A vision for scaling climate-smart agriculture in Africa

Bridging the research-to-practice divide for climate-smart agricultural co-innovation in Africa

AICCRA
Accelerating Impacts of CGIAR Climate Research for Africa

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May • 2023

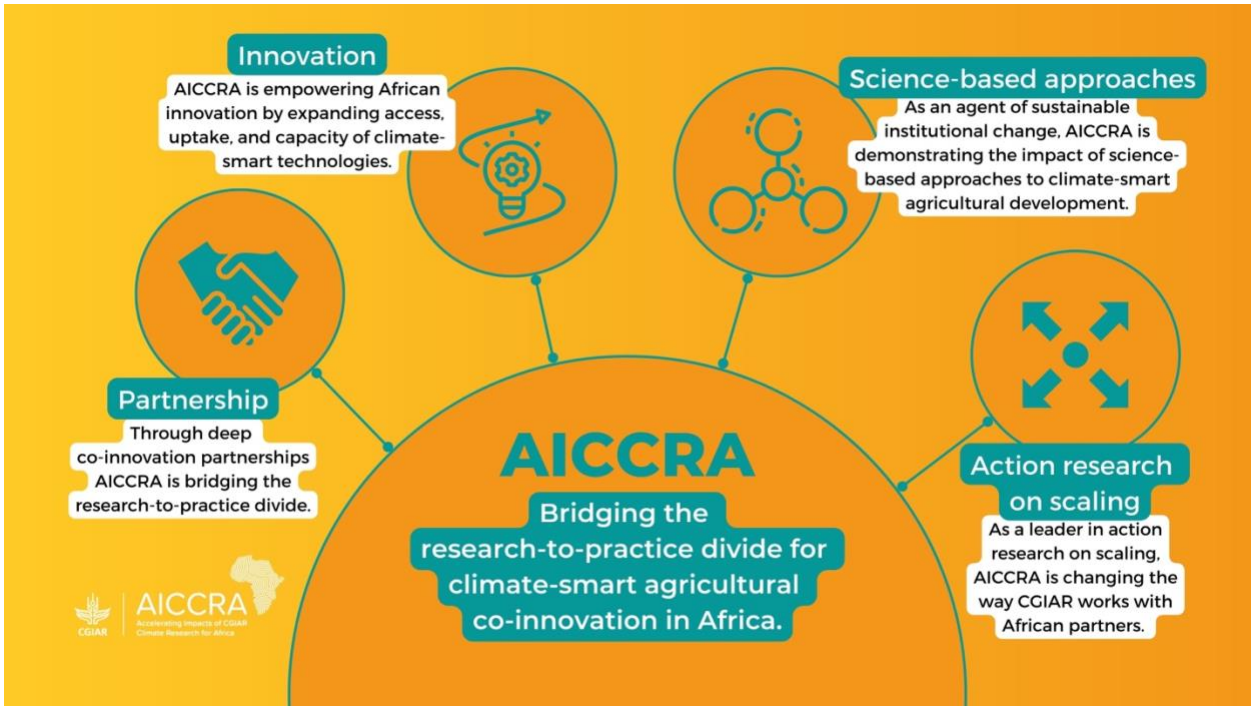

Figure 1. AICCRA's vision for scaling climate-smart agriculture

Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) works with national and regional partners to scale climate information services (CIS) and climate-smart agriculture (CSA), increasing access and use of CGIAR innovations for millions of smallholder farmers in Africa. Through AICCRA, a broad coalition of CGIAR partners work with over 70 organizations to strengthen the agriculture research architecture in Africa and to build the capacity of thousands of African climate and agriculture leaders.

This document showcases the AICCRA model for sustainably accelerating delivery of value to governments and other agrifood system actors, implemented by six country cluster teams and regional initiatives.

Based on experience since 2021, AICCRA offers insights to major research institutions and donor agencies about partnership-based scaling.

Looking ahead, this document signals key components of a future framework to guide more effective scaling of climate-smart agricultural co-innovation in Africa.

Through deep co-innovation partnerships, AICCRA is bridging the research-to-practice divide.

African agriculture needs a science-based climate-smart transition.

Climate change and other significant disruptions are taxing the resilience of the world's diverse, dynamic, and interconnected agrifood systems, with many African countries feeling the greatest stress.

Agriculture is fundamental to the livelihoods of millions of African farmers and livestock keepers, yet

many remain food-insecure and malnourished.

These essential producers are now facing severe droughts and major weather-related challenges and women farmers are especially disadvantaged.

