

Partnership Brief

Scaling Climate-Smart Agriculture Technologies through Collaborative Innovation

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Key messages

- **Climate Smart Innovation:** AICCRA, LEWA, and ACTN are scaling climate-smart agriculture to enhance resilience, protect biodiversity, and improve the livelihoods of the smallholder farmers
- **Empowering Communities:** The partnership equips farmers with sustainable practices through training, demonstrations, and improving food security and resilience.
- **Sustainable Development:** By advancing CSA/CA technologies and promoting crop diversity, the initiative supports the UN SDGs, fostering resilient ecosystems and communities

This brief highlights how the partnership between AICCRA, Lewa Wildlife Conservancy, and the African Conservation Tillage Network has greatly promoted the access and adoption of CSA and CA technologies among small-scale farmers to enhance soil health, water retention, and on-farm biodiversity conservation. Training programs and demonstration plots have empowered thousands of farmers, promoting sustainable livelihoods and resilience to climate shocks. These collaborative efforts emphasize ecosystem-based adaptation and align with Kenya's sustainable development goals and Vision 2030.

Overview of the Partnership

¹The Accelerating Impacts of CGIAR Climate Research for Africa, (AICCRA) project focuses on scaling climate-smart agriculture and climate information services to benefit millions of smallholder farmers across Africa. By leveraging CGIAR's innovations, AICCRA aims to help farmers better anticipate and respond to climate-related events, thereby safeguarding their livelihoods and the environment. Through Partnerships for Delivery AICCRA

aims to combine expertise in conservation, climate-smart agricultural practices, and community engagement to:

- ❖ Enhance climate resilience in communities.
- ❖ Promote the adoption of Climate-Smart Agriculture (CSA)/Conservation Agriculture (CA) technologies and practices among smallholder farmers.
- ❖ Strengthen ecosystem-based adaptation and biodiversity conservation.
- ❖ Leverage research and data to inform sustainable development strategies.

²AICCRA's expertise in connecting climate science with local communities through partnerships with LEWA Wildlife Conservancy (LEWA) and African Conservation Tillage Network (ACTN) creates strategic synergy to address the pressing challenges posed by climate change in Africa. This partnership aims to deliver scalable, impactful solutions for climate adaptation and resilience.

Contribution to SDGs



Scope of agriculture in Africa

Agriculture in Africa faces significant challenges due to outdated farming practices, infrastructure deficits, and limited access to financing, which collectively hinder

¹ <https://aiccra.cgiar.org/our-work/about-us>

² <https://aiccra.cgiar.org/>

productivity and sustainability. Many African farmers rely on traditional techniques such as monoculture and inadequate soil management. These practices lead to soil degradation, reduced fertility, and lower crop yields. The adoption of modern agricultural technologies remains low, partly due to high costs and a lack of training and awareness among farmers.

In Kenya, agriculture accounts for about 33% of the GDP and employs over 70% of the rural population. Key crops include maize, tea, coffee, horticultural products, and floriculture. However, the sector faces challenges such as climate change, land degradation, and limited access to modern farming technologies. Many parts of Kenya suffer from limited resources such as water, land (due to degradation, land-use change and fragmentation), and low soil fertility.

Many initiatives ranging from CSA/CA practices to infrastructure development and policy reforms are underway to address these challenges. With sufficient investment and support, Africa’s food system has the potential to overcome these challenges and ensure food and nutrition security for all.

Partnerships for Delivery

LEWA Wildlife Conservancy

In November 2023, Lewa successfully undertook a base-line survey for the AICCRA project. The survey provided valuable insights into various aspects of the agricultural landscape, focusing on farm acreage and ownership, soil testing practices, irrigation methods, water utilization, storage and conservation, farming experience, crop preferences, farm yields, types of fertilizers used, and farming challenges faced by the respondents. The evaluation identified community needs from the feedback and data collected during the evaluation. The findings provide evidence for the need for advancing transformative agricultural practices within the Lewa Borana Landscape (LBL) to enhance sustainability, and resilience, and improve livelihoods for the farmer communities.

