

Communal Pasture Areas

Sustainable Practices

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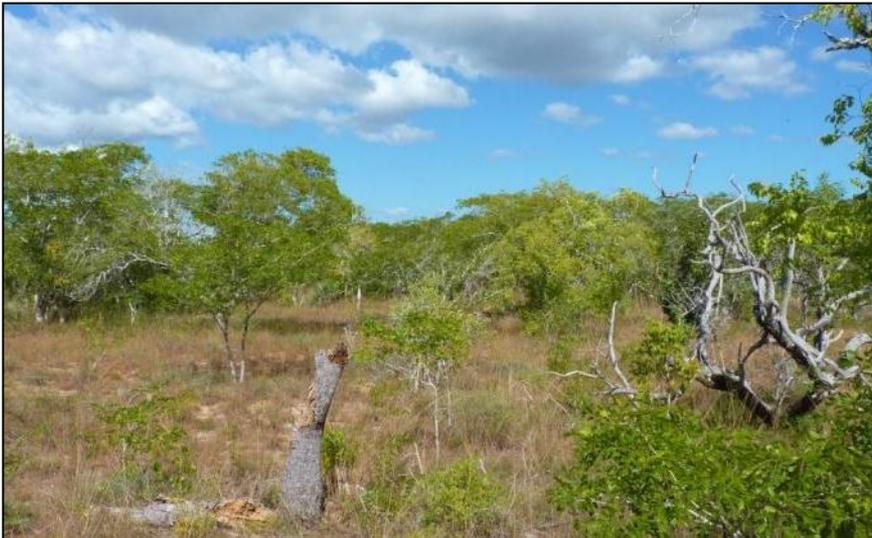
Vilanculos, Mozambique



Natural Resource Management

- Long term use of the areas -> sufficient vegetation
- Prevent overgrazing and desertification
- *Sustainable use of the pasture areas*

GOOD



BAD

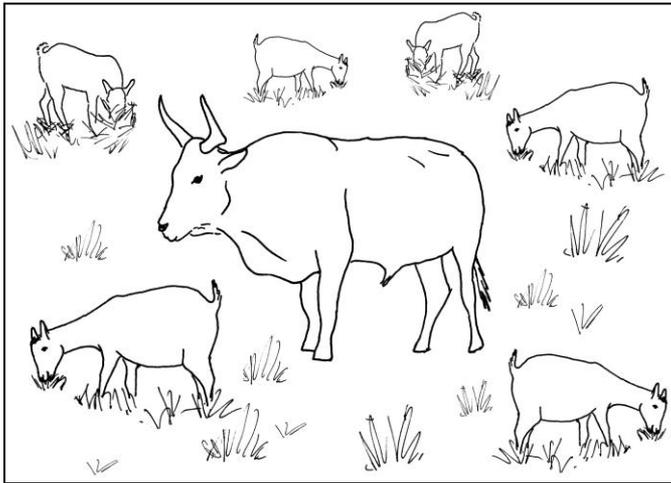


HOW?

Mixed herding

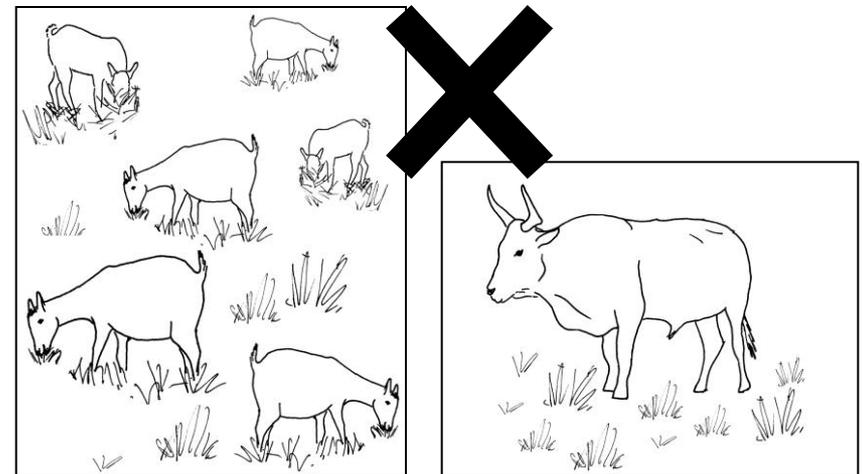
GOOD:

