



**DR. JOHN OLAOLUWA ADEMOLA**

**DR. JOHN OLAOLUWA ADEMOLA** work with the Department of Zoology, University of Ilorin, Ilorin, Nigeria He is one of ACE IRPM&BTD PHD students who successfully completed his PHD work at the Sokoine University and graduated on the 28<sup>th</sup> May 2021. His study focused on the Community ecology and population genetics of rodents in highland and lowland forests of Ukaguru Eastern Arc Mountain, Tanzania.

**Thesis summary**

Rodents, one of the diverse groups of mammals, are important contributors to biodiversity and good ecological indicators of habitat disturbance and their assessment is an important component of the study of forest ecosystems. The Ukaguru Mountains within the Eastern Arc Mountains (EAM) are of particular interests because the forests of this range have received little/no attention on rodents and are facing alarming rate of anthropogenic disturbances such as grazing, firewood collection, tree/pole cutting and clearance of forest for agriculture which may impact on the diversity, population structure and demography of rodents. This study, therefore, aimed at understanding the ecology of the rodents, population and demographic parameters of the dominant species in disturbed and undisturbed habitats of the Ukaguru Mountains.

A total of 1196 individuals of small mammals comprising 13 species were captured from the CMR trapping in farmland, disturbed and intact forests; in the order of relative abundance, these are: *Praomys delectorum* (52.26%), *Mus triton* (21.07%), *Mastomys natalensis* (17.14%), *Mus minutoides* (2.93%), *Lophuromys kilonzoii* (2.26%), *Crocidura hirta* (1.59%), *Beamys hindei* (1.59%), *Grammomys surdaster* (0.59%), *Graphiurus cf. raptor* (0.17%), *Lemniscomys rosalia* (0.17%), *Hylomyscus arcimontensis* (0.08%), *Pelomys fallax* (0.08%) and *Xerus* sp. (0.08%). Species diversity and evenness in intact forest were much higher compared to disturbed forest. A relatively low niche breadth was observed in rodents caught in farm/fallow lands while forest-dwelling rodents showed greater food diversity.

The sex ratios of the dominant species (*P. delectorum*) showed highly significant number of males in intact forest compared to disturbed forest ( $\chi^2 = 10.71$ ,  $df = 1$ ,  $p = 0.001$ ). The proportion of reproductively active individuals varied temporally in both disturbed and intact forests while habitat disturbance showed no effect on the breeding activity of this species. There was no variation in abundance or maturation of *P. delectorum* between intact and disturbed forests, but habitat type did affect survival. However, this effect was sex-dependent since female survival was higher in disturbed forests while male survival remained similar across the two forest types potentially due to differences in predation pressure or food availability between the two habitats.

This study provides information on the impact of anthropogenic disturbances on the small mammal abundance, diversity and demographic traits in the Ukaguru Mountains with the Eastern Arc Mountains. Also, the dietary preferences and niche overlap of rodents in the landscape is elucidated. Put together, the knowledge derived from this work, will be useful to optimize the current conservation and management strategies of the small mammals and be valuable in the conservation of the forests of this landscape.