# Jujube and tamarind for early fruit production to enhance food and nutrition security in southern Mali

Ky-Dembele C.[1], Samaké O.[1], Koné B.[1], Traoré FT.[1], Diakité A. [1], Binam J.[1], Doumbia M.[1], Kalinganire A.[1]
[1]I1World Agroforestry Centre – West Africa and Central Regional Office - Sahel Node – BP E5118 Bamako, Mali
Corresponding author email: C.Dembele@cgiar.org

## Key research activities

- Undertake at the grassroots level, participatory action research on superior accessions and grafting of four priority tree species including baobab, jujube, tamarind and shea.
- Test, evaluate and validate fruit and vegetable tree garden establishment at household level, to address especially children and pregnant women needs in terms of dietary, micronutrient and vitamin intakes.

## Results and main findings

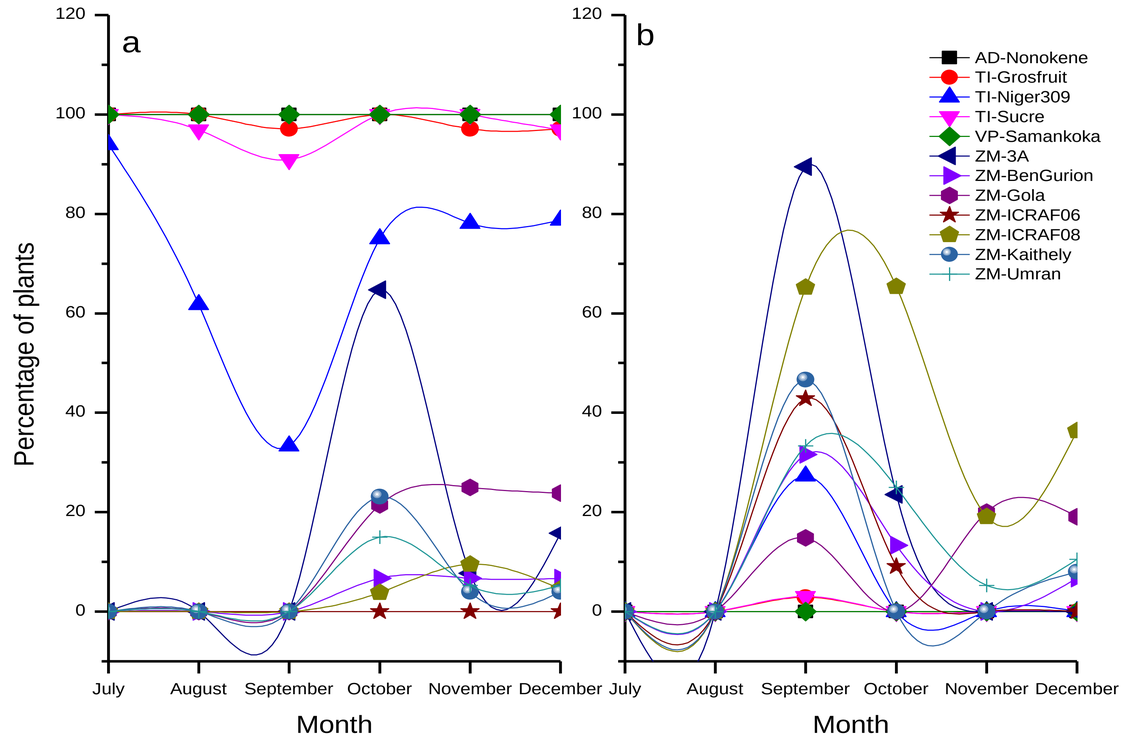
- The promoted fruit and vegetable tree garden technologies can be used to address the prevailing micro-nutrient deficiencies known as hidden hunger. Within 6 months after planting many superior accessions of indigenous trees are able to produce fruits which are easily available source of nutrients and vitamins, often lacking in staple foods.
- Jujube accessions are growing faster than accessions of other species. They are the most efficient in fruiting as shown on the figure.
- Niger 309 is the most successful out of the three tamarind accessions. Most plants have fruited two years after planting.
- Nononkene, a superior accession of baobab , had the highest survival rate (100%) and greatest collar diameter whereas its canopy width is similar to that of Samankoka shea accession. Baobab and shea grafts have not yet fruited two years after planting.

## Implications of the research for generating development outcomes

- The adoption of fruit tree gardens would allow farmers, especially women who are currently managing the established fruit gardens, to have a micro-nutrient and vitamin rich sources to enhance household nutrition and their income.

## How this work would continue in Africa RISING phase 2

- Strengthening the scaling up/out the promising results obtained on fruit production from the improved indigenous tree plants.
- Fostering the partnership and networking with local, development and community-based organizations to promote fruit consumption and the adoption of household fruit and vegetable tree small gardens innovations in the Sikasso region in Mali.
- Addressing food deficiency and child malnutrition issues by promoting a better use of underutilized indigenous tree species in Sikasso region.




**Figures a & b:** Percentage of plants with no fruits (a) and at the peak of fruiting (b) from July to December 2015 for 12 superior accessions of four fruit tree species *Adansonia digitata* (AD), *Tamarindus indica* (TI), *Vitellaria paradoxa* (VP) and *Ziziphus mauritiana* (ZM) planted in 2013


Pictures of two-year flowering tamarind and fruiting jujube trees

## Current partnerships and future engagements for out scaling

Partnerships with CGIAR centers, NARs and national and international NGOs are integral to providing the best targeted opportunities for the scaling up/out of promising agroforestry technologies in Mali. The importance of these partnerships is reflected in the bilateral projects that ICRAF is leading including SmAT-Scaling, BRAS-PAR, CASCAID, GCC, DRYDEV, etc.

The Africa Research In Sustainable Intensification for the Next Generation (Africa RISING) program comprises three research-for-development projects supported by the United States Agency for International Development as part of the U.S. government's Feed the Future initiative.

Through action research and development partnerships, Africa RISING will create opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.

The three projects are led by the International Institute of Tropical Agriculture (in West Africa and East and Southern Africa) and the International Livestock Research Institute (in the Ethiopian Highlands). The International Food Policy Research Institute leads an associated project on monitoring, evaluation and impact assessment.

www.africa-rising.net