TRansition paths to sUstainable legume-based systems in Europe

Case Study Nr. 24

Productivity of cereal-legume intercrop under smallholder farms in western Kenya .

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Aim and background of case study

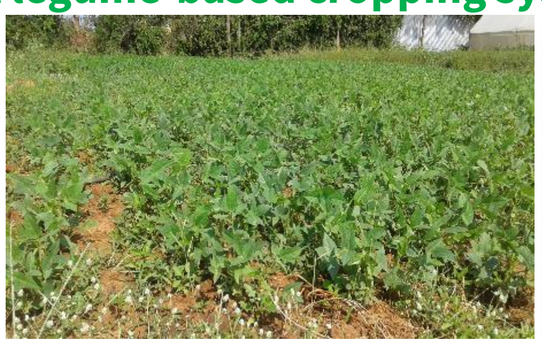
This Case study aims to evaluate legume-non-legume mixtures with varying spatial and temporal designs under on-farm conditions. The study is located in Lake Victoria basin region, western Kenya in sub-Saharan Africa. These are mainly smallholder farms averaging 0.3 to 3 hectares. Maize, common beans and cowpeas are important staple food crops for the region. They are cultivated as intercrops. The key legume-based technologies involve various crop combinations, namely maize-bean, maize-cowpea, maize-bean-cowpea, and fallow or relay intercropping with N_2-fixing trees & shrubs for soil fertility management and provisioning of other ecosystem services.

Location of study

Lake Victoria region, western Kenya

Current legume-based cropping systems

Push-Pull technology



Common bean monoculture

Sesbania fallow- biomass transfer

Maize-bean intercropping

Maize-groundnuts intercropping

Tephrosia bush fallow- background

Achievements and progress to date:

- Carried out awareness TRUE project creation and work programme with partners in the Lake Victoria Basin cluster (Western Kenya, East Africa, sub-Saharan Africa).
- Identified several legume-based cropping systems, which were predominantly maize-bean intercrops, and include the innovative 'push –pull' technology.
- Collected soil samples for baseline (pre-experimental) physico-chemical analysis and microbial (symbionts) composition.

Soil sampling at Mr Aggrey O. Warinda's farm, Nyabeda, western Kenya.

Workplan for next reporting period:

- Undertake soil analysis and trapping experiments for rhizobia and arbuscular mycorrhiza (AMF)
- Isolate, characterise and test for effectiveness of rhizobia/AMF
- Establish field trials for a 2-year crop rotation experiment
- Analyse supply chains and markets for the legumes produced by smallholder farmer networks

Policy Makers | Inputs | Primary Production | Aggregation | Processing | Distribution | Retailers | Markets | Consumers

WP1: Knowledge Exchange & Communication | WP2: Case Studies | WP3: Nutrition and Product Development | WP4: Markets and Consumer | WP5: Life Cycle Assessments and Environmental Assessments | WP6: Economic Assessments of Legume Production and Consumption | WP7: Policy and Regulations | WP8: Transition and Decision Support Tool

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