

SECTION II: Improved nutrition

1. GENERAL INTRODUCTION

- ☛ *It is a big difficulty to provide cattle, goats and sheep with good-quality feedstuffs during the entire year.*
- ☛ *The type, availability and quality of the feed is changing over the year.*

A. Rainy and early dry season (SAMA and SANJANGO)

Small ruminants can find sufficient and good food from the grazing lands (grasses, fruits, leaves) and from crop residues (straw from millet, rice, maize, sorghum and groundnut-hay), household waste and sometimes also receive extra salt.

PROBLEMS

Many people are involved in crop production and crops need to be protected from the animals so that:

- Animals are tethered at the same place too long
- Time that they go out for grazing is too short.

B. Dry season (TILIKANDO)

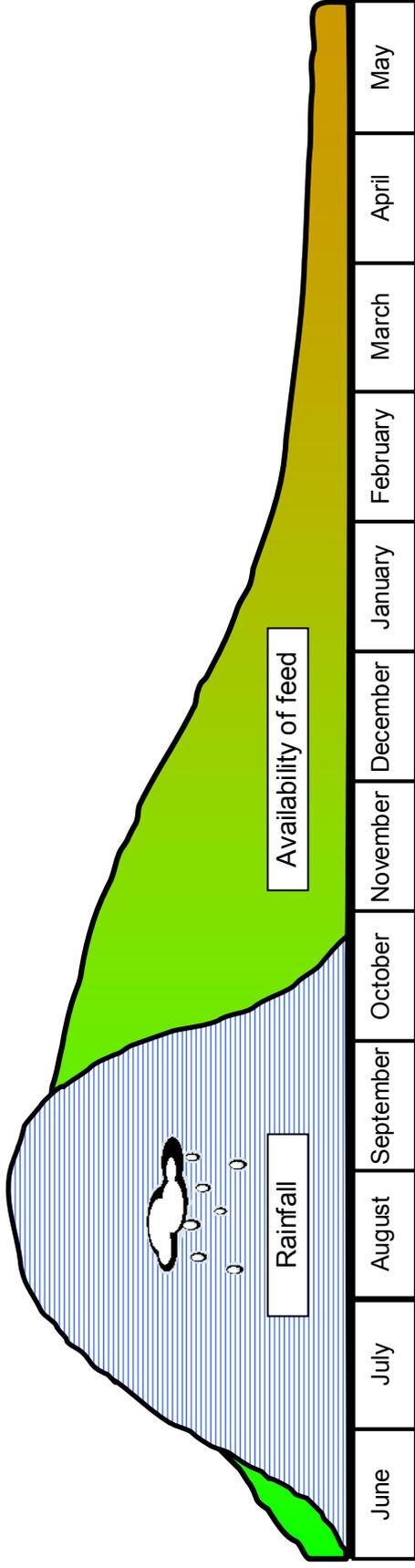
PROBLEMS

- The quality from the pastures becomes less good
- Bushfires: feed becomes scarce
- Animals have to travel long distances

C. Effect of inadequate feeding

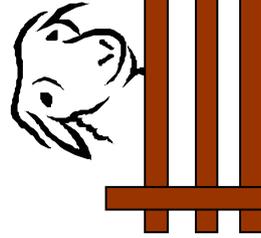
- Low production of animals (milk and meat)
- Abortion
- Weak kids - lambs
- Death
- More chances to become sick

FEEDING CONSTRAINTS FOR LIVESTOCK DURING YEAR



SAMA (rainy season)

- Crop farming involves much labour and crops need protection from animals
- Animals are tethered too long at same place and grazing times are too short



TILIKANDO (late dry season)



Standing hay:
Low quality feed



2. SUPPLEMENTATION OF TARGET SMALL RUMINANTS

A. Which animals can be your target?

A.i. Pregnant animals

A pregnant sheep or goat needs more energy and proteins. During the last month of the pregnancy, they need two times the amount of energy and proteins than animals that are not pregnant

✪ It is important to supplement during last month of pregnancy in order to have:

- Less abortion
- Strong and heavier kids or lambs with a better chance of survival
- Kids or lambs that will grow faster
- A mother that is in good condition at the start of lactation

✪ It is important to keep pregnant animal inside when they are about to kid or lamb:

- Avoids delivery in bush and kids or lambs that get lost or killed
- Farmer can help if something goes wrong during delivery
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A.ii. Lactating animals

Producing milk requires a lot of energy and proteins

✪ It is important to supplement during first 2 months of lactation in order to have:

- More milk production by mother
- Better survival of kids or lambs
- Better growth of kids or lambs
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A.iii. Sick and treated animal

✪ It is important to separate and supplement sick animals in order to:

- Help them overcome the disease
- Avoid other animals get infected

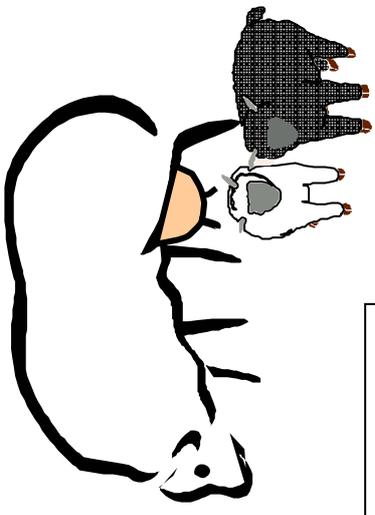
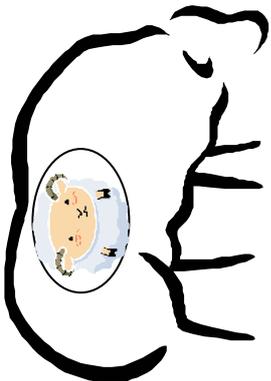
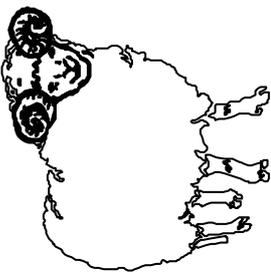
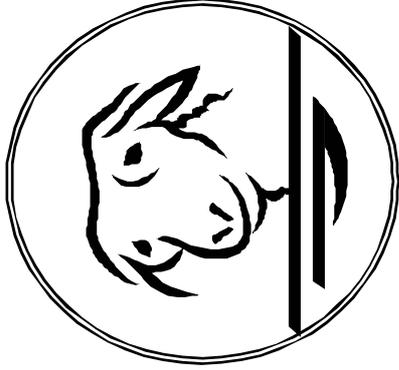
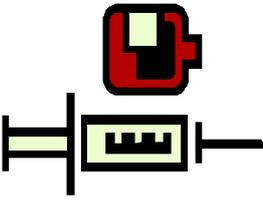
✪ It is important to supplement recovering animals in order to:

