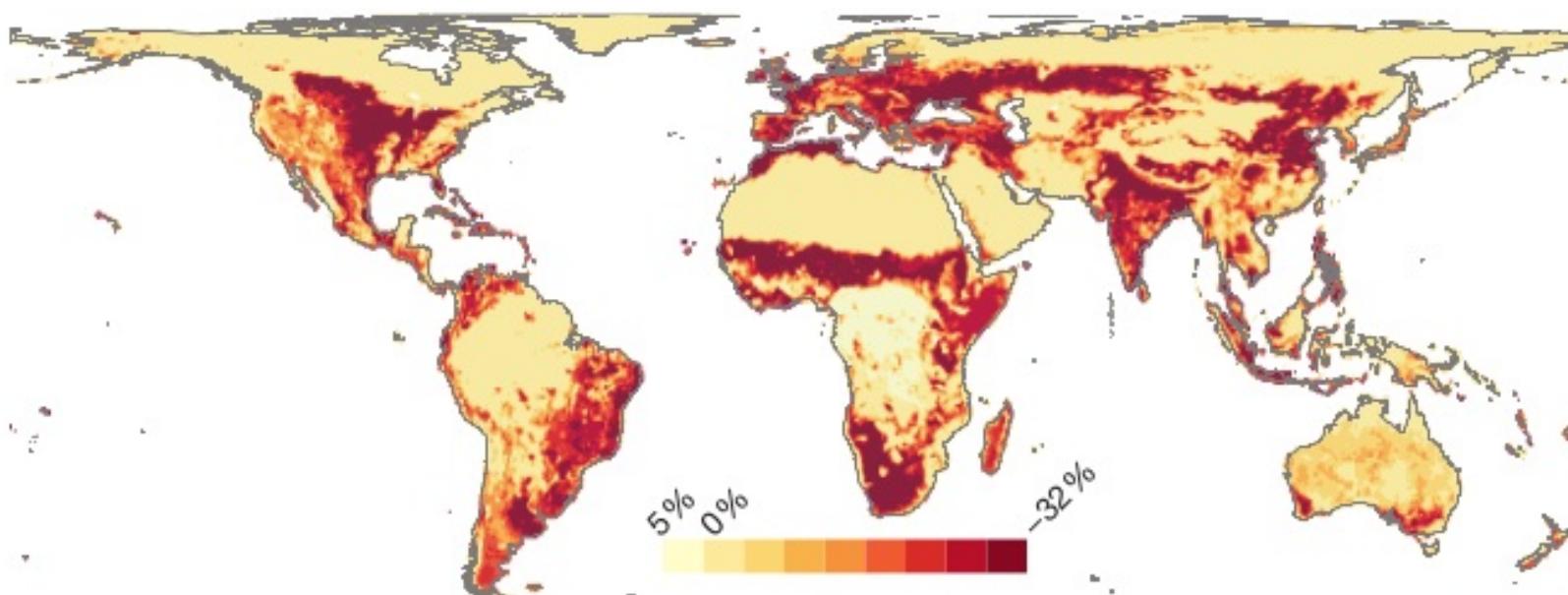




# Recommendations for broad-scale diversity models from an independent study

Martin Jung  
Center for Macroecology, Climate and Evolution

# BIODIVERSITY MODELS



Predicted change in species richness from Newbold et al. (2015)

# POTENTIAL PROBLEMS

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- Many broad-scale models generalize over a wide range of variables

