



# Balancing Extensive Goat Production and Conservation Interests in the Caatinga Rangeland Resource



Christoph Reiber, Mira Siemann, Karin Stock de Oliveria Souza, Guilherme Amorim Franchi, Anne Valle Zárte

Department of Animal Breeding and Husbandry in the Tropics and Subtropics, Institute of Agricultural Sciences in the Tropics (Hans-Ruthenberg-Institute), University of Hohenheim, Germany

## Introduction

- The semi-arid Northeast of Brazil is the poorest region in the country<sup>1</sup> and extensive livestock keeping (small ruminants) is a common livelihood strategy.
- Mismanagement, increasing stocking rates and exploitation of resources coupled with frequent droughts threaten the sustainability of the farming and Caatinga biome<sup>2</sup>. Conflict of interests between goat keepers and ecologists is noticed.

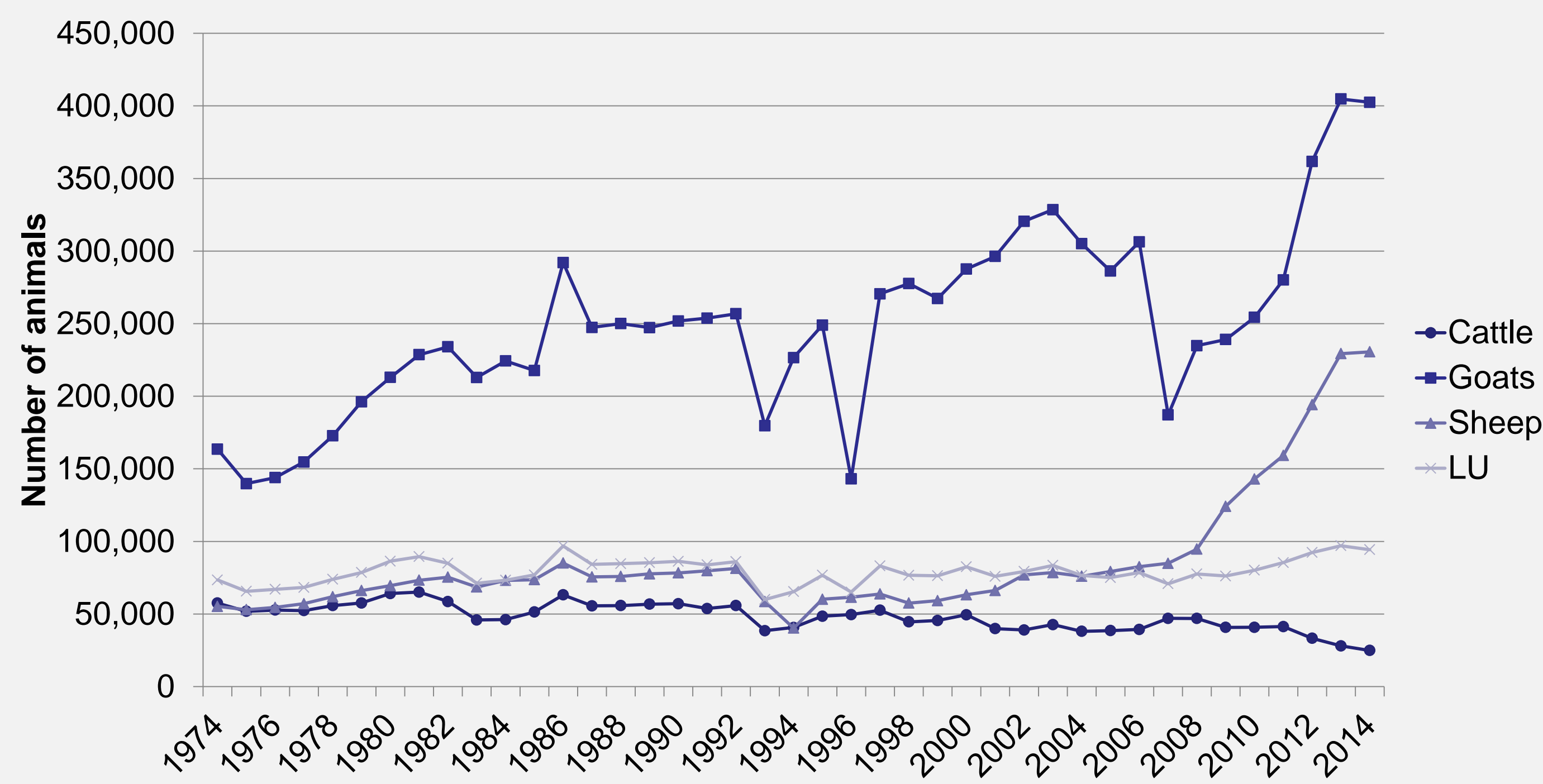


Figure 1. Development of livestock population in the research area<sup>3</sup>

## Research objective

To reveal farmers' and experts' a) perceptions of change of Caatinga vegetation and biodiversity and its causes, and b) management strategies to reduce the pressure on the Caatinga rangeland resource.

## Methodology

- Region: Itaparica, Pernambuco, Brazil
- Precipitation: ~400 mm/year
- Interviews with 135 small ruminant keepers and 10 experts (technicians, extensionists, head of farmer organizations, professors)
- Interviews: semi-structured with open and closed, quantitative and qualitative questions
- Data analysis (farmer and expert interviews): quantitative (descriptive statistics with SPSS) and qualitative (categorization, thematic analysis)<sup>4</sup>

