WORKSHOP: FROM QUANTITATIVE GENETICS TO GENOMIC PREDICTION IN PLANT BREEDING

Date: 26th to 30th April, 2018

Host: The Nelson Mandela African Institution of Science and Technology, Tengeru Campus, Arusha, Tanzania.

General themes

- Quantitative genetics in plant breeding.
- Concept and analysis of genotype-by-environment interaction
- Genetic models and their use in plant breeding.
- Basic concepts of association genetics and genomic-enabled prediction.

Objectives

- To provide some basic quantitative genetic concepts to be applied in plant breeding.
- To provide some basic statistical models and methods for genetic and genomic analyses.
- To detect and measure the genotype-by-environment interaction.
- To show practical results of association genetics and genomic prediction in a breeding context.
- To demonstrate implementations of various genetic analyses using R-packages.

Learning outcomes

- Refresh /get basic ideas of quantitative genetics applied to plant breeding.

- Dissecting the genotype-by-environment interaction and estimating stability of genotypes.

- Understanding the conceptual framework of selection in plant breeding.
- Learning results that clearly show how biometrical genetics, association genetics genomic-estimated prediction of breeding values WORK!
- Knowing how to run some R codes for biometrical genetics, association genetics. and genomic-estimated prediction of breeding values involving different statistical models.