Lewa aims to integrate sustainable agriculture practices that are in harmony with the natural ecosystem, ensuring the well-being of both wildlife and local communities. Lewa’s Climate-Smart agriculture program seeks to enhance the existing agricultural and livestock productivity through enrolment and support of over 4,000 farmers as lead farmers, the establishment of conservation agriculture demonstration sites in schools and farms that utilize rainwater harvesting and drip irrigation, support fodder

crop establishment and preservation, and development of dairy farming value chain within the landscape.

³Training was undertaken to build the capacity of small-holder farmers surrounding the LEWA conservancy. The project engaged 11 communities and 5 schools within Meru and Isiolo through farmer training sessions, practical demonstrations via model farms, exchange visits, and dialogue facilitation with agro-dealers and supply chain service providers during the farmer field days as indicated in the figure below. They successfully blended training that delivered 11 topics to 2672 farmers, 11 communities, 5 schools, and 3 community forest associations (CFAs) learning hubs and established model farms in schools and community-based centres of learning.



Figure 1 showing the kind of trainings and the number of people trained Photo: Lewa

African Conservation Tillage Network (ACTN)

ACTN with the support of the AICCRA Kenya, scales out CA with Sustainable Agriculture Mechanization (SAM) and CSA practices and technologies for improved soil health, water retention, and reduced pests and diseases buildup, for improved farm productivity, food security, environmental sustainability, building resilience and reducing the impacts of climate change in targeted ASAL Counties.

ⁱACTN supports farmer groups to establish CA demonstration sites/plots in Makueni, Murang’a, and Tharaka Nithi Counties. Through these demonstrations, ACTN supports (i) Enhancing the farmers’ capacity on CA and CSA, (ii) Link farmers to CA mechanization service providers, (iii) Empower the lead farmers and CA service providers to be able to provide quality services and capacity building to other farmers, and (iv) Formation of CA Community of practices with different stakeholders in the counties involved.

³<https://aiccra.cgiar.org/news/aiccra-and-lewa-forging-path-towards-sustainable-agriculture-and-community-resilience>

Results achieved from the activities

6 farmer groups were profiled, 899 farmers (355 males, 676 females) and 132 youths trained directly on CA, CSA, and the safe use of pesticides. 6 field days were held reaching out to over 796 farmers (236 males, 428 females, and 132 youths). 7 protocols were co-developed with farmers to compare various CA interventions. In addition, the project backstopped the three Universities of Chuka, Murang'a and Taita Taveta to enhance their ability to mainstream CA and CSA in their curricula and allow for continued research activities in the CA and CSA space by their researchers and students.



Benefits of The Partnership

- **For Lewa and ACT:** Access to cutting-edge climate-smart agriculture innovations and enhanced impact in sustainable livelihoods.
- **For AICCRA:** Opportunities to scale CSA/CA practices in ASAL areas and demonstrate the value of ecosystem-based adaptation.

- **For Communities:** Improved food security, resilience to climate change, and empowerment through sustainable practices

Way Forward

To strengthen sustainable agricultural practices and environmental conservation, a multifaceted approach is being implemented.

- ❖ Expanding farmer demonstration farms, enabling them to adopt best practices through hands-on learning.
- ❖ Promoting crop diversity and agroforestry to enhance ecological balance while integrating organic farming practices reduces reliance on chemical inputs, fostering healthier soils and crops.
- ❖ Provide training and capacity-building programs on CSA/CA farming practices.
- ❖ Incorporating bundled CSA/CIS technologies.

Conclusion

AICCRA leverages the strength of LEWA and ACTN to address the interconnected challenges of climate change, biodiversity loss, and sustainable development. By working together, the aim is to create resilient communities and ecosystems that thrive in harmony.

About the Authors

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ABOUT AICCRA



AICCRA
Accelerating Impacts of CGIAR
Climate Research for Africa



Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) is a project that helps deliver a climate-smart African future driven by science and innovation in agriculture. It is led by the Alliance of Bioversity International and CIAT and supported by a grant from the International Development Association (IDA) of the World Bank. Explore our work at aiccra.cgiar.org