

N2Africa - Putting nitrogen fixation to work for smallholder farmers in Africa

A Socio-Economic Analysis of the Factors that Affect Legume Production among **Smallholder Farmers in Zimbabwe**

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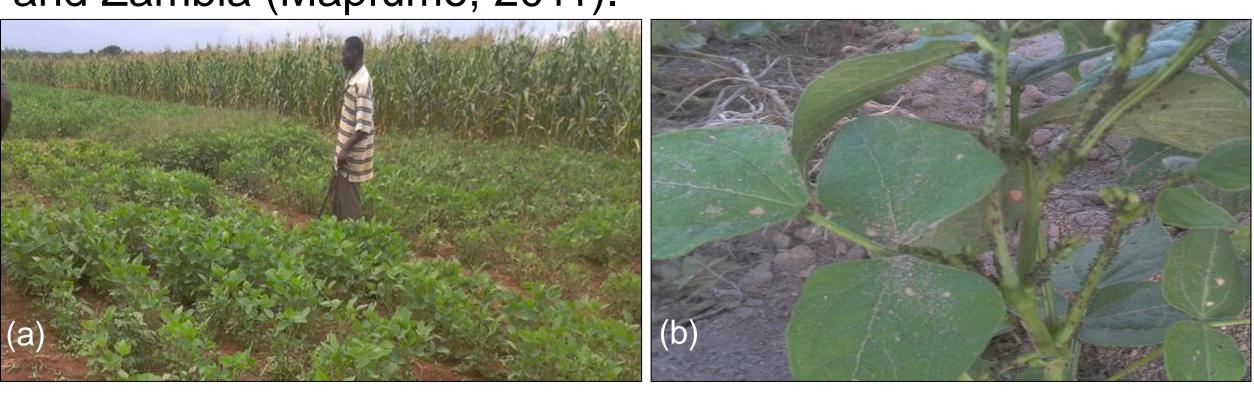
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Introduction

- Biological nitrogen fixation (BNF) has been recognised as key in replenishing soil fertility
- Investing on BNF has been justified on the basis that the technology utilises legumes which in turn provides grain protein and improves household food security (Kanonge et al., 2009)
- Despite these benefits, legume production remains low with maize accounting for 60% or more of the cropped area in Malawi, Zimbabwe and Zambia (Mapfumo, 2011).



Pic 1: (a) shows poor legume (soya bean)field in contrast with good maize crop and (b) shows poor legume crop attacked by a disease.

❖As a result, there is need to understand how the cultivation of legumes is determined by the social, economic, institutional and biophysical factors

Objective

To identify factors that determine Zimbabwean smallholder farmers' decision to cultivate legumes

Methodology

Carried out in four districts differentiated by agro- ecological potential and market access

