

Breeding & Seed System Southern Africa

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Annual Sweetpotato Breeding Meeting

Blantyre, Malawi

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Major Objectives: Breeding & Seed System

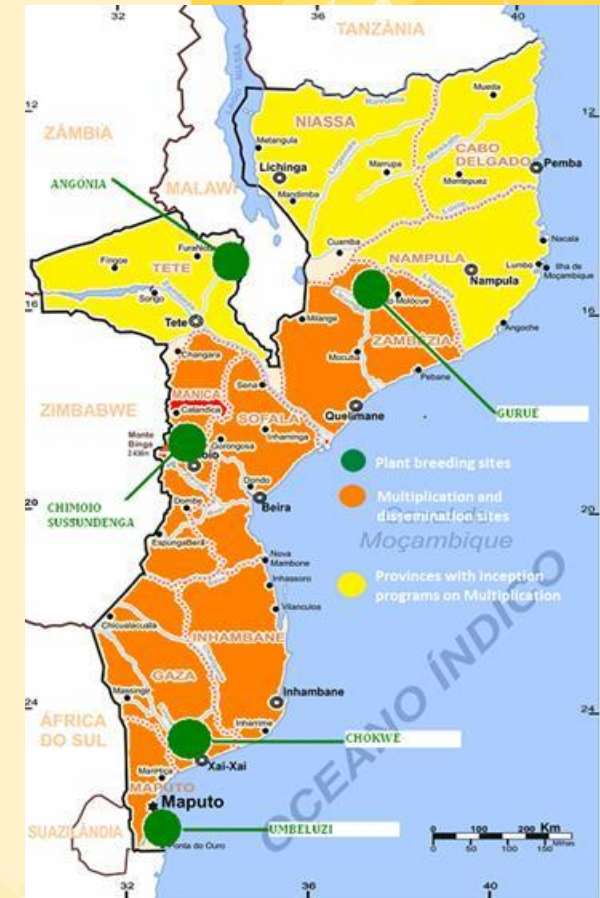


On Breeding:

Generate drought resistance, orange-fleshed sweetpotato that combine different quality characteristics with significant improvements in yielding ability

On Seed System:

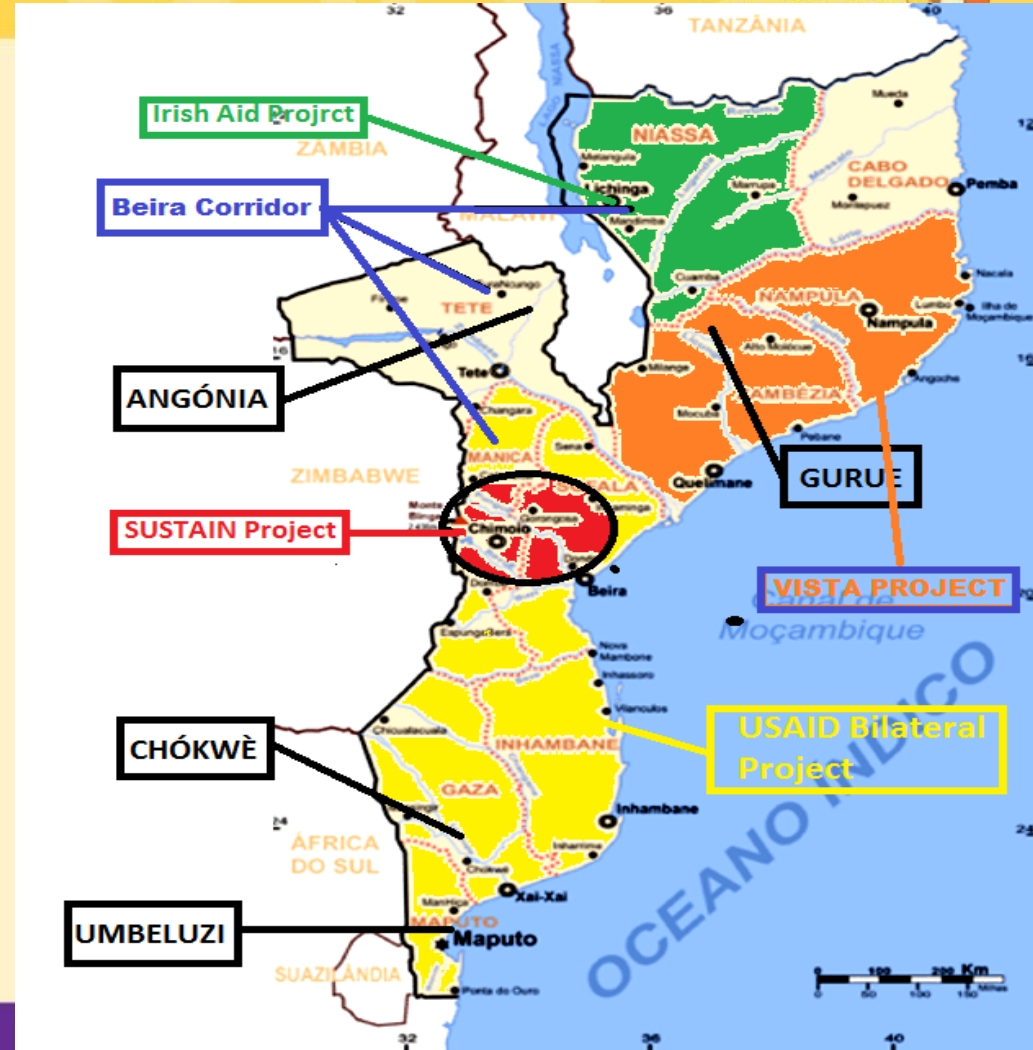
Establish community based seed systems for good quality seed dissemination and develop & test strategies for the multiplication and dissemination of sweetpotato varieties



Project Intervention Areas



- SASHA Project
- **USAID Bilateral Project**
- RAC Project
- **Beira Corridor**
- **Irish Aid project**
- **SUSTAIN Project**
- **VISTA Project**



Major Achievements to Date



- Two genetically separate populations developed with new drought screening techniques; two other developed (smaller)
- **First recurrent selection cycle for drought stress adaptation in two independent controlled cross populations in Mozambique by an accelerated breeding scheme (ABS) achieved in 2011;**
- Drought adapted population disseminated as true seed (Half-sib) to NARS breeding programs from 12 SSA countries in June 2011;
- **15 drought tolerant varieties released in 2011;**
- More seed distributed in 2013 (total of over 45,000) to 11 countries;

Major Achievements to Date cont.

Seeds in storage to distribute in 2014 for ASIA

SASHA
Sweetpotato Action for
Security and Health in Africa

Location	2011		2012	
	Controlled	Polycross	Controlled	Polycross
Umbeluzi	1,500	44,157	-	8,147
Gurue	14,498	30,569	30,847	115,223
Total	15,998	74,726	30,847	121,561



Breeding trials planted from 2010 to 2013 in Mozambique



Indicator/Year	2009/10	2010/11	2011/12	2012/13	Total
Nr of trials established	83	116	82	68	349
Nr of on-farm trials	205	171	41	40	457
Nr of clones evaluated	40,000	13,769	18,834	11,926	84,529
Nr of seeds collected	114,786	70,786	132,657	210,681	528,910
Nr of variety released	3*	-	15		18
Nr of potential clones to test for variety release in 2012 & 20013	-	-	77	25+32	134

