

### **3. Identifying the Physiological and Genetic Traits that Make Cassava One of the Most Drought Tolerant Crops**

**Principal Investigator:**

Alfredo Alves, EMBRAPA/CNPMPF

**Co-Principal Investigators:**

Hernán Ceballos, CIAT

Martin Fregene, CIAT

Yvonne Lokko, IITA

Tim Setter, Cornell University

#### **MID-YEAR REPORT**

Based on the outcomes from the cassava breeding programs carried out by Embrapa (Brazil) and CIAT (Colombia), in the last 15 years, 40 cassava varieties were identified as contrasting for drought tolerance attributes, being 28 tolerant and 12 susceptible. The identification data and other basic information of these selected genotypes are listed in the Appendix.

The selected contrasting varieties have been multiplied through *in vitro* micropropagation procedure at CIAT Headquarters. Around 50 individual copies of each contrasting genotype were produced and will be shipped to Embrapa and Cornell University for evaluation.

Tangible outputs delivered

- Drought tolerant contrasting cassava varieties identified
- *In vitro* plants of the drought tolerant contrasting varieties produced

The first six months of the project have been dedicated to solve some administrative constraints regarding the transfer of funds to the participant institutions. Considering that Embrapa (CoPI institution) could not be able to receive all the annual budget and then transfer to the CoPIs institutions, new agreement between CIMMYT and Embrapa were appropriately arranged in order to allow that the budget to the CoPIs (CIAT, IITA and Cornell) can be sent directly to them without sending first to Embrapa. By the end of May the year 1 budget was transferred from GCP to the participants institutions. Shortly, Embrapa and CoPIs will sign subcontracts which has the rules, rights and responsibilities to be undertaken by the participant institutions. The subcontract incorporates many of the rules that were already agreed upon when the institutions became a member of the Generation Consortium.

Another initial constraint to implement the project is the delayed bureaucracy to issue the import permit to ship the cassava genotypes (*in vitro* plants) from CIAT to Brazil and USA. These constraints have caused some delay of the original workplan and can be minimized by no cost extension of the project's activities.

### **4. An Eco-physiological – statistical Framework for the Analysis of GxE and QTLxE as Occurring in Abiotic Stress Trials, with Applications to the CIMMYT Drought Stress Programmes in Tropical Maize and Bread Wheat**

**Principal Investigator:**

Fred van Eeuwijk, WUR