Accelerated learning through characterization of smallholder cassava production systems

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Introduction

• The ACAI project characterized the smallholders’ production systems in both Tanzania (TZ) and Nigeria (NG) to create a starting point for a geo-spatial and well targeted cassava agronomy technology delivery.
• The project will develop decision support tools for fertilizer recommendation and blending; intercropping; scheduled planting and high starch cassava content; and best planting practices.
• This will benefit the development and private sector partners facilitating effective transfer of appropriate cassava agronomy recommendations to thousands of smallholder cassava growers.
• In turn, accelerating the identification of appropriate targeted technology delivery for higher cassava production and productivity (www.cassavamatters.org; Mutsaers et al. 2017).

Materials and Methods

• Surveyed ACAI project target areas: the Lake, Eastern, Southern zones and Zanzibar in Tanzania; South East and South West of Nigeria.
• 2016 administered open and closed ended structured questionnaires to cassava growers, earmarked with the aid of GIS techniques that incorporated GPS coordinates and proximity to Development partners’ extension agents.
• Used CDK forms for data collection on variables e.g. farming systems, planting practices, use of inputs, to identify association between and among the variables.
• Questionnaire data curated, processed and analyzed using R-Statistical package

Results and Discussion

In Nigeria, more than 75% of the cassava growers use raised bed, usually done in conjunction with tillage. Tillage should be promoted in combination with ridges in Tanzania.

Herbicide use is common in Nigeria, and fertilizer is only used by farmers applying herbicide. Promotion of fertilizer use should therefore be targeted to herbicide users. Less fertilizer is used in Tanzania, therefore its use should be promoted among smallholders.

The commercialization of cassava (>75%) must have driven the use of input in Nigeria. Only 20% of cassava is commercialized in Tanzania and lesser commercialization must have also reduced the drive to use input and vice versa.

About 20% of the respondents in Nigeria obtain their seed from a seed multiplication initiative (research, NGO/government or commercial). 95% of Tanzanian respondents obtain seeds informally (own field, neighbor, exchange within local community). Seed systems should be promoted in Tanzania.

Intercropping cassava is less popular with growers in Nigeria (50%) than in Tanzania, (>75%), as an option for income before harvesting the long duration cassava.

Conclusions

• Understand current practices and variations which offers opportunities for co-learning through observational studies
• Opportunities for targeting of technological interventions such as fertilizer use and ridging
• A baseline to evaluate changes in cultivation practices through project interventions.
• Considerable variation in cultivation suggest opportunities for accelerated learning by assessing local yields and management modifications in field sub-sections.

Acknowledgements

We are grateful to the Bill and Melinda Gates Foundation which funded these studies, and to all partners, including the farmers, who participated in the characterization exercise.

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