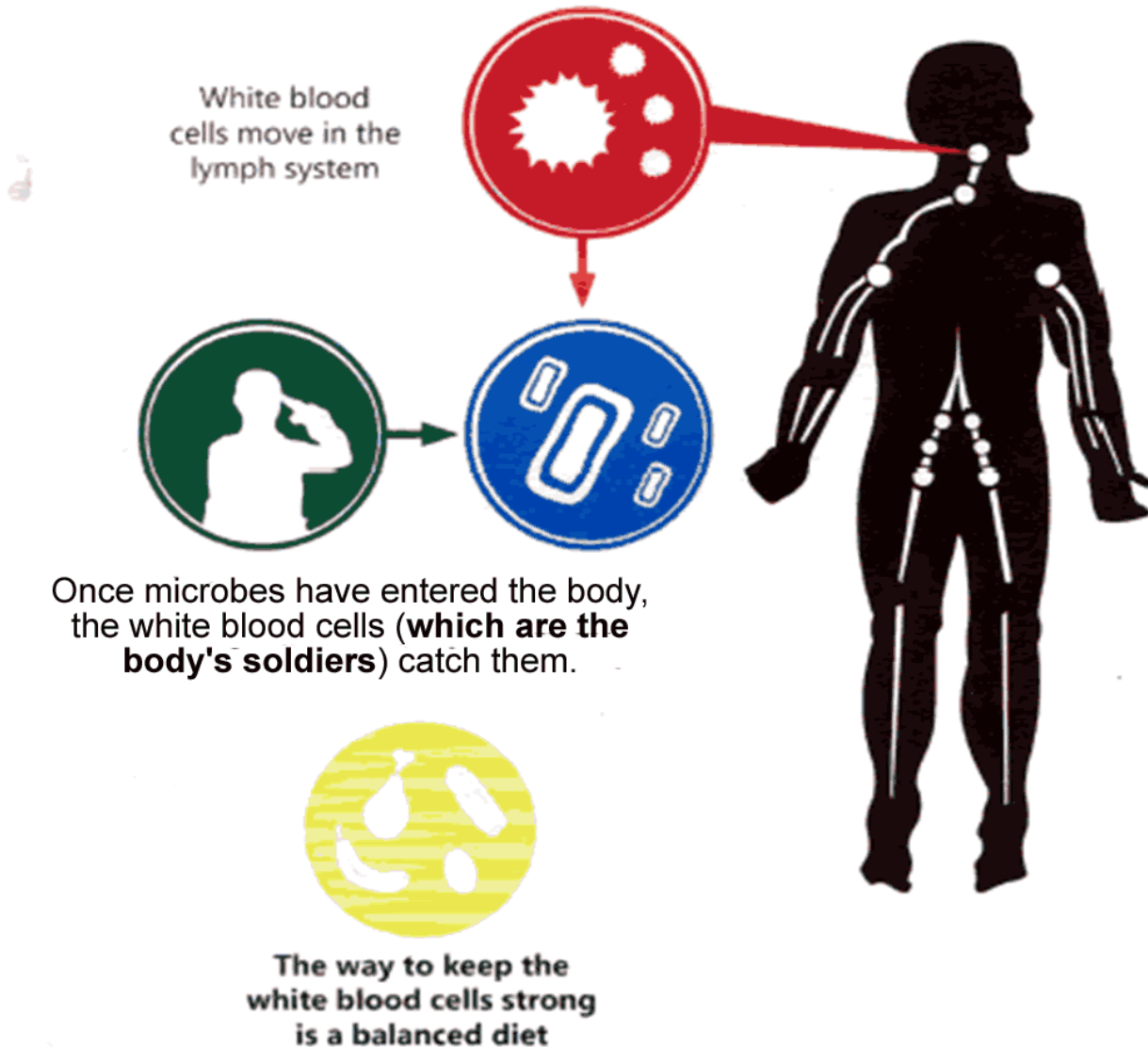
**Answer: fertilizer, but not the artificial one, it must be organic. We need all organic matter, so change our toilets: plant a mango tree when the eco-toilet is full (bottom right) and collect the bin when the family compost toilet (bottom left) is full, and put another empty one. Also, collect urine and use it as fertilizer, it is same as urea, so be careful and dilute.**



**The Tiko course continues with nutrition**



STEP FIVE



# WHITE BLOOD CELLS

What does the body do, when some microbes have managed to enter?

Answer: There are the soldiers, the white blood cells, to catch them



## STEP SIX (A)



Maize



Cassava



Sugar cane



Potatoes



Bread



Nshima



Sweet potatoes

# ENERGY GIVING FOOD

What should we do to have many strong white blood cells?  
**Answer: A balanced diet, not only nsima. Nsima is for energy and only good for field work, not for office work**





