Potential and constraints for animal feed as an objective of poor farmers in participatory research with multipurpose forage crops in Central-America

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1 Significance

Participatory on-farm research:

- Can identify factors which determine small-scale farmers' objectives on multipurpose forages.
- Hence provides instruments to enhance their adoption.

2 Objective

- To determine the main factors inducing or inhibiting small-scale farmers to opt for animal feed production as an objective to experiment with multipurpose forages.

3 Background

- Small-scale farmers representing the maize-beans based agricultural system of central Honduras are experimenting with multipurpose forages.
- Objectives are food production, enhancing soil fertility and animal feed, the latter based on a need to improve animal production or a desire to diversify into this.

Farmers assessing *Lablab purpureus* (left) and *Brachiaria brizantha* (right)

Table 1. Variables used in animal feed regression model

$$\ln(\text{ObjectiveFeed}) = \beta_0 + \beta_1\text{Altitude} + \beta_2\text{LandTenure} + \beta_3\text{BuyMaize} + \beta_4\text{UreaMaize} + \beta_5\text{MaizeYield} + \beta_6\text{CattleNr} + e_i$$

Variable	Definition
ObjectiveFeed	1: yes, 0: no
Altitude	1: < 800 masl, 0: ≥ 800 masl
LandTenure	1: owning land, 0: landless
BuyMaize	maize bought for household consumption: 1: yes, 0: no
UreaMaize	Level of urea application on maize (kg/ha)
MaizeYield	Maize yield (kg/ha)
CattleNr	Number of cattle

4 Methods

- 150 farmers involved in 200 participatory on-farm experiments during three growing seasons.
- Germplasm consisting of grasses (e.g. *Brachiaria brizantha*), annual legumes (e.g. *Vigna unguiculata, Lablab purpureus*), and legume shrubs (e.g. *Cratylia argentea*).
- Experimental outline determined jointly by farmers and researchers.
- Use of a dichotomous logistic regression model to examine the factors influencing the inclusion of animal feed as an objective (Table 1).

5 Results

- Landownership, urea application, maize yield and cattle number were inducing factors for animal feed production.
- Farmers depending on purchased maize for their food security were less likely to grow forages for animal feed.
- Altitude had no effect.

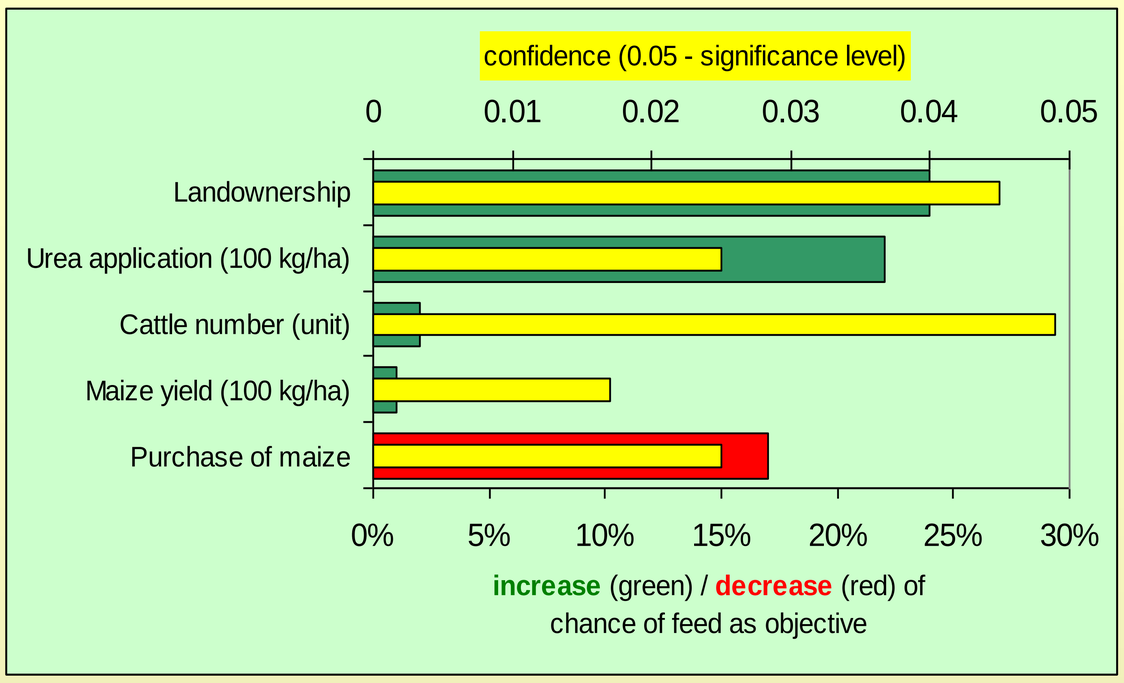

Figure 1. Factors determining the choice for animal feed as an objective for small-scale farmers

6 Conclusions

- Participatory on-farm experiments with multipurpose forage crops are useful to make farmers acquainted to their opportunities and identify inducing and inhibiting factors.
- Farmers without full land ownership and those who depend on outside acquired basic grains for their food security will be less likely to dedicate resources to produce animal feed.

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