**STANDARD OPERATING PROCEDURES (SOP) FOR CASSAVA BREEDING PROGRAM AT TARI-TANZANIA**

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**Parental selection and establishment of the crossing block**

* **Define national breeding objectives**
  + CBSD resistant
  + CMD resistant
  + High DMC
  + B-carotene
  + High yield
  + Low cyanide level
* **Assemble breeding germplasm**
  + From existing and exotic sources and evaluate their breeding values.
* **Select parents for breeding**
  + Use phenotypic information for parental selection (i.e. mean performance, stability across environments, flowering/sprouting/seed set ability)
  + Keep pedigree information for diversity maintenance
  + Use genomic information to help in kinship and estimation of Gebvs
* **Establishment crossing block and target environments**
  + Identify mega environments for breeding
  + Characterize target environments
  + Should have suitable weather to help flowering
  + Have irrigation systems for supplementing water
  + Determine the size of land needed based on number of parents and crossing sizes
  + Preparation of land two weeks to planting of parents(plouging/harrowing/ridging)
* **Planting parents and establishing crosses**
  + Identify and retrain an experience crosser(s)
  + Determine the field design and layout
  + Define planting spacing (1 x 1 m), number of plant per genotype (i.e. 40), time of planting (i.e. November-December)
  + Define the time of making crosses (i.e. Mid-day) and time for collecting pollen from male parents (i.e. morning)
  + Assemble materials needed during crossing (i.e. pollination bags, labels, marker pen, log book etc.)
  + Define management activities in the crossing bock (i.e. weeding, irrigation etc.) and appropriate time of doing it (i.e. weeding after every two weeks)
* **Monitoring successful crosses, seed collection, seed processing and seed storage**
  + Identify experienced individual
  + Define time period for monitoring successful crosses after pollination (i.e. one week after pollination).
  + Define signs for fruit maturity to avoid seed lost through shuttering
  + Define time period for seed collection (i.e. Daily after the onset of fruit maturation)
  + Assemble materials for keeping the seeds (i.e. envelope)
  + Define procedure during seed processing to avoid seed mixing
  + Define storage conditions of seeds after processing