

A Farming Systems Analysis in Ethiopia's Wheat Belt - Challenges and Perspectives for a more Sustainable Agricultural System

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Introduction

Ethiopia is challenged to increase food security, reduce poverty and environmental degradation. Much of the total wheat produced in Ethiopia is grown in Ethiopia's wheat belt, mostly by rain-fed smallholder farms (SHF). Increased mono-cropping results in surging weed, wheat rust and insect damages.



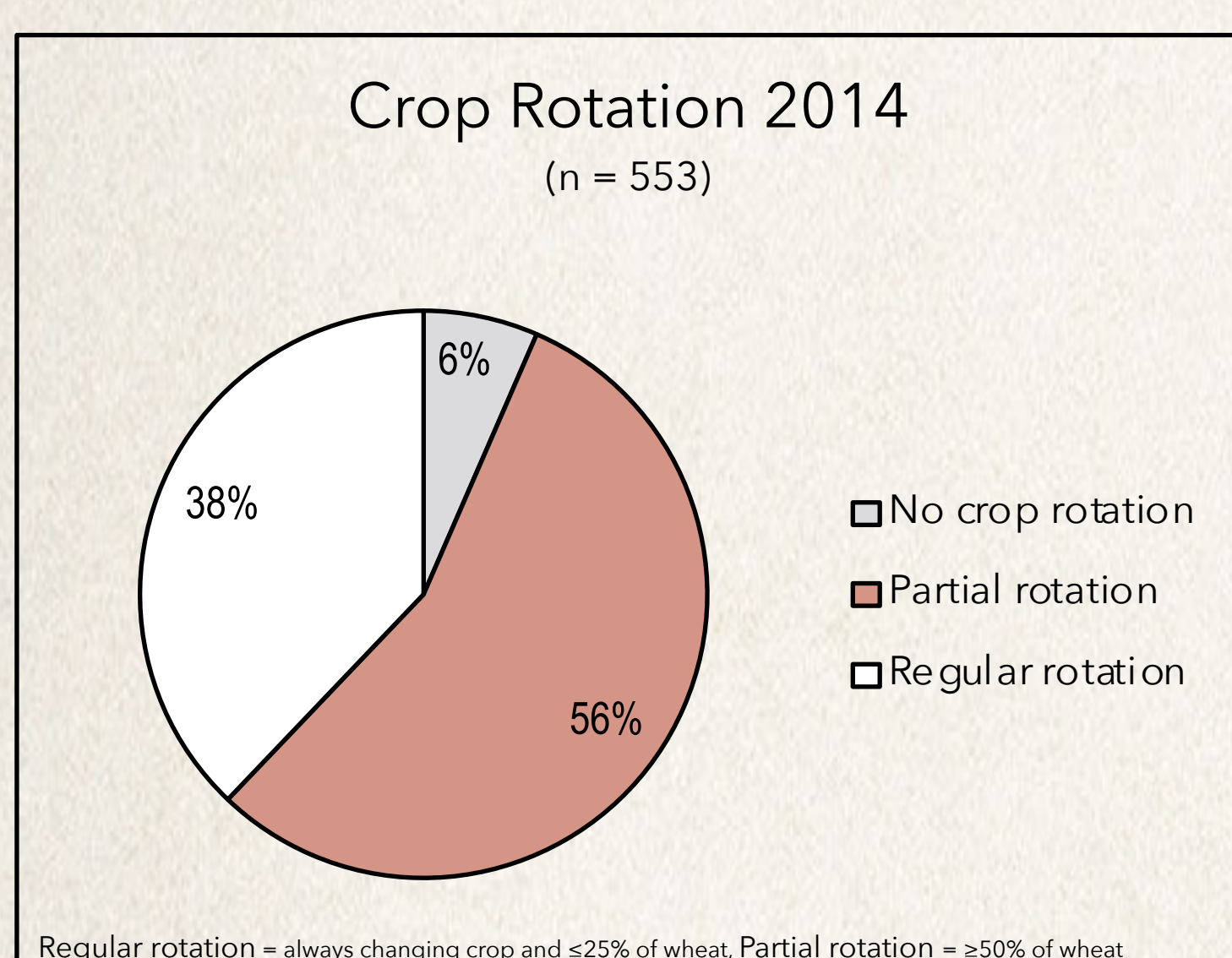
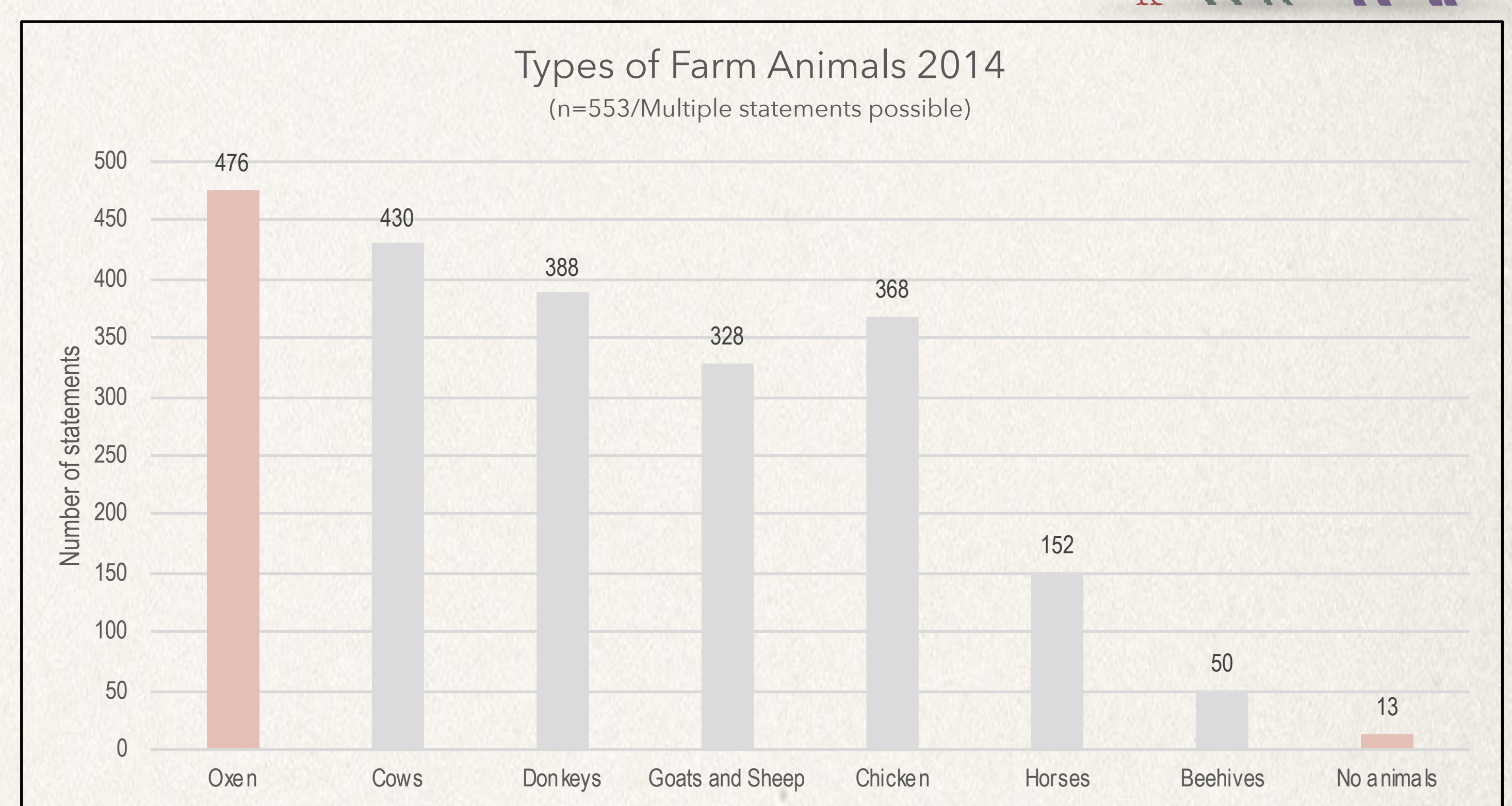
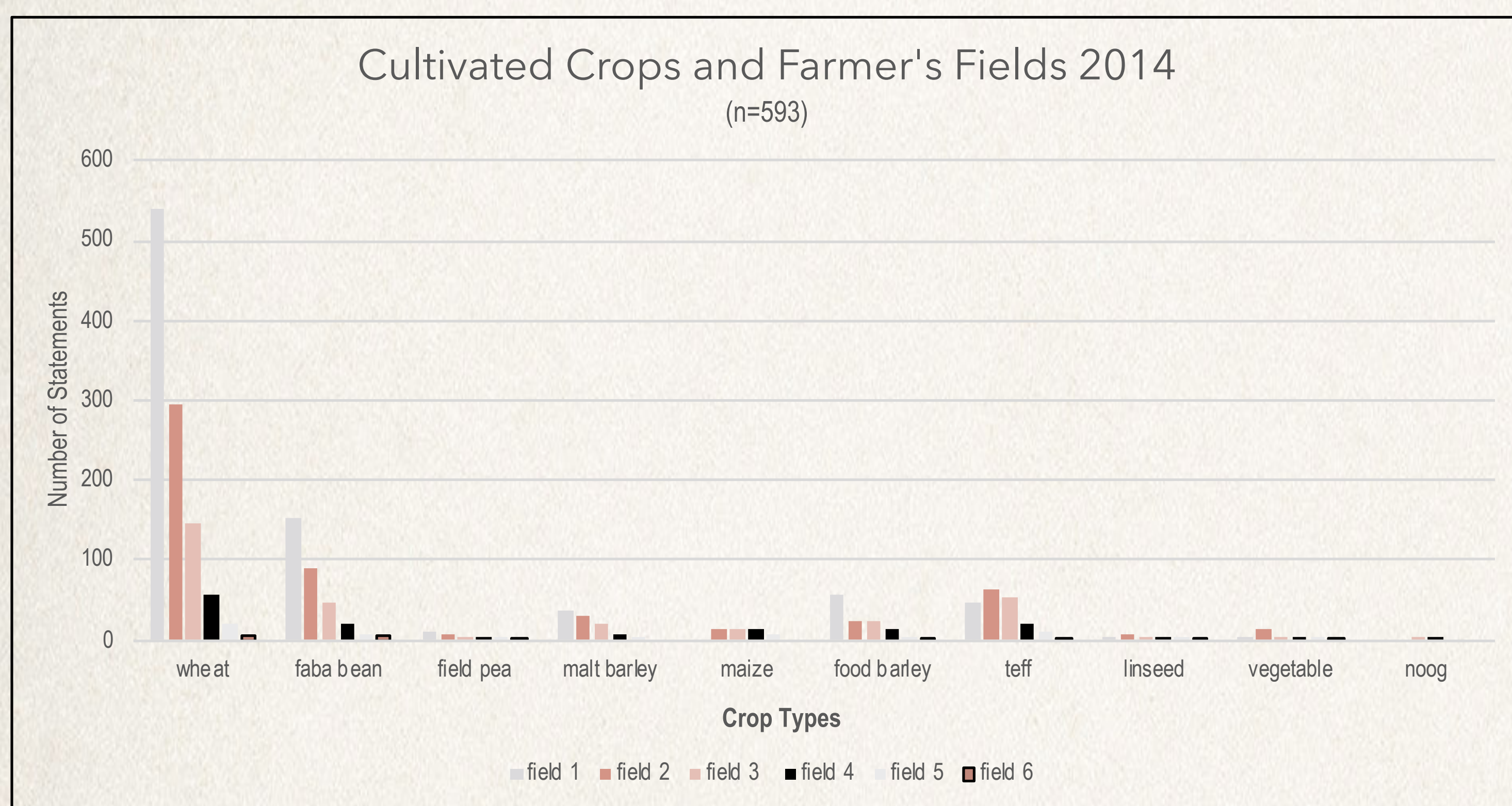
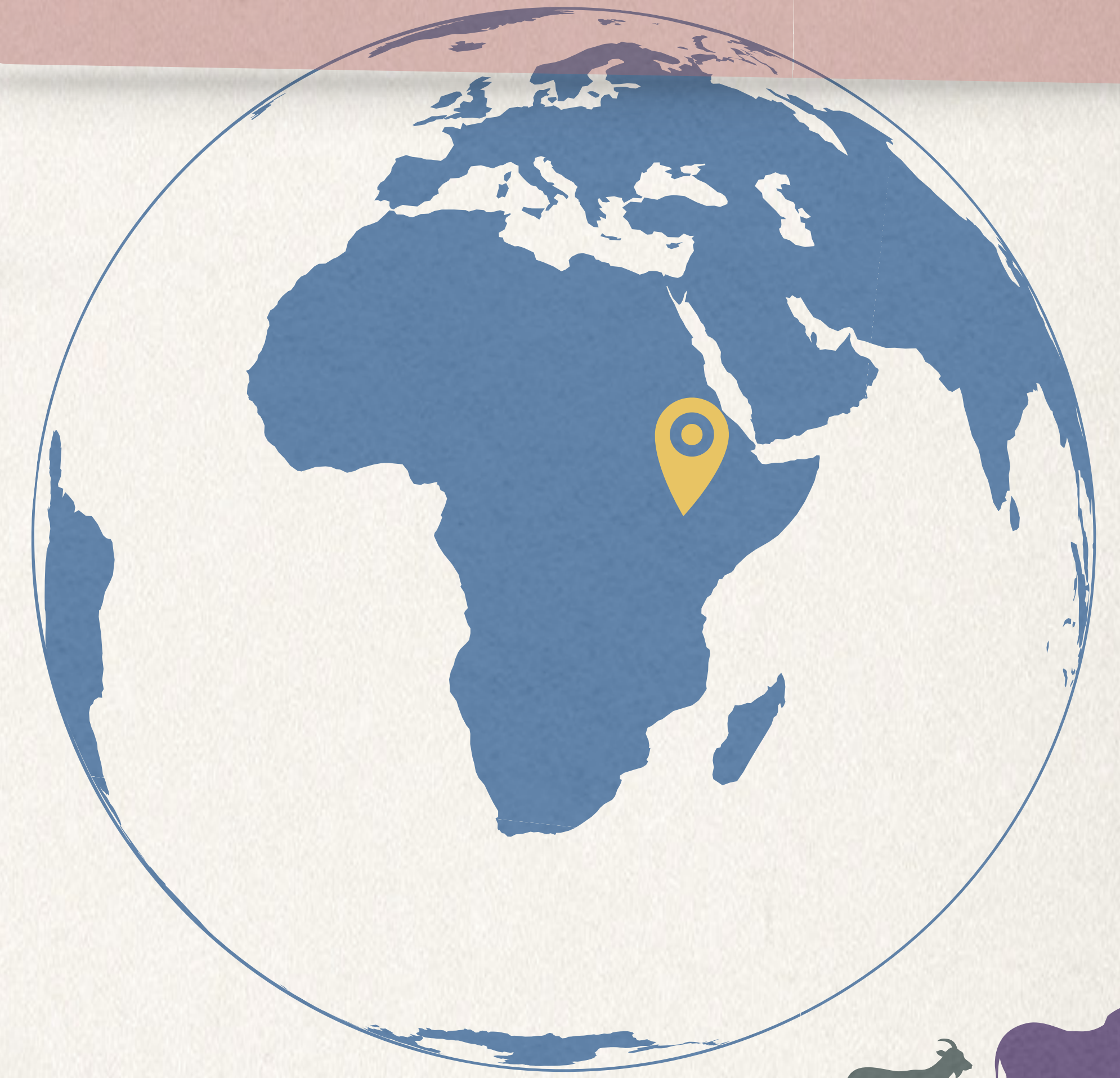
