

## Project Update: December 2020

### Previous plan on study sites and changes made

Previously I proposed that in Iringa I were to study Kleruu Teachers College constructed wetland, the plan has changed because I found the wetland to be in poor condition; it seems there has been no maintenance which makes it not function well anymore. Thus, I have studied the Iringa municipal constructed wetlands which are in good condition. On the other hand, in Moshi the wetlands that were envisaged to be visited I also found they are not in a good condition and again I found the Moshi municipal constructed wetland to be working well and therefore I collected wastewater samples and will work on the biodiversity of macro-organisms later. For Arusha, I have managed to study two wetlands where I have picked samples from Banana Brewing constructed wetland and Meatking constructed wetland. In Dar es Salaam, I am planning to study two wetlands which are Dar es Salaam municipal wetland and Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) constructed wetland which are all in good condition. For Mwanza, during a study feasibility survey I have found all the wetlands to be unsuitable for my research as most of them are not functioning well due to poor maintenance and thus I have discussed and agreed with supervisors to just go on with the four region CWs that are functioning well.

### Household Respondent survey

Previously I planned to interview at least 60 respondents from six sites by a sampling fraction of 5%. Plan has changed and the number has increased as the number of households around the sites was too high and by thus picking a sampling fraction of 5% has made the sample size to increase. Therefore, up to now I have already conducted questionnaire survey in Moshi and Iringa, whereby in Moshi I have interviewed a total of 111 in Bomambuzi ward (Relini Street) with a total of 2217 households (sampling fraction was 5%) and in the Mabogini ward (Bogini street) I have interviewed 37 households with a total of 736 households (sampling fraction was of 5%). Therefore, a total of 148 respondents in Moshi.

I have also done a questionnaire survey in Iringa where I have interviewed a total of 91 people in one ward i.e, Mkwawa ward - from two streets Bwawani A with a total of 957 households and Bwawani B with a total 862 households.

On the other hand, since the wetlands in Arusha were in private companies, I just managed to interview some of respondents working in these companies and key informants who work closely in monitoring the performance of these wetlands. I am planning to go to Dar es Salaam where I will finalise the questionnaire survey. About the criterion for selecting study site and household respondents, it is that the study sites are selected purposively based on the proximity of the community to CWs and who operate their activities in these wetlands or using the water, and some are selected away from the wetland to check on their difference on understanding of various aspects of the wetlands, and thereafter the household respondents are selected randomly from a list of households provided by village/street chairman.

### Wastewater sampling from CWs number of samples that will be collected

So far, I have already collected a total of 30 wastewater samples from four different constructed wetlands i.e. 12 from two municipal constructed wetlands of Iringa, six from Moshi municipal CW, six from Banana brewing industry CW and six from Meatking. I am left with 12 samples from Dar es Salaam CWs.

### Ongoing activity

Currently I am working on DNA extraction on the samples collected in Iringa, Moshi, and Arusha. I am also at the same time working on data entry of my social survey data collected from Iringa and Moshi.

### Future Plan

- To present progress over what I have done so far.
- Continue with sample collection and social survey in Dar es Salaam.
- To start working on objective three on "Assessing Diversity of Insects, Birds and Reptiles communities in Constructed wetlands and its associated Wastewater treatment systems in Municipal cities of Tanzania"







Photos from left to right:  
Wastewater sample collection from Moshi Municipal CW. © Joyce Christopher.  
Farms Close to Iringa Municipal CW. © Gerubin Msak  
Leopard Tortoise spotted at Moshi Municipal. © Gerubin Msaki

Questionnaire Survey to farmers using Treated Wastewater from CW in Iringa. © Asilia John

Spotted Bird Nest in Iringa Municipal CW. © Gerubin Msaki

Wastewater sample collection at Iringa CW. © Asilia John

Laboratory Analysis (Filtering wastewater to concentrate microbial cells for DNA extraction)