Mixing cattle and goats



BAD:

Separate goats and cattle



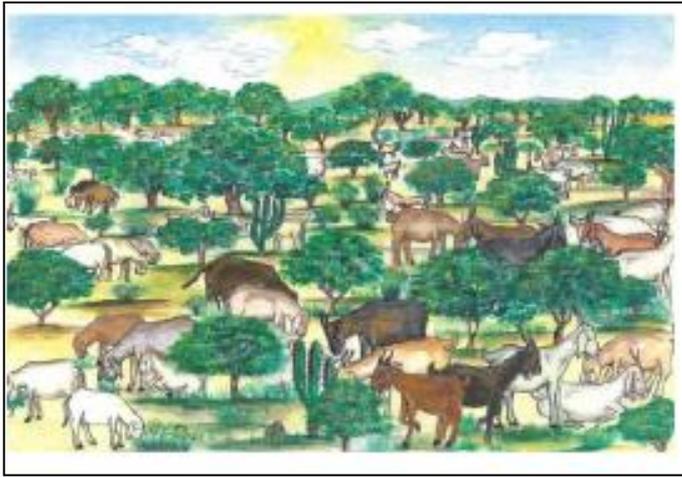
Why?

- Goats and cattle eat different vegetation
- Better utilisation of the feed resources: best long-term integrated animal production system
- Control over woody species by goats and improvement of the range vegetation by cattle grazing

Maximum number of animals

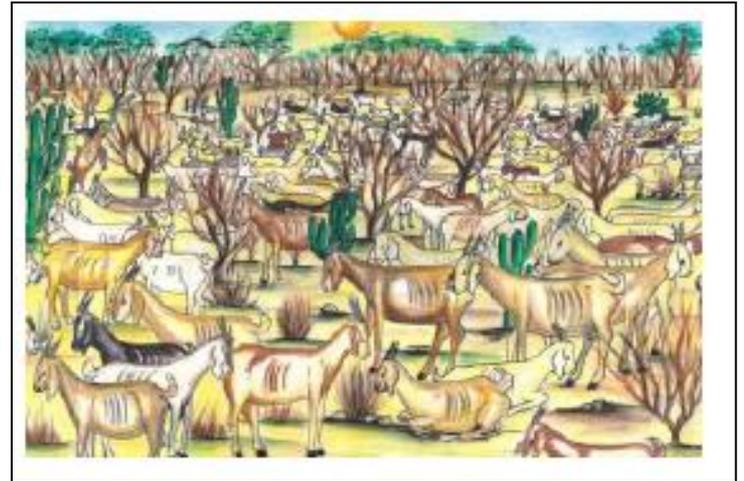
GOOD:

Maximum number defined



BAD:

Maximum number undefined



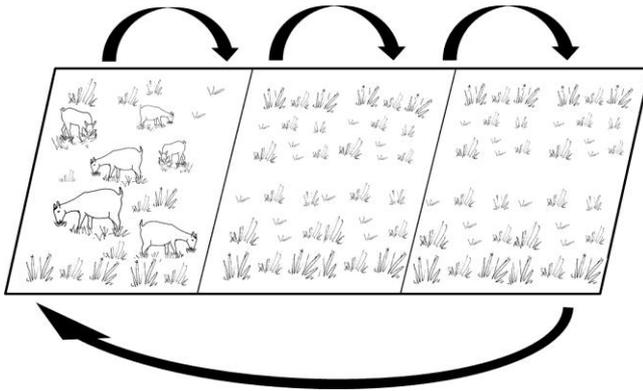
Why?

