Assessing Fascioliasis Prevalence and Diagnostic Accuracy in Lake Chad's Nomadic Livestock: A Bayesian Approach

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Background

Nomadic Lifestyle
Livestock as only income

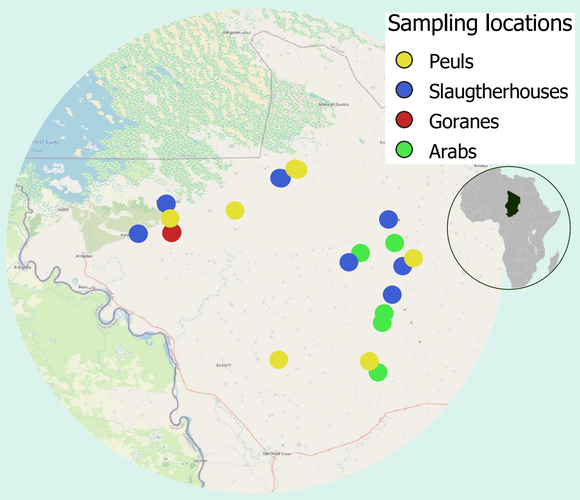
Difficulties accessing **human** and **animal healthcare**

High prevalence of *Fasciola spp*. in livestock

Heavy economic losses

Aims Estimating the performance of **three diagnostic tests** and **true prevalence** in livestock for Fascioliasis
Identifying needs and ways to implement **control** and **eradication** of *Fasciola spp.*

Methods



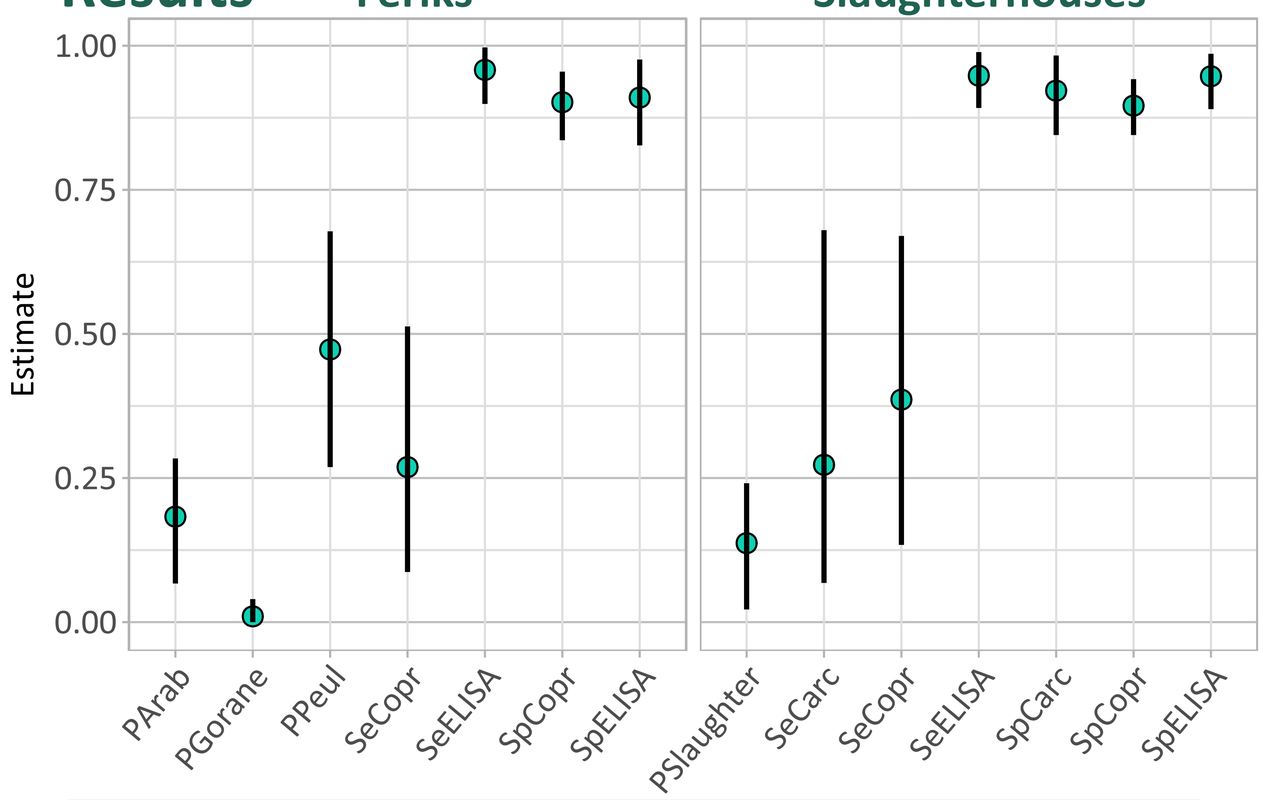
Study site: Lake Chad region, Chad
Species sampled in camps: bovine, caprine, ovine, and equine