# POTENTIAL PROBLEMS

- Often only single factor ( land use ) models

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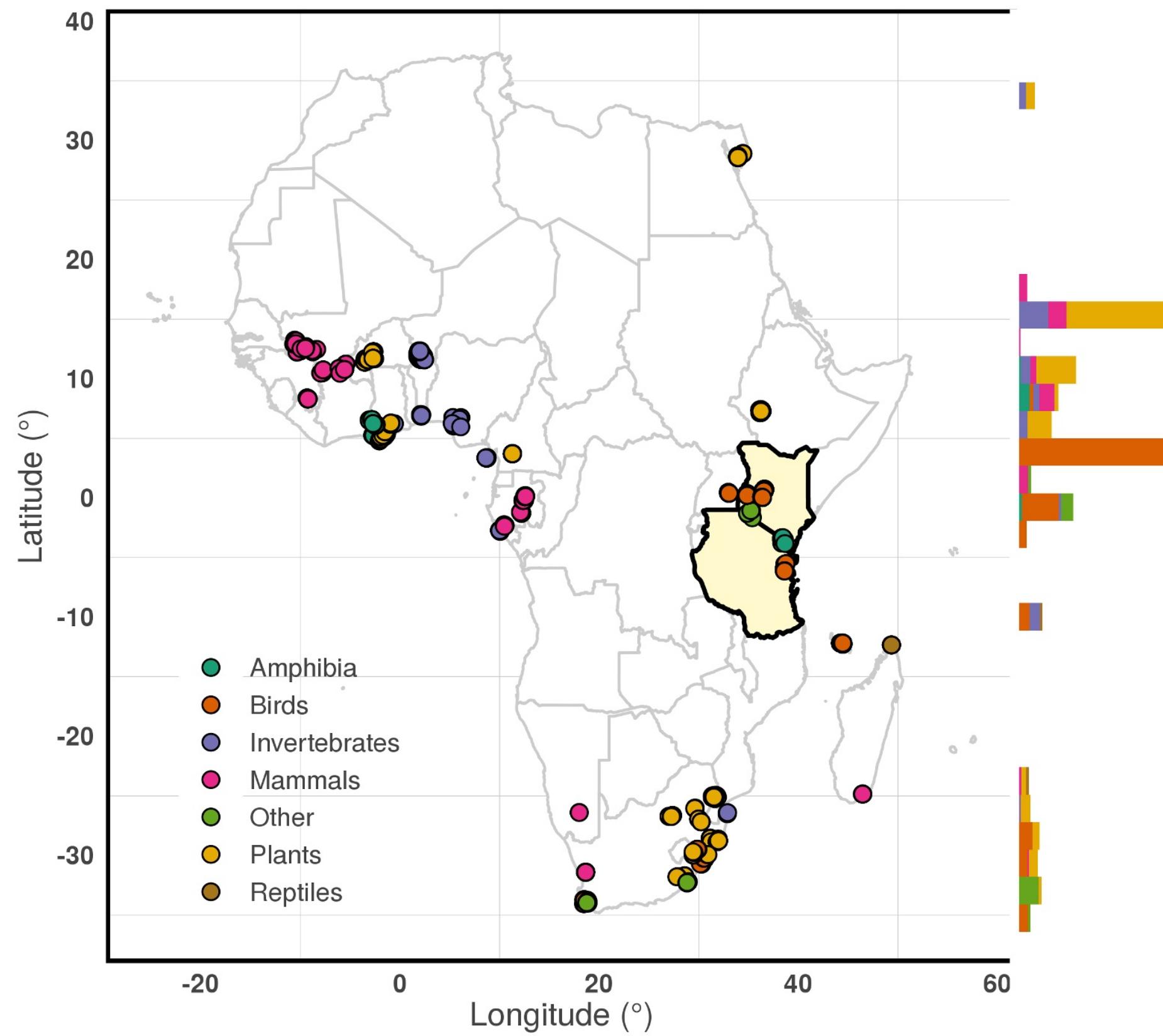
- Based on available ( biased ? ) data