- **One of the most critical factors for sustainable pasture area**
- Consequences of overgrazing due to goat **overpopulation** in one pasture are known as a major environmental issue (e.g. **desertification**)
- Maximum numbers differ per areas depending on the vegetation
- if this criterion is not included to some organisational chart, the number of animals could increase on the long-term to a point of overpopulation that can not be undone!

Grazing pattern

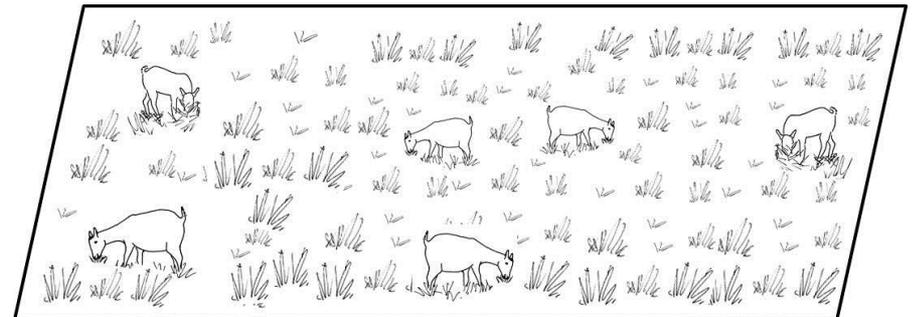
GOOD:

Rotational pasture



BAD:

Using one area without rotation



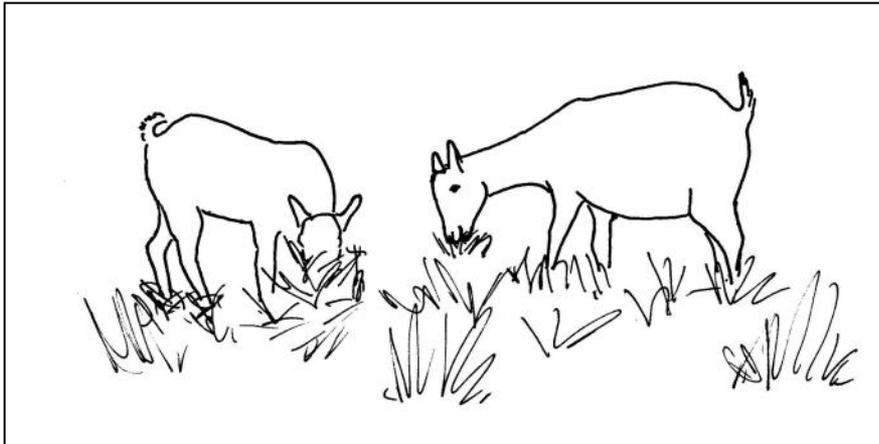
Why?

- Restricting the grazing in certain parts as in rotational grazing can lead to a decrease of forage availability in short-term
- Grazing areas may be characterised by different vegetation; i.e. one area can be composed of grasses while the other has a high density of trees and bushes
- Different areas are often separated from each other geographically (e.g. by the community households, a road or a river).
- **Rotate before** there is no vegetation anymore: **50%** grass utilisation is seen as a sustainable use

Animal keeping system

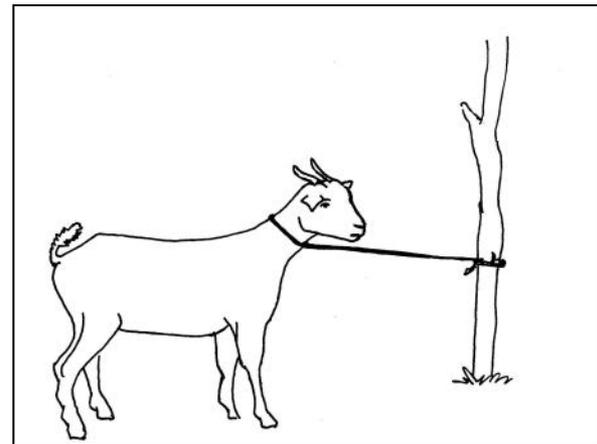
GOOD:

Free range



BAD:

Tethered



Why?