*MGCL, Gabagaba, 1992.11, 199062.1





More achievements



- During this reporting period, (July 2013 to June 2014) **60 breeding trials were planted** and a total of 139 On-Farm trials planted & **48 breeding trials harvested**;
- **About 134 advanced clones** were multiplied to establish 4 multi-location trials and many on-farm trials for more varietal release in 2014 & 2015.
- in 2013 about **2,781 sweetpotato seeds**, received from Uganda for heterosis study were germinated successfully, now under rapid multiplication in the field to establish the heterosis trials next month;
- About **51,135 polycross & 11,373 controlled cross** ones were harvested in two sites ; Some distributed last breeding meeting;
- For **2014 13,000 crosses carried out in Gurue and 3,400 crosses at Umbeluzi**. Seeds harvesting initiated last week;
- There are about **200,000 seeds**, both controlled cross and polycross ready for distribution;
-

Multiplication and dissemination for the period 2010 to 2013 in Mozambique



Indicator/Year	2009/10	2010/11	2011/12	2012/13	Total
Area per hectares multiplied (on-station)	3.7	18	32.5	8.5	62.7
Nr of DVM	13	188	210*	278**	278
Area per hectares multiplied DVM/ contact farmers	3.8	37.6	57.5	70***	168.9
Kilograms of Vines	87,250	550,440	916,040	804,000	2357,730
Nr of beneficiaries (Households)	20,729	91,740	94,800	134,000	341,269



In tc about 22,896 plantlets produced from 94 clones.
Meristem, Thermotherapy, Indexing



A total of 7,535 fresh samples processed and 3,387 scanned by NIRS

Indicator/Year	2010/11	2011/12	2012/13	Total
Nr of plantlets multiplied (lab)	6,441	8,993	14,489	29,923
Nr of plantlets virus free (lab)	3,246	3,959	1,824	9,029
Nr of plantlets acclimatized (greenhouses)	696	234	614	1,544
Nr of samples processed (NIRS)	1,121	5,059	9,552	15,732
Nr of samples analyzed (NIRS)	820	5,059	8,492	14,371



Summary of quality data for the observational trial of 2484 clones in Gurue, 2012/13



Data from Lab indicated that 434 clones from a total of 2440 clones were selected

	Total YLD	Storage root DM	BC	Protein	Fe	Zn	Starch	Fructose	Glucose	Sucrose
Min	12.25	25.00	20.10	1.70	1.10	0.76	36.91	1.39	2.80	1.38
Max	40.74	41.20	71.70	11.10	3.30	1.93	70.20	10.06	13.74	22.93
Mean	22.92	29.43	34.88	4.55	1.93	1.24	56.60	4.34	6.19	8.89



ISO-Standard 17025 compliance, germplasm indexing and distribution and upgrade of TC facilities



- Diagnostics auditory, reformulation of all the procedures and drafting recommendations for future work related to quality management
- Rearranging and reworking tissue culture protocols and virology (detection of virus, thermotherapy, Virus indexing. Protocols for internationally exchanged germplasm
- Upgrading of in vitro facilities and skills of tissue culture staff at SSP level to ensure safe reception and sending of in vitro and true seed material
- Training screen house technicians;
- Production of a manual for training on quality;



SSP



- Exchange information
- Training/capacity building
- Knowledge management



Indicators



Indicator/Year	2009/10		2010/11		2011/12		2012/13		Total
	Nr of participants		Nr of participants		Nr of participants		Nr of participants		
	Male	Female	Male	Female	Male	Female	Male	Female	
Farmers trained etc. (production, processors, multiplication and DVM, data management)	217	691	595	427	343	1027	288	269	3857
Technicians trained in short term)	84	69	79	84	211	102	81	47	757
Farmers trained in agro-processing/nutrition trainings	7	6	13	19	28	14	37	35	159
Technicians trained in agro-processing/nutrition trainings	6	4	4	8	8	3	23	17	73
Degree training BSc	0	1	0	2	1	1			5
Degree training MSc	1	1	0	0	0	0	0	0	2
Internships	5	3	4	6	24	13	5	5	65
Nr of Displays	13		15		28		19		75
Nr of Field days	6		8		12		6		32
Nr of variety released	3		-		15				18
Nr of beneficiaries (Households)	20729		91740		94800		134000		341269
Nr of Visitors/individualities	30		79		63		61		233

Thanks for Listening