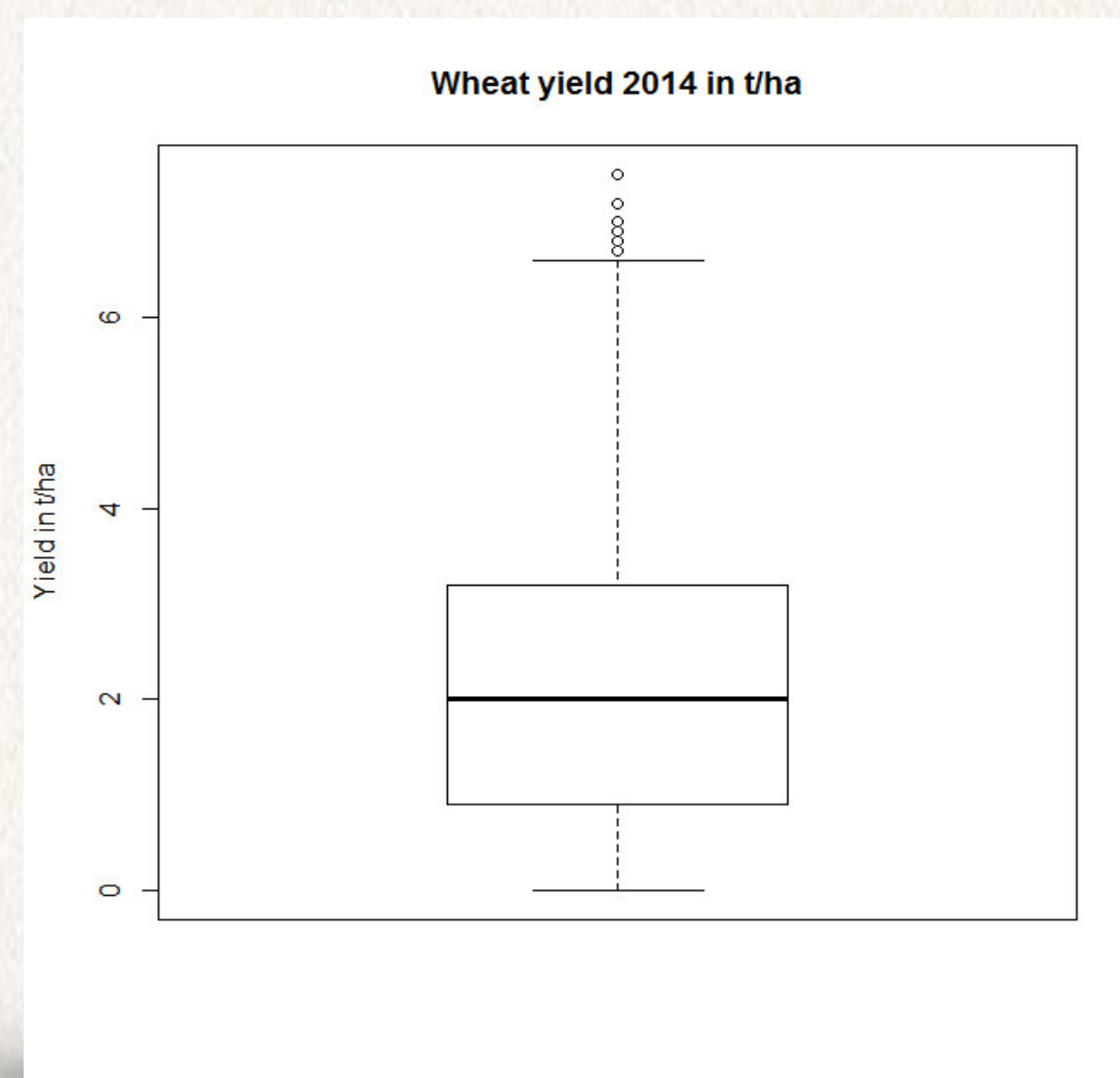
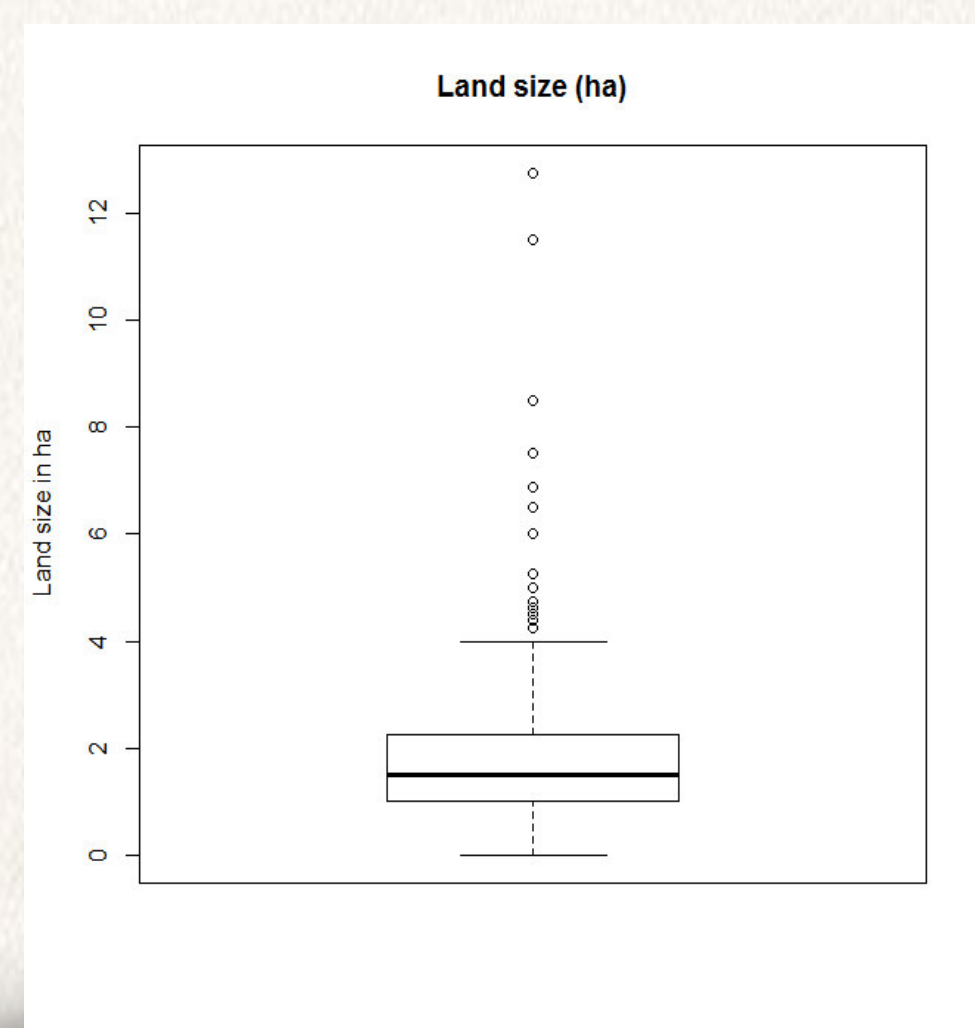
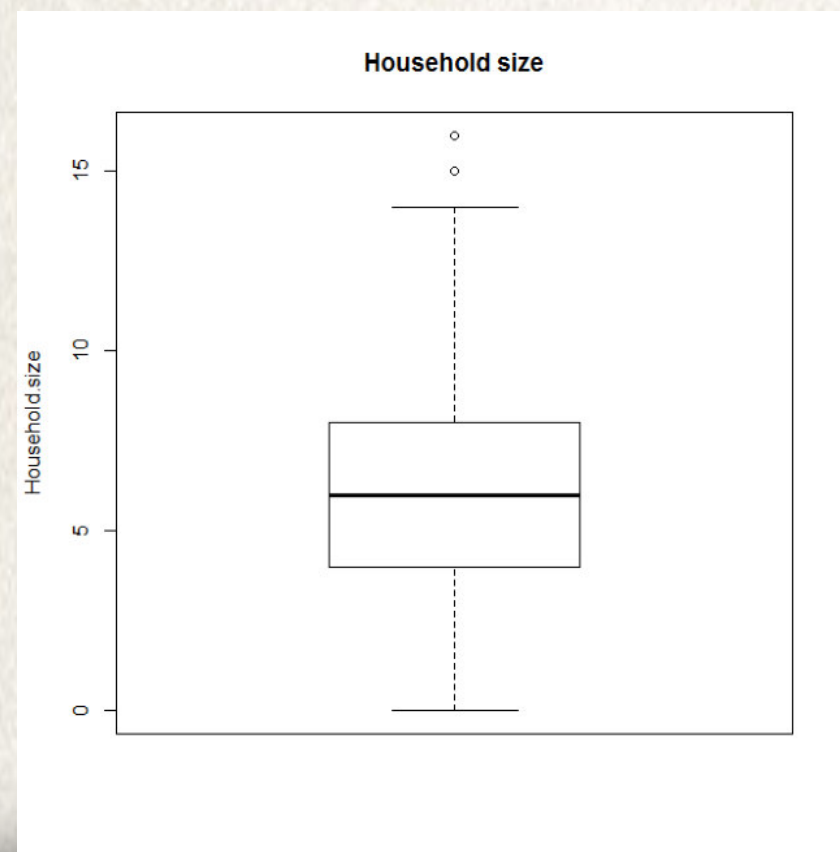
Objective

The aim is to enhance the understanding of SHF-systems in the region of Arsi and to identify challenges/perspectives for more sustainable agricultural systems with special regard to the soil fertility management.