Can lead to a fast overgrazed zone (i.e. grazing is concentrated on a small part of the pasture).

Herd movement

GOOD:

Dispersed grazing, e.g. also far from corral and water source

BAD:

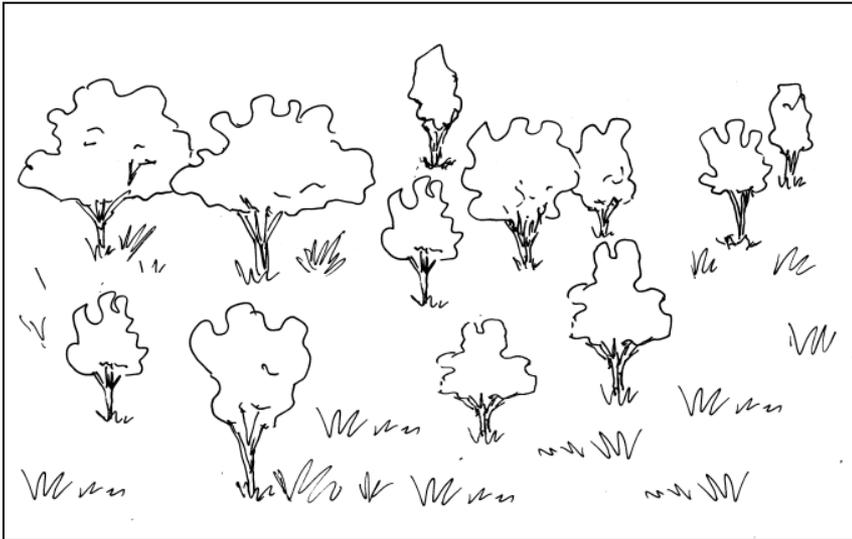
Concentrated grazing, close to the corral and water source

Why?

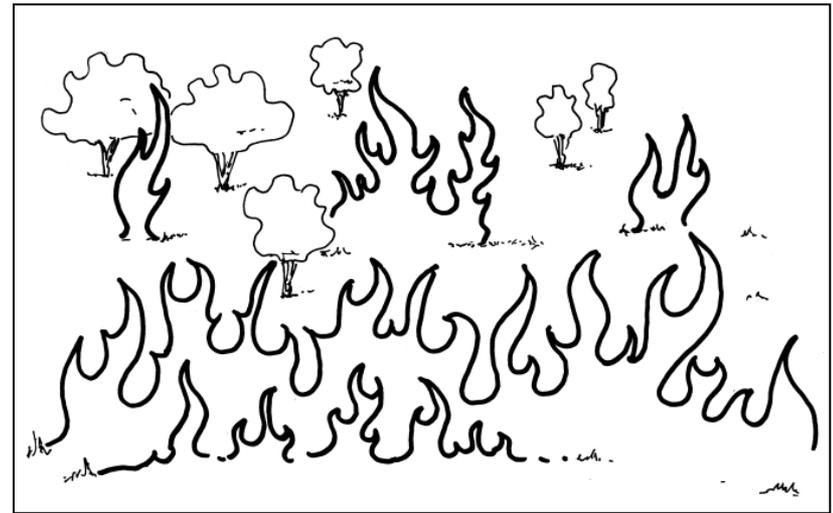
- Grazing time of the goats (h/day) on one place.
- Can lead to a fast overgrazed zone (i.e. grazing is concentrated on a small part of the pasture).
- The goat herds need to be mobile, in response of the fluctuation of the fodder availability; i.e. Identifying area with more bushes/trees for the dry season.
- Implementation of trails would facilitate the use of zones further from the corral
- Communities with natural water supply should have several watering points instead of a specific one.

