Productivity in diverse production systems: insights from the Elgon highland agroecosystems of Uganda

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Introduction

- The Elgon highland agroecosystems are characterized by diverse production systems, including livestock, perennial and annual crops.
- Increasing population densities, reflected in the low cultivable area per household still a challenge in implementing sustainable production practices.
- Alternative systems such as polycultures, could be productive and contribute to sustainable agroecosystems
- Farm productivity from different production systems were therefore compared

Methods

- Household survey of farm households in the Mt. Elgon region (Kapchorwa district) in 2018.
- Structured interview with households to collect data on time use.

Fig.1: Annual production systems (Maize and beans monoculture)

Fig.2: Perennial production systems (Banana and Coffee monoculture)

Fig.3: Perennial and annual production systems (Banana + coffee, Maize + beans polyculture)

Results

- Perennial polyculture production systems, involving a mixture of coffee and bananas are more labour saving compared to coffee monoculture production systems.
- Less production time was realized in annual production systems where maize was intercropped with beans compared to beans in monoculture production systems

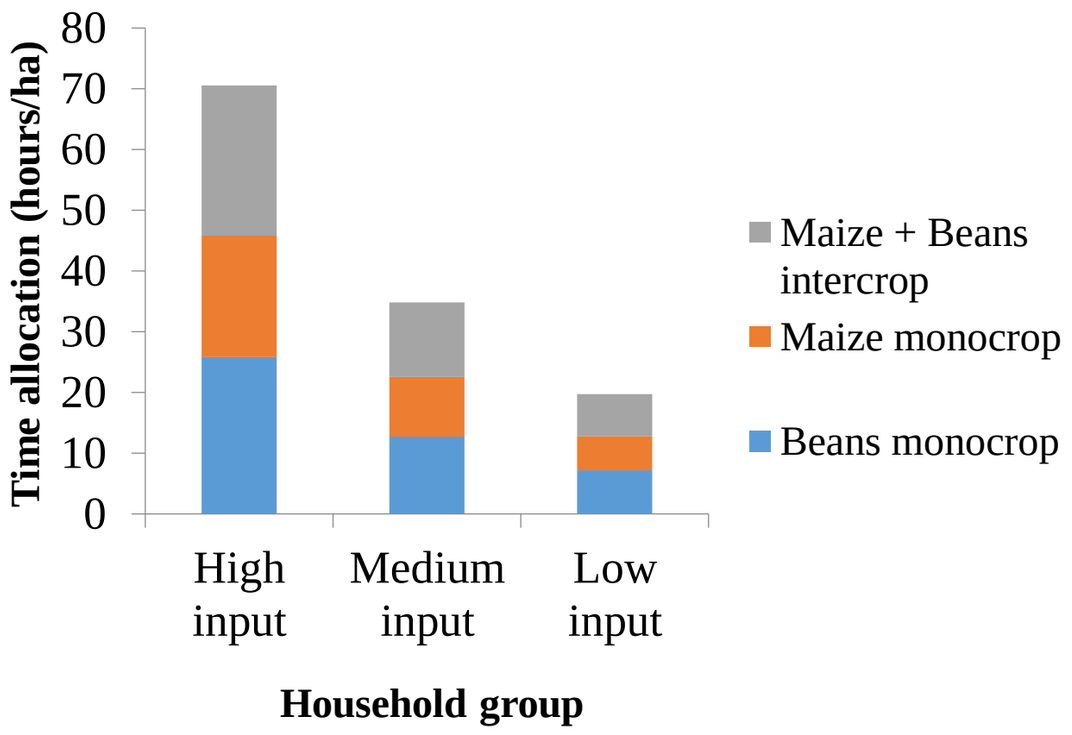

Fig.4: Time allocation to different annual production systems

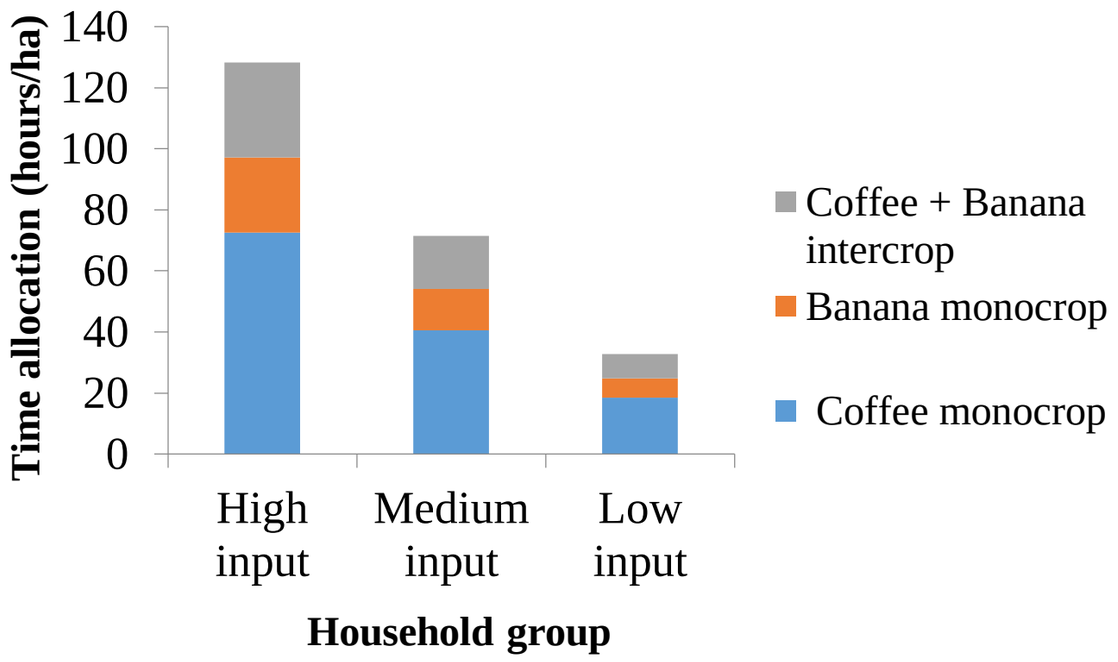

Fig.5: Time allocation to different perennial production systems

Conclusions

- High returns per unit of labour in polyculture production systems
- Increasing diversity in production systems could help promote better use of farm resources
- Incorporating perennials in production systems supports agroecosystem sustainability

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BMZ Federal Ministry for Economic Cooperation and Development

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