# Legume SELECT: Science-driven Evaluation of Legume Choice for Transformed livelihoods

# Characteristics of farming systems in Digga, Oromia, Ethiopia

Zerihun Abebe,[1] Birhan Abdulkadir,[2] Kindu Mekonnen,[2] James Hammond,[2] Alemayehu Dabessa,[3] Tamiru Muleta[3] and Peter Thorne[2]

1. Oromia Seed Enterprise (OSE), Ethiopia
2. International Livestock Research Institute (ILRI), Ethiopia
3. Oromia Agricultural Research Institute (IQQO), Ethiopia

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*Patron: Professor Peter C Doherty AC, FAA, FRS*
*Animal scientist, Nobel Prize Laureate for Physiology or Medicine–1996*

Box 30709, Nairobi 00100 Kenya
Phone +254 20 422 3000
Fax +254 20 422 3001
Email ilri-kenya@cgiar.org

ilri.org
*better lives through livestock*

ILRI is a CGIAR research centre

Box 5689, Addis Ababa, Ethiopia
Phone +251 11 617 2000
Fax +251 11 667 6923
Email ilri-ethiopia@cgiar.org

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# Key facts

- Maize, teff and finger millet are common crops in the area.
- Digga has a monomodal rainfall pattern. It receives 2,080 mm annual rainfall. The average maximum temperature of the area is 18°C.
- Groundnuts are the most popular legumes produced in the area.
- Soil erosion and soil nutrient depletion are the main constraints.
- Food insecurity has become a concern for most of the households.

# Introduction

The Legume SELECT project aims to improve the use of legumes in smallholder farming systems in sub-Saharan Africa through improved decisions support. This factsheet highlights the key findings of the Rural Household Multi-Indicator Survey (RHoMIS) baseline survey that was conducted in Digga in 2021. Digga is one of the action sites of the Legume SELECT project in Ethiopia.

# Approaches

- A total of 202 out of 382 households were randomly selected and interviewed in three kebeles of Digga woreda.
- A structured questionnaire was used to study the prevailing situations such as socio-economic importance of legumes, land use systems, soil fertility status and crop management practices.

# Key findings

## Farming systems and current household livelihoods

- Maize is the most dominant crop grown by 94% of the households.
- Although there are diverse legume crops, 50 and 30% of the households mainly grow groundnut and bush bean, respectively.
- Groundnut is the most widely grown grain legume for generating income, which accounts for USD 638 of sales per year per household.
- Farmers in the area sell about 25–40% of the main crops for generating income.
- Only 10% of the households in the area grow perennial legumes (e.g. acacia, pigeon pea).

- Nearly 60% of the households in Digga are living below the poverty line (earning less than USD 1.90 a day).

## Livestock production

- Livestock owned per household is 0.4 Tropical Livestock Unit (TLU).
- Its production value is about USD 1,046/household per year.
- Livestock accounts for about 36% of the total production value per household per year.

## Land and soil fertility status

- Nearly 95% of the households perceived problems associated with low soil fertility.
- About 60 and 30% of the households realized how the problems of soil erosion and soil moisture are serious in Digga and the surrounding areas.
- The majority of the maize and sorghum crop residues are used for animal feed and as a source of fuel. For example, about 69 and 58% of the households used maize residues as animal feed and fuel, respectively. Only 10% of the households retain crop residues on their farm to improve soil fertility.

## Existing soil and water conservation practices

- Cutoff drains, soil/stone bunds and contour ploughing are common soil and water conservation practices in the area.
- About 65% of the households use cutoff drains, soil/stone bunds and contour ploughing to sustainably use their land.

## Existing legume intensification strategies

- About 10% of the households grow 17 diverse species of legumes for different purposes.
- All households planted groundnut and soya bean as sole cropping.
- Cereal–legume intercropping is practiced by 50–66% of the households.
- Nearly 80% of the households practice sole planting of legume trees such as acacia and Sesbania while 20% of them plant legume trees on contours in the farm lands.

## Key legume production constraints

- limited land size
- soil fertility depletion and erosion problem
- poor skill and knowledge on legume intensification
- limited access to quality legume seeds

# Recommendations

- Strengthen cereal–legume intensification strategies through:
    - crop rotation
    - intercropping
    - double cropping
    - strip cropping practices
    - residue retention
    - minimum tillage practice
- Strengthen soil conservation practices to restore soil fertility
- Promote early maturing varieties for double cropping
- Demonstrate and promote the use of:
    - both annual and perennial legumes
    - small legume seed packs
    - high biomass legume crops for animal feed
    - improved livestock breeds
- Use technology promotion tools to enhance the farmers' knowledge and skill
- Technical capacity building for smallholder farmers.

# Reference

Caulfield, M., Abdulkadir, B., Mekonnen, K., Duncan, A., Thorne, P., Dabess, A., Muleta, T. and Hammond, J. 2021. *Legume SELECT: Rural household multi-indicator survey (RHoMIS) report for characterization of smallholder farming in Sinana and Digga woredas, Oromia, Ethiopia*. ILRI Research Report 84. Nairobi, Kenya: ILRI. https://hdl.handle.net/10568/116603