

Project Update: September 2016

Progress to date

Since the last update, much work has been carried out especially centred on objective three. The first activity had to do with participatory mapping exercises and land-use/cover change analysis in order to understand the location of local ecosystems that work as sources of woodland resources as well as establish any spatio-temporal changes. The team travelled to Malipati and Chomupani communal areas where meetings were conducted with villagers and discussions were held centred on local understandings of their natural environment. Volunteers from the villages were then asked to draw sketch maps highlighting their knowledge of the local environment and with a special focus on the access and utilisation of tree species. Similar meetings, discussions and mapping exercises were also carried out with small scale commercial farmers of the Gonakudzingwa farming area. Outputs were maps drawn by locals illustrating their spatial knowledge. These activities were carried out between February and April 2016. After the participatory mapping exercises with locals, the next activity was to carry out a land-use/ cover analysis using remote sensing and geographic information systems tools. Landsat images were downloaded from the Global Visualisation Viewer (Glovis) on the United States Geological Survey website (<http://glovis.usgs.gov>). The images covered the period 1974 to 2015. They were pre-processed to normalise the data and remove atmospheric effects and noise using ENVI software. The data on the images were also converted to reflectance values in order to facilitate the calculation of normalised difference vegetation index (NDVI) for time series analysis. Time series analysis is currently underway.

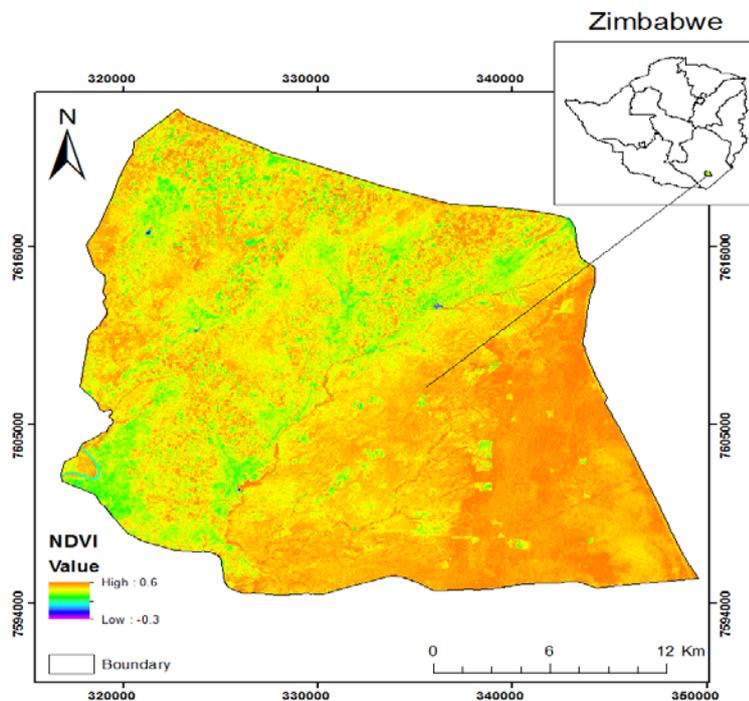


Figure 1. A Normalised Difference Vegetation Index (NDVI) image of Chomupani communal area and Gonakudzingwa Farmlands. The key shows levels of NDVI correlated to vegetation growth.



Figure 2: A mother and her children drawing a map of their village highlighting areas of the forest where they access wood for firewood and building.

Ecological vegetation surveys were also carried out. These were meant to establish the current state of the woodlands where people access tree resources and also compare with the state of vegetation in the park. Plotless sampling methods in the form of transects were used. The number of transects was determined by an adapted species-area curve. Data entry is still in progress and analysis will commence soon after.

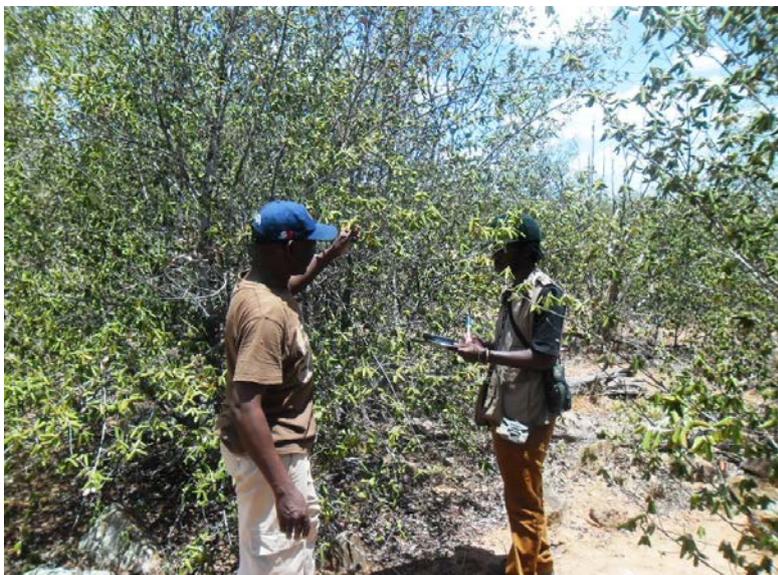


Figure 3: Measuring vegetation in a stand of *Androstachys johnsonii*, a woody species popular with locals for construction poles.

Moreover, the study also seeks to understand the utilisation patterns of forest products with particular emphasis on wood used for firewood and construction wood. This involved the quantification of wood used for firewood and construction wood annually per household. Hence, field trips were also made between June and August 2016 to carry out these surveys. Data entry is still in progress. However, below are some pictures from the field activities for this quantification of wood use survey.



Figure 4: Some structures at a homestead in Malipati built with wood sourced from outside and within the National Park.



Figure 5: A heap of firewood stored at a homestead in Malipati Communal Area.