



ICRISAT in

Kenya



Country Overview

Kenya has acquired lower-middle-income status, but the increased wealth has not benefited all Kenyans equally. Over one-third of the population still lives under the international poverty line, and social, economic, and gender disparities remain.

According to the **World Food Programme**, access to adequate nutritious food remains challenging for many, especially in arid and semi-arid regions, which comprise **80%** of the country's land area. Factors include rapid population growth – at a rate of **2.9% a year** – climate change, stagnating agricultural production, and inefficient food systems.

Malnutrition remains unacceptably high, with stunting experienced by **29%** of children in rural areas and **20%** of those living in cities.

Agriculture remains the main economic driver but is highly vulnerable to climate shocks. Unpredictable rainfall and recurring droughts contribute to the erosion of soils and the disruption of crops, **95%** of which are rainfed.

To build resilient livelihoods, ICRISAT provides farmers with climate-smart agricultural technologies and improved varieties of dryland crops with desirable traits such as drought tolerance, short to medium maturity duration, low external inputs requirement, climate change resilience and nutrient recycling. Crops include sorghum, pearl millet, finger millet, groundnut, pigeonpea, and chickpea.

Regional Hub

ICRISAT's office in Kenya is the regional hub for Eastern and Southern Africa (ESA), which works with other ICRISAT offices in Ethiopia, Kenya, Zimbabwe, Malawi, and Mozambique.



Partnerships

ICRISAT's association with Kenya started in 1981 with the Semi-Arid Food Grain Research and Development Program (SAFGRAD), funded mainly by the **United States Agency for International Development (USAID)**.

Key completed projects

- **2007-2015:** Tropical Legumes I & II, and from 2009 Harnessing Opportunities for Productivity Enhancement (HOPE), both funded by the **Bill & Melinda Gates Foundation**.
- **2013-2015:** Development of a robust, commercially sustainable sorghum for multiple uses (SMU) value chains in Kenya and Tanzania funded by the **European Community** and the **International Fund for Agricultural Development (IFAD)**.
- **2017-2020:** Strengthening Sorghum and Millet Value Chains for Food, Nutritional, and Income Security in Arid and Semi-Arid Lands of Kenya and Tanzania (SOMNI) funded by **IFAD**.
- **2015-2021:** Accelerated Value Chain Development of Drought Tolerant Crops (AVCD-DTC) funded by **Feed the Future (USAID)**.

Ongoing projects

- **2021-2024 (Sep):** Accelerated Institutional and funding Food Systems Development Program (AIFSD) funded by **Feed the Future (USAID)**.
- **2021-2023 (Dec):** Accelerating the Impact of CGIAR Climate Research in Africa (AICCRA) funded by the **World Bank** through the **International Development Association (IDA)**.

ICRISAT works with various partners, including the Kenya Agricultural Livestock and Research Organizations (KALRO), Ministry of Agriculture, Livestock Fisheries and Cooperatives (MoALF), National and County Governments, Egerton University, Kenya Seed, CGIAR centers, NGOs, development partners, and the private sector to meet the goals of improving food and nutritional security, alleviating poverty and safeguarding the environment.



Milestones

Promotion of improved drought-tolerant varieties

A total of **52** improved varieties and hybrids comprising sorghum (**21**), pearl millet (**1**), finger millet (**8**), chickpea (**10**), pigeonpea (**8**), and groundnut (**4**) were released in Kenya as of 2021.

- **430 tons** of drought-tolerant crop seed were produced by community seed producers.
- **40** community seed banks were established.
- **153,000** households received improved seeds of different drought-tolerant crops.
- **364** model farms were established across **7** counties.
- Farmers growing improved varieties registered higher yields. For example, sorghum yield increased from **0.7 t/ha** to **2.0 t/ha**, finger millet yield increased from **0.6 t/ha** to **1.5 t/ha**, and pearl millet yield improved from an average of **0.5 t/ha** to **1.2 t/ha**.
- Cultivation of the snapping finger millet variety has increased production from an average of **0.5 acres** per household to **1.0 acres**.



New opportunities

Several projects have led to the development of varieties with traits preferred by farmers and the market. Sorghum and millets, for example, have demand in the brewing and animal feed industries, which can provide significant opportunities for improving farmers' incomes.



Value addition and improved nutrition

Nutrition

ICRISAT promotes the consumption of finger millet, pearl millet and sorghum as nutritious crops. Products include bakery and confectionery items such as biscuits and cooked dishes like pearl millet 'rice' and porridges; and both brewed and non-alcoholic drinks. Sorghum and millets contain important macro and micro-nutrients that make them healthier staples compared to maize.

Improved post-harvest handling of dryland cereals



ICRISAT in collaboration with local fabricators is promoting affordable and efficient mechanical and motorized threshing machines to reduce manual labor, especially for women and children. The machines also ensure that grain is free from sand and stones which fetches a higher market price.

Sustainable value chains

The SOMNI project scaled commercially sustainable dryland cereal-based value chains for **15,793** beneficiaries in **466** groups comprising producers, processors, grain traders, produce transporters, agro-dealers, seed producers, seed companies, crop protection companies, farm equipment fabricators and credit and finance service providers. A total of **121** extension officers were trained as Trainers of Trainers to enhance outreach to farmers closer to their homes.



Hybrid Parents Research Consortium

The formation of a sorghum and pearl millet hybrid parents research consortium was initiated in Kenya by the Seed Traders Association of Kenya (STAK) and ICRISAT in 2015. This is a public-private partnership approach to building the seed industry for the supply of higher performing hybrids. Having ready hybrid parents shortens the time taken by seed companies to develop new hybrids.

Soil, water and climate interventions

Watershed management

Farmers have been trained in better soil and water conservation practices (check dams and tied ridges) and climate-smart agronomic practices such as *tumbukiza* pits (where farmers plant grass in pits to sustain soil fertility and moisture) to establish grass and forage trees.

Digital tools for Climate Smart Agriculture (CSA)

The World Bank funds this project to enhance the sharing of knowledge, effective climate information services, partnerships for delivery and supporting the uptake of climate smart agriculture innovations through piloting. So far, the project has achieved:

- A prototype of the AgDataHub under Accelerating Impacts of CGIAR Climate Research for Africa
- (AICCRA) Dashboard has been developed and deployed
- Training manual developed on crop variety choices and associated CSA packages
- Climate analysis in Makueni, Kitui and Taita Taveta counties using observed and gridded data
- Framework developed for integrating Computer Information Systems and tools into a data hub

Looking to the Future

ICRISAT's Strategic Plan 2021-2025 envisions prosperous, food secure and resilient dryland tropics and aligns with the Kenyan government's efforts towards achieving **food security** for the nation.

ICRISAT and its partners will continue to develop and deliver scientifically proven technologies and innovations to contribute to resilient agri-food systems in Kenya.

Efforts will be made towards the development of technologies (improved crop varieties and agronomic management), markets and institutions to advance the value chains of grain legumes, sorghum and millets due to their health benefits and suitability for cultivation under harsh climatic conditions.

ICRISAT will leverage its Agribusiness and Innovation Platform to build crop value chains that create job opportunities for women and youth. ICRISAT is committed to engaging the public and private sectors and other key stakeholders while leveraging global opportunities such as the International Year of Millets in 2023 to continue creating sustainable agri-food systems in the arid and semi-arid areas of Kenya.

