

## **Project Update: June 2019**

### **Summary**

Anthropogenic activities in the Masito-Ugalla Ecosystem (MUE) in western Tanzania seem to be mainly driven by poverty which leads to over-dependence on natural resources, expansion of human settlements and farms, and increasing number of livestock resulting in human encroachment in one of the chimpanzee habitat with lower conservation status. This project aimed at identifying chimpanzee plant feeding species available in the MUE, finding out how anthropogenic activities influence chimpanzee plant feeding species, chimpanzee spatial distribution and nest tree selection. We conducted field surveys in the MUE in four sites of varying intensity of human disturbances to test the influence of anthropogenic activities on both chimpanzee plant feeding species and habitat selection.

### **1. Field Surveys**

After a field survey which was conducted in Issa Valley in February, from March to May we conducted field surveys in Mlofwesi, Mapalamane and Mfubasi. The surveys aimed to identify chimpanzee plant feeding species available in MUE, estimate their abundance and diversity, as well as assessing the damage associated with human activities to plants (i.e. damage like tree being cut, debarked, marked, burnt etc.). We also collected data on chimpanzee presence using nests as proxy of chimpanzee presence. For any chimpanzee nest observed, ageing of the nest was conducted, GPS coordinates were collected and identification of the tree on which nest was constructed was done. This was done to highlight areas of chimpanzee presence and correlate them with areas of human disturbances to understand human activities deterring chimpanzees.

Human activities observed in the study sites were recorded and given scores with respect to the magnitude of their impact. On average 20 days were used by the field team in each study site. To accomplish the aim of the project, eight transects which were 2 km long each, were established in each study site. Transects were laid randomly covering different habitats (i.e. forest patches, riverine forests, miombo woodland and wooded grasslands). On each transect, ten quadrat plots at a constant interval of 200 m apart were installed. Thus, in each study site a total of 80 quadrat plots of 25 × 25m were installed.

### **2. Field observations**

In general, a combined number of chimpanzee plants feeding species identified in all the study sites were 102 plant species. In addition to chimpanzee plant feeding species, 40 chimpanzee nests were observed in the established quadrat plots. Also, different human activities were observed in the surveyed sites.

## 2.1. Chimpanzee plant feeding species

Here are some of the important chimpanzees plant feeding species observed:



Fig. 1a



Fig. 1b



Fig. 1c



Fig. 1d



Fig. 1e



Fig. 1f

Figure 1a: A fruit of *Saba comorensis* (a liana). Figure 1b: Fruits of *Diplorhynchus condylocarpon* (a tree). Figure 1c: Fruits of *Ficus ottoniifolia* (a tree). Figure 1d: Fruits of *Strychnos spinosa* (a tree). Figure 1e: Fruits of *Ampelocissus abyssinica* (a climber). Figure 1f: Fruits of *Psychotria peduncularis* (herb).

## 2.2. Chimpanzee nests

Some of the chimpanzee nests observed within the MUE



Fig. 2a



Fig. 2b



Fig. 2c

Figure 2a, 2b, and 2c depicts some of the chimpanzee nests observed during field surveys.



### 3. Human activities

#### 3.1. Human activities observed in Mlofvesi

In Mlofvesi, the main human activities observed were logging, beekeeping, livestock grazing and poaching (snaring). Illegal logging for timber was observed to be high. Illegal beekeeping was observed to threaten the forests as local people make beehives using logs and thick tree bark. The most targeted trees under this destruction are *Pterocarpus angolensis* (logging), *Brachystegia spiciformis* and *Julbernardia globifrola* (making beehives) as they have thick tree bark. Cattle herds and snares were also observed in this site.

#### 3.2. Illegal logging for timber



Fig. 3a



Fig. 3b



Fig. 3c



Fig. 3d

Figure 3a, 3b and 3c: Illegal logging for timber. Figure 3d: Timbers from *Pterocarpus angolensis* ready for transportation.



### 3.3. Debarking of tree for beehives



Fig. 4a



Fig. 4b



Fig. 4c



Fig. 4d

Figure 4a: *Brachystegia spiciformis* debarked. Figure 4b and 4c: The barks of *Brachystegia spiciformis* folded and left to dry to make beehives. Figure 4d: A complete beehive positioned to a tree.

### 3.4. Poaching/snaring



Fig. 5a



Fig. 5b



Fig. 5c

Figure 5a, 5b & 2c: A snare for antelopes. Figure 5c is rope (substitute of wires) used in setting snares.



#### 4. Human activities observed in Mapalamane

In Mapalamane there is high number of people and have established settlements. People have at large cleared the forest to establish farms. There are big farms of maize, cassava, tobacco, cotton, beans etc. The only area where chimpanzee signs were observed (Mapalamane Mountain) is advancing to be an island as human settlements and farms are just close to the foot of the mountain. Apart from settlements and farms, the area is heavily encroached with thousands of cattle in addition to goat and other domesticated animals.

##### 4.1. Settlements



Fig. 6a



Fig. 6b



Fig. 6c



Fig. 6d



Fig. 6e

Figure 6a and 6b: Settlements (shelters/houses) observed at Mapalamane. Figure 6c: Maize milling machine for villagers. Figure 6d: A church in Mapalamane. Figure 6e: A pre-primary school constructed by the villagers for their children.



## 4.2. Agriculture



Fig. 7a: Debarking of trees to clear forests for agriculture



Fig. 7b: A cleared portion of forest for agriculture



Fig. 7c: Cassava farm



Fig. 7d: Tobacco farm



Fig. 7e: Beans farm

## 4.3. Livestock grazing



Fig. 8a: Livestock keepers in Mapalamane



Fig. 8b: Cattle boma in Mapalamane



## 5. Human activities observed in Mfubasi

In Mfubasi; livestock grazing, beekeeping, logging and poaching were observed. The most threatening activity is livestock grazing.

### 5.1. Livestock grazing



Fig. 9a



Fig. 9b

Figure 9a: Cattles observed in Mfubasi. Figure 9b: A piece of land left with no vegetation as a result of increasing number of cattle in the area.

### 5.2. Illegal logging for timber



Fig. 10a



Fig. 10b

Figure 10a: Logging station in Mfubasi. Figure 10b: Confiscated timbers by the government authority following illegal logging.



## 6. The field team and camping life



Figure 11: The field team on safari for camping Figure 12: A camp in Mapalamane



Figure 13: From left those standing are Prof. Anna Treydte (main supervisor for this project when she visited in one of the field sites), Mr. Shabani Kabangula (field assistant and local botanist), Mr. Mwami Rashidi (field assistant) and Simula Peres Maijo (the project leader). The one sitting is Mr. Yahya Said (the botanist).



**Acknowledgement**

We thank Alex Piel and Fiona Stewart for supporting this work through their project "Greater Mahale Ecosystem Research and Conservation (GMERC)". We are grateful to the Rufford Foundation for funding this project.