- Have a fast recovery
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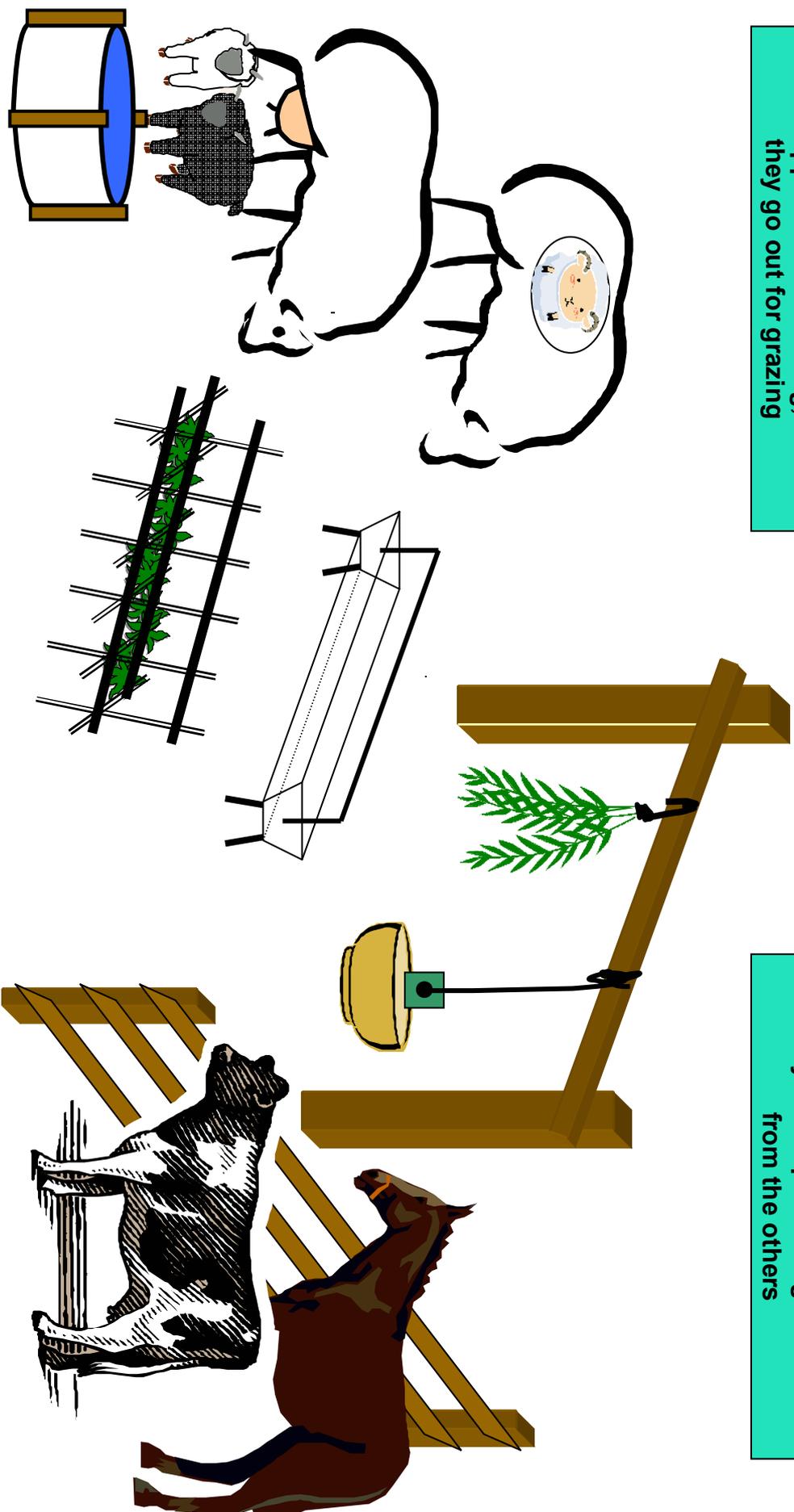
A.iv. Other target animals

- Breeding males, fattening rams,...

TARGET SMALL RUMINANTS

	
<p>Lactating goat or sheep</p>	<p>Highly pregnant goat or sheep</p>
	  
<p>Ram fattening</p>	<p>Sick or recovering animal</p>

Give supplement in morning, before they go out for grazing



Identify and separate target animals from the others

B. When to supplement the target animals?

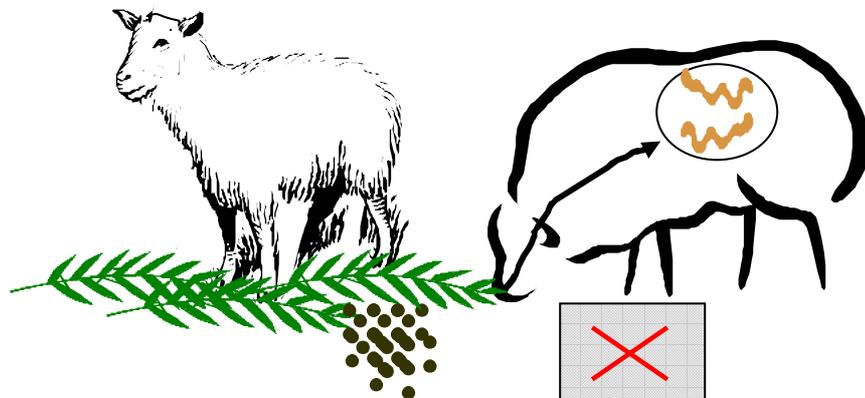
- ✦ *By giving the supplement in the morning, before the animals go out for grazing, they will better utilize what they eat during grazing*

C. How to supplement the target animals?

C.i.