**STEP SIX (B)**



**Eggs**



**Fish**



**Chicken**



**Soya beans**



**Milk**

**OR**



**Moringa**

**+**



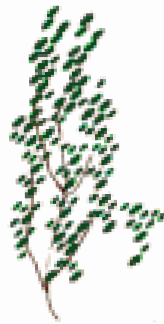
**Groundnuts**

**BODY BUILDING FOOD**

**Do you know another food group?  
Give examples of body-building food.**



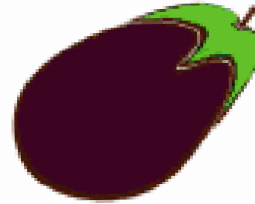
**STEP SIX (C)**



**Moringa**



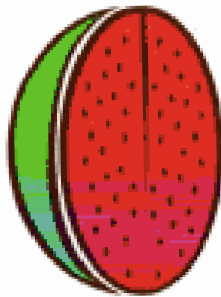
**Rape**



**Eggplant**



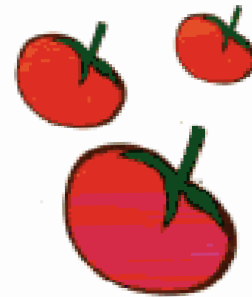
**Papaw**



**Water melon**



**Banana**



**Tomato**

# **PROTECTIVE FOOD**

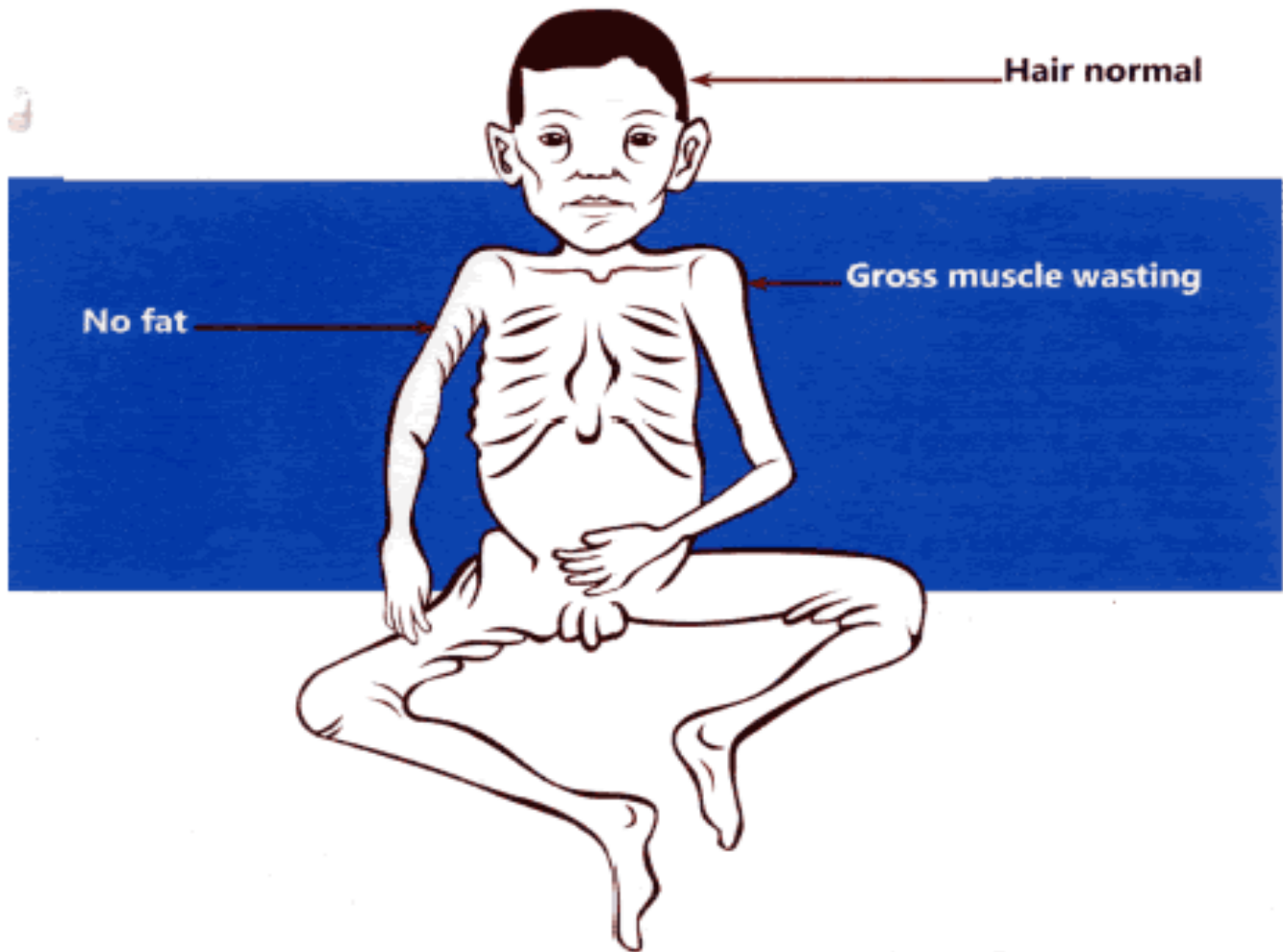
**Balanced diet food group number three, a difficult group,  
'protective food'**