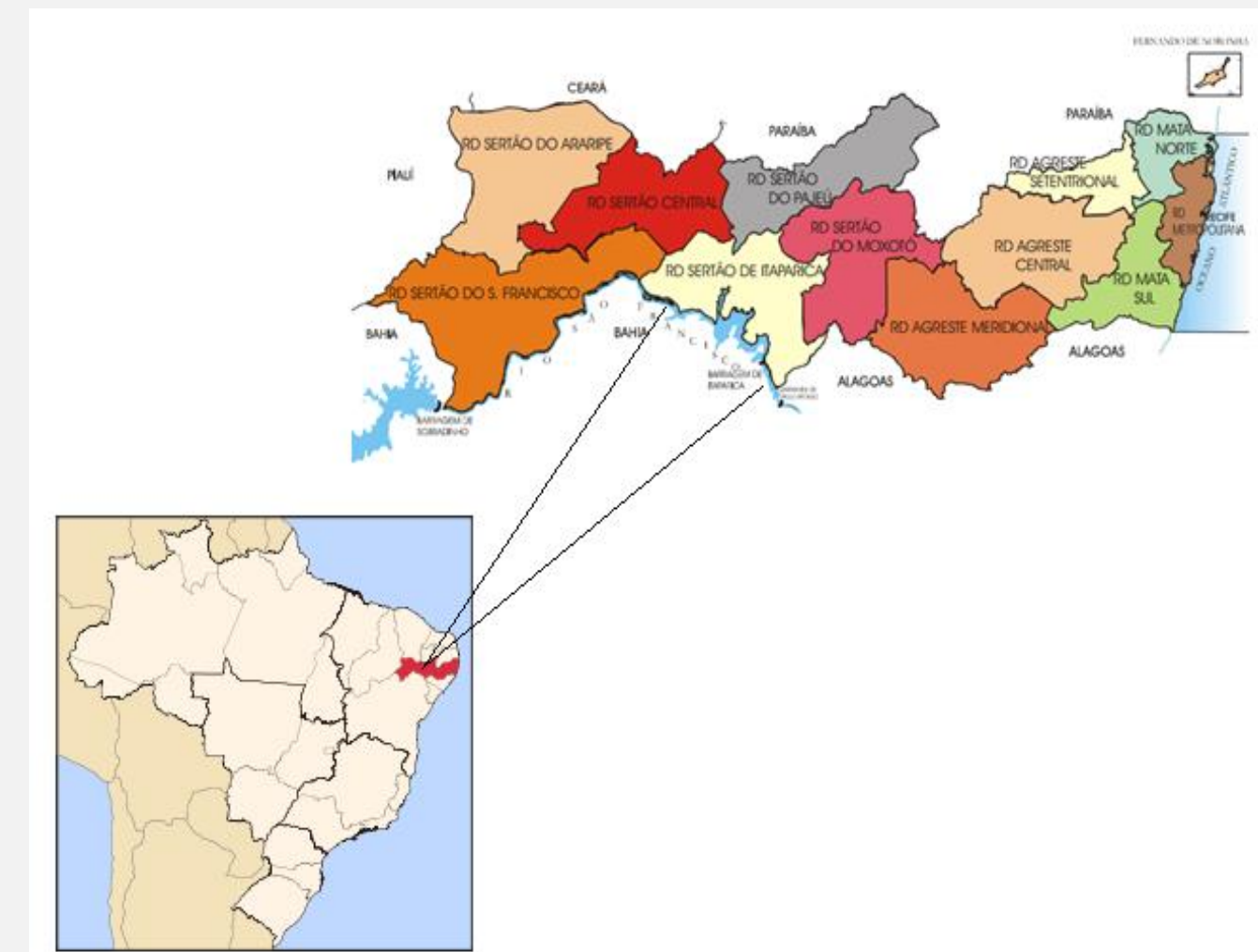


Figure 2. Research area in Pernambuco, Brazil.

## Results

### Small ruminant production:

- Average stocking rates of 3 to 5 goats per ha (0.33 – 0.55 LU/ha) were registered (Caatinga carrying capacity in Itaparica: 0.07 – 0.1 LU/ha/year<sup>5</sup>).
- Additionally, general low forage production and feed supplementation level revealed excessive pressure on the vegetation.

### Farmers' perception of Caatinga degradation:

- 85% (n = 117) of farmers perceived that **vegetation density** was higher or much higher in the past than today.
- 80% (n = 102) of farmers perceived that **biodiversity** was higher or much higher in the past than today.

### Farmers' and experts' contrasting reasons:

- **Farmers:** drought (58%) perceived as main reason for Caatinga degradation. Overgrazing (5%) perceived irrelevant.
- **Experts:** 70% (7 out of 10): extensive livestock production affects Caatinga degradation and biodiversity loss.



