



Global Program

Climate-smart interventions for smallholder farmers in Ethiopia



Overview

Sorghum, a significant contributor to Ethiopia's food security, provides food for more than 60 million people.

It is a multi-purpose crop that produces grain, forage, fuel and building materials, and is predominantly grown by some of Ethiopia's poorest farmers in the dry lowlands. In that region, climate change is leading to higher frequency of drought and crop failures, exposing farmers to food shortages and loss of livestock due to lack of feed. Severe droughts can lead to the displacement of farmers, which increases the vulnerability of women and children in the community.

Seventy per cent of Ethiopia's sorghum is consumed domestically. Women provide the majority of labour for the crop and also do most of the trading, so changes to the economics of sorghum production can directly target women and children. The production of tradable surpluses is possible through the strategic use of inputs and improved varieties, however economic and environmental factors are a limitation.

Sorghum is risky and labour intensive; in good years farmers often have a surplus and grain prices are low, in bad seasons the reverse is true. Limited storage options force farmers to sell surpluses at harvest.

KEY FACTS

ACIAR Project No. GP-2019-173

Duration: April 2019 to September 2022 (3.5 years)

Target areas: Ethiopia

Budget: A\$2,786,700

Project Leader

Dr Taye Tadesse, Ethiopian Institute of Agricultural Research

Key partners

- Holeta Biotechnology Research Centre
- Debre Zeit Poultry Research Centre
- University of Queensland

ACIAR Research Program Manager

Dr Anna Okello

Objective

The aim of the project is to create demand for sorghum, build value-chains linking smallholder farmers to that demand and provide the farmers with tools and technologies to produce surplus sorghum in a cost-effective way that reduces risk.

The objectives are:

- Develop improved drought-adapted sorghum varieties and management packages as a tool to increase smallholder productivity.
- Enhance smallholder productivity by introducing new varieties, improved agronomy, labour-saving threshing technologies and grain storage technologies.
- Increasing demand for sorghum by enabling markets and small businesses that utilise the grain.

Expected scientific results

- Development of drought-adapted sorghum varieties and management packages through screening for root architecture and transpiration efficiency variation using phenotyping platforms and genomics. This will confirm the value of the traits in areas with limited water.
- Development of cost-effective methods to deploy these selection tools within the sorghum program.
- Testing and introduction of more sustainable farming practices, including fertiliser use and conservation farming techniques.

Expected impact/outcomes

- Improved stability of the food supply of dry lowland farmers through the distribution of improved sorghum varieties, fertiliser, management packages and grain storage.
- Increased resilience of farm families to the effects of climate change and drought.
- Increased productivity of women sorghum farmers with the availability of affordable, labour-saving threshing equipment.
- Improved incomes for farmers (predominantly women) in the dry lowlands through the creation of opportunities to access higher value markets for surpluses, generated by the implementation of improved technologies for growing and storing sorghum.
- Increased value of sorghum farming in the dry lowlands to provide an incentive for implementation of more sustainable farming practices.
- Increased economic opportunities for businesses run primarily by women in rural and urban locations through an increased and stable supply of high quality sorghum grain.
- Increased economic opportunities for businesses that require grain as an input, such as poultry farmers and bread makers, through the provision of an increased and stable supply of high quality sorghum grain.

