



HealthyLAND Project



# Characterizing the Diversity of Smallholder Farmers for informed Agricultural Interventions in Kapchorwa District, Uganda

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## INTRODUCTION

Typologies:

- tools to deal with farming system heterogeneity by classifying farms into groups that have common characteristics;
- supports the implementation of a more tailored approach to agricultural development (Kobrich *et al.*, 2003).

In the HealthyLAND Project: typology was used to relate the level of crop diversity with household income, food, and nutrition security outcomes;

Hypothesis: increased diversity is related to higher income, food and nutrition security.



Farming system in the upper belt of Kapchorwa district

## STUDY DESCRIPTION AND METHODS

Kapchorwa district, Mt Elgon region, Eastern Uganda

Main characteristics:

- low, medium and high altitude
- High risk of malnutrition (35.9% stunted children < 5 years)

Sampling:

- Probability Proportional to size (PPS) methodology -> 40 villages =10 villages were randomly selected per sub-county;
- in each village: 12 households randomly selected.

Agricultural diversity index was constructed to categorize the farms by diversity levels. The weights of the variables of the index were derived using a Cobb-Douglas type of production function.

## REFERENCES

Kobrich, C., Rehman, T. and Khanc, M. (2003). Typification of farming systems for constructing representative farm models: two illustrations of the application of multi-variate analyses in Chile and Pakistan. *Agricultural Systems* 76 (2003) 141–157.

## STUDY RESULTS

A variety of crops is grown in Kapchorwa district, but the number grown varies by altitude and by farm household. The crops include maize, potato, barley, wheat, cabbage, beans, coffee, avocado and banana.

### Relationship between agricultural diversity, food security, income and nutrition status of farm households

Diversity level	Low	Medium	High
Food security	<ul style="list-style-type: none"> <li>• On average 3 different crops</li> <li>• Monocropping</li> <li>• Fewer farmers practicing crop rotation</li> <li>• Livestock</li> <li>• Some (54%) have kitchen gardens</li> </ul>	<ul style="list-style-type: none"> <li>• On average 5 different crops</li> <li>• Mixed/intercropping</li> <li>• Most farmers practicing crop rotation</li> <li>• Livestock</li> <li>• Majority (79%) own kitchen gardens</li> </ul>	<ul style="list-style-type: none"> <li>• On average 8 different crops</li> <li>• Mixed/intercropping</li> <li>• Most farmers practicing crop rotation</li> <li>• Livestock</li> <li>• Most (88%) own kitchen gardens</li> </ul>
Income	<ul style="list-style-type: none"> <li>• Commercial crops</li> <li>• 85% travel &gt;1hr to the market</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial crops</li> <li>• 66% travel &gt;1hr to the market</li> </ul>	<ul style="list-style-type: none"> <li>• Subsistence farming</li> <li>• 65% travel &gt;1hr to the market</li> </ul>
Nutrition status	<ul style="list-style-type: none"> <li>• Energy rich crops</li> <li>• Market oriented production</li> <li>• Livestock</li> </ul>	<ul style="list-style-type: none"> <li>• Energy rich crops</li> <li>• Market oriented production</li> <li>• Livestock</li> </ul>	<ul style="list-style-type: none"> <li>• High value crops</li> <li>• Subsistence production</li> <li>• Livestock</li> </ul>

- Farmers are different by level of diversity (location, number and type of crops grown)
- There are similarities between the diversity groups (livestock production, farming experience and distance travelled to the market)
- Farmers in the high diversity category are more food and nutrition secure while farmers in the low diversity category are more likely to be income secure.

## CONCLUSIONS AND RECOMMENDATIONS

Farmers who are highly diversified have a variety of food sources and a diversity of foods that give them nutrition diversity. Therefore there is need to promote agricultural diversity across all the belts of Kapchorwa district.