**– think of Columbus travelling for four months, not knowing  
about the importance of it**





STEP SEVEN



GROSSLY UNDERWEIGHT

HUNGRY

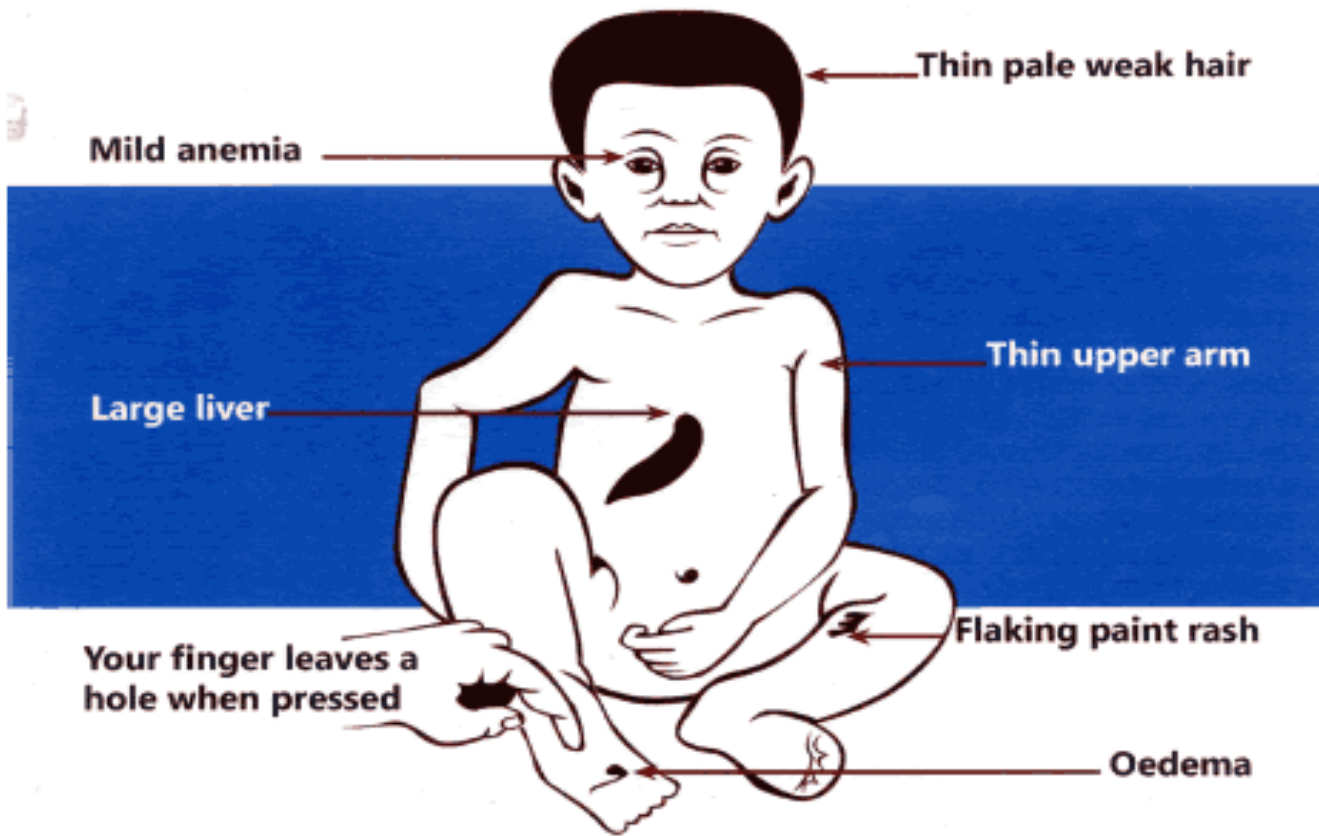
# MARASMUS

"Little old man"

What happens if there is not enough food?  
Answer: "Marasmus" means the person loses weight.



STEP 7 (B)



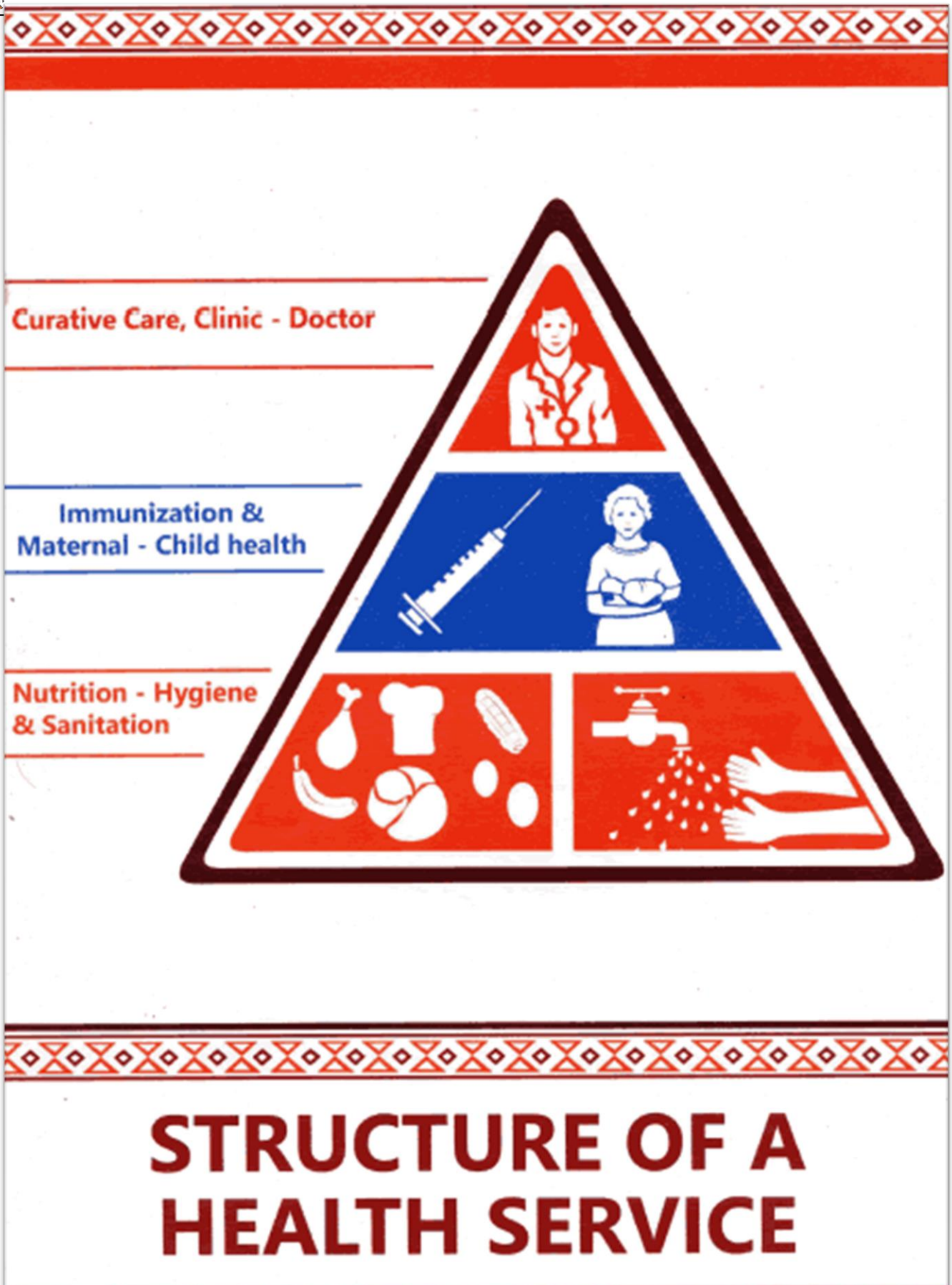
USUALLY UNDERWEIGHT

WILL NOT EAT

# KWASHIORKOR

What happens, if there is enough nsima, but no body-building food at all?

