

## Project Update: March 2019

In the previous four field trips, I have collected vegetation ecology and terrain variables associated with the vegetation. The main scope of the research was to deal with the following objectives:

1. To assess floristic composition and diversity of Hirmi forest.
2. To determine the major plant communities in the forest ecosystem.
3. To see the distribution of plant community in relation to the environmental variables.
4. Correlating the soil parameters and characters in the distribution of plant species.

## Current status of the project

About 204 different species from 10 transect lines and 75 plots were recorded in four different field trips. Those plant species belonged to 90 and 101 different families and genera, respectively. Out of this, the major plant family recorded in Hirmi forest ecosystem were Poaceae (14.5%) Combretaceae (14%), Fabaceae (12%), Asteraceae (11%) Moraceae (8%), Lamiaceae (6.1%) Rubiaceae (5.5%) and Ebenaceae (4.1%). The rest 24.8 % of plant families belonged to other different families.

There are three vegetation communities categorised based on the species compositions and altitudinal gradients. In the lower elevation (i.e. <1400 m asl) more *Combretum – Terminalia* species were confirmed. On the mid-level altitudinal gradients (1500-1800 m asl) more acacia species and some *Terminalia* species were recorded. At the top of the study area (i.e. >1800 m asl) dry Afro-montane species such as *Rhus* species, *Olea europaea*, *Croton* species, etc., were collected in this study.

More than 50% of the plant species recorded in Hirmi forest ecosystem have > 10 cm dbh for individual species. This indicates conserving of Hirmi forest will have significant a contribution to sequestering of carbon, to maintain the currently faced climate change both at the local and global level.

As it is described above, the distribution of plant species in the ecosystem, terrain variables such as altitude, slope and edaphic characters were identified. Type, distribution, and abundance of the vegetation in the study area have a direct relation with altitude and slope. About 94 soil samples from each vegetation quadrant were taken for various soil chemistry parameters laboratory analysis and correlated with vegetation distribution. A sandy loam is the major soil type.

Currently, the collected specimens are identified and the collected data (ecological and soil laboratory results) are under entry for analysis. I've presented my progress report to Shire Agricultural Research Center (which is near to the study area) for further improvements and comments on March, 2019. I have also presented and shared my experiences with other RSG grantees at the workshop conducted in Ethiopia from April 27<sup>th</sup> to 28<sup>th</sup> 2019. I was the country organiser for the conference and got special grateful and recognition from the Rufford Director (Josh Cole) and conference organiser (Alphonse Karenzi) for our successful conference. In addition, the results of this

research will be displayed and mainstreamed via published articles and creating a platform for further discussion and awareness with the local community as well as concerned stakeholders in accordance the outputted findings.



Figure 1: Hirimi forest



Figure 2: vegetation sampling inside the forest





Figure 3: measuring of DBH, slope, and pressing of plant specimens





Figure 4: soil sampling, packing, and laboratory analysis



Figure 5: progress report presentation @ Shire agricultural research center (on March, 2019) and Rufford conference @ Ethiopia (on April 27-28/2019)





Figure 6: certificates for workshop participation & presentation (April 27-28/2019) from H.E. Josh Cole and Shire- Maitsebri Agricultural research center (March, 2019), respectively