If feed is given on the ground, the animals will spoil it by walking on it and it will become mixed with manure and urine:

- ✦ *Animals will refuse to eat it*
- ✦ *When they eat it, it can cause diseases (such as worms)*



- ✦ *Put it in a feeding trough or a rack or hang it with a rope (see next pages).*
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C.ii.

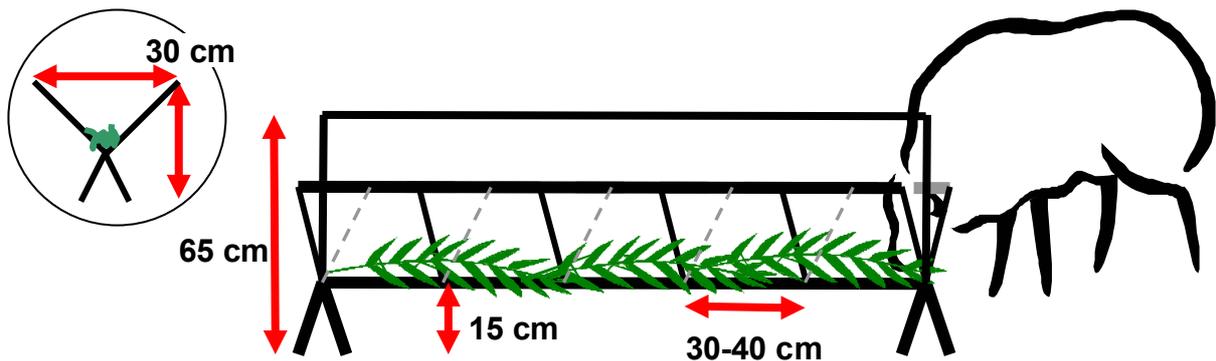


- ✦ *Make sure that all the target animals can have access to the supplement (have enough troughs, racks, blocks and others).*
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C.iii. Presentation of different feed stuff to the target animals

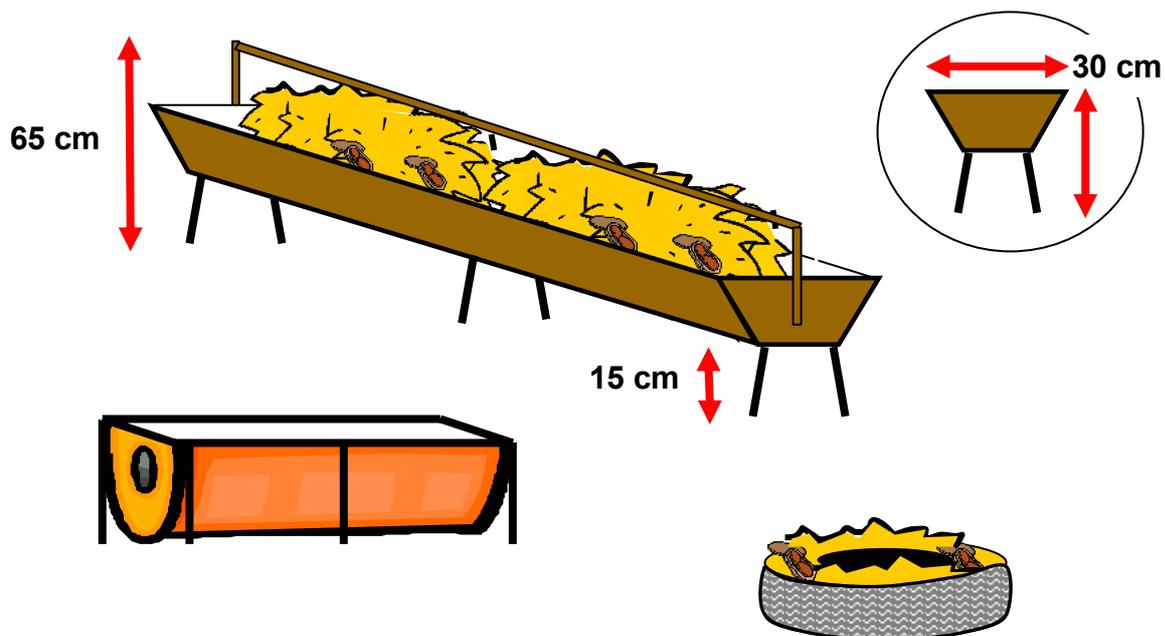
Rack: FRESH LEUCAENA OR OTHER CUT-AND-CARRY PRODUCE

- Rack should be high enough so that animals do not pass head over it and kids - lambs do not jump in rack
- A bar in the centre will prevent that animals jump in rack
- Bottom of rack: not higher than head
- Distance between bars: enough for the head, but not more or food falls out
- Enough openings or racks for all animals to eat
- Materials: bamboo, wood, etc



Feeding trough, half barrels and tyres:

DRIED LEUCAENA LEAVES, GROUNDNUT-HAY, BRAN, CHOPPED STRAW

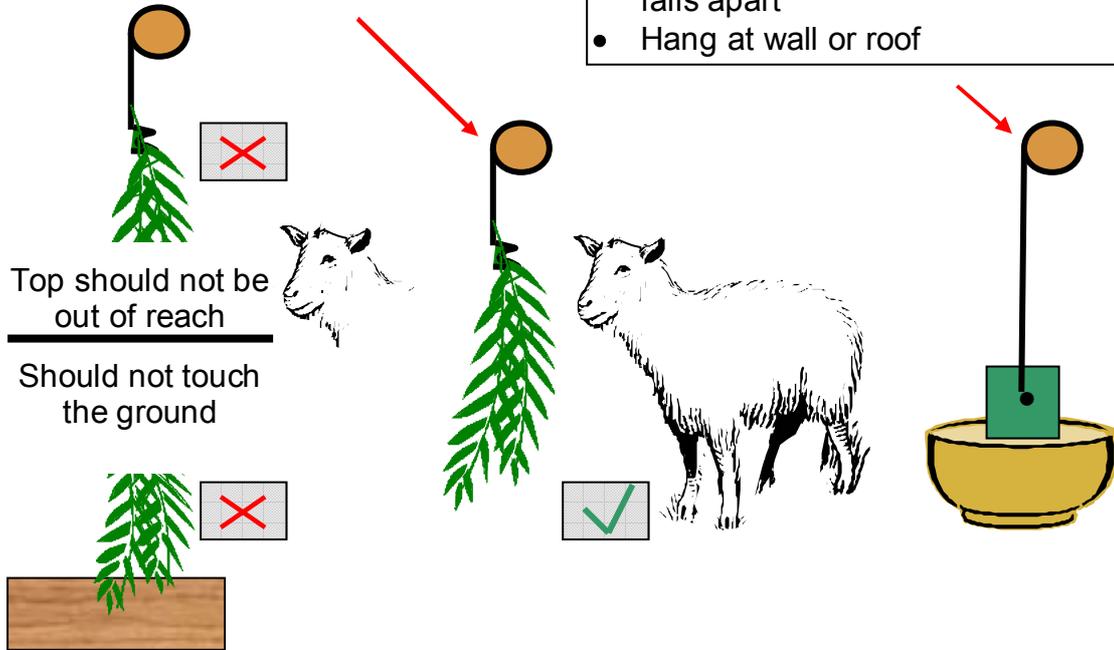


Rope:

FRESH *LEUCAENA*, OTHER CUT-AND-CARRY PRODUCE AND FEED BLOCKS

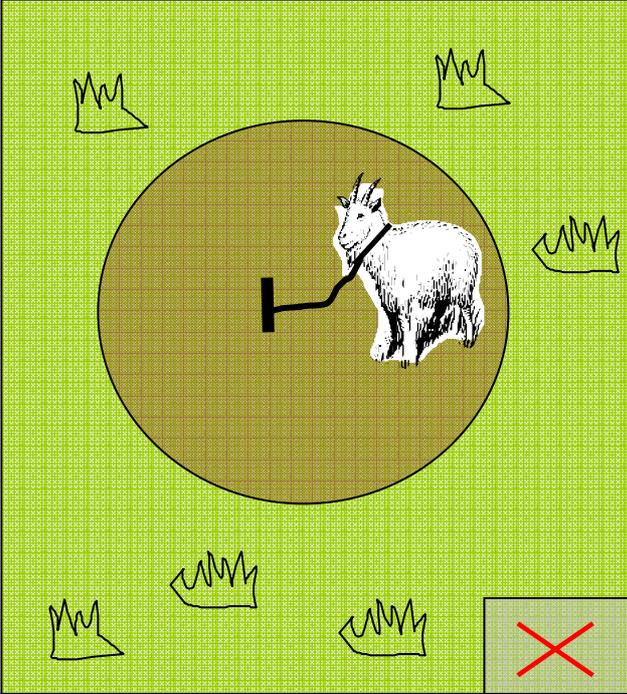
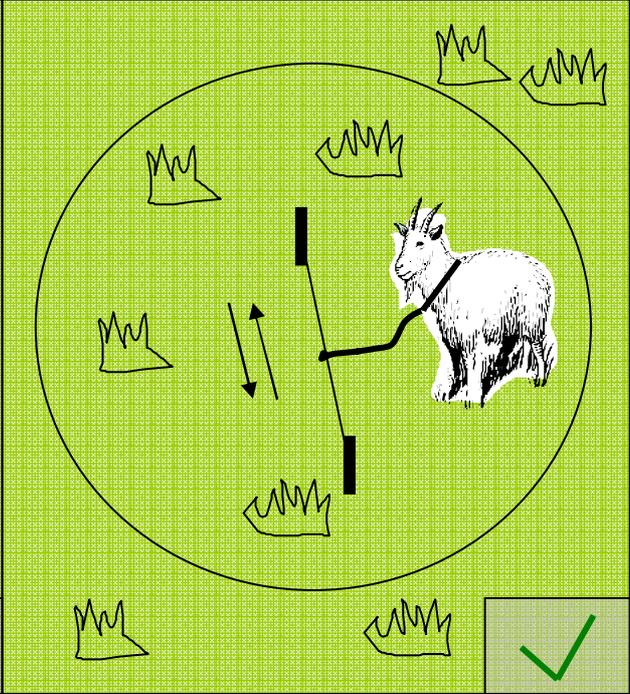
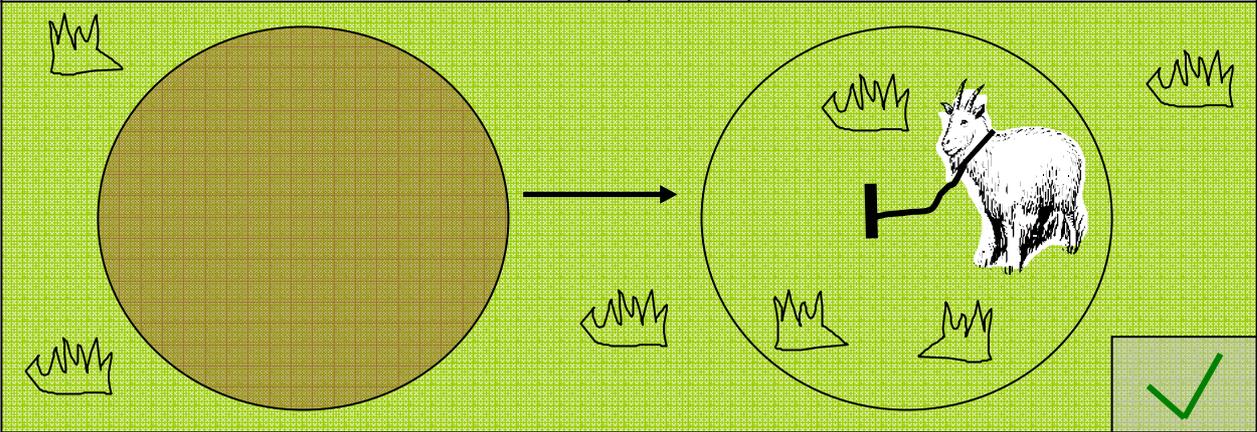
- Bundle cut-and-carry produce together with a rope
- Hang upside-down (at wall or roof)