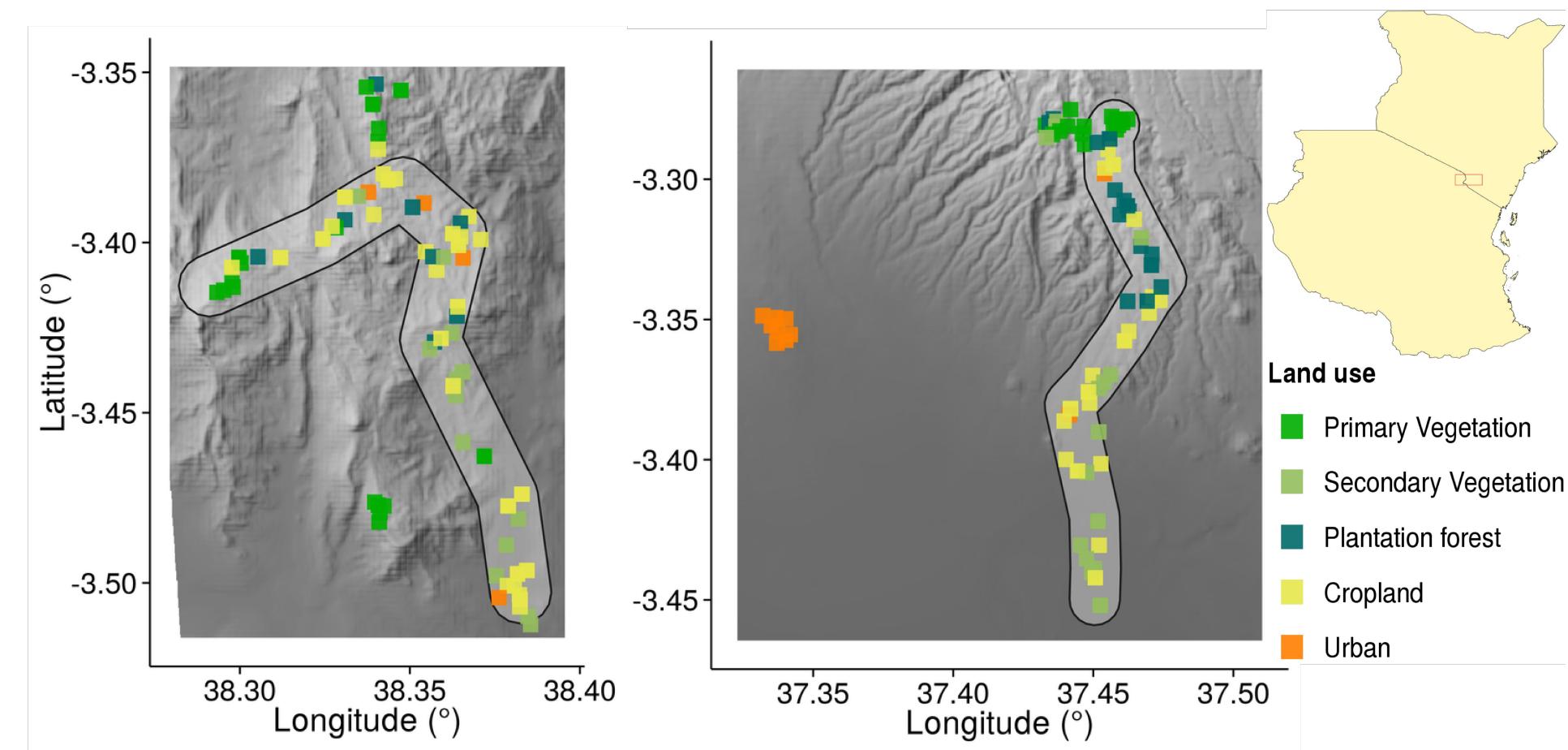
# **QUESTION :**

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How well does an African-wide model reflect species diversity and abundance on a local land-use gradient where local conditions are known?

# METHODS





**PV**

**SV**

**PL**

**CL**

**UR**



- Timed point counts

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- Total 147 sites: 172 species, 2700 individual counts