In 2014, at a summit of the African Union, heads of states and governments adopted the *Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods*.

This set of goals emphasized that agriculture is critical for economic growth and poverty reduction in Africa. In its *2022-2032 Climate Change and Resilient Development Strategy and Action Plan*, the African Union (AU) set out a continental-level framework for joint climate action by African countries and Africans.

The AU strategy informs policy and guides investment toward a collective climate change and resilient development agenda, including agriculture.

This hoped for transition to climate-smart African agriculture must be informed by scientific research, however the relationship between science and on-the-ground innovation remains opaque.

Decades of investment in agricultural technology development and dissemination have not resulted in the hoped-for gains in productivity, equity, and resilience.

The scope of many agricultural development initiatives, coupled with the diminished capacity of local extension services, limits their ability to catalyze adoption of climate-smart technologies and practices at scale.

Climate-smart transitions are complex, multi-level process that require context-specific knowledge and viable business models that enhance climate risk management.

The CGIAR has built up massive scientific capital, yet knowledge and technologies have been insufficiently mobilized.

Too often, institutional bottlenecks keep much-needed research products 'on the shelf'. As climate change and other shocks pull a growing number of African farmers and rural communities into crisis, it is urgent for agrifood system actors to access and utilize CGIAR resources.

International research organizations need a new approach to partnership and co-innovation.

With growing recognition that social and institutional contexts determine whether innovation can flourish, research and development organizations are revisiting how they engage with other players in the agricultural development ecosystem.

To overcome bottlenecks to CSA, international initiatives are increasingly pursuing co-innovation with government agencies, financial institutions, producer groups, and other value chain actors.

Co-innovation and capacity building are especially important in complex, heterogeneous African agrifood systems, which are ill-suited to one-size-fits-all technology dissemination strategies, and which require multi-faceted solutions developed in partnership with local experts.

To bridge the research-to-practice divide, AICCRA has explicitly pursued multi-actor partnerships that enrich the capacity of existing scientific and educational platforms. ⇓

AICCRA support to CORAF led to the creation of a regional community of practice in foresight for the region—a key pillar of its 2018-2027 Strategic Plan— led by 'foresight ambassadors' who bolster regional preparedness and response plans for pest and disease outbreak management.

The project is accelerating the flow of science-based knowledge by facilitating coherent and consistent engagement among regional, national, and sub-national programs in Africa.

By balancing top-down and bottom-up approaches, AICCRA is mobilizing African institutions to achieve outcomes that cannot be easily reached by engaging with individual partners at the country level.

Through intensive collaboration with regional and national networks, AICCRA is playing a vital catalytic role in the push toward continental climate resilience goals such as those put forward in the Malabo Declaration and the African Union 2022-2032 Strategy. ⇓

AICCRA played a key support role in the drafting of the African Union 2022-2032 Climate Change and Resilient Development Strategy and Action Plan, which lays the foundations for ambitious climate action across the continent.

As an incubator for best practices of co-innovation, AICCRA is filling a critical gap in the transition to climate-smart African agrifood systems while enabling millions of farmers to benefit from CGIAR climate research.

AICCRA is empowering African innovation by expanding access, uptake, and capacity of climate-smart technologies.

Through its initial three-year phase, AICCRA has strengthened the scientific foundation for climate-smart investments and action by African governments and other agrifood system actors.

The core thesis is that farmers and livestock keepers in Africa will better anticipate climate-related risks and take preventative actions if they gain access to CIS, bundled CSA technologies and practices, and financial mechanisms that have been co-developed with strategic regional partners.

This section reviews major features of the AICCRA model for leveraging existing platforms to deliver customized technology bundles, with continuous focus on processes of scaling and beneficial spillover.

Technology bundles are customized based on deep contextual understanding and local priorities.

AICCRA scientists and practitioners add value to the development ecosystem by investing in a thorough understanding of national contexts and institutional bottlenecks.

Deep contextual knowledge about regional and national policies and priorities – combined with awareness of existing technology dissemination platforms and private and civic sector activities – is essential for removing impediments to the scaling of CSA.

Through AICCRA, a new generation of CSA country investment plans is providing a high-level entry point for engaging with public, private, and civil sectors. ⇓

With the Africa Enterprise Challenge Fund, AICCRA piloted an improved science-based approach for investment due diligence and screening to assess CSA impact in five investments in their multi-million agribusiness portfolio in Africa.

By providing methodological guidance, AICCRA has helped national decision makers identify major investment options for high-priority value chains that align with national plans and priorities. As countries prioritize value chain investments, AICCRA facilitates context-specific bundling of CSA technologies and other forms of support through an evidence-based approach that incorporates climate-smartness, social inclusion, and financial criteria.

Customized bundles sample from an existing set of CSA solutions encompassing technologies, practices, information services, delivery mechanisms, financing options, and policy strategies.

Depending on each country's specific entry points and more granular baseline assessments, validated solutions are either directly replicated or adapted to suit local contexts. To ensure no one is left behind, targeted needs assessment for marginalized groups informs customized support strategies.

Strategically targeting existing platforms accelerates partnerships and technology access.

To meet its mandate for rapid deployment, AICCRA builds on components and outputs of earlier CGIAR projects as well as existing platforms.

Focused on dramatically increasing access to CSA technologies and advisory services, AICCRA works through platforms that facilitate partnerships among CGIAR and NARS scientists, universities, public sector stakeholders, farmer organizations, NGOs, and the private sector.

As part of its mandate for in-region capacity building, AICCRA's private sector collaborations emphasize local financial institutions and small- to medium-size enterprises (SMEs) that align with public sector agendas.

AICCRA partnerships co-develop user-centric tools, such as context-specific agro-advisories, that fit with available transfer mechanisms to reach next-users and end-users more effectively. ⇓

In Mali, an AICCRA partnership with ECOTECH opened up access to solar-powered irrigation systems to farmers on a 'pay-as-you-go' basis, increasing incomes by USD 5,262 per hectare while improving nutrition.

To build capacity and interest in climate services, AICCRA partnerships combine advanced forecasting capacity with tailored advisories, input services, labor-saving technologies, and financing.

AICCRA digital advisory partnerships have contributed to an emerging service provider ecosystem (e.g. seed companies; lenders; farmer advisory services; pre-commercial NGOs), for example, by integrating diverse data streams and delivering a web-based tool that is open for anyone to develop custom products.

By strategically targeting existing platforms, AICCRA engages with representatives from multiple sectors who are well-positioned to make improved CIS and validated CSA technologies accessible to small-scale producers and value chain actors.

In addition to engaging and enhancing existing platforms, in some instances, AICCRA has created new platforms.

The project also embraces opportunities to both build on donor-funded programs, such as USAID's Feed the Future program, and to inform donor-funded programs, such as the World Bank's Food System Resilience program.

AICCRA validates practices that activate co-investment and result in scaling and spillover.

Developed through a decade of evidence-gathering in the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) the 'three-thirds principle' proposes that research-for-development programs should equally divide their effort toward engagement, evidence, and capacity building. It recognizes that CSA implementation arises from a confluence of supporting factors and does not occur through fixed scaling pathways.

AICCRA has put this principle into practice toward uptake of tailored technology-knowledge-service bundles at scale. The project has successfully reached all of its targets with higher-than-expected outcomes achieved through effective collaboration and capacity building activities.

By working on multiple themes simultaneously, at multiple levels and across regions, AICCRA cultivates synergies and encourages insight about differentiated strategies across country contexts.

Through deep partnership with AICCRA, regional organizations enhance their multi-sector coordination role in Africa-based innovation systems and better position themselves to deliver long-term support for demand-led, evidence-based agrifood systems policy and investment.
With significant investment in iterative, intensive stakeholder and next-user engagement, AICCRA partnerships have developed expertise in assessing scaling readiness.

AICCRA aspires to increase total reach of CIS and CSA technologies while ensuring that these are effective for improving decision-making, productivity, well-being, and equity and that they are delivered sustainably over the long-term.

Consequently, financing strategies based on viable business models and investment mechanisms are a major theme in AICCRA's work with local entrepreneurs such as cooperatives and SMEs.

As CSA and CSI 'best bets' are identified, AICCRA partnerships assess financial readiness, strengthen capacity of implementers and investors, and support matchmaking.

By supplying technical CSA criteria that improve climate risk assessment and investment screening and prioritization, AICCRA accelerates pipeline development and finance flows.

A typology of scaling approaches

Scaling out commonly refers to uptake and adoption by a larger number of people.

Scaling up implies changes in the enabling environment such as laws, policies, regulations, and institutions. For AICCRA, scaling up also encompasses the context for financial investment.

Scaling deep refers to efforts to shift relationships, values, or beliefs to enable new approaches such as co-design or participatory processes and gender and social inclusion.

Source: Moore M-L, Riddell D, Vocisano D. 2015. Scaling out, scaling up, scaling deep: strategies of non-profits in advancing systemic social innovation. Journal of Corporate Citizenship 58: 67-84

Gender-responsive finance efforts have advanced savings and insurance mechanisms that assist women- and youth-led enterprises.

Working closely with regional African organizations, AICCRA explicitly pursues beneficial 'spillovers' from the six AICCRA countries to larger regions. ⇓

AICCRA supported the implementation of the Global Framework for Weather, Water and Climate Services and through initiatives and national meteorological services, the frameworks were adopted in 11 countries across East and Southern Africa.

Spillovers of successfully validated CSA solutions can occur in a planned way, such as accelerated information exchange across local to regional levels through structured participation in innovation platforms and regional symposia.

Spillovers can also occur more spontaneously, such as through peer-to-peer sharing that leads to requests for AICCRA support.

The AICCRA approach is to "stay flexible and really listen to others" because it isn't possible to anticipate every bottleneck or opportunity.


AICCRA / Kelvin Trautman, KANDS Collective

As an agent of sustainable institutional change, AICCRA is demonstrating the impact of science-based approaches to climate-smart agricultural development.

National ownership amplifies scaling and impact.

Recognizing that African resilience can only be built by African institutions, AICCRA places empowerment and national ownership at the heart of its agenda. The project's intention is for countries to benefit from demand-driven, science-based technologies and information and for countries to be able to carry these benefits forward beyond the project's duration.

Explicit alignment of CSA strategies with government priorities and demonstration of on-the-ground impact increases the probability that CGIAR research outputs are brought to bear at large scale. With a mandate predicated on partner-based scaling,

AICCRA navigates within the socio-institutional contexts of the countries where it operates including competition or misaligned incentives across ministries. ⇓

AICCRA has been a driving force behind 'AgData Hubs' in five of its focus countries which digitize, centralize and integrate agricultural data from multiple sources to help farmers make informed decisions.

AICCRA's offer of valuable technical and financial support and positive visibility for agency programs – and its capacity to undertake 'shuttle diplomacy' – can help in overcoming obstacles to collaboration.

To move past institutional constraints, AICCRA actively cultivates high-level champions for CSA within key national institutions. More than just providing technical content, the AICCRA model succeeds when it gets the right people to talk to each other at the right time about shared challenges and opportunities.

Institutionalizing CSA requires deep engagement and solid evidence of impact

Policy change and institutional innovation are powerful CSA and CSI scaling mechanisms. AICCRA pursues institutionalization of climate-smart principles in policies and investments through close interaction with national governments and with continental and regional groups including the AU and the New Partnership for Africa's Development (NEPAD).

Focused on "connecting the dots" within multi-level systems, AICCRA seeks to bring forward proven CSA solutions and to get them institutionalized in national strategies so that they can take on a life of their own.

Grounded in tangible examples of CSA benefits, AICCRA's policy support activities are demand-driven and adaptative to emerging opportunities.

With heavy emphasis on capacity building, AICCRA invests in training the next generation of policy and planning leaders in African agriculture.

To foster a more robust ecosystem of policy actors, AICCRA has opened channels for new types of groups to feed into policy networks, which benefit from participation by a broader range of voices.

Through a deep partnership with the African Group of Negotiators Experts Support (AGNES), AICCRA is also enhancing African capacity to engage in international climate negotiations.

Full institutionalization of CSA innovation can take years, but AICCRA has seen notable progress by forging relationships among key units of governments and counterpart institutions that allow CGIAR scientific resources to be used in policies and planning.

To broker cross-government collaboration for improved CIS, AICCRA directly engages national meteorological agencies, extension, and NARS and negotiates formal hosting arrangements and funded work plans.

These build trust and enable establishment of the AgData Hubs that collate diverse data streams into dashboards with analytics for extensionists and other next-users to produce context-specific, climate-informed agro-advisories.

These advisories can then be disseminated, in local languages, by local social enterprise partners.

Intersectionality and capacity building are is key to working at the research-development interface.

As agrifood system volatility increases, it is important to build solutions through co-innovation based on diverse knowledge sets and real-world experience in navigating crises.

AICCRA's work has benefitted from combining diverse capabilities and adopting an intersectional approach that focuses on empowerment to adapt to climate change.

AICCRA operates at the interface between research and development, providing science-based support to government ministries, NARS, agribusinesses, media companies, and others to ensure that they can leverage CGIAR's scientific outputs to generate context-specific solutions.

