



Tropentag, September 17-19, 2014, Prague, Czech Republic

“Bridging the gap between increasing knowledge and decreasing resources”

## Reproductive and Growth Performance of Extensively Managed Goat Herds in Southwestern Madagascar

TOBIAS FELDT<sup>1</sup>, REGINA NEUDERT<sup>2</sup>, EVA SCHLECHT<sup>1</sup>

<sup>1</sup>*University of Kassel / Georg-August-Universität Göttingen, Animal Husbandry in the Tropics and Subtropics, Germany*

<sup>2</sup>*Brandenburg University of Technology Cottbus-Senftenberg, Inst. of Botany and Landscape Ecology, Germany*

### Abstract

Livestock keeping plays a key role for people's livelihoods in semi-arid Southwestern Madagascar. While zebu cattle are mostly kept to fulfil social and cultural obligations and to buffer extreme times of need, sheep and especially goats are of higher importance from an economic perspective and contribute to people's regular income. However, the very extensive animal husbandry system is liable to several constraints such as seasonal water and forage shortage as well as livestock diseases, and thus bears risks of loss for herd owners. Furthermore, limited market access due to poor infrastructure lowers the breeders' revenues. We therefore analysed the live weight development and reproductive performance of local goats along with herders' culling strategies to determine herd dynamics and opportunities for economic development.

In early 2013 interviews were conducted to determine the progeny history of 449 does and their 1,241 kids in six villages located on the Mahafaly Plateau and along the coastal zone near Tsimanampetsotsa National Park. Together with live weight data of 804 male and 1,625 female animals across four bodyweight categories, results were fed into the species-independent PRY Herd Life Model to calculate variables such as litter size, age at first parturition, kidding interval and mortality rate. Model results were merged with further socio-economic information from structured and semi-structured interviews to assess the economic performance of goat keeping using a Monte Carlo simulation model.

Preliminary results indicate early maturity of the breeding females and short parturition intervals across the whole region. Low kid mortality rate before and after weaning seems to be a major factor influencing the system whereas the seasonal kidding has no perceptible effect on herd performance. The economic analysis indicates that the local goat husbandry system is profitable under the given circumstances, mainly due to favourable reproductive performance, low labour costs and large herd size. Therefore a good management, particularly with regard to veterinary care ensuring good health of does and kids, might enhance the incomes of goat-breeding households.

**Keywords:** Goat husbandry, herd demography, herd productivity, Monte Carlo model, progeny history records, PRY herd model, southwestern Madagascar