Sustainable intensification of key farming systems in East and Southern Africa

Introduction

The African Research in Sustainable Intensification for the Next Generation (Africa RISING) comprise of three research for-development projects for West Africa, East and Southern Africa, and the Ethiopian highland supported by the United States Agency for International Development as part of the U.S. government’s Feed the Future Initiative. Africa RISING in East and Southern Africa is being implemented in Tanzania, Malawi and Zambia.

Project countries: Tanzania and Malawi and soon, Zambia

Malawi

Project sites: The project is being implemented in Ntcheu and Dedza districts in central Malawi where maize-based productions systems are dominant. Agroecological considerations guided the identification of research action sites.

Challenges: Poverty, food insecurity, and malnutrition are common in the area as a result of low agricultural productivity and over-reliance on low-protein staple cereal crops. Constraints to agricultural productivity include inadequate and outdated extension messages, variable rainfall, and degraded soils.

Project interventions

Africa RISING aims to enhance farmers’ knowledge and support intensification to increase productivity in maize-legume farming systems, beginning with integrating technologies that address soil and land degradation. The research in Malawi is coordinated by Michigan State University and builds on its past successes of promoting legume-diversified farming systems in northern Malawi through participatory action research using ‘mother-baby’ adaptive trials as platforms for knowledge dissemination. Mother trials: The researchers set up ‘mother trials’ on lead farmers’ fields that demonstrate an array of existing technologies and technology combinations for sustainable intensification. These are:

- Intensified grain legume production as sole crops in rotation with cereals or using various maize/legume intercropping options, and a unique intercropping of two grain legumes based on their complementary growth characteristics and plant architecture. This ‘double-up legume’ technology hinges on pigeon pea’s unique growth habit contrasted to the potential under-storey competition crops (groundnut, soybean, cowpeas, beans), which ensures enhanced soil fertility benefits and grain for better nutrition.
- Soil fertility and soil health management through application of organic, inorganic, or a mixture of both fertilizers, use of cover crops and short fallow rotation with green manure.

Adaptive baby trials: Members of the farmers’ groups involved in setting up the mother trials select their preferred options and set up ‘baby trials’ for experimentation on their farms.

Livestock integration and intensification: While the livestock density in Malawi is very low, the project is exploring options for enhancing productivity across the interventions sites among the farmers who own livestock.

Zambia

Project sites: Katele, Chipata, Lundazi districts in Eastern Province

Challenges: low soil fertility conditions, frequent droughts, farmers can only make limited use of high yielding varieties and inorganic fertilizer, lack of capital and assets to invest in improved production methods.

Project interventions

Africa RISING has formed a strategic partnership with the SIMELEZA (Sustainable Intensification of Maize-Legume Systems in Eastern province of Zambia) project, led by the International Center for Tropical Agriculture (CIAT) and IITA.

The SIMELEZA-Africa RISING research activities aim at:

- Enhancing technology targeting and delivering for the poor by identifying systematic constraints and option for improving input and output value chains and impact pathways
- Enhancing the adoption and adaptation of productive and resilient agronomic practices and facilitation of local innovation systems for intensification and income growth in maize-legume cropping systems
- Enhancing the diversification of soybean use at household level through processing and product development
- Increasing the range of maize and legume varieties through participatory testing and release, and enhanced delivery of seeds of locally adapted varieties
- Enhancing the capacity of national partners on targeting, technology adaptation, trial management, seed and input supply and value chain development

---

"Through this project we want to increase the productivity of smallholder farms while paying careful attention to avoid any negative environmental impacts and also address some of the challenges we are currently facing due to climate change. We want to provide a scenario for bringing about a Green Revolution, but avoid the negative consequences that are often overlooked."

Jerry Glover
USAID Senior Sustainable Agricultural Systems Advisor Africa

Partners

To implement the Africa RISING East and Southern Africa project, IITA has entered into partnerships with a wide range of individuals and institutions with different expertise. These are farmers and their organizations, international and national research institutes, national and international universities, ministries, development organizations and private sector companies.

Contacts

Dr. I. Hoeschle-Zeledon, Africa RISING Coordinator E-mail: i.hoeschle@cgiar.org
Prof. M. Bekunda, Chief Scientist for Africa RISING in East and Southern Africa project E-mail: m.bekunda@cgiar.org

For more information please visit: africa-rising.net