Burning

GOOD: No uncontrolled fires
(and controlled fires only every 4 years)



BAD: Uncontrolled fires
(every year)





Burning

Why **bad**?

- Uncontrolled use of fire on the pasture or its repeated application (e.g. every year) reduces soil fertility, vegetation composition and production.
- Uncontrolled fires are very dangerous
- Uncontrolled fires are prohibited by Mozambican law
- Fires destroys shrubs, which can be eaten by the goats in the dry season
- Repeated fires emphasize ecological instability, resulting in loss of protective vegetative cover, soil compaction and accelerated erosion
- Bush encroachment on pasture can be controlled by goats, goats have high digestive efficiency for coarse roughage such as bushes and trees

Can it be **good**?

- If it is very well controlled
- It can remove the moribund grasses
- It can activate the development of new grasses
- It can help to reduce bush encroachment

Most communities conduct **bad** burning practices, mostly uncontrolled. So we advocate to stop burning.

Water sources

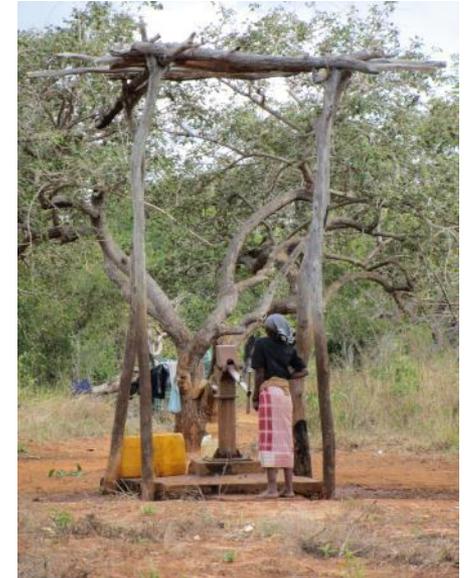
GOOD:

Natural



BAD:

Borehole



Why?

- The use of surface water (e.g. river, lake) has smaller impact on the natural resources than the use of groundwater (i.e. water coming from a borehole), because the refilling speed of groundwater in dry areas is much lower than for surface water: i.e. it could take centuries for a groundwater to be refilled.
- Water has to be available for goats every day. Water is as important as feed for the goat productivity

Natural Resource Management

Effects of practices on pasture areas

Land pressure of the practices

- Low pressure on the land
- High pressure on the land

Time period of the effect

- Short-term impact
- Long-term impact

	Low land pressure	High land pressure
Short term impact	Good	Bad
Long term impact	Good	Very bad

Natural Resource Management

		Low land pressure	High land pressure
Practices with <u>short-term</u> impacts	Grazing pattern	Rotation between plots or area	all-year round without rotation
	Animal keeping system	Free-range	Tethered
	Herd movement	Dispersed from the corral	Close to the corral
Practices with <u>long-term</u> impacts	Mixed herding	Goats and cattle	Only goats
	Burning	No fires (or controlled fires every 4 years or longer)	Uncontrolled fires (every year)
	Water sources	Natural	Borehole
	Maximum number of animals	Defined and applied	Not defined

