

Breeding Pipeline: Bambara Nut 2007-2017

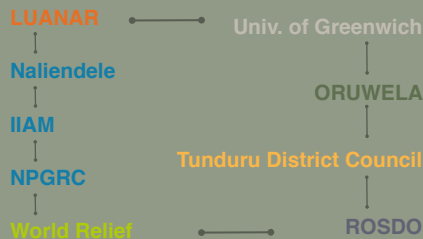


Members of Kanthu Nkhama Farmer group in Mzimba South with some of the Bambara groundnuts they harvested in 2016

Southern Africa Community of Practice



Project Partners



- University in Region
- National Ag Research Center
- Non-Governmental Organization
- International Non-Governmental Organization
- Governmental Organization
- Farmer Organization
- University outside of Region

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Improved livelihoods

Multi-dimensional outcomes

(2014) A study evaluated the impact of the Bambara nut project on profitability for participants in Mzimba and Ntchisi districts (n=60 intervention, n=70 control) show that **supported households were earning approximately \$30 more** in gross profit and had a return to labor of \$0.18/hour versus \$0.05 for unsupported farmers.

Farmer managed seed production and dissemination

2013: 144 farmers in Malawi, 75 in Mozambique and 400 in Tanzania for the 2011/12 season **received seed** to create greater interest in the crop. In Malawi and Tanzania all farmers paid back twice the seed received to be **passed on to other farmers**.

2014-2015: 5,000 kg **breeder seed** produced, farmer groups **multiply 2-3,000 kg** of new varieties and preferred local varieties 2016/17: 11,000 kg of Bambara produced.

More diverse options for various contexts

2017: 4 varieties released in Tanzania and 3 more will be released in Malawi, that have **different characteristics** like seed size and color, nutritional properties, and precocity.

More appropriate variety testing under targeted conditions

2017: PVS trials were conducted with farmers in 7 villages in Tanzania using 6 Bambara groundnut genotypes. The farmers identified **local evaluative criteria** for their preference which included maturity, flavor, grain colour, yield, disease tolerance and cooking quality. There were differences in nut yield between sites but Nalbam 9 was the highest yielding genotype overall (882 kg/ha) followed by TZM 22 with mean seed yield of 871 kg/ha, compared with the lowest mean yield of 642kg/ha in a local variety. The varieties Nalbam 9 and TZM 22 will now be submitted for release, and seed multiplication.

More appropriate variety testing under targeted conditions

2013: 5 of the **local lines** selected over three seasons in **multi-location trials** and **preferred by farmers** for high yield, drought tolerance and ease of earthing up will be proposed as the first Bambara varieties ever to be formally released in Tanzania. Line were tested over 3 years in **multiple sites**, on and off station, and selected using **Participatory Varietal Selection (PVS)**. Pod yield ranged from 700 to 2800 kg/ha on-farm in Tanzania.

Characterizing agrobiodiversity

2014: Bambara **groundnut landrace** accessions were collected from Tanzania (16), Mozambique (4), and West Africa Bambara Project (11). They were characterized for a range of traits on-station and on-farm to identify **farmer and market evaluative criteria** and to validate **performance**.

Understanding context

- Bambara nut, a grain legume that is often grown by **women** in the region, is **underutilized and under-researched**.
- The average yield of local landraces was **400 kg/ha**.
- 80% goes to home consumption, but it is only consumed on average 1.5/ week during the 4 months it is available (consumption frequency of common bean is 2.6 and groundnut 4.5) and only in 1 preparation (a stew.)
- Market studies reveal there is unmet demand but farmers report they have difficulty selling their surpluses. The project hypothesizes that if there is **more production it will attract traders** and a stronger value chain will develop.