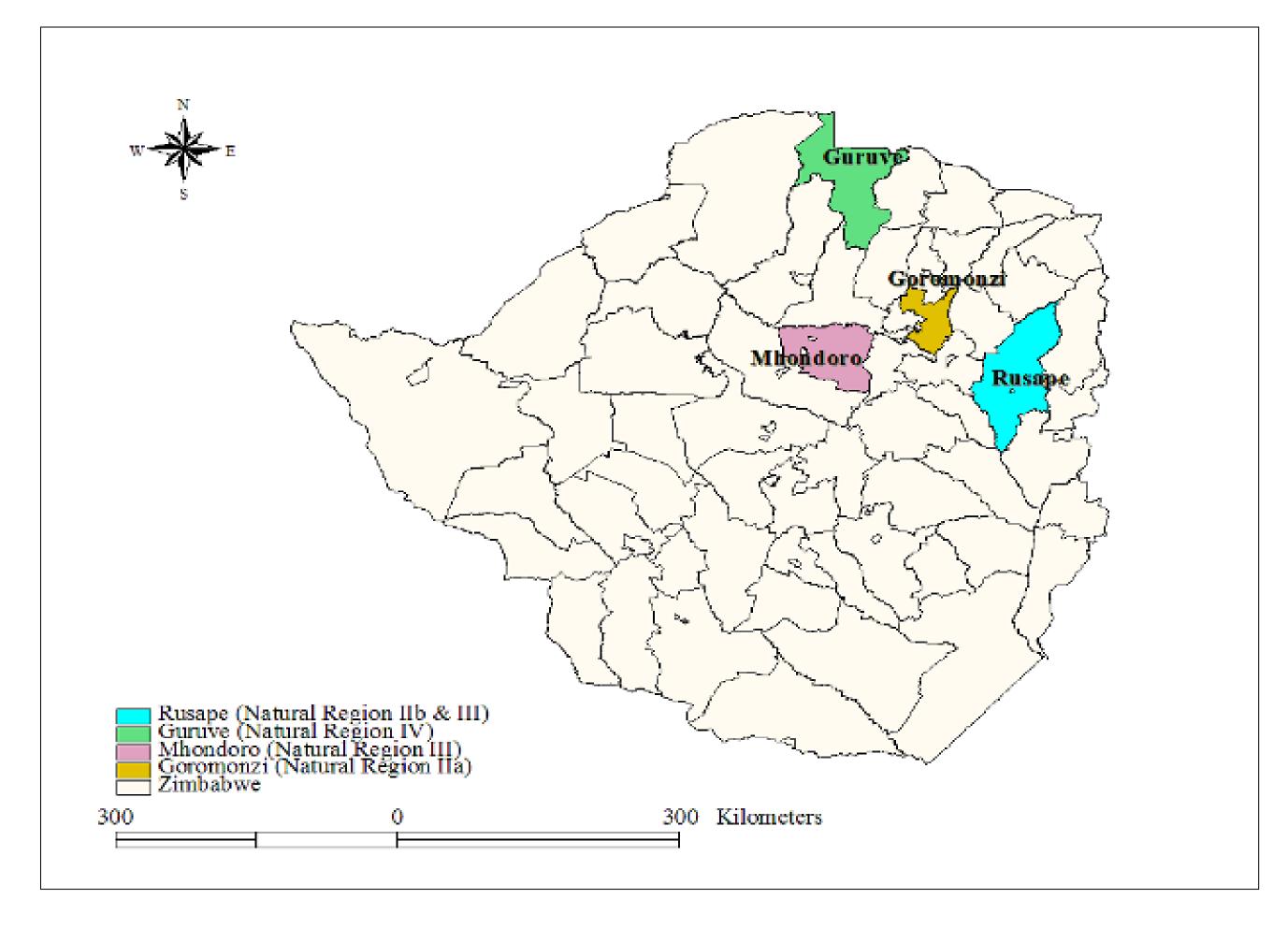


Fig 1: Zimbabwean map showing study sites

- Conducted four focus group discussions per district (2 female and 2 male groups) with 15 participants per group
- Carried out six case studies per district
- Direct observation on case study participants

Name Organisation¹ University of Zimbabwe

Results

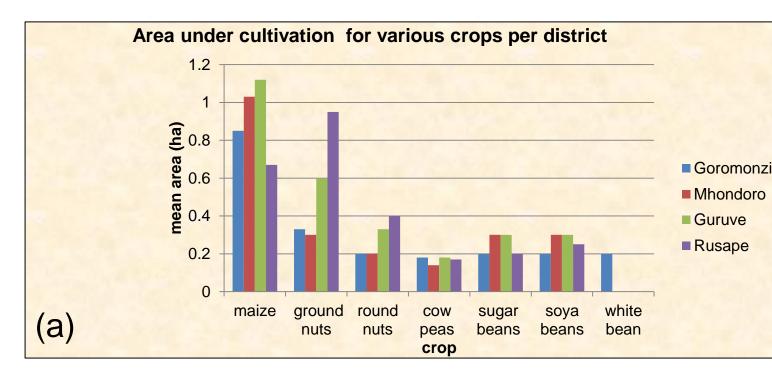
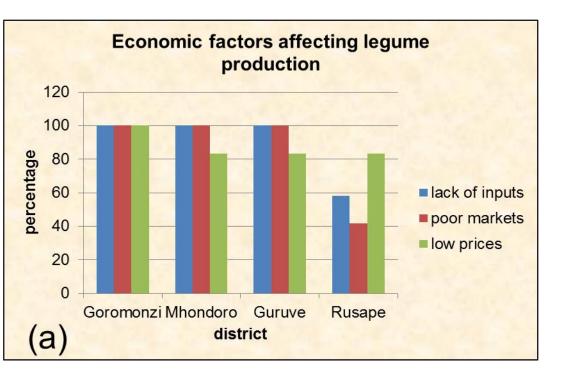
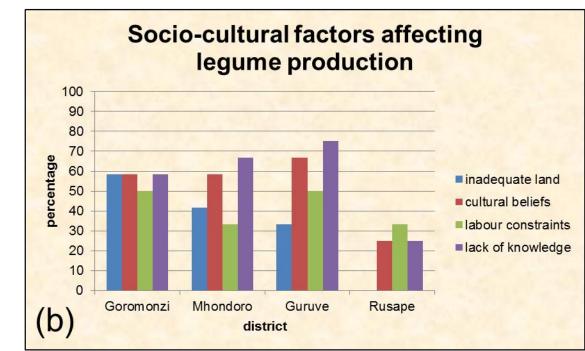


Fig 2: Mean area under maize and legume production

Intense production of legumes was recorded in Rusape while other in other districts legume production remains low





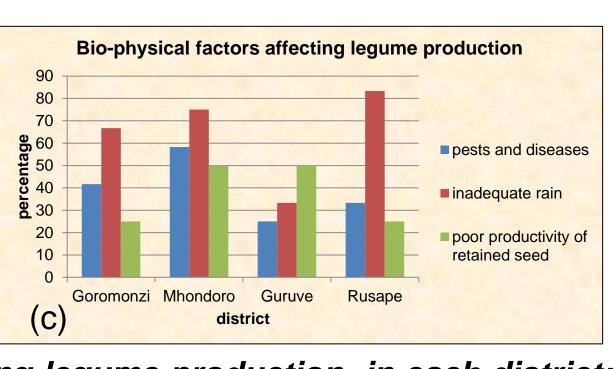


Fig 3: Shows factors affecting legume production in each district: (a) economic, (b)socio-cultural and (c) biophysical.

- Economic factors like lack of inputs, poor markets and low prices were outlined as major factors inhibiting intensive legume production
- Legume production was higher in Rusape where there is a contract farming scheme for groundnuts and bambara nuts that availed inputs and competitive market prices



Pic 2: (a) 1 hectare under bambara nut cultivation in Rusape, (b) shows ground nut bumper harvest Rusape (c) shows a small plot under soya bean cultivation in Goromonzi.

Conclusion

❖ To increase the area under legume production, efforts should be channeled towards addressing economic factors affecting legume production. Interventions like contract farming that avail inputs and markets should be initiated by both the government and the private sector.

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References

Kanonge G, Nezomba H, Chikowo R, Mtambanengwe F and Mapfumo P, (2009). Assessing the potential benefits of organic and mineral fertiliser combinations on maize and legume productivity under smallholder management in Zimbabwe. African Crop Science Conference Proceedings, Vol. 9. pp. 63 – 70.

Mapfumo P 2011. Comparative analysis of the current and potential role of legumes in integrated soil fertility management in Southern Africa. In A. Bationo (eds)

Fighting poverty in Sub-saharan Africa the multiple roles in integrated soil fertility management. Springer pp 175-200





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