- Attach feed blocks with a rope through the hole
- Put bowl underneath in case blocks falls apart
- Hang at wall or roof

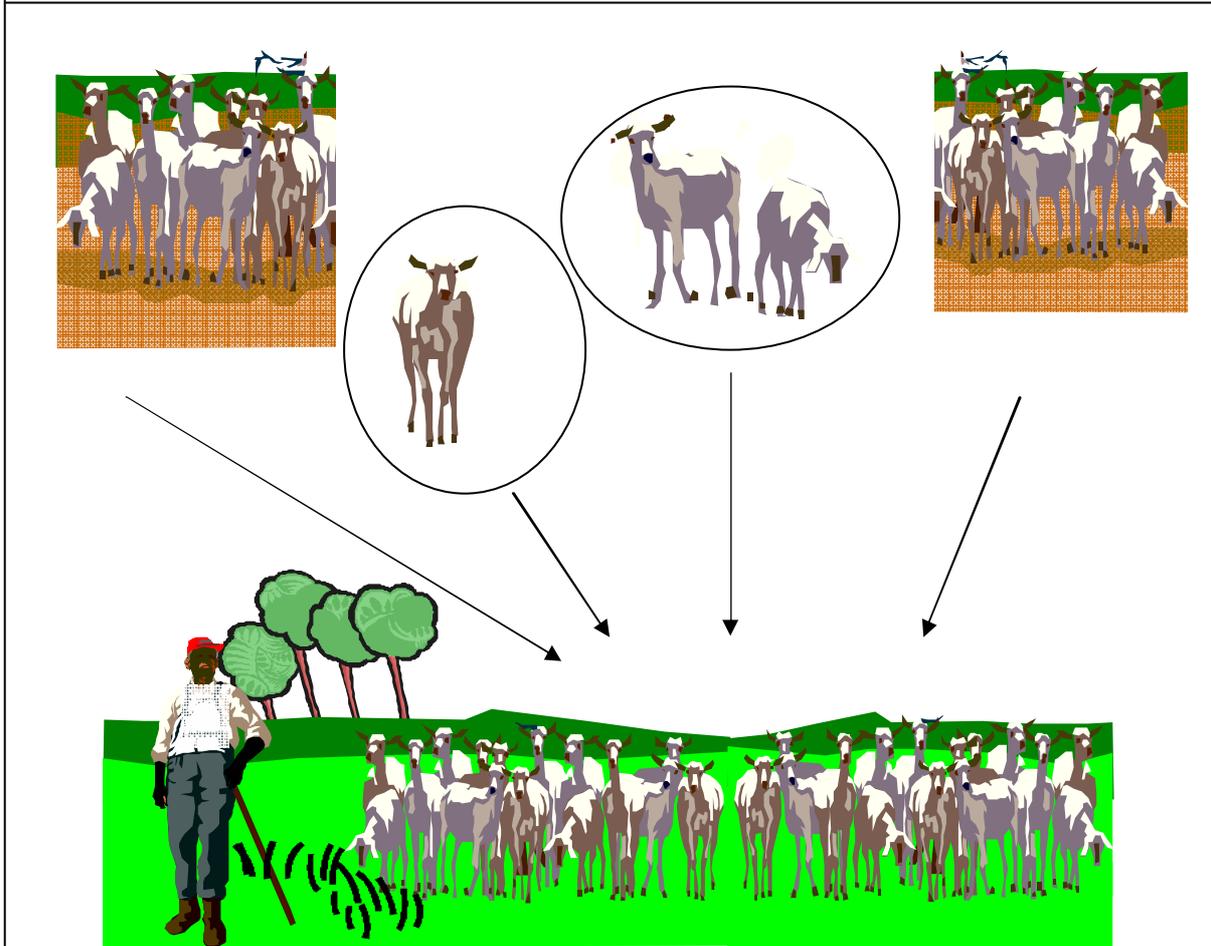
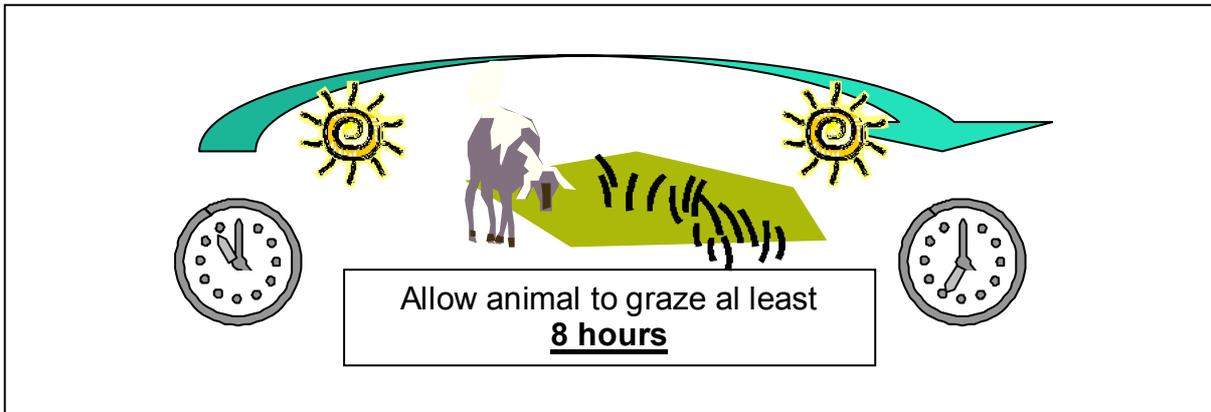