The body swells up – many children die because of kwashiorkor.

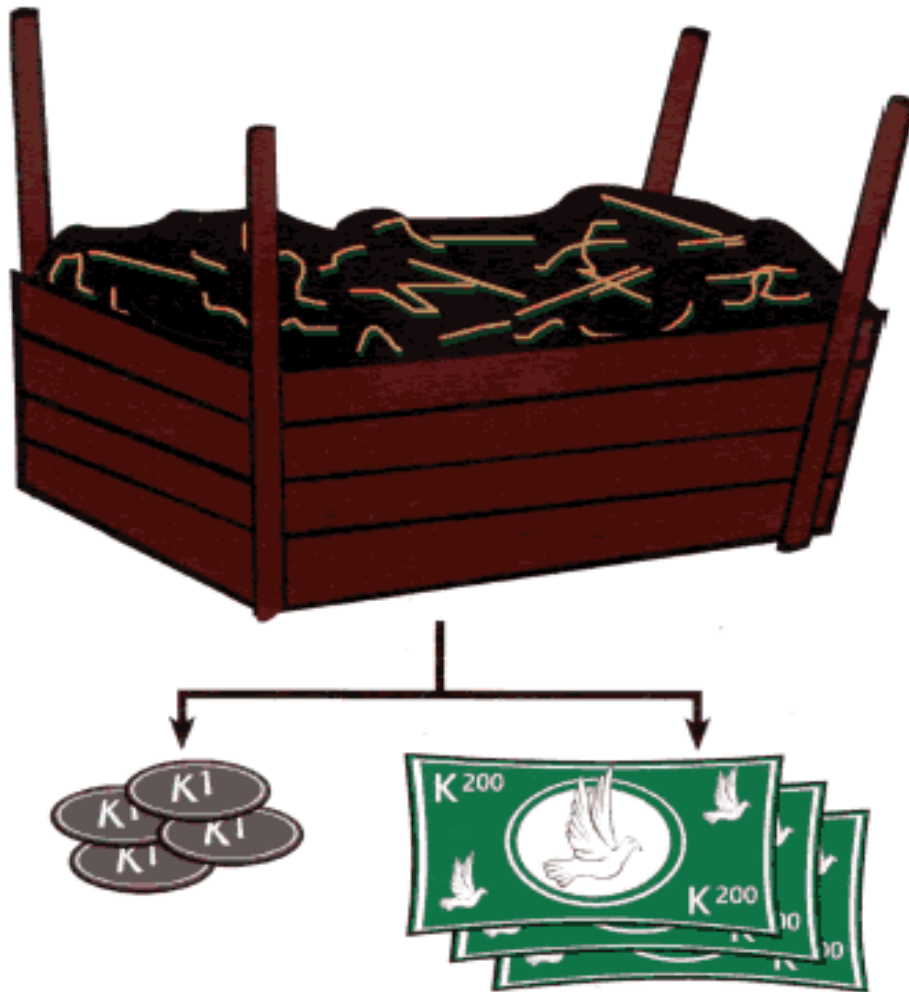


**The Tiko course now describes the way to grow healthy food and work for sustainability**





STEP EIGHT



GREAT COMPOST CAN BE MADE IN 18 DAYS

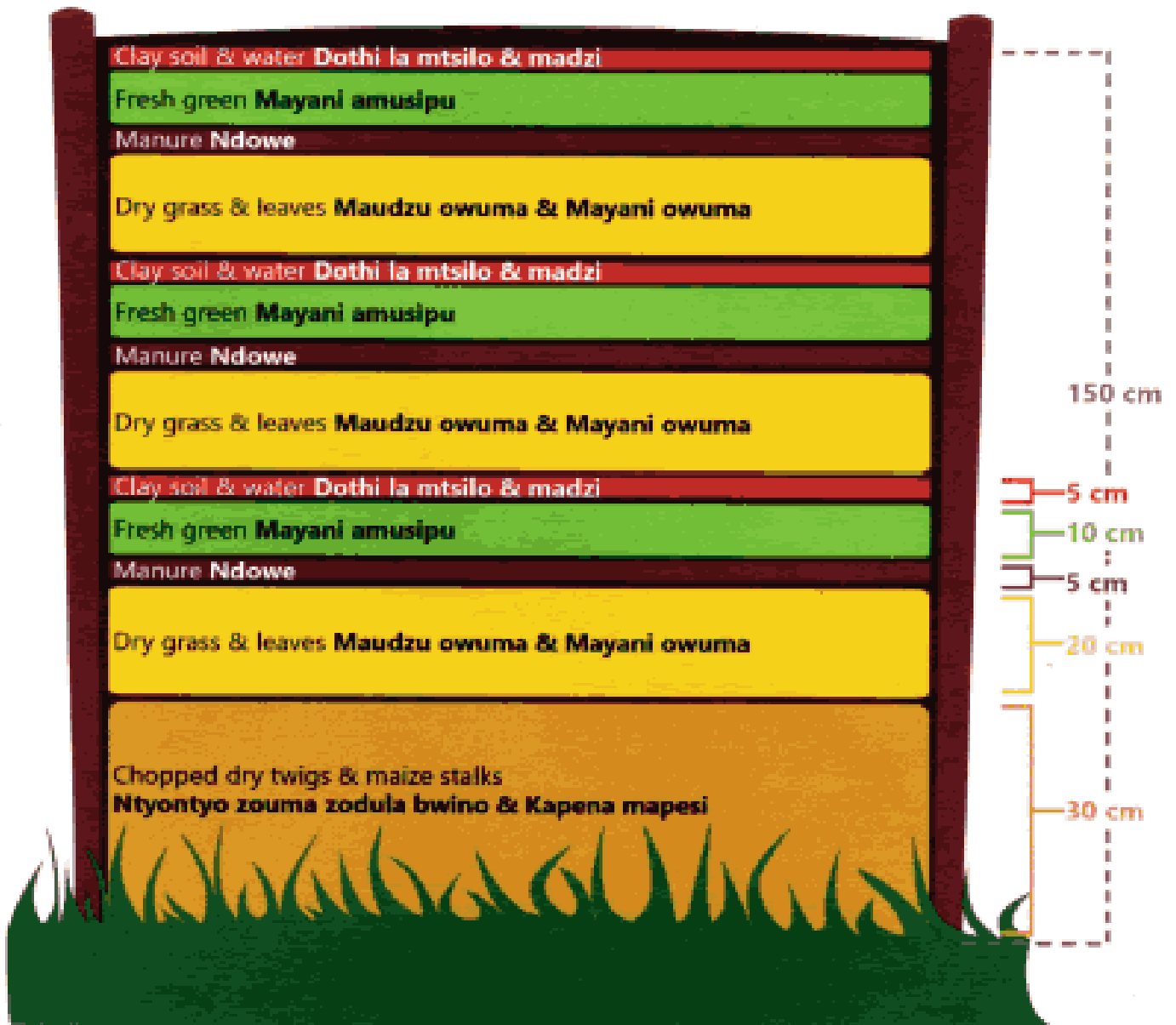
# FOR A COST EFFECTIVE & BALANCED DIET

How can we grow healthy food cheaply?

Compost heap – local ingredients, even if sometimes there is need for money to buy manure from the rich farmer



