

Paws and Numbers: Estimating the owned dog population and factors influencing ownership in Machakos, Kenya

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1. Key messages

Age-old friends to vectors of diseases: Dogs have been humanity's closest allies for over 2,000 years, they also play a significant role in transmitting diseases like rabies, and echinococcosis.

Accurate dog population data is critical for formulating effective public health interventions, particularly in rabies prevention.

Socio-economic factors can guide approaches to improve vaccination outreach and ownership responsibilities

Actual dog population distribution is essential for optimizing resource allocation and achieving effective disease control.

2. Context

Rabies remains major public health concern globally: Dogs are the primary reservoirs. The disease is preventable through vaccination yet remains under-controlled due to gaps in public health strategy execution.

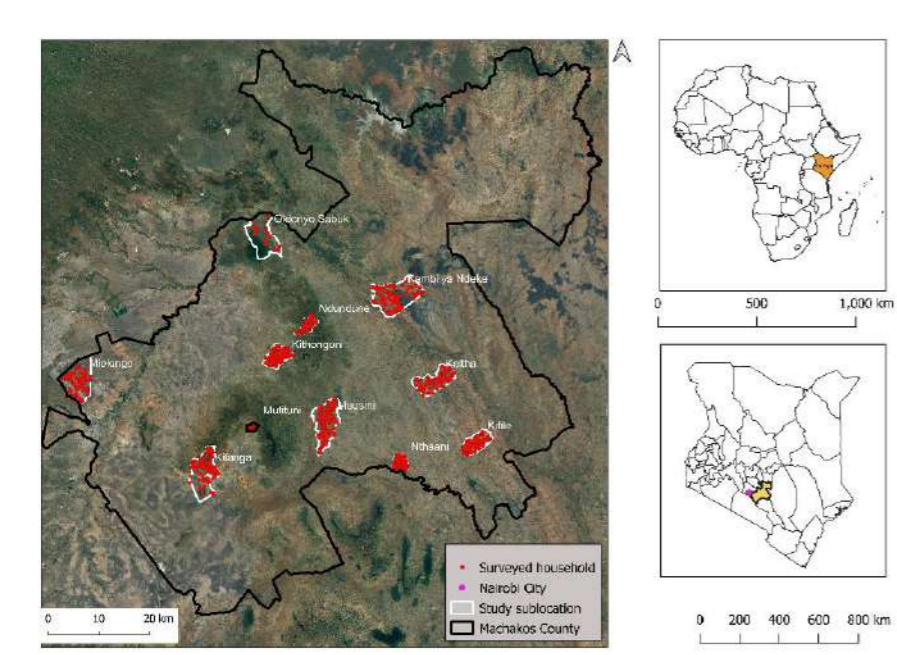
Existing demographic data estimates often are inadequate leading to inefficient resource allocation and control efforts.

Understanding the dynamics of dog ownership, influenced by socioeconomic, environmental, and health factors, is crucial for implementing effective disease control



Photos by Maurice Karani/ILRI

3. Our approach

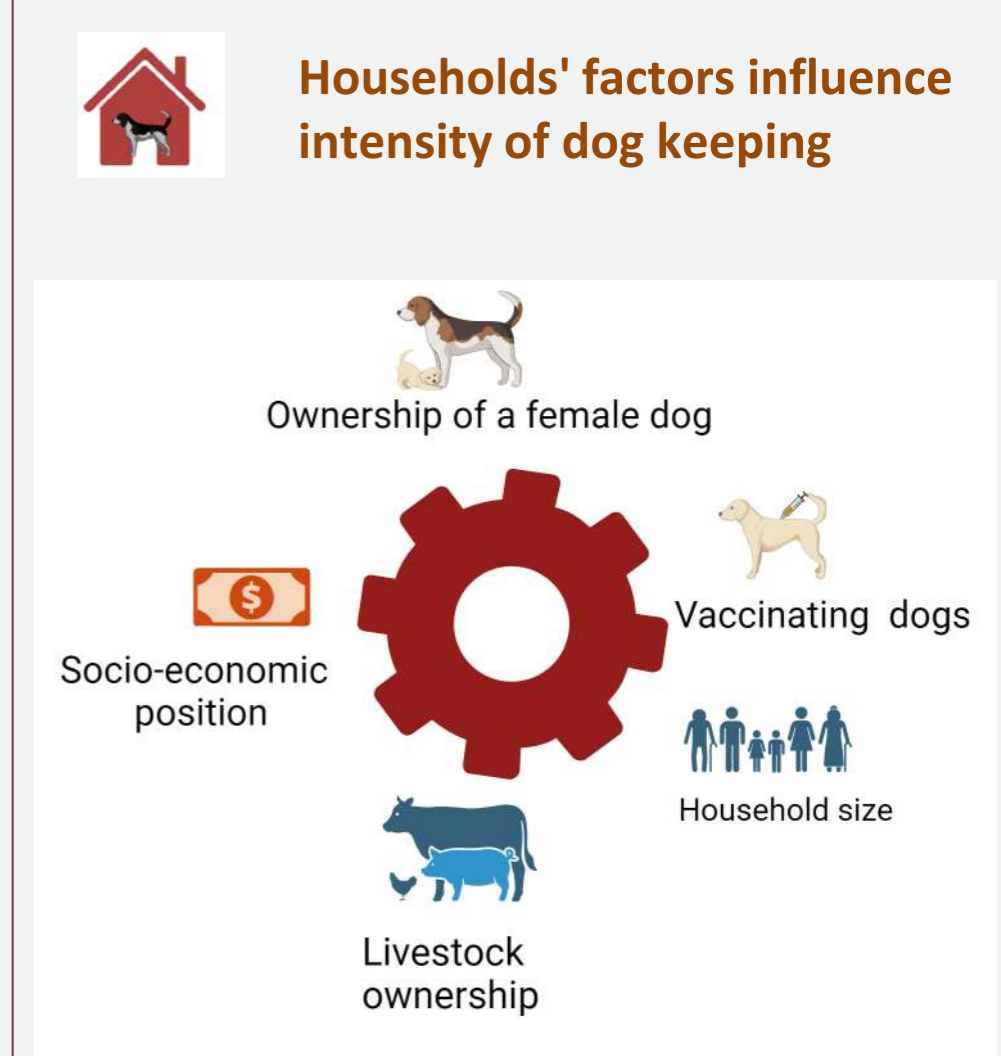


Cross-sectional survey of 825 households -stratified based on human population densities.

Utilised a negative Poisson regression model to analyse factors affecting the number of dogs per household.

4. Outcomes

- 65%** - owned at least one dog
- 2.2** dogs/dog owning HH
- Human: Dog ratio of **3.3:1**
- Owned dog population of approximately **421,079**
- Low rabies dog vaccination uptake among dog owning households
- More male than female dogs across the surveyed households
- 43.2% of the dogs allowed to always roam



Conclusion

The study's outcomes inform rabies control strategies and other zoonotic diseases

Need for localised and robust rabies vaccination campaigns to effectively manage the larger-than-expected dog population.

