OneHealth and Malagasy Dogs
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Introduction

• Malagasy dogs (Canis lupus familiaris) can negatively impact biodiversity and human health by preying on wildlife and serving as a vector of rabies and zoonotic diseases.
• Despite man’s proximity to dogs, the implications of Malagasy dog interactions with humans and their environments are not well defined in current literature.

Objectives

Observing OneHealth in action in order to develop a deeper understanding of the Malagasy dogs interactions was the key focus of this research project—field work offers more context for the thesis. In addition, I sought to collect more blood samples for the laboratory component.

Methods

• Noted demographic information: weight, temperature, heart rate, respiratory rate, CRT/MM, lesions, any conditions.
• Collected additional blood samples on TropBio filter paper for later genetic sequencing alongside older primary blood samples from Ranomafana.

Results

• Dogs are vectors of rabies, which causes approximately 60,000 human deaths annually—Madagascar has a relatively high burden of disease, which made the vaccination campaign important.
• The mobile clinic, staffed with Malagasy and foreign veterinarians, also spayed/neutered dogs in order to control population.
• Village nutrition surveys showed that families that could hardly afford food often left dogs to fend for themselves.
• These dogs would often roam into the rainforest—lemur transect surveys showed a disruption in habitat and range.

Discussion

• Malagasy dog owners were more likely to consent to spays/neuters if rabies vaccinations were used as a bargaining chip.
• Families would often feed dogs after feeding children—many dogs would be forced to forage for food in the rainforest.
• Although it is still unknown what dogs eat when they wander into the rainforest, we assume that they outcompete lemurs.
• Implications for zoonotic disease spread.
• The laboratory component, which involves studying the roles of host genetics, demographics, and spatial interactions on nasal microbiome composition in Malagasy dogs, will be completed this year.

Conclusion

• OneHealth shows that Malagasy dogs have complex interactions with their environments and human owners.
• These observations could help explain factors that lead to differences in nasal microbiome compositions.

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