The project is also providing a scientific foundation for the World Bank's operational portfolio, including the multi-billion-dollar Food Systems Resilience Programs in West Africa and East and Southern Africa.

AICCRA can do this because of the unique combination of its development-mandated funding embedded within an international scientific network and built atop a coherent body of expertise and capacity developed through the CCAFS program.

Given its funding source and mandate, AICCRA can invest more in science-based technical support and be more responsive to governments and development partners compared to many other CGIAR projects.

AICCRA makes the most of these investments by focusing on institutional capacity building for major programs with significant budgets.

AICCRA also amplifies the impact of existing climate-smart assets by bringing in new resources to promote cost-effective, market-responsive technology bundles tailored to local conditions and communities. ⇓

An AICCRA Accelerator Program for agricultural SMEs in Zambia benefits 118,000 farmers so far, while catalyzing half a million USD additional investment into climate-smart agribusinesses - a more or less 200% return on the original investment in the program.

The project is also making an important contribution to the African portfolio of the World Bank's International Development Association program.

Required to adhere to the World Bank Environmental and Social Framework (ESF) – a first for the CGIAR – AICCRA has become a model for CGIAR project implementation to align with these important standards.

As a leader in action research on scaling, AICCRA is changing the way CGIAR works with African partners.

AICCRA is harnessing insights about deep, equitable, long-term CSA partnerships.

While AICCRA's mandate is focused on scaling in practice, the project is about more than just implementation.

It is also generating empirically-based understanding of modalities for sustainable, effective, partnership-based scaling in the African context.

In addition to powerful stories of progress toward climate-smart transitions, AICCRA harvests insights about scaling processes and impact pathways through its knowledge management system.

Baseline data gathering allows for tracking changes among beneficiary groups, including spillover effects, and AICCRA commissions independent impact surveys that are validated by national partners.

In 2023, AICCRA partners will be engaged in a stocktaking exercise to assess impacts, extract lessons about effective implementation, and better articulate good practices.

While they can be difficult to cultivate in the context of short-term research-for-development projects, deep, equitable, long-term partnerships are often the key that opens the door to CSA implementation at large scale.

As initial users of scientific knowledge become co-producers and co-owners of knowledge within mature partnerships, the potential for institutional scaling, learning, and spillovers increases.

Through demand-led projects in six countries and two regions, AICCRA is systematically learning about essential elements for undertaking effective, inclusive partnerships and documenting outcomes from a range of partnership strategies.

AICCRA embraces an energetic, flexible, and decentralized approach to African-led partnership. By building direct relationships with many different types of people who can put science-based information to work, AICCRA gains major trust-building dividends.

AICCRA / Kelvin Trautman, KANDS Collective

AICCRA is a CGIAR incubator for partnership-based scaling models.

By extracting insights from peer-reviewed science and translating them to specific national and regional contexts, AICCRA functions as a 'knowledge broker' for CGIAR resources.

In addition to AICCRA core staff, CGIAR technical expertise is drawn from teams that pitched successful projects in the early stages of the project's planning and implementation.

AICCRA cultivates an extensive 'in house' network to crowd-in CGIAR experts in response to requests from policy and agribusiness partners.

Since AICCRA operates within CGIAR, there are many opportunities for researcher-to-researcher learning about the project's deep upfront investments in partnership as the anchor for context-specific impact pathways.

As AICCRA generates empirically-based understanding, CGIAR colleagues become aware of the benefits arising from tested scaling modalities and can integrate these into their own program delivery, including how they allocate resources and construct their work plans.

AICCRA is also developing frameworks, taxonomies, and other tools to facilitate wide adoption of tested scaling modalities across CGIAR.

Partnership-based scaling is at the heart of the CGIAR's 2030 strategy for transformative impact, but institutional capacity in this critical skillset is still evolving.

AICCRA is a valuable repository of validated practices and experienced people that can offer examples and insights about the dividends of deep, reciprocal, and demand-driven partnerships and application of the three-thirds principle.

As a long-standing global leader in agricultural research, continuous institutional experimentation and evolution is essential for CGIAR to effectively support agrifood system actors as they cultivate innovation in their diverse local and national contexts.

As climate change and other stressors make achieving agricultural resilience ever more difficult, CGIAR must deliver its mandate through co-innovation within adaptive, trust-based partnership networks.

As an organization committed to climate action in agrifood systems, CGIAR has an opportunity to learn from AICCRA's experience, by cultivating transdisciplinary teams that work beyond technological innovations to engage policymakers and practitioners who can lead a climate-smart agricultural transition.

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