3. IMPROVED FEEDING OF ALL SMALL RUMINANTS

A. Increase access to forage in rainy season (sama) and early dry season (sanjango)

	
<p>An animal that is tethered with a short rope and is not moved often to a fresh place will not eat enough</p>	<ul style="list-style-type: none"> ⊛ Increase grazing area by using longer ropes ⊛ Increase grazing area by using a rope that moves over a stick or another rope
	
<p>⊛ Move the animal when the grass is too short (2-3 times per day)</p>	

B. Increase the daily grazing time

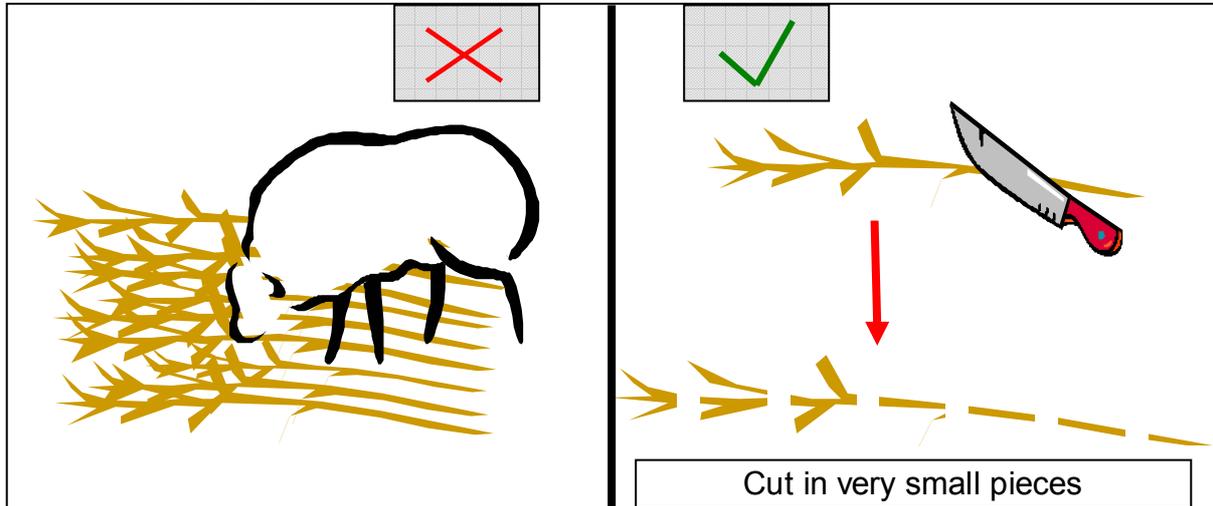


- ✪ Bring the animal of different flocks together
- ✪ Rotate herding amongst families and family members
- ✪ Or: hire a herdsman for joined flock
- ✪ Herd the flock to grazing lands, away from crops
- ✪ Protect animals from predators and theft

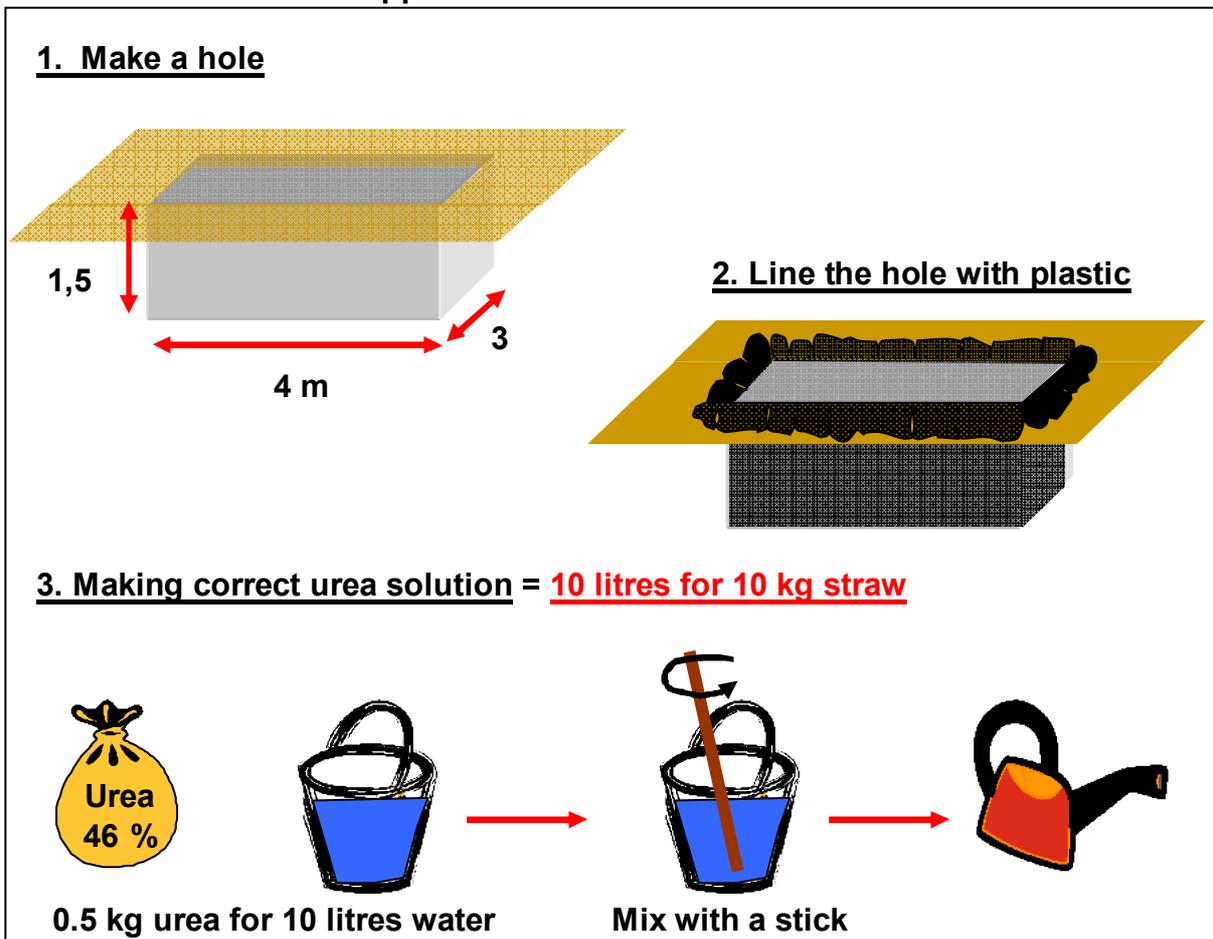
C. Increase quality and digestibility of crop residues

Straw of rice, millet, sorghum and maize are crop residues that are mostly left on the fields after harvesting. Animals can eat it, but it has a low nutritive value (not much minerals and proteins) and it is not very digestible. The intake and utilization of straw can be increased by chopping and by urea treatment.