Cross-sectional study
400 animals in 20 camps
120 small ruminants in slaughterhouses

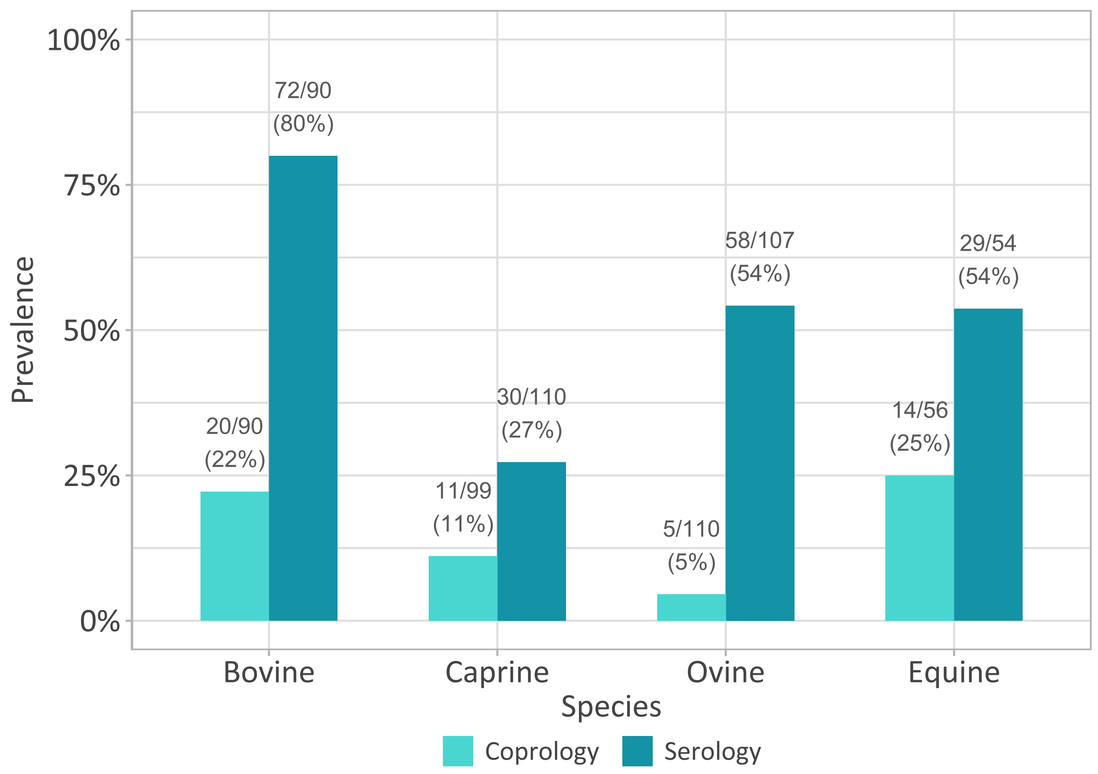
Sample collection
Feces (coprology)
Blood (ELISA)
Carcass (liver flukes)

Data analysis
Hui-Walter model
Bayesian latent class model

Results



Mean posterior estimates and 95% CIs
Estimates of the **true prevalence** (P) for three ethnicities (Arab, Gorane, Peul) and slaughterhouses; of the **sensitivity** (Se) and **specificity** (Sp) for **coprology** (Copr), **liver inspection** at slaughter (Carc) and **serology** (ELISA)



- The disease was found **in all tested species**
- Need to **focus** on **every species** for disease control
- Need of **reliable diagnostic tools** for detection
- Importance of **husbandry system** on prevalence was confirmed

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