Malawi is a land-locked country with one of the highest population densities in sub-Saharan Africa. This allows only 0.23 hectares of land per person in rural areas. Most rural families rely on the staple crop – maize. Around 90% of the people are subsistence small farming households, agricultural yields are very low and Malawi has experienced several food crises in the past decades with staple crops being affected by dry spells and floods.

Agriculture employs about 80% of the workforce, contributing one-third of the national GDP and 80% of exports such as tobacco and groundnuts.

Seventy percent of the workforce comprises women, mostly producing food for themselves and their families. One out of four farms is headed by women.
ICRISAT’s work with Malawi partners

**Genesis:** Chitedze Agricultural Research Station, near Lilongwe, was set up in 1982. Initial work focused on developing resistance to rosette virus in groundnut.

**Partnership:** ICRISAT is strategically engaged with the Department of Agricultural Research (DARS) in building the capacity of Malawi researchers and farmers’ organizations in legume crop breeding, especially groundnut and pigeonpea.

**New varieties:** Eleven new ICRISAT-bred groundnut varieties were released, including seven in September 2014.

**Seed production and delivery systems:**
- The Malawi Seed Industry Development Programme, established in 2008 and managed by ICRISAT, aims to improve the quality of seed available to smallholder farmers.
- ICRISAT engages directly with members of the National Smallholder Farmers Association of Malawi (NASFAM).
- The seeds produced under this program are certified and sold commercially under an umbrella brand, the Malawi Seed Alliance (MASA).

**Improving resilience and food security:**
- Testing more efficient agro-ecological cropping systems like pigeonpea-maize intercropping, and conservation farming as ways to overcome limited fertilizer access and to improve the resilience of rural communities.
- Increasing legume cultivation and boosting their demand, leading to increased production and consumption of protein and micronutrient-rich legume crops.
- ICRISAT has been closely working with smallholder farmers to mitigate aflatoxin contamination in groundnut using low-cost aflatoxin screening kits and on-farm management techniques.
Ms Mary Kumwenda, a single mother of three children, aged 5, 9 and 13, is a role model for other young women in the surrounding villages.

Mary has been a member of Madede seed multiplication club in Mzimba District of Malawi for three years. She joined the club in 2012 and was issued with 20 kg of groundnut seed for further seed multiplication under the Malawi Seed Industry Development Project. After harvest, she sold the basic seed back to the project and realized MK 78,000 (US$ 177).

“Before I joined the groundnut seed multiplication club, my only source of income was through piece works in other smallholder farmers’ fields,” said Mary.

In 2013, with increased area under seed multiplication, Mary realized MK 321,000 (US$ 728). “I reinvested the proceeds from my seed sales into other small businesses, which included making fritters and selling them within my village. I also used the money to buy fertilizer for my maize field,” she said.

This gave me additional income and also kept my family food secure throughout the year.

Besides, Mary also used the maize harvest, which had been boosted up from proceeds of the groundnut seed sales, to hire labor to work in her groundnut seed field. Mary has been investing and reinvesting, with groundnut seed multiplication remaining the main source of income.

Mary has been able to fulfill her dream of building a new house, well cemented and with an iron sheet roof. She expects to buy window panes using seed sale proceeds from the year’s crop. Pointing at her old and new houses, Mary proudly says, “Before long, my children and I will have moved from that small grass thatched house to that beautifully constructed house, which is plastered and floored with cement and roofed with iron sheets.

Mary now lives peacefully as the head of her family. All her three children attend school. Indeed an inspiring transformation from a casual laborer in a fellow farmer’s field to an independent owner of a good house and a female head of her happy family.

By Felix Sichali, ICRISAT-Malawi
Mr. Lourence Gondwe of Salima district, Malawi with his pigeonpea crop.

The Agricultural Model Intercomparison and Improvement Project (AgMIP) is a major international effort linking the climate, crop, and economic modeling communities with cutting-edge information technology to produce next generation of climate impact projections for the agricultural sector. The goals of AgMIP are to improve substantially the characterization of world food security due to climate change and to enhance adaptation capacity in both developing and developed countries.

AgMIP Phase II aims at reducing poverty and enhancing resilience to climate change, building pathways for sustainable futures for smallholder crop-livestock systems in semi-arid regions.

Aflatoxin Management Interventions, Education, and Analysis at Various Steps within the Peanut Value Chain in Malawi, Mozambique and Zambia

**Donor Organization:** Peanut and Mycotoxin Innovation Lab (PMIL) thru North Carolina State University (NCSU)

**Grant Period:** 2014 – 2017

This project will address a wide range of production, post-harvest handling, and processing issues relative to peanuts in Malawi, Zambia, and Mozambique that can impact aflatoxin contamination levels, yield and profitability. The strength of this project is that interventions will be studied throughout the value chain and the cumulative effect of these efforts measured against traditional production and marketing practices.

**Improving the livelihoods of smallholder farmers in drought-prone areas of Sub-Saharan Africa and South Asia through enhanced grain legume production and productivity (TLII Phase 2)**

**Donor Organization:** Bill & Melinda Gates Foundation

**Grant Period:** 2011 – 2015

**Goal:** To enhance productivity by at least 20% for six legume crops (chickpea, common bean, cowpea, groundnut, pigeonpea and soybean) in drought-prone areas of SSA and SA, principally through the availability and adoption of improved crop varieties and associated crop management practices. This is a partnership involving three CGIAR centers, scientists of 14 national programs, advanced research institutes, the private sector and other R&D organizations.

### Key completed projects

- Provide technical support to Enhancing Community Resilience Programme (ECRP)-Malawi consortium Implementing Partners in seed systems development, Pre and Post Harvest handling and storage of crops
- Sustainable Intensification of Maize-Legume Cropping Systems for Food Security in Eastern and Southern Africa (SILMESA)
- Groundnut Varieties Improvement for Yield and Adaptation, Human Health, and Nutrition
- Enhancing Child Nutrition and Livelihoods of Rural Households in Malawi and Tanzania through Post Harvest Value Chain Technology Improvements in Groundnuts.

### Moving forward

The ICRISAT Governing Board in September 2014 made a decision to boost its research in Sub-Saharan Africa (SSA) by investing US$ 5 million towards upgrading research infrastructure and building scientific skills on the African continent. This investment will be across SSA where ICRISAT has its offices and will focus on harnessing the required resources to further advance the productivity of smallholder agriculture in SSA for greater self-reliance and resilience, particularly in light of climate change, and for increased participation in the market economy. These new investments will provide greater opportunities for collaborative research and strengthen partnerships along the whole value chain.

ICRISAT will continue to work with Malawian scientists, producers, development workers, private sector and government departments in addressing the various challenges facing the agriculture and rural sectors of the country to meet the goals of improving food security, alleviating poverty and safeguarding the environment.