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**Outcomes and Impacts of CGIAR Research Initiatives in
Kenya from 2022 to 2024**

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Abstract

Kenya hosted one of CGIAR's largest portfolios of research and innovation from 2022 to 2024, when pooled funding for the CGIAR was distributed through CGIAR research initiatives. This paper synthesizes CGIAR's contributions to Kenyan agriculture in that period by triangulating two evidence streams: 148 outcomes logged in the CGIAR Performance and Results Management System (PRMS) and 56 impact assessments published as peer-reviewed journal articles. The analysis shows that CGIAR's work has catalyzed improvements in seed systems, facilitated refinements in agronomic techniques, and encouraged the adoption of climate-resilient, sustainable farming practices and technologies. These contributions have paved the way for increasing crop productivity, while also supporting key livestock innovations that enhance food safety and bolster the resilience of pastoral communities. Robust local partnerships underpinned several policy shifts and helped align many outputs with the Bottom-Up Economic Transformation Agenda (BETA). Yet, important gaps persist. Activities are mainly concentrated in easily reached areas rather than being spread across all agro-ecological zones, and outcomes are recorded in an isolated way, obscuring how separate successes add up to systemic change. Peer-reviewed impact evaluations focused on a different set of impact areas than outcomes reported in PRMS, rarely involve cross-center collaborations, and PRMS entries seldom document how evidence, policy uptake, and multidisciplinary collaboration link together. Looking ahead to the next CGIAR Science Programs phase, the paper urges broader engagement with under-served value chains, deeper cross-program synergies, and closer alignment with Kenya's BETA and MTP IV priorities to foster inclusive, resilient agricultural growth.

Keywords: CGIAR Initiatives, Kenya, food systems, Impact Evaluation, Agricultural Innovation

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1. Introduction

Kenya was one of the countries with the highest concentration of CGIAR activities from 2022-2024, when pooled funding was distributed to centers through CGIAR research initiatives from three action areas: Genetic Innovation, Resilient Agrifood Systems, and Systems Transformation. What can we learn from the various CGIAR activities that these initiatives implemented in Kenya? This paper synthesizes CGIAR’s contributions to agricultural and food systems outcomes in Kenya over the 2022–2024 period, highlighting how complementary initiatives and strategic synergies worked towards aligning with national priorities. This analysis examines the diverse interventions implemented by CGIAR centers and partners across Kenya, from strengthening seed systems and agronomic practices to enhancing climate resilience and fostering inclusive, nature-positive innovations.

Drawing on a wealth of data from both the CGIAR’s Performance and Results Management System (PRMS), in which initiatives reported outputs and outcomes on an annual basis, and 56 peer-reviewed impact assessment studies drawn from the CGIAR repository for publications, the paper brings together quantitative outcomes and qualitative reflections to present a holistic picture of CGIAR’s impact. The diverse activities that were documented in these data sources underscore CGIAR’s commitment to fostering sustainable, resilient, and socially inclusive agricultural development. In addition, the paper discusses how these contributions align with national partners’ priorities, highlighting both successes and areas for improvement. Together, these elements reveal the interconnected pathways through which CGIAR’s integrated research and innovation efforts are transforming Kenya’s agricultural landscape, informing policy, and advancing sustainable development.

The paper is structured as follows. Section 2 provides a comprehensive overview of CGIAR’s research during this period. It begins by “unlocking insights on outcomes” from 148 outcomes reported in the Performance and Results Management System (PRMS), which illustrate successes in innovation use, policy change, and other key areas, while also revealing opportunities for deeper integration and scale. It then tries to “unlock insights on impacts”, by delving into published impact studies, offering granular, peer-reviewed evidence on the effects of CGIAR projects in Kenya. Section 3 examines the alignment of CGIAR contributions to the Kenya Bottom-Up Economic Transformation Agenda (BETA), capturing national partner priorities. Section 4 showcases how three scaled innovations—Aflasafe, Participatory Rangeland Management (PRM) and Index-Based Livestock Insurance (IBLI)—have helped drive change in Kenya agricultural and food systems. Section 5 concludes.

2. Interventions in Kenya in 2022-2024

2.1. Unlocking insights on outcomes: Lessons from Performance and Results Management System (PRMS) in Kenya (2022-2024)

Between 2022 and 2024, CGIAR initiatives used a Performance and Results Management System (PRMS)¹ to document a wide spectrum of outcomes across Kenya’s agricultural sector, from advancements in seed systems and agroecological practices to improvements in plant health, livestock

