Drought tolerant bean varieties offer hope to smallholder farmers in Malawi

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1. Introduction

The 2014/15 season has been a nightmare in Malawi as the country faced floods at the beginning of the season and then terminal drought. Most farmers lost property and crops through flooding and water lodging while surviving crop fields were burnt dry prematurely by the terminal drought which was experienced towards the end of the season. As other crops suffered, the drought tolerant bush bean which CIAT is testing in Africa RISING trials survived the ordeal and has been described as the hope towards mitigating against the effects of climate change by both technocrats and farmers.

2. Methodology

CIAT is testing drought tolerant bush bean genotypes in Dedza and Ntcheu under Africa RISING project, using mother baby approach. In each mother has eight different management options being implemented and these are sole beans unfertilised, sole bean with manure, maize with manure and NPS fertilizer, bean-maize intercrop with NPS fertilizer, bean-maize intercrop with both manure and NPS fertilizer, sole bean with both manure and NPS fertilizer, bean-maize intercrop unfertilized and bean-maize intercrop with manure. The two bean genotypes used in these trials are SER 45 and SER 83. Each of the babies choose and implement one or two management options. The trials have been implemented for two seasons. During the season, Participatory Technology Evaluation (PTE) is conducted with both participating and non-participating farmers. We also collect agronomic and soil data from both trial and control plots. The bean-maize intensification trials are conducted to promote food diversification and mitigating against the effects of climate change and land pressure while introducing and disseminating the promising varieties in smallholder cropping systems.

Map of central Malawi showing Study Sites

3. Findings

Before terminal drought

After terminal drought

The bush beans have shown outstanding performance in all the plots when compared to other crops including the local bean varieties. In some plots particularly those which did not have either organic or inorganic inputs, maize completely failed but the beans produced pods and matured properly. “This is a magic bean, how I wished I had an opportunity to plant a big area?” Said Mrs. Pokoma Lebita, a farmer hosting the bush bean mother trial at Ungwe village in Linthipe, Dedza district. Pod load count by two women of Tikondane club in Linthipe showed big differences between SER 83 (124pods/plant) and the adjacent local variety (27pods/plant). Review team for Africa RISING which visited the trials were equally puzzled and pressed for the release of the drought varieties. PTE and Agronomic data is being processed to aid in distinguishing performance across management options.

4. Conclusion

Follow-up visit by the Department of Agricultural Research Services, Department of Agricultural Extension Services, Technology Dissemination representative, farmers, CIAT Scientists and the media has made at bean breeding field at Chitedze Research Station to appreciate the performance of Drought Andean Beans (DAB). The Department of Agricultural Research Services, through the bean breeding program, has since committed to present for release at least two drought tolerant bean varieties.

5. Acknowledgement

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