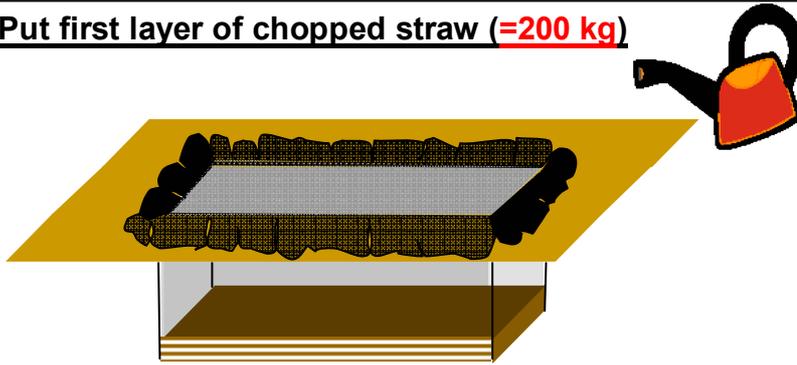
C.i. Chopping of straw



C.ii. Treatment of chopped straw with urea



4. Put first layer of chopped straw (=200 kg)

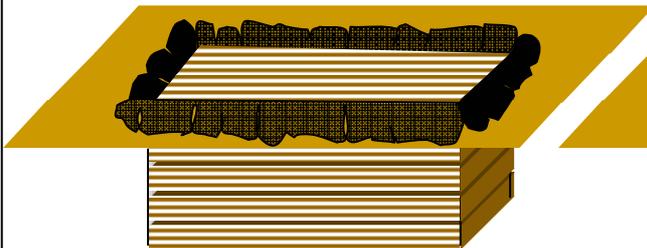


20 cans of 10 litres

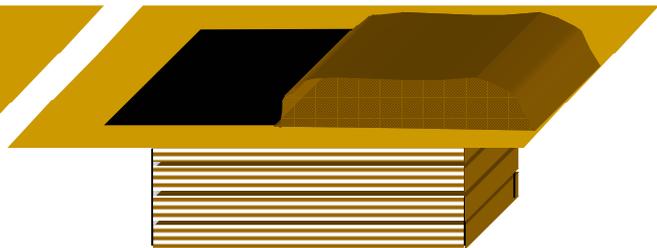
5. Step on treated straw in order to make it compact



6. Repeat step 4 and 5 until hole is full



7. Close with plastic and cover with soil



- 30 cm soil
- Ready after 2 weeks

If you don't have plastic:

The straw that makes contact with soil will be spoiled (no good for animals)

- Put a first layer of straw in the pit (5 cm thick) that you do not treat with urea
- Add your layers of 200 kg that you treat
- End again with a layer (5 cm) that you will not treat
- This first and last layer will not be fed to the animals, as well as the sides making contact with soil

4. WATER

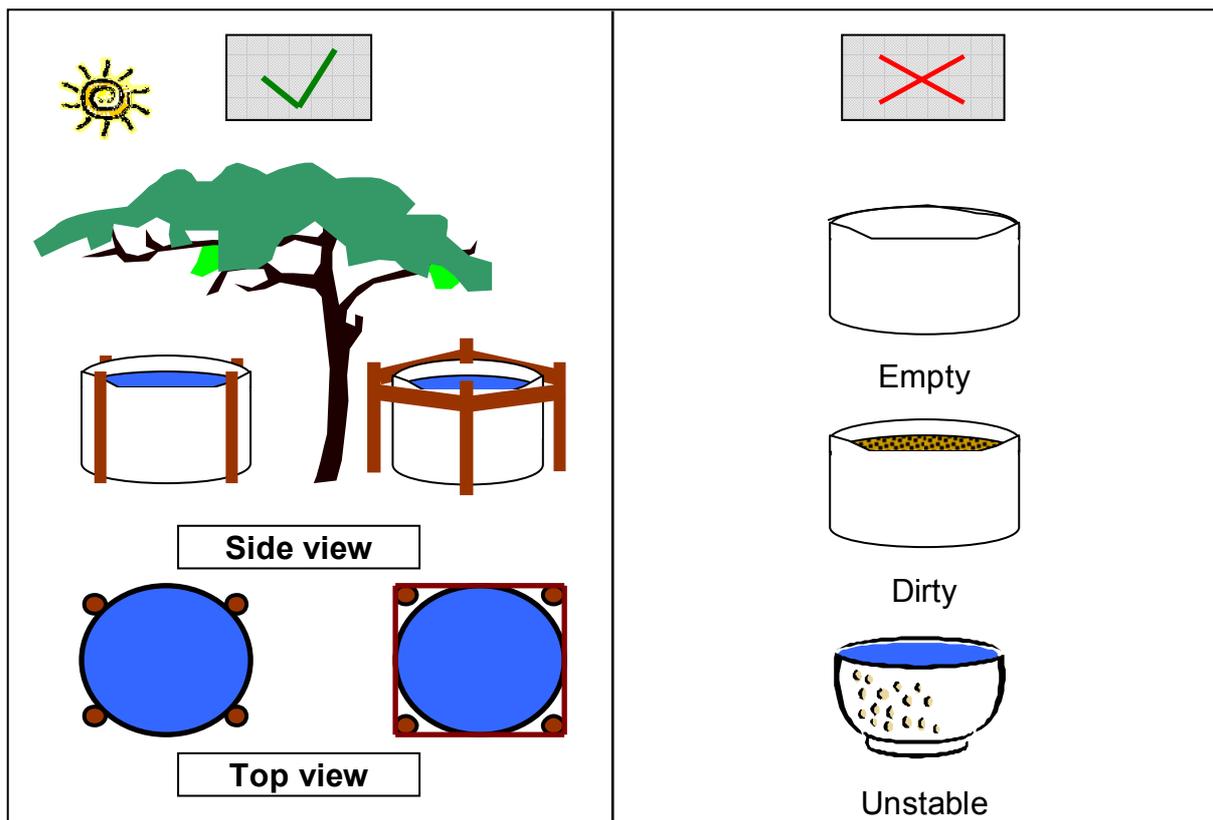
A. Why do animals need water?