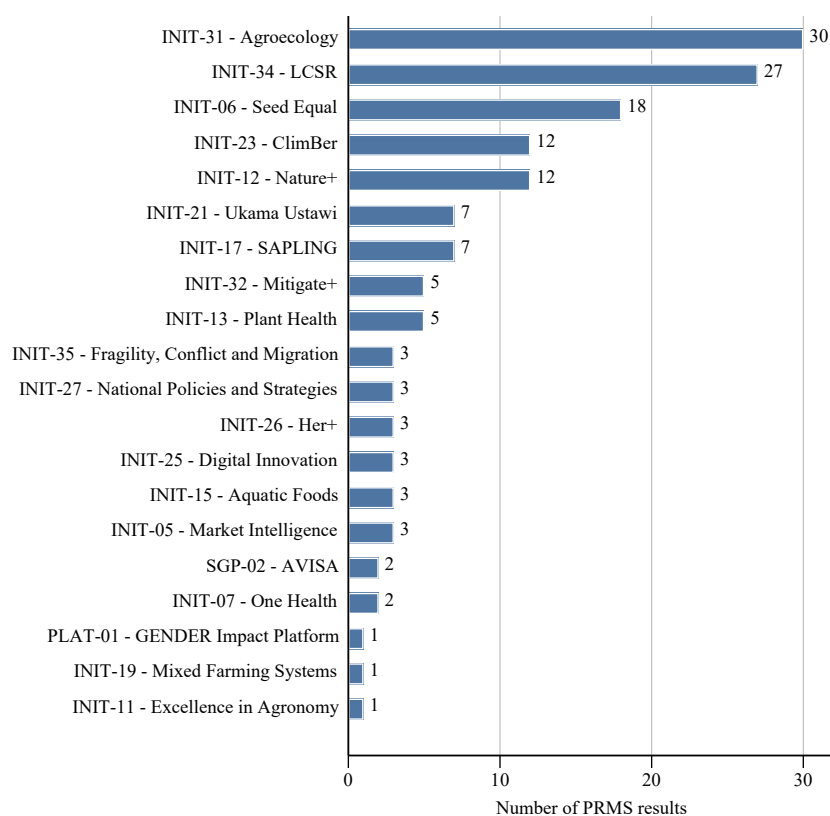
¹ PRMS is a platform that supports CGIAR’s 2022–2030 Performance and Results Management Framework (PRMF). It integrates data and entries from multiple sources into a streamlined annual report, providing transparent, timely, and robust evidence of CGIAR’s performance against expectations also tracking progress on CGIAR research initiatives. Outcomes are defined as behavioral, institutional, or policy changes attributable to research outputs and are documented through partner-reported results or evidence-based submissions.

resilience, and policy engagement. During the 2022-2024 reporting period, PRMS recorded a total of 18,634 results, of which 1,180 (6%) were initiative outcomes. Among these, 148 outcomes (12.5%) were tagged to Kenya, comprising 63 focusing on innovation use, 48 documenting other outcomes, and 37 capturing policy change outcomes. Although PRMS categorizes results into various types, including action area outcomes, initiative outputs, initiative outcomes, and impact contributions, this paper concentrates solely on initiative outcomes (no action area outcomes or impact contributions were reported for Kenya based on our analysis). While outputs include what was delivered, outcomes illustrate the meaningful changes achieved through the initiatives, often using their outputs. Drawing on the 148 reported initiative outcomes for Kenya, PRMS provides valuable insights into how integrated strategies in research, technology, and stakeholder collaboration have supported enhanced productivity, sustainability, and social inclusion. This section distills the key lessons learned from these efforts.

2.1.1. Overview of PRMS outcomes

The 148 PRMS outcomes paint a comprehensive picture of interventions conducted through CGIAR's efforts. Furthermore, among these, 90 outcomes are exclusively related to Kenya, while the remaining 58 reflect multi-country interventions. Those outcomes were collectively reported by 20 distinct initiatives operating in Kenya in the years 2022-2024. Figure 1 presents the distribution of PRMS outcomes by CGIAR initiatives. It highlights two key insights. First, a few initiatives, particularly Agroecology and Livestock & Climate Systems Resilient, account for more than one third of reported outcomes. Agroecology has a pivotal role in promoting environmentally sustainable practices among small-scale farmers, while Livestock & Climate Systems Resilience aims to address the challenges climate change poses to livestock production. Seed Equal, ClimBer, and Nature+ also have a significant presence (ranging from 10 to 20 outcomes). This indicates that CGIAR's efforts in Kenya are strategically focused on key areas that drive sustainable and resilient agricultural systems, with a broader commitment to improving access to seeds of resilient crop varieties, enhancing climate adaptation, and fostering agrifood systems that work harmoniously with nature. These trends suggest that CGIAR is channeling its resources and expertise toward a comprehensive approach that balances productivity, climate resilience, and environmental sustainability in Kenya. Furthermore, as the outcomes are decisions taken by external organizations such as the Government of Kenya, it signals interest in these areas by those organizations.

Figure 1. Distribution of PRMS outcomes by CGIAR initiatives (Kenya, 2022-2024)



Source: Authors' analysis based on PRMS

Second, while other initiatives (such as Digital Innovation, Market Intelligence, HER+, and Fragility, Conflict, and Migration) report fewer outcomes, their smaller footprint could reflect early-stage investments, more narrowly targeted interventions, or outcomes at the regional or global level, which will result in national-level outcomes only in the longer term. For instance, the Market Intelligence initiative, which provides strategic information to breeding programs to strengthen impact opportunities, targets breeding networks rather than country-level actors. It may not have reported many outcomes in Kenya, even if indirectly influencing breeding institutions in Kenya in the longer term. In addition, these smaller initiatives may not all have had a dedicated team member to enter results in PRMS, like some of the larger initiatives such as Agroecology.

Overall, this pattern of concentrated but varied engagement points to both strengths and gaps. On one hand, CGIAR's core investments in agroecology, seed systems, and climate resilience could provide high-impact returns as they align with important Kenyan policies such as the Kenya's National Climate Change Action Plan and its Agriculture Sector Investment Plan, which both emphasize the need for sustainable, climate-smart agricultural practices, improved seed quality, and resilient food systems. On the other hand, other initiatives reporting fewer outcomes highlight the need to improve coordination, encourage learning across programs, and scale successful approaches to increase their overall impact.

The next question is to what extent these outcomes are achieved together with partner institutions