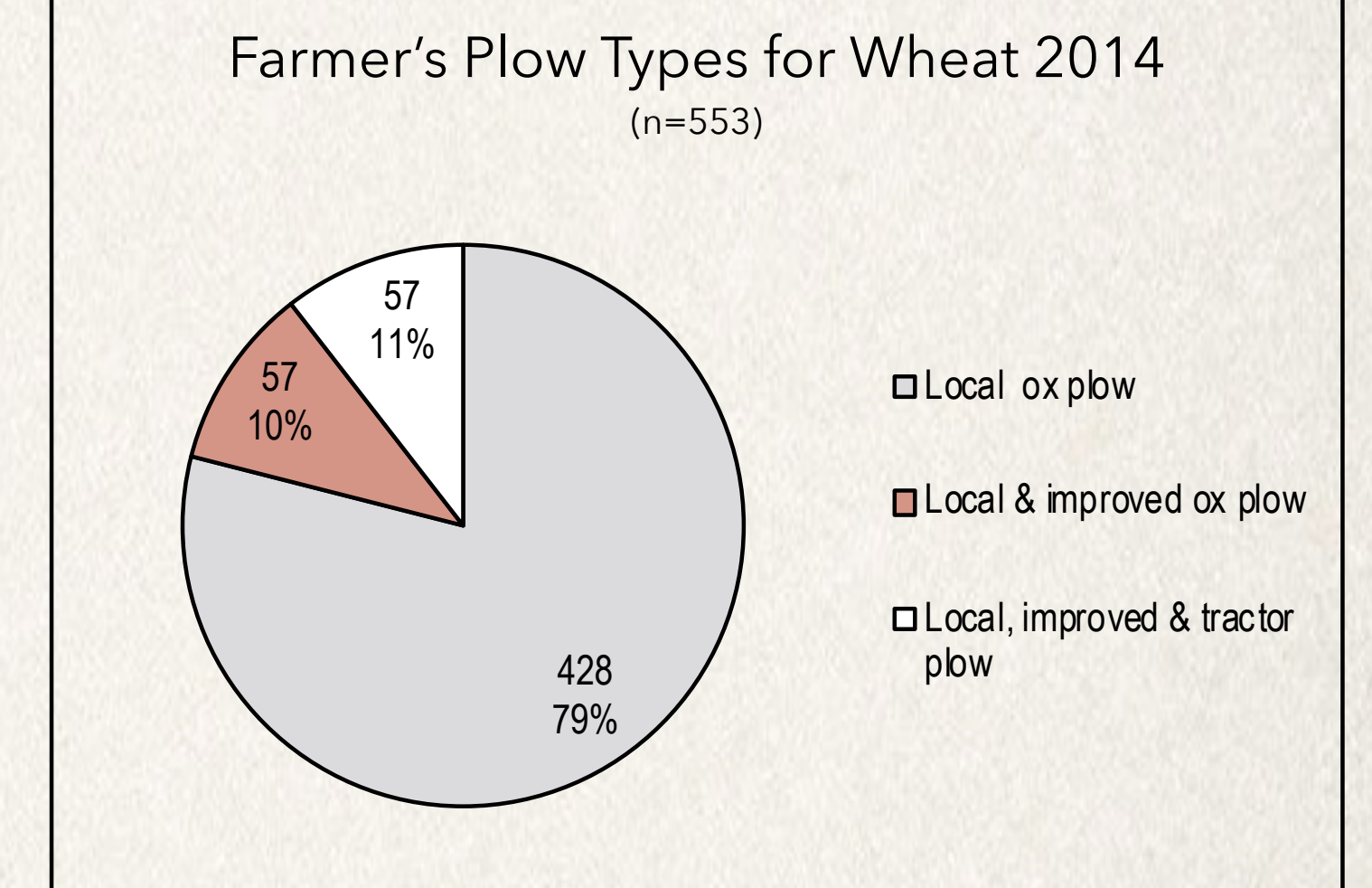
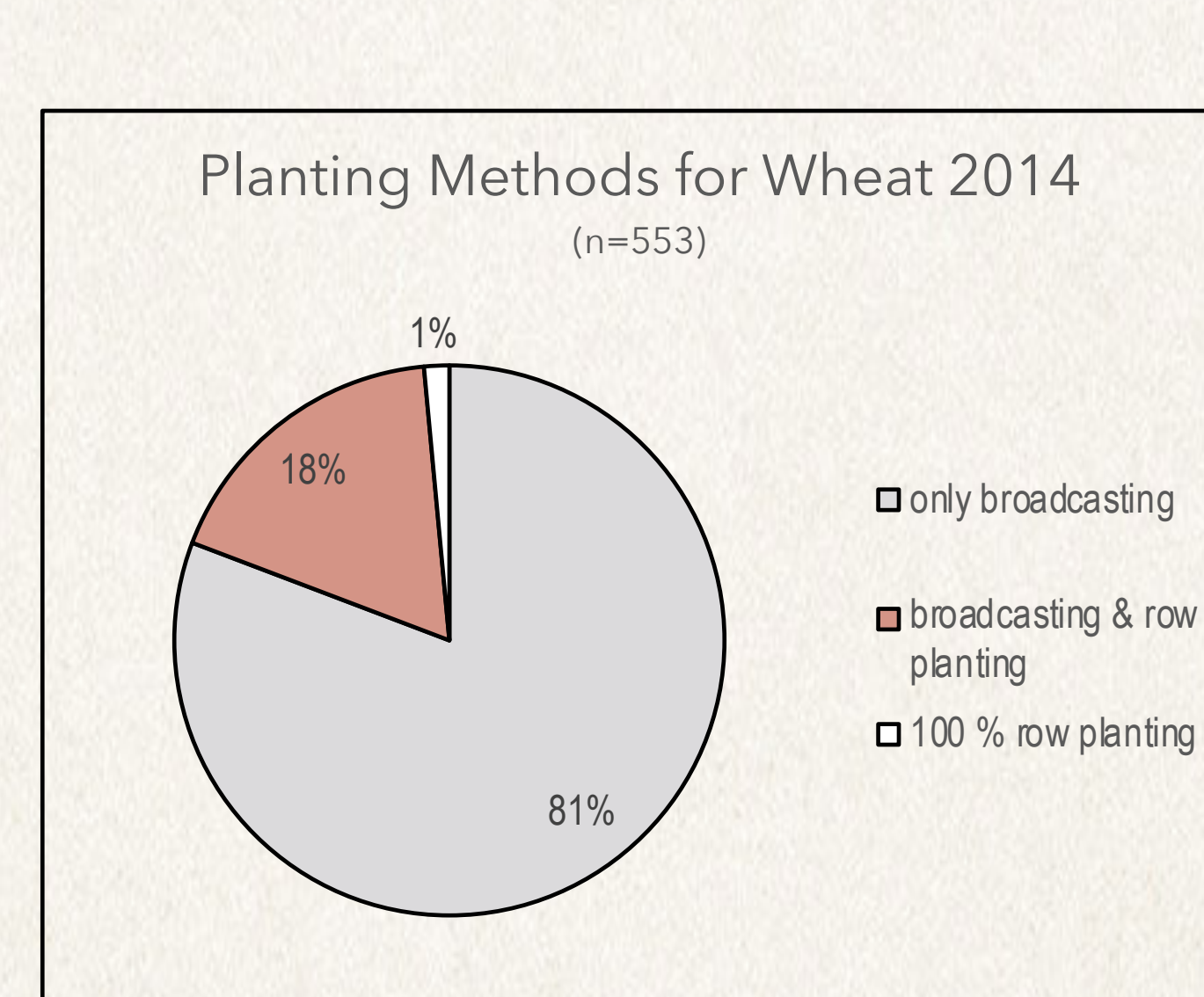
Methods

In total 593 randomly sampled smallholder farms were analyzed using descriptive and statistical analysis by employing Microsoft Excel 2010 and R 2.3-0. A focus group discussion and literature review served to clarify and complement the analysis.

Results



	Mean wheat yield t/ha	Mean farm size in ha	No. of farmers
No Rotation	2.11	1.5	35
Partial Rotation	2.12	1.5	275
Regular Rotation	2.71	1.9	195



Fertilizer	Farmers applying fertilizer	Farmers application rate
Urea	50 %	2 % >100kg/ha
DAP	97 %	18 % >100kg/ha
NPS	42 %	No info
Compost/Manure	3 %	No info

Conclusion

The less land farmers have, the more wheat they grow. Shrinking farm sizes, agronomic and market challenges - among others - for (legume-) crops such as faba bean appear to hinder increased percentages of legumes in the crop rotation. Crop rotations and low compost/manure application rates indicate negative humus balances, high weed pressure and high risk of soil borne diseases and thus partly explain the relatively low yield performance. The mechanization of field operations such as seeding and tillage operations may lead to substantial yield increases.