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Community-based monitoring and management of Madagascar's National Park protected areas

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Astrochelys radiata

Introduction

Madagascar is one of the world's most important centers of biodiversity (Ganzhorn et al. 2001, Joppa et al. 2013), with exceptionally high species diversity and levels of endemism in all major taxonomic groups (Goodman and Benstead 2005, Raherilalao and Goodman 2011). Unfortunately, the natural habitats that remain are under pressure from human activities and climate variability (Primack and Ratsirarson 2005, Brinkmann et al. 2014).

However, effective biodiversity conservation requires a human dimension for the management of ecosystems (Ferguson et al., 2014) Conservation based on collaborative management of communities has been in place for decades in Madagascar. Biodiversity data, such as composition and species richness, recorded by local communities can be used to inform the management of protected areas. However, Madagascar National Parks institution, which manage and conserve protected area network in Madagascar, do not effectively integrate community-based approaches in their monitoring protocol. In addition, information provided by scientific researchers also seems dispersed and unorganized within the decision-making process that guides land management. Local communities have high level of knowledge of local biodiversity and therefore are critical in the integration in community-based conservation

In addition, predicted climate change impacts also threaten the wellbeing of both the country's biodiversity and its people. Thus, conservation also have to considered climate change.



Figure1: Biodiversity monitoring by local community

Objectives

- Develop a process of data collection by local communities on local biodiversity knowledge and climate
- Develop biodiversity and climate indicators for protected areas management


Figure 4: Meeting with Local communities

Acknowledgement

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Methodology

- Data collection in three major ecosystem types: desert, dry woodland/rainforest and humid rainforest
- 6 protected areas as study site (Figure 2) .
- local knowledge of biodiversity and terrain combined with researchers to sample biodiversity and climate through an identification guide (Figure 5).
- 6 transects (2km) in each protected areas to collect data on birds, lemurs, others mammals, reptiles and amphibians (Figure 3).
- 6 weather stations to monitor local and regional climate patterns across a precipitation-temperature climate gradient formed by our habitat selection.
- 12 local communities will be trained during the project and we will also study on local communities incomes by survey in each local community (Figure 4)

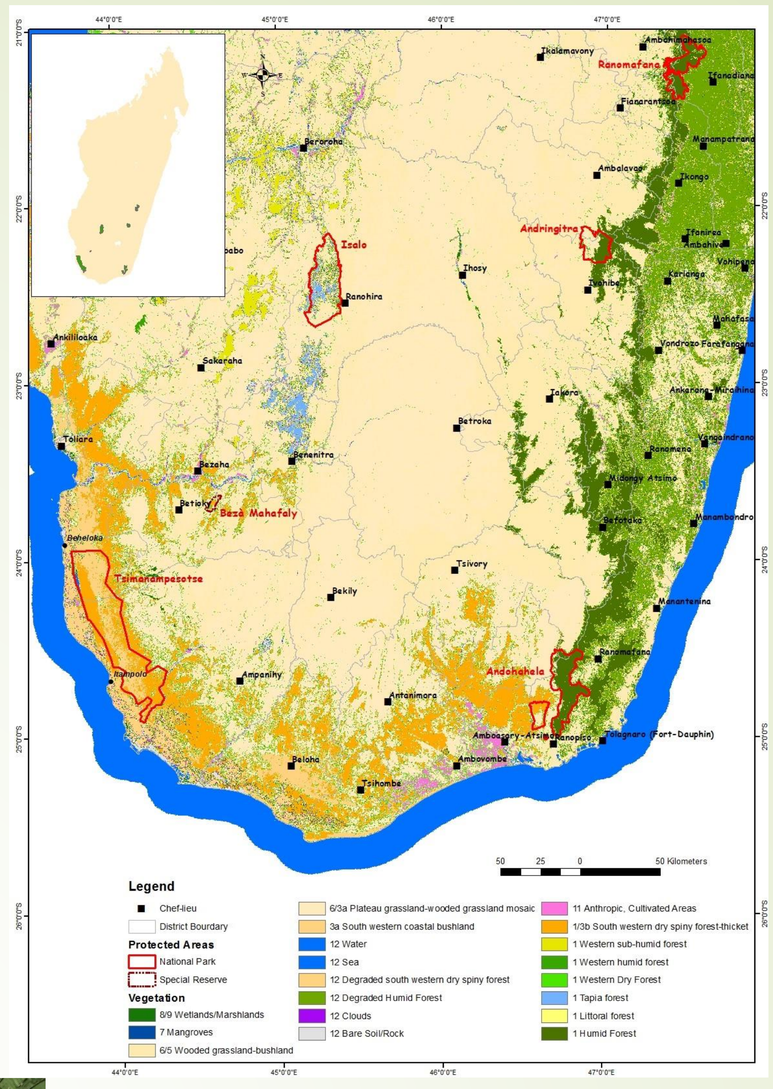

Figure 2: Study site

Figure 3: Transect

Expected results

1- Biodiversity indicators will be identified to help protected areas in their management according to climate variation in different regions of Madagascar.
2- Community local can be an researcher assistance in long term
3- Local community incomes increasing

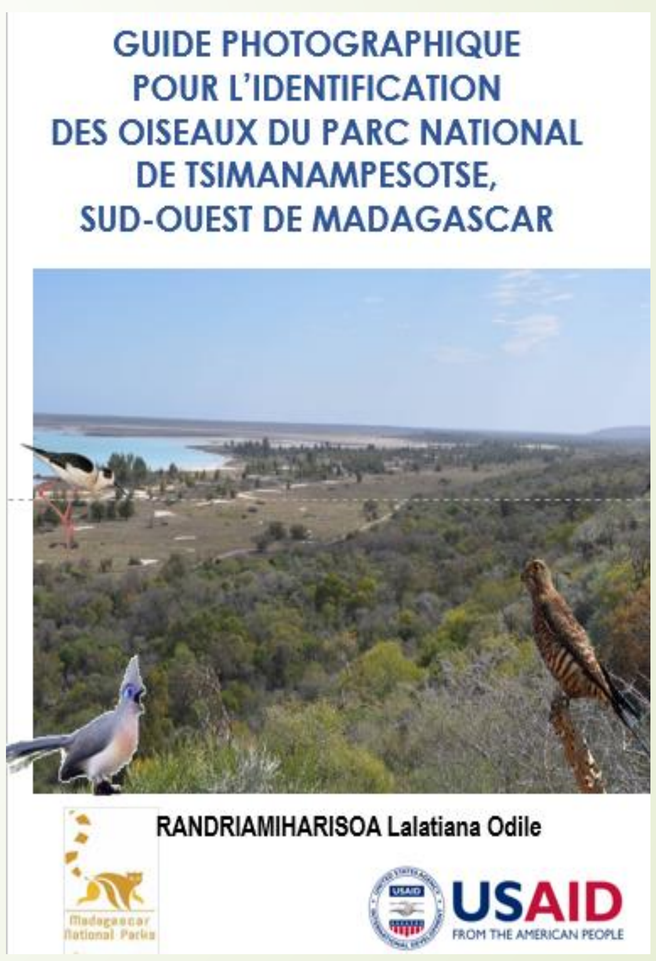

Figure 5: Identification guide of birds

Next steps for my project:

- Local community training on biodiversity and climate monitoring
- Data collection
- Analysis and treatment on the first data

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