**STEP NINE**

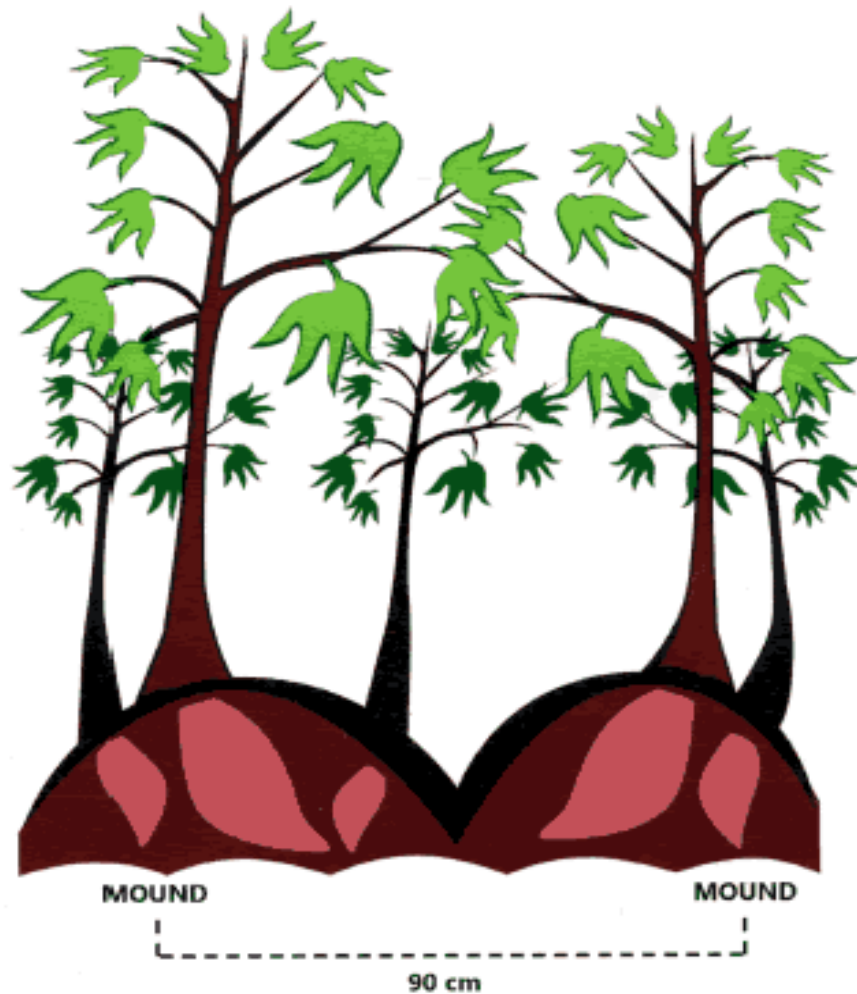


**COMPOST HEAP**  
**MULU WA NDOWE**

**Compost ingredients for the hot Berkeley method: 18 days**



STEP TEN



ADD INOCULATION OF COW-PEAS FOR COMPANION PLANTING

# CASSAVA & COW PEAS

Can someone make nsima from anything else but maize?  
Answer: yes, they do it in Northern Zambia and in Malawi  
We add inoculated cowpeas after germination to get more nitrogen into the cassava and improve its growth





STEP ELEVEN



## THE LIVING FENCE

Who likes cassava as much as people do?