Source: Marblé 2012

Grazing practices per community

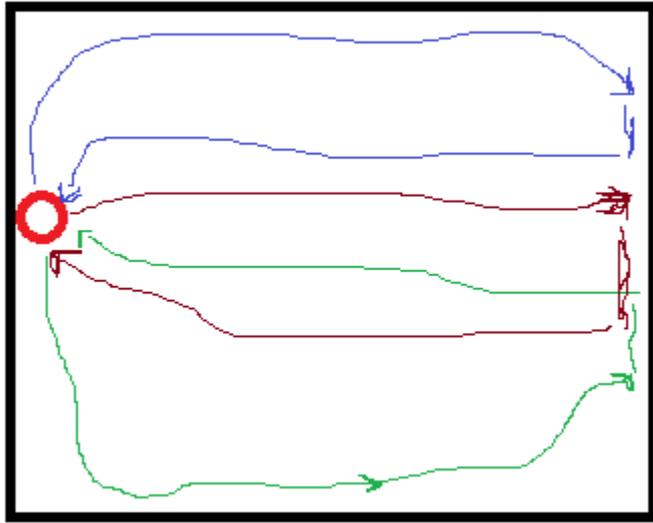
Practices/ communities	Chichangue	Cachane	Vulanjane	Nhapele	Mabime	Rumbatsatsa
Grazing pattern		x	x	x	x	x
	x					
Animal keeping system	x (long-term)	x	x		x	x
	x (short-term)			x		
Herd movement	x	x	x (women)			x (women)
			x (men)	x	x (men)	x (men)
Mixed herding		x (women)		x	x	x
	x	x (men)	x			
Burning	x	x	x	x		x
					x	
water sources	x		x			
		x		x	x	x
Max number of animals						
	x	x	x	x	x	x

Source: Marblé 2012

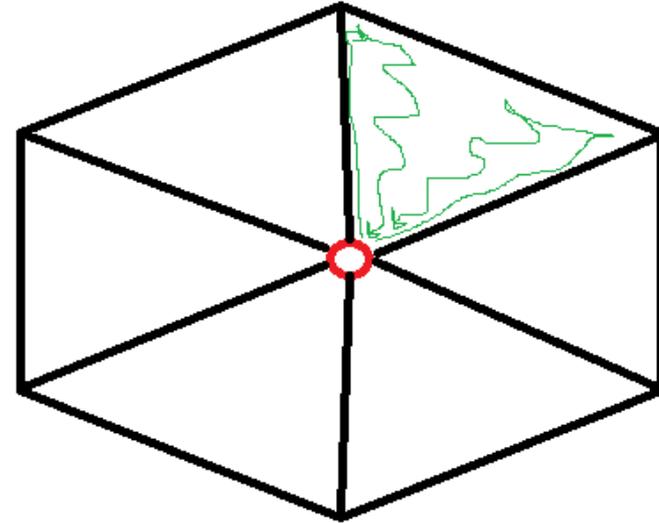
low land pressure

high land pressure

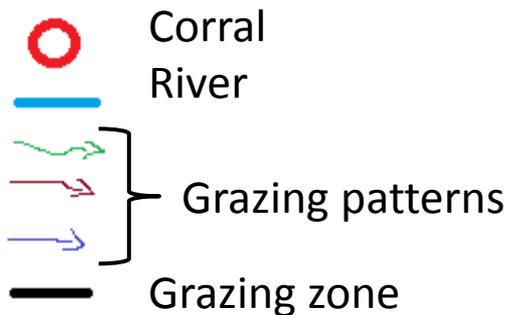
Example of grazing management



With natural water supply



With water supply from the pump, at the corral



In the situation of natural water supply (from a river or lake), the corral should be at a distance of max. 1-1.5km from it. The mornings, the goats would graze towards the water point that they could reach at lunch time, where they could graze/rest during the hottest hours, before going back to the corral for the end of the afternoon. Changing the watering point every few days/weeks would decrease the likeliness of localised overgrazing and allowed a more even use of the pasture.

In the situation of water supplied by people from the household pump to the corral, a different grazing design could be like on the scheme. Different grazing zones could be delimited by trails (here 6 but can 4 or other number). The goats would go from the corral to the end of the grazing zone (max. 1km from the corral) thanks to the trail and then would graze towards the corral that they could reach back for the end of the afternoon, where they could receive water. Every week the goats would move from one grazing zone to another, allowing a grass regeneration and avoiding overgrazing (here a 6-week rotation).

References

Marblé, Y., 2012. *'Creation of communal grazing areas for goats in southern Mozambique: future perspectives'* Master thesis, Wageningen University.

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