Project Update: May 2017

During the second part of the fieldwork, the following activities were conducted.

- Continued engagement of botanist and studying of secondary documents;
- Estimation of the population abundance of the cycad species around the two districts;
- A conservation assessment of the cycad plant under research in light of the anthropogenic factors that threaten Encephalartos chimanimaniensis cycad.

The research team conducted interviews to get assistance on mapping sites on remaining wild population of the *Encephalartos chimanimaniensis* population and understand current programmes in place to ensure conservation of the cycad. The researchers had consultations with an official from the national herbarium and the largest botanical garden in the Manicaland province, the Vumba Mountains Botanical Gardens and an official from the department of parks and wildlife management based at the Bunga Forest National Park.



Mike Nyamucherera in conversation with a Parks and Wildlife Authority Official at a local National park.

Guided by the data gathered in the first phase of the research project, the research team managed to do field visits to map remaining populations and conduct a comprehensive conservation assessment. As part of the ground based survey process, the research team moved around areas where the *Encephalartos chimanimaniensis* populations are found. During the ground-based surveys the researchers conducted physical counting for adult plants and estimated numbers of juveniles identified in all the discovered sites. After conducting ground based surveys and mapping of the sites with the remaining wild populations, we attempted to quantify the extent of fragmentation of remaining *Encephalartos chimanimaniensis* cycad wild populations



Mike Nyamucherera manually recording an identified wild plant





Left: Mike Nyamucherera inspecting a corn in another wild population. Right: Mike Nyamucherera inspecting plant populations of interest

Preliminary conclusions from the conservation assessment

In situ conservation Chimanimani cycad sub-populations are severely fragmented due to illegal removal of mature plants, ever-dwindling natural habitats and death of pollination agents through lack of suitable ecological. Due to fragmentation of wild populations, most females in sub-populations have become isolated from males and coning frequencies are not in sync which results in very limited and lack of natural pollination. More so it was discovered that the genetic variation for the *Encephalartos chimanimaniensis* cycads is very narrow so adaptive capacity is reduced. Since globally it is getting warmer, it is becoming more and more difficult to adapt to changing conditions hence the isolated populations are now suffering from in breeding fatigue. Climate change is making it difficult for reproduction mainly because habitat requirements necessary for pollination and fertilisation among the cycad species are very specific. More plants are needed for balance in nature to avoid a state of affairs where we have males or females only in the wild a scenario which will jeopardise the survival of the remaining wild species.