Answer: cows and goats, therefore we need a living fence  
(Jatropha is good for soap making)



**STEP TWELVE**

**AFRICAN VEGETABLES HAVE THE MOST VITAMINS & MINERALS:  
SUNTHA, IMPWA, BUNONGWE & MORINGA**

# **VEGETABLE RINGS**

**Some wooden sticks and iron mesh to grow vertically holding the soil (compost + humus + stones), saving space, as one can plant on the sides, and saving water as the stones retain it. A simple trick for perfect plants.**



STEP THIRTEEN



**7x** the vitamin C of Oranges 

**4x** the vitamin A of Carrots 

**4x** the Calcium of Milk 

**3x** the Potassium of Bananas 

**2x** the Protein of Yogurt 

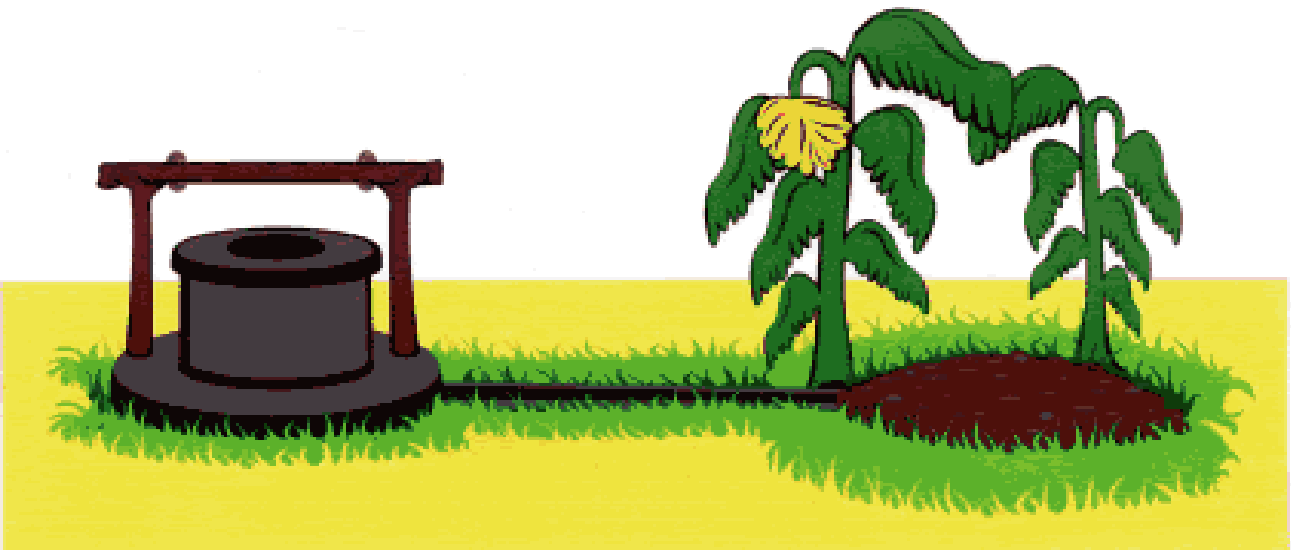
# MORINGA

Growing perfectly in Katete it is the best food complement for a better nutrition and a better health, among so many other miraculous properties.





**STEP FOURTEEN**



# **PAWPAW CIRCLE**



**If you have a water point nearby, dribbling water, add a banana or paw-paw circle – same as bag garden, put stones in a hole and cover. The roots will reach the stones and use the water that would otherwise be lost.**

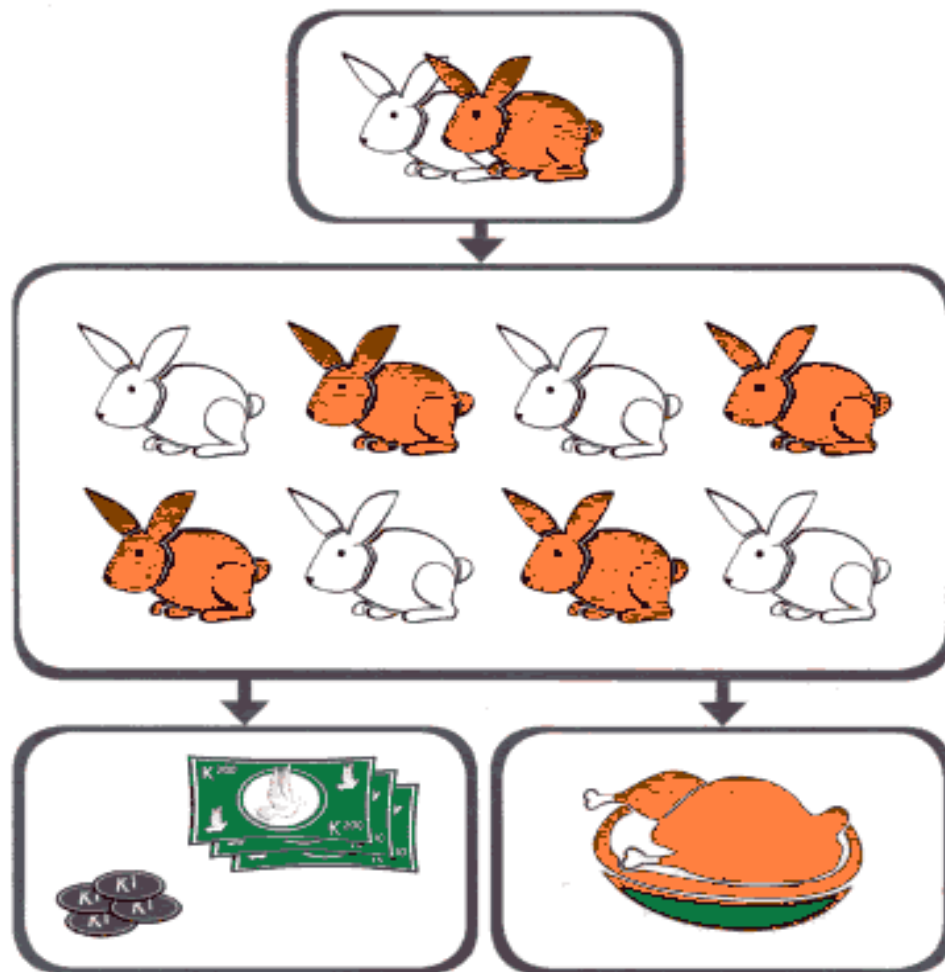
STEP FIFTEEN



**DOVES / PIGEONS**  
"NKHUNDA"

**Pigeons are good to learn how to breed animals – give them always water, lock them always up etc. If you make mistakes, the cost is small. Also, the pigeon is small and there is a chance it will be given to the small child, which needs protein most – cassava or maize has none**