- For control of their body temperature, especially in hot areas
- For good utilization of their feed
- For blood circulation
- Pregnant and lactating goats even need more water
- When there is fresh water in the compound, animals will come back after grazing
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B. When to give water?

During the rainy season the feed itself contains a lot of water (fresh grass for instance). But dry grass, dried Leucaena and groundnut-hay for instance, offered in the dry season, does not contain much water and the animals need good access to water. Otherwise production feed intake may be reduced and production affected.

C. How to give water?



- ⊗ *Water should be available at all time when the animals are enclosed*
- ⊗ *Change it regularly so that it is clean and cool*
- ⊗ *Put water in the shade so that it stays cool*
- ⊗ *Make sure that water recipient can not be tipped over by animals*
- ⊗ *Provide enough troughs for all animals*

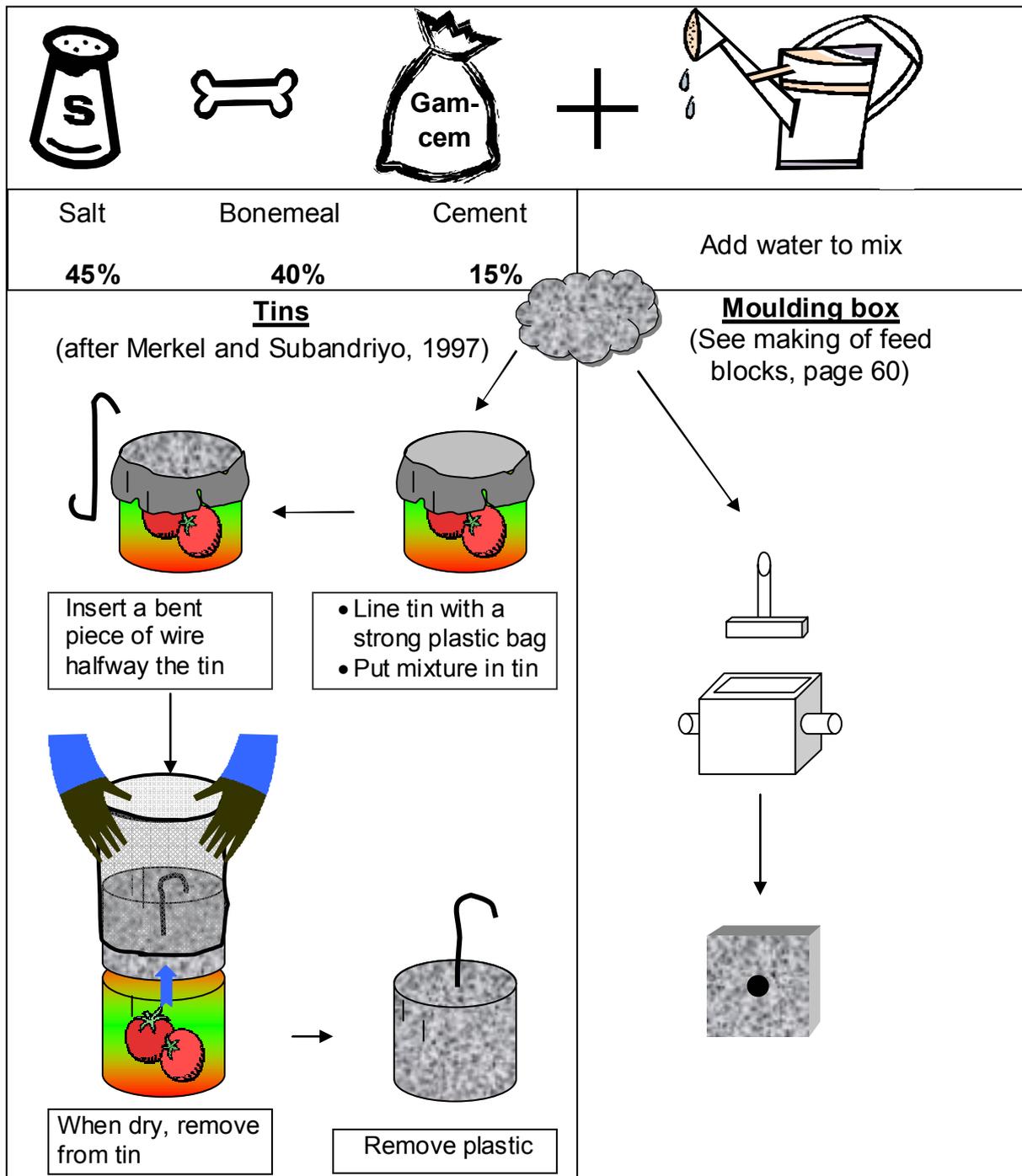
5. MINERALS

A. Why do animals need minerals?

Especially young, pregnant and lactating animals need sufficient minerals. When diet is varied, normally sufficient minerals will be available for the animals. When the animals start licking different objects, this is a sign they have a mineral shortage.

☛ *It is useful to provide mineral licks or salt to the animals preventively*

B. How to make mineral blocks?



C. Making of salt licks and presentation to animals of licks

