

Resilient Landscapes and Livelihoods Through Better Conservation Planning

Proposal for Boise State Hazard and Climate Resilience Institute Research Grant

Matt Clark

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Executive Summary

Diverse and intact ecosystems are our insurance against extreme climatic events caused by climate change. Despite decades of effort, conserving natural areas is still a critical problem. Human dimensions are the primary roadblock of conservation; we recognize now that **managing our environment is fundamentally about managing people**. We need to understand how features of the natural environment interact with features of the social environment to influence whether people adopt conservation or not.

The aim of this project is to better align conservation projects with underlying social and environmental features of the landscape. Specifically, we will focus on two main conservation paradigms, **fortress conservation** and **payments for ecosystem services**. Both of these interventions have been implemented successfully and unsuccessfully on Pemba Island, Tanzania — the study system for this project. We will collect empirical data, in the form of semi-structured interviews, from communities involved in these conservation projects to inform **agent-based models of conservation dynamics**.

Our main question is: *How do resource characteristics such as mobility, regeneration rate, and market substitutability interact with intervention features like conservation area size and payment amount to influence long-term adoption and success?*

We are collaborating with Community Forests Pemba, a nonprofit organization focused on climate resilience through sustainable agroforestry. Our community partner will ensure an **accurate empirical backdrop for our agent-based simulations and provide an inroad to local community members**.

After publication, results and the **interactive tool** accompanying this research will be presented at a **workshop in collaboration with our community partner**. This research advances the HCRI Natural Environment pillar by providing a roadmap for conservation planning in complex social-ecological landscapes. Failed conservation projects leave scars

on both the environment and communities. This work also contributes to the Health & Wellbeing pillar by considering both the environmental and social impacts of conservation.