Caatinga rangeland vegetation in dry season



Rotational grazing on irrigated pasture

### Caatinga management strategies:

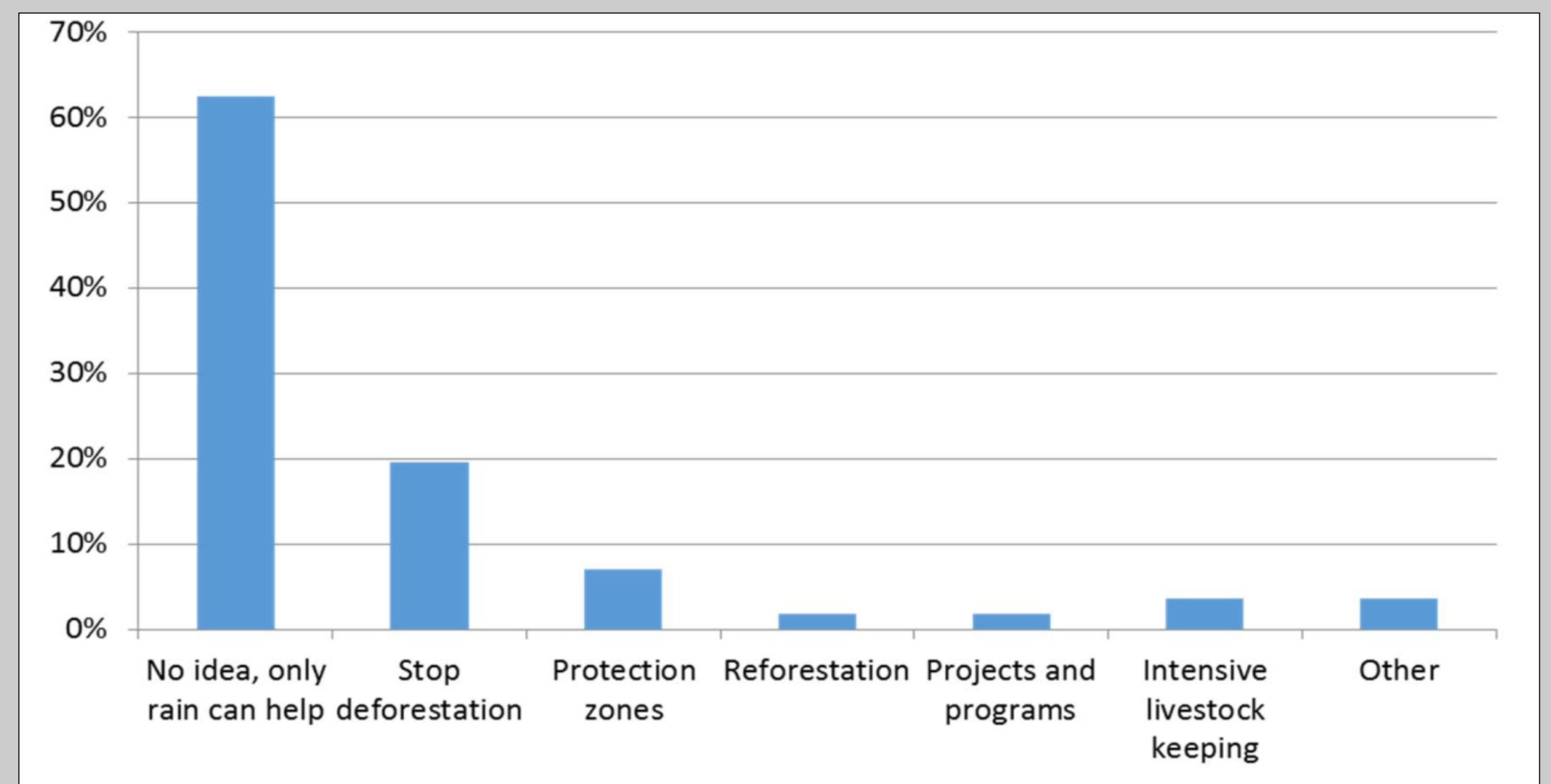


Figure 3. Farmers' Caatinga management strategies (n=56)

- **Farmers:** hardly know strategies to conserve or restore Caatinga vegetation;
- **Experts:** Improve herd (e.g. rotational grazing, reduction of herd size) and forage (e.g. thinning or enrichment of Caatinga vegetation) management, stop deforestation, establish Caatinga conservation areas and education.



Standing hay in rain-fed production



Drip-irrigated forage production

## Conclusion and outlook

- ✓ Balance livestock keeping with rangeland conservation through matching stocking rates to Caatinga carrying capacity and enhancing forage production;
- ✓ Increase awareness and knowledge about sustainable use of Caatinga among livestock farmers and other users through education programs;
- ✓ Collaboration among local stakeholders, scientists and policy makers can create feasible, fair and site-adapted solutions for sustainable Caatinga management.

## References

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### Contacts:

Guilherme Amorim Franchi  
[amorimfranchi@gmail.com](mailto:amorimfranchi@gmail.com)

Dr. Christoph Reiber  
[C.Reiber@uni-hohenheim.de](mailto:C.Reiber@uni-hohenheim.de)