STEP SIXTEEN



# RABBITS

"KALULU"

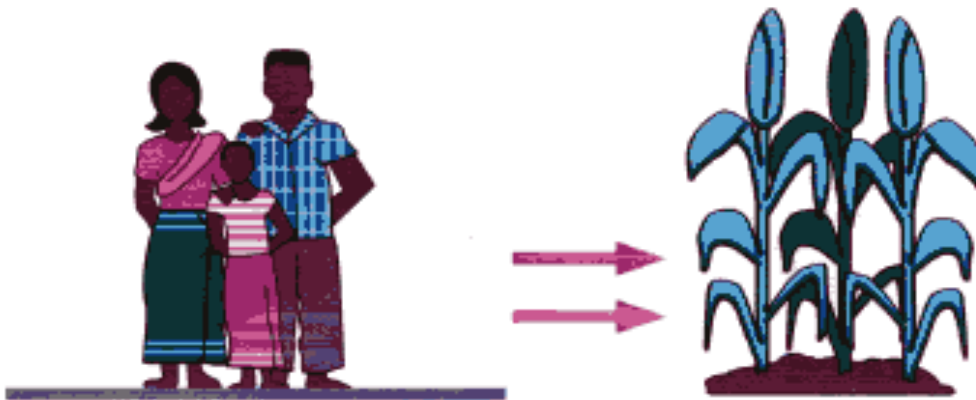
**Rabbits breed like rabbits, up to 32 for a single mother – what a chance to have good food and a merchandise to sell!**

**Also, the food is not in competition with human food, differently from chicken, and especially important in the times of famine**





STEP SEVENTEEN



# CHILD SPACING

**Child spacing or family planning are important  
– only make a baby if you have the money to send the child  
to school!**



STEP EIGHTEEN



Cook where there is fresh air



Cut your firewood with an axe

# ENERGY SAVING STOVE

– very cheap and can be repaired by the owner.

tricks: it needs an axe to cut the firewood so small. Also, the stove is to be placed in an outdoor kitchen to prevent eye and chest problems due to smoke. It really saves a lot of money.



## STEP NINETEEN



# MODEL HOMESTEAD



To have a model homestead in the village, with garden and field for agricultural entrepreneurship plus skills for small business and computer skills to feel connected – that is Tiko’s dream and the curriculum of its Academy course for the agricultural entrepreneur.





