BIOCULTURAL SUSTAINABILITY IN MADAGASCAR

Duke UNIVERSITY | BASS CONNECTIONS

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Bass Connections in Energy & Environment

Objectives

Is forest management in northeast Madagascar sustainable?

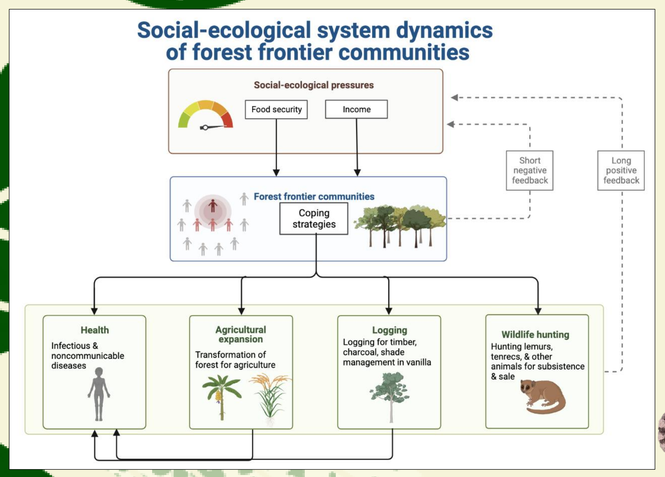
- **How do habitat characteristics affect lemur diversity in the COMATSA protected area?**
- **How can communities effectively manage forests with participatory approaches to conservation?**
- **What are the values & uses of plants for people?**

Team photo at the Duke Lemur Center in Sambava

Forest camp

Ambodivoara community

Background



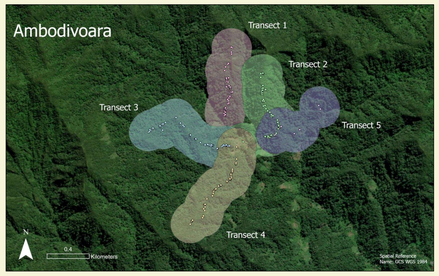
Approach

1. **Lemur surveys on 23 transects throughout COMATSA**
2. **Focus groups, household surveys, & key informant interviews**
3. **Systematic literature review**

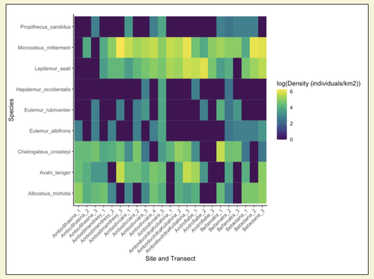
Ecology subteam

Social science subteam

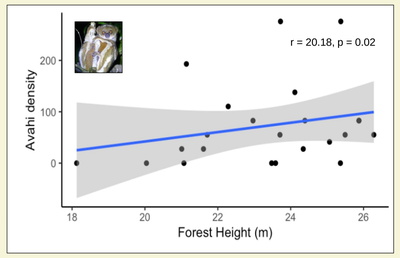
Findings: Ecology

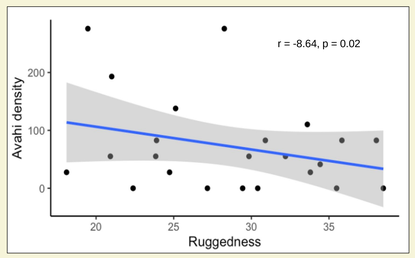


Example map of buffer around transects using lemur observations for one site, Ambodivoara. We used GIS to calculate habitat variables within the buffer to determine preferred lemur habitat.



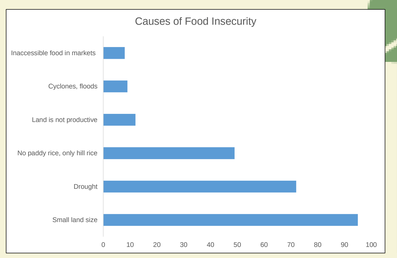
Variation in lemur abundance (population density) across 23 transects in the COMATSA. Bright colors indicate higher abundance, while dark colors indicate rarity.



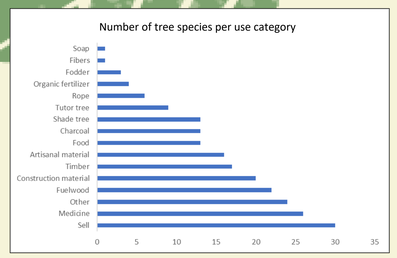


Example relationships between lemur abundance & environmental variables. These relationships are being used to extrapolate lemur abundance across the COMATSA & estimate total population sizes for each lemur species.

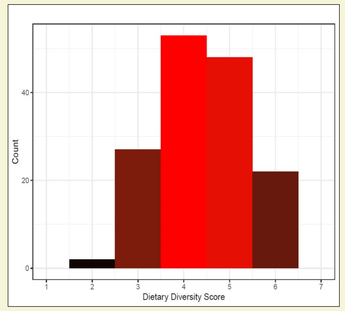
Findings: Social Science



Over 80% of respondents reported food insecurity, primarily due to small, unproductive land, as well as drought

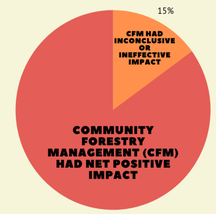


Respondents reported diverse & important uses for trees in their forests, valuable resources for meeting their needs



Over 50% of respondents consumed ≤4 food groups, inadequate to meet micronutrient needs

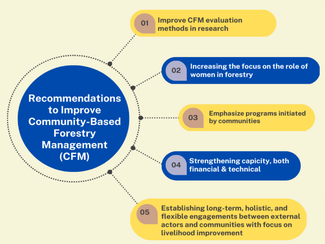
Farmers reported the types of interventions they desire, especially including agricultural development

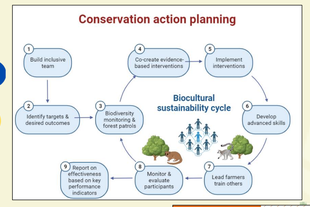


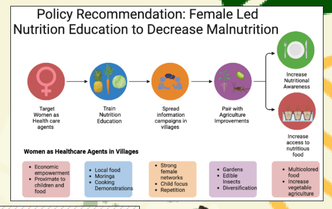
85% OF STUDIES FOUND CFM TO HAVE A NET POSITIVE IMPACT

Of the surveyed sources in academic literature across Africa, Asia, and parts of Latin America, 85% of studies found community-based participatory approaches to forest and natural resource management to be beneficial to communities in developing economies as whole

Recommendations







Thank you to our funding sources & the Ambodivoara community!