

## Proposed Work Summary

My SKJ-supported pre-dissertator fieldwork took place from June 28<sup>th</sup> 2017 to September 06<sup>th</sup> 2017 in Tanzania and in Uganda. I went to provide feedback of previous research and educational work, collate data from relevant agencies for dissertation research, and conduct pilot field surveys on smallholder woodlots. The purpose of my research is to understand what happens to rural land use in East Africa, as the region rapidly urbanizes (Figure 1). Contrary to North America, where industrial-driven urbanization meant rural lands were abandoned as people moved to urban areas, in East Africa a different pattern may play out. Agricultural commodities are in high demand and prove a worthwhile investment for urbanites, therefore despite living in urban areas, some individuals engage in agriculture in various remote locations (Figure 3).

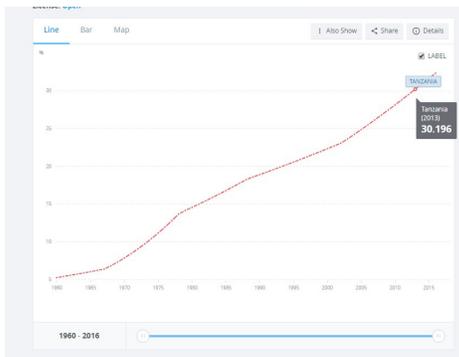


Figure 1: Urban population growth for Tanzania from 1960 to 2017 (figure from the World Bank Data portal)

### Goal 1: Feedback to communities

I reported findings from two previous projects to respective audiences. The first project was a socio-ecological study on forest regrowth in the Southern Highlands of Tanzania, and the second a collection of short videos on daily life near Kibale National Park in Uganda. Stakeholders at the two locations received the feedback positively. The short videos, in particular, generated an engaging discussion on whether mitigation of crop damages is the the community responsibility or the park's. In the open discussion after each video, the attendants had various ideas on how on-farm losses could be offset in other ways (eg: by the park finding good markets for crafts made by local women).



Figure 2: A public screening of short videos produced by UW-Madison team on what it is like to live near a protected forest

### Goal 2: Collating data from agencies

In order to accurately study urban growth and its consequences on rural land uses, I require a multitude of information on demographics, accessibility, and governmental policies that affect land uses. For that reason, I spent time in Kampala and in Dar-es-Salaam to collate that information from various relevant agencies. In some cases, the data were easily accessible, and in others follow-up is necessary. Each visit entailed interaction with policy makers, hearing their challenges and questions of interest to their work. Some even expressed interest in the findings of this research.

Agency	Location
Tanzania Bureau of Statistics	Dar, Tanzania
Institute for Resource Assessment	Dar, Tanzania
§ Private Forestry Programme	Dar, Tanzania
§ Tanzania Forestry Authority	Dar, Tanzania
Tanzania Forestry Trust	Iringa, Tanzania
Tanzania Roads Agency	Dar, Tanzania
Ruaha Landscape Programme	Iringa, Tanzania
§ Southern Highlands Conservation Programme	Mbeya, Tanzania
Makerere Biological Field Station	Kibale, Uganda
Mountain of The Moon University	Fort Portal, Uganda
Uganda Bureau of Statistics	Kampala, Uganda
§ Sawlog Production Grant Scheme	Kampala, Uganda
§ National Forestry Association	Kampala, Uganda
Makerere University Climate Centre	Kampala, Uganda

Table 1: Agencies visited during field work. §: Organizations that promote tree planting.

### Goal 3: Pilot woodlot surveys

My dissertation work will look at expansion of tree planting in rural East Africa, and relate this trend to growth of urban areas. I want to demonstrate that rural land uses are linked to urbanization, and to do so I needed a detailed understanding of both the physical characteristics of tree farms (size, spacing of trees, average growth rates) and the social characteristics of tree planters. For this component, I visited tree farms in Tanzania and in Uganda, developing a protocol for surveying the social and ecological characteristics of the owners and their fields. Additionally, I visited several key locations where large-scale tree plantations have been started by private individuals, noting their differences from the rural smallholders. In my visits, I noted the axis of variations in ownership -- developing a plan for how to capture the range of social-economic drivers for tree planting.



Figure 3: Map indicating dispersed rural lands farmed by Dar-es-Salaam urbanites. Data by kind permission: Maisha Shamba Association.

SKJ support enabled me to firmly establish a clear dissertation plan and form connections in East Africa with agencies that might benefit from the research. The pre-dissertation field work will help me outline a workplan that bears intellectual merit, and is in line with the realities of land use in East Africa. Scouting for potential datasets has opened opportunities for asking broad, exciting, questions on the links between urban growth and rural land uses, questions that have profound implications for conservation of natural resources in the region.

## Urbanites role in rural land use

Understanding who, exactly, is responsible for certain land use is challenging in all world regions, particularly in Africa. This is because even though modern satellite technologies can see land cover to impressive details, the individual decisions that go into each land use are invisible from the sky. My pilot field work gave me traction on how to reveal an unusual category of rural land users -- urbanites. I learned that urban dwellers participate in agriculture for many reasons; particularly as an investment or income diversification strategy. Using their tree farms, I hope to reveal how urban dwellers are a critical force in shaping rural land uses, thus contributing to the gap in research on land use decisions, particularly for Africa.

## Socio-ecological nature of woodlots

On-the-ground surveys of different woodlots helped me link how the social characteristics of the tree owner affects how they manage and utilize their trees. For example: Poor tree owners tended to have unpruned, closely spaced, and small tree plots; and reported that they might harvest their trees before they reach full maturity. Rich tree owners, on the other hand, tend to have well-tended, widely spaced, and large tree farms (Figure 5); and are more likely to harvest their trees after they fully mature. These physical landscape signatures of social forces need to be well-understood in order to incorporate tree farms in conservation planning.



Figure 4: Surveying smallholder tree farms. Here, pine woodlots are planted right against existing native forests. Note the different tree textures.

## Who benefits from institutional support?

During this pilot field work, I identified several institutional efforts to promote investment agriculture, particularly tree farming (see Table I). In many of these efforts, the stated goal is to reduce rural poverty by providing ruralites with cash sources. However, well-funded institutional opportunities are not as easily accessible to rural farmers as they are to savvy urbanites. As a result, policy plans that targeted rural development only benefit rural farmers indirectly (eg: when rural people are hired as laborers on urbanites' farms). It is important to evaluate how such policies unfolds in practice, if we are to make any progress with development goals.



Figure 5: A well-managed eucalyptus tree farm of a farmer who owns the land in rural Uganda (Kibale) but lives and works in the city of Kampala, Uganda