STEP TWENTY

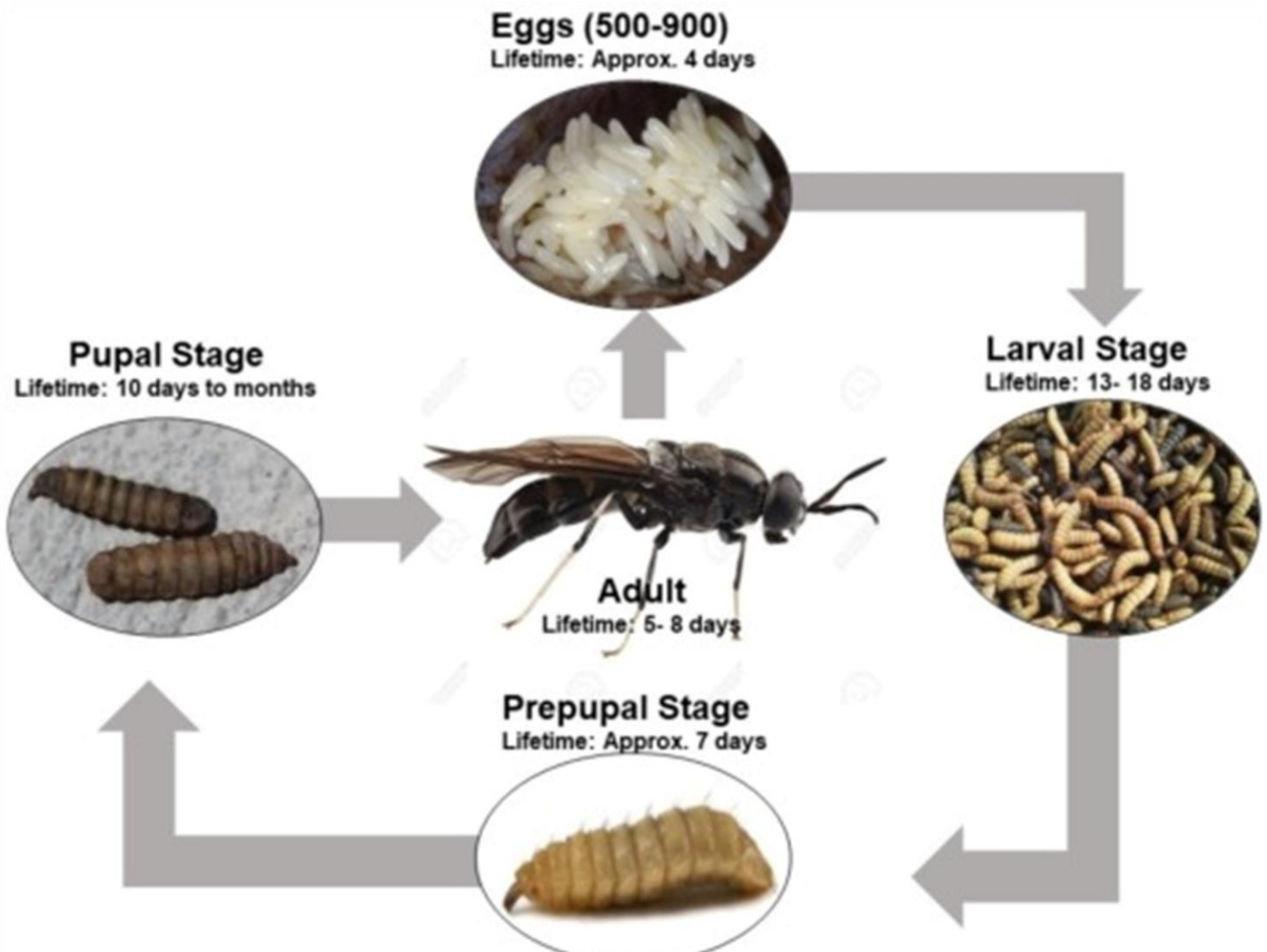


# AZOLLA

Azolla is a wonderful branched free-floating aquatic fern which grows very fast on water surface. It is an ideal sustainable feed for cattle and poultry and can also be used as a biofertilizer to grow crops.



**STEP TWENTY-ONE**



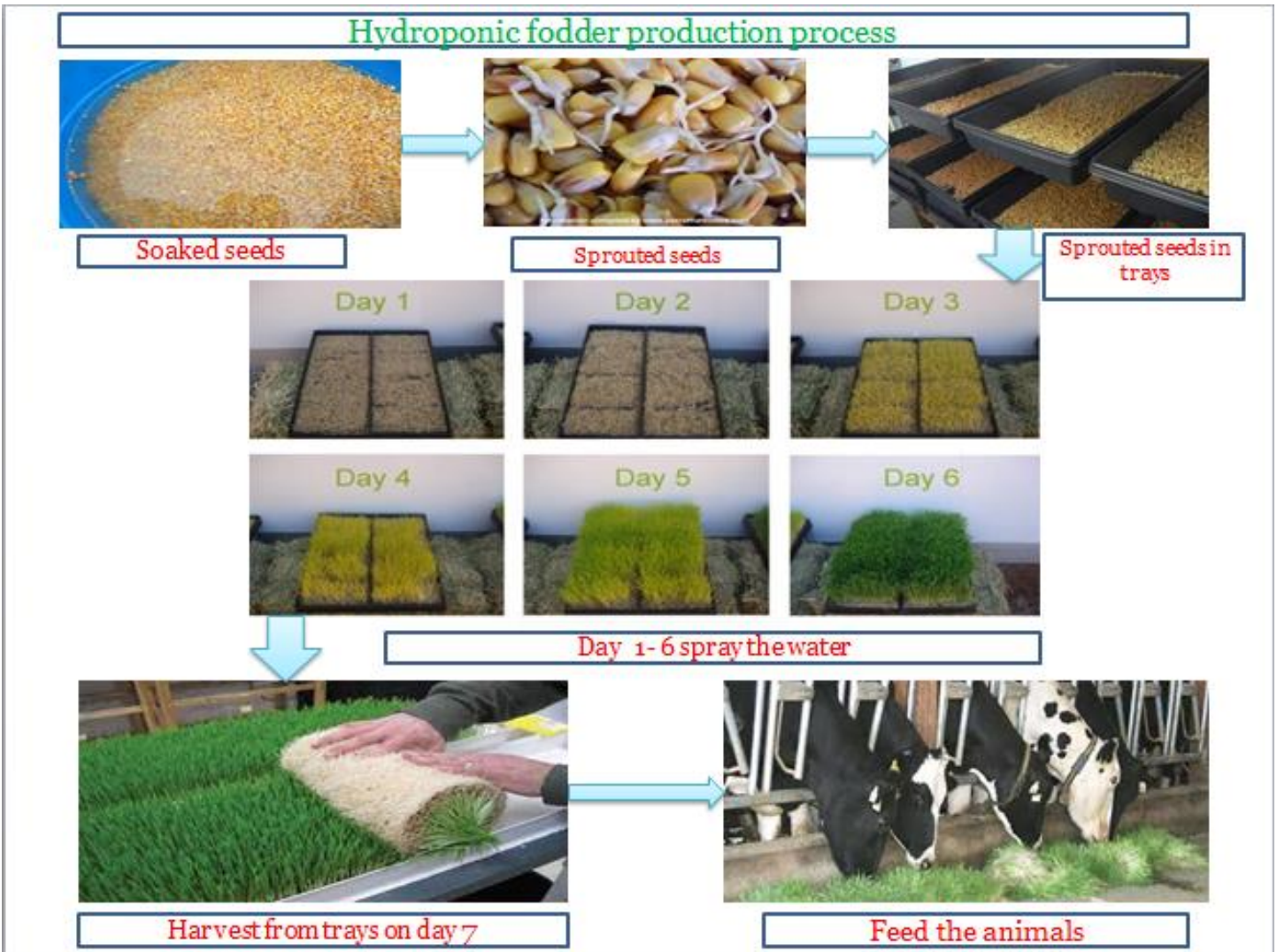
# MAGGOTS

Maggots are a sustainable resource alternative to fish meal; it has about 40% of protein and is very suitable for livestock nutrition. There are also easy to farm due to their mass reproduction. In fact, 1 gram of their eggs will turn to about 4kg of maggots.





STEP TWENTY-TWO



# HYDROPONIC FODDER

Maize fodder is a very low cost and highly nutritive alternative to conventional livestock feed. It contains enzymes and vitamins which aren't present in grains and it only takes water and a few days to grow.