# AUXILIARY DATA FOR THE COMPARISON

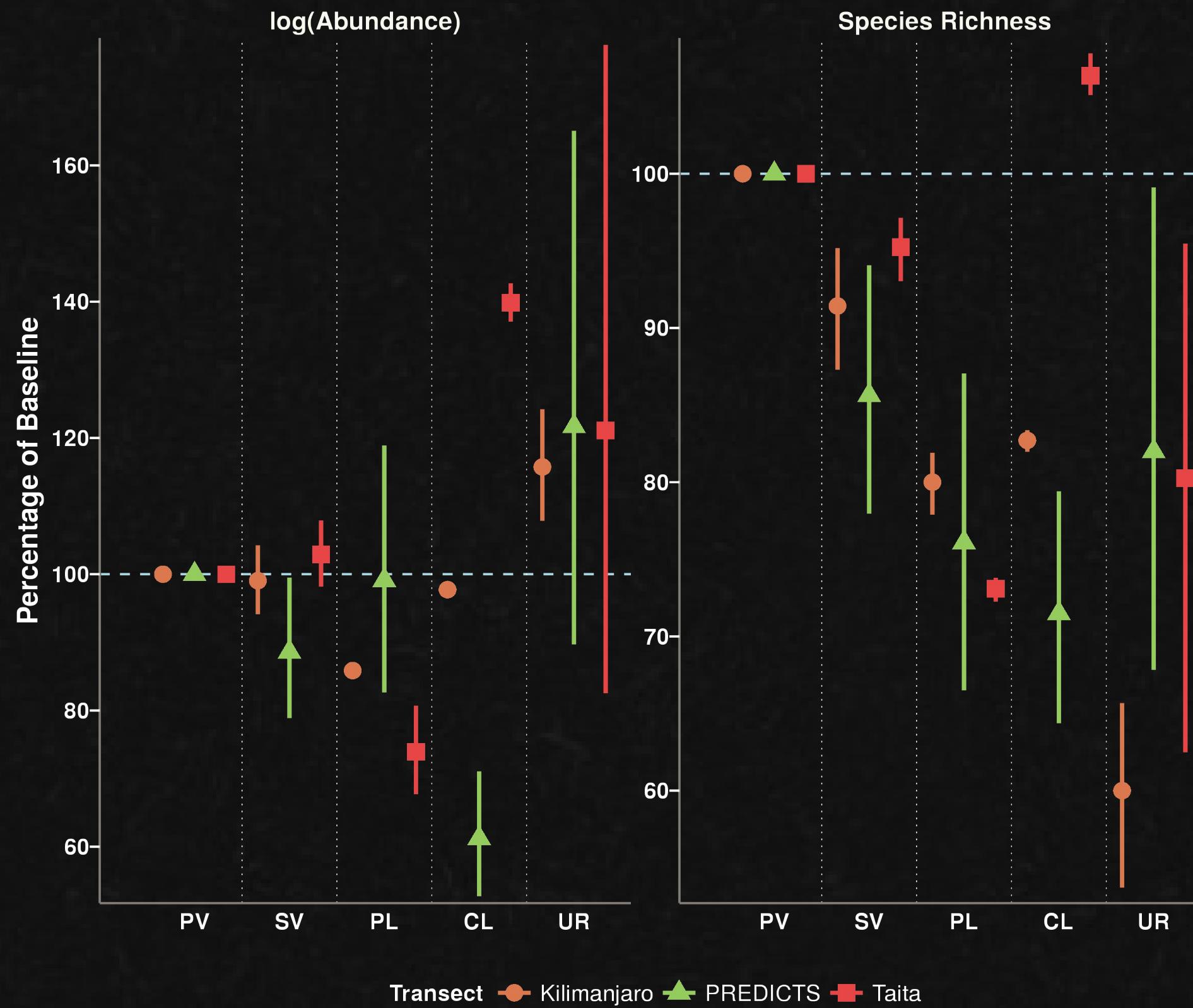
# AUXILIARY DATA FOR THE COMPARISON

- Remote-sensing and census data  
(INDVI and meanNDVI, Human population density, Forest-Cover year 2000 )

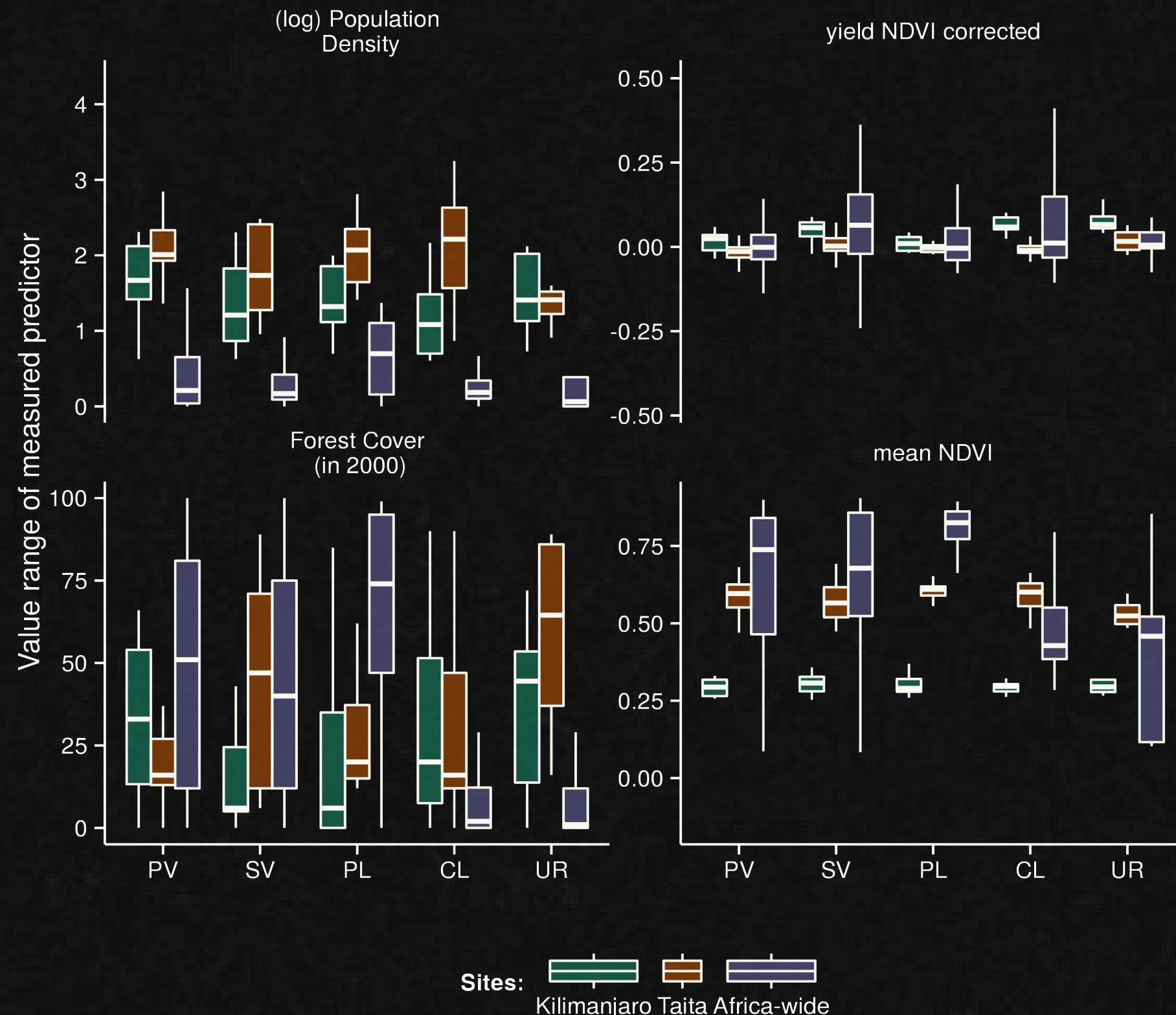
# AUXILIARY DATA FOR THE COMPARISON

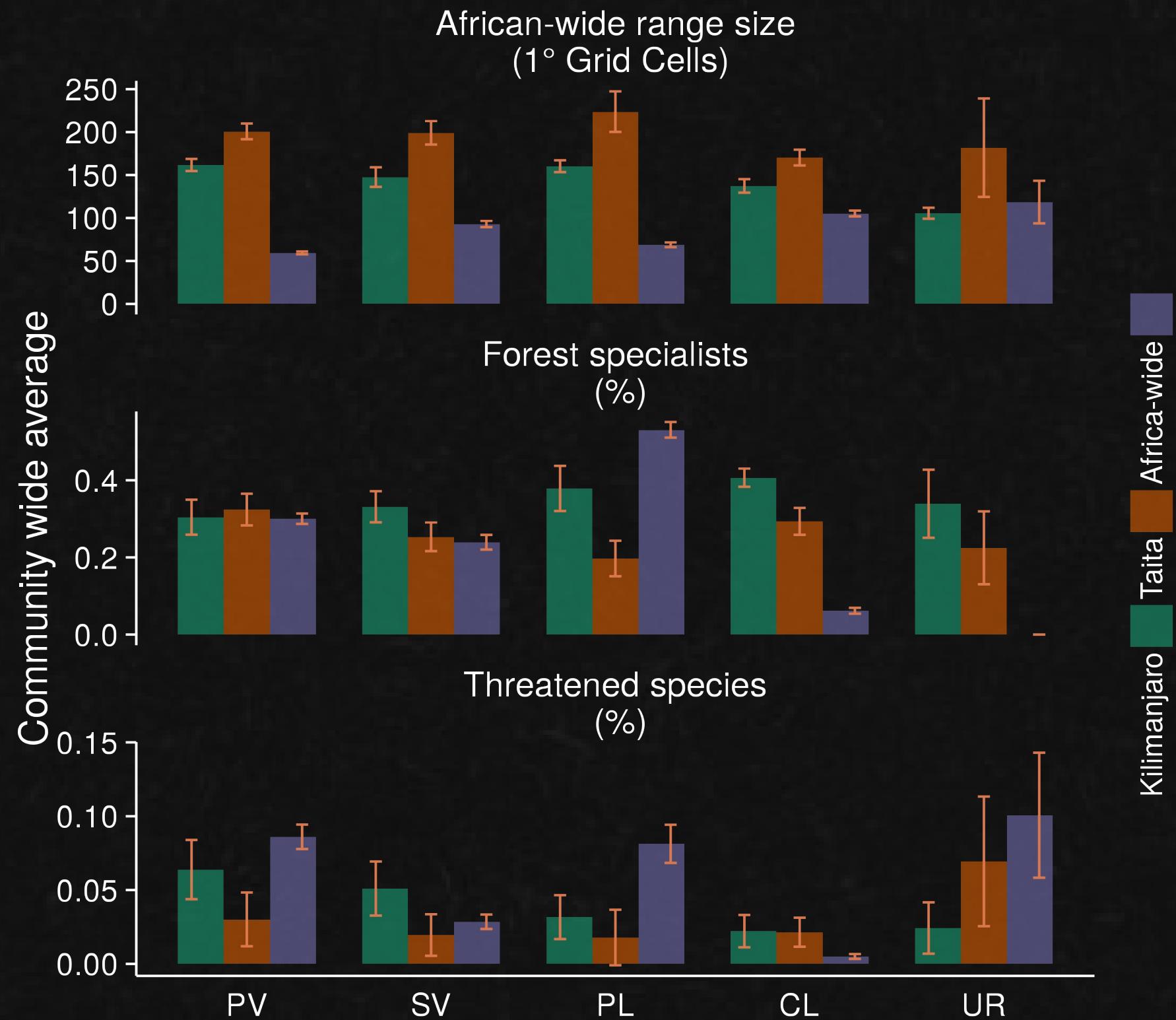
- Remote-sensing and census data  
(INDVI and meanNDVI, Human population density, Forest-Cover year 2000 )
- Functional traits  
(Range size, Threat status, Forest specialization )

# RESULTS



Transect ● Kilimanjaro ▲ PREDICTS ■ Taita





A wide-angle photograph of a tropical landscape. In the foreground, there is a dense field of tall, green grass or crops. Behind the field, there is a mix of green vegetation, including several palm trees and other tropical trees. The background is a dense forest of green trees under a clear blue sky.

# SUMMARY

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- Cropland higher number of species than the average more intense cropland site (Agroforestry)
- More forest-specialists in cropland
- Primary forest likely lower diversity due to size and fragmentation

# CONCLUSION

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- Large-scale models succeed at detecting overall impacts of land use change.
- However they might lose accuracy if they are used to predict local impacts on biodiversity, if local conditions do not conform
- Policy makers need to look not only at large-scale patterns, but also at local differences, when deciding on conservation actions.

# ACKNOWLEDGEMENTS

- Tim Newbold and Neil Burgess for scientific advice
- PREDICTS contributors for making data available  
(<http://predicts.org.uk>)
- The CHIESA project partners for support and coordination
- Everyone at CMEC and UNEP-WCMC
- Danida Fellowship Centre for financial support



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**THANKS FOR  
LISTENING!**

[conservationecology.wordpress.com](http://conservationecology.wordpress.com)