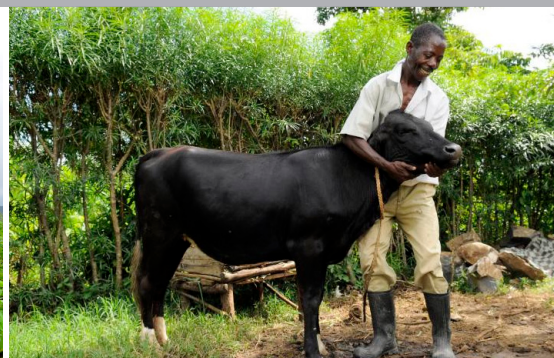




Africa

Delivering on the promise of tropical agriculture

Tropical agriculture holds great potential for reducing chronic hunger, opening pathways out of rural poverty, enhancing nutrition, and improving the management of scarce natural resources. While the challenges for African agriculture have grown since the International Center for Tropical Agriculture's (CIAT) inception 46 years ago, so have the capacities to address them more effectively.

Impact cannot result from the efforts of one organization alone, so CIAT complements the efforts of many other national and international partners by focusing on key crops – beans and tropical forages – together with cross-cutting themes – soils, natural resource management, and pro-poor policies. To put CIAT's guiding principle of eco-efficient agriculture into practice, we promote competitive and profitable food production while preserving agrobiodiversity and helping lower agriculture's environmental footprint.

The Comprehensive Africa Agriculture Program (CAADP) provides a shared framework for the efforts of regional governments to accelerate growth and eliminate poverty and hunger. CIAT aligns its support for African countries with their CAADP Investment Plans, which define specific research needs and priorities.

Regional trends

Africa is home to about 30% of the world's 870 million undernourished people, and malnutrition leads to stunted growth for 40% of the region's children under the age of five. The demand for food in Africa is rapidly increasing. By 2030, the continent's population is projected to reach 1.3 billion with 50% living in urban areas.

Food and nutrition security in Africa is compromised by climate change impacts and soil degradation. Land degradation affects 67% of Africa's agricultural area, with about 490 million hectares experiencing erosion and declining vegetation. Overall, farmers lose 8 million tons of soil nutrients each year, worth an estimated US\$4 billion.

Tangible impact Bringing land back to life

Reversing soil degradation and halting the creeping decline of soil fertility are necessary precursors to achieving eco-efficiency in agriculture. CIAT's integrated approach links our research in crop improvement and policy analysis to vital work on agricultural production systems. We believe this multidisciplinary approach is essential for improving productivity and nutrition, while reversing land degradation and making agriculture climate smart.

Land management research is giving rise to novel approaches for delivering specific soil management recommendations. This approach draws on extensive gathering and generation of soils, agronomic, and ecosystem data, which feed into up-to-date digital soil maps for Africa.

Building on this strong foundation, CIAT soil scientists will concentrate on large-scale application of new knowledge

to tasks, such as closing crop yield gaps, intensifying tropical forage production, restoring degraded agricultural landscapes and ecosystems, and fostering climate-change mitigation and adaptation.

Better beans for Africa

As the “meat of the poor,” beans offer a crucial source of vitamins and protein as well as income for millions of people in Africa. CIAT’s decades of research on beans has led to massive uptake of high-yielding and other improved varieties, with significant impacts on food security in major bean-producing countries, like Ethiopia, Rwanda, and Uganda.

Improved bean varieties, while strengthening food and nutrition security, also have the power to enhance soil fertility and generate significant income for households. Moreover, since the majority of African bean growers are women, they and their children are the primary beneficiaries.

Facilitated by CIAT, the Pan-African Bean Research Alliance (PABRA) develops and disseminates new bean technologies in close partnership with national programs. As a result of these collective efforts, improved bean varieties and production practices have reached approximately 6.2 million rural households. Moreover, the Alliance has helped a number of African nations bounce back from conflict. Rwanda has transformed climbing beans from a subsistence crop into a cash crop, and is now even a net bean exporter. In 2013, the world’s newest country, South Sudan, became the 29th country to join PABRA.

Feeding the livestock revolution

Over the last few years, CIAT has begun laying the groundwork for a major initiative on tropical forages in Africa, aimed at enabling smallholders to benefit from rapidly rising demand for milk and meat. The result of high population growth combined with rapid urbanization, the demand from African consumers is met mostly by mixed farming systems, including both crops and livestock, which also provide a livelihood for the vast majority of the region’s rural population.

To keep pace with demand, Africa’s crop-livestock systems must be intensified sustainably. But progress is hindered by a lack of good-quality feed, among other problems.

Recent work on tropical forages in Africa has demonstrated how superior grasses can help relieve the

continent’s severe shortage of feed resources – leading to enhanced livestock nutrition and higher farm incomes as well as environmental benefits, such as increased soil organic matter and reduced greenhouse gas emissions. To ensure these rewards are realized, CIAT is implementing the large-scale integration of tropical forages into key livestock value chains, such as goats, small ruminants, and cattle.

Looking forward

CIAT is seeking new ways to:

- Leverage soil management, climate-smart agriculture, and ecosystem services to better enable governments and farmers to respond to the looming threats of land degradation and climate change, providing greater long-term benefits for local populations.
- Scale-up PABRA’s market-led approach to enhance household income generation and stimulate economic growth.
- Apply lessons from PABRA’s experience to build new partnerships aimed at addressing the region’s serious shortage of livestock feed and widening the impact of our soils research.
- Promote new efforts in South Sudan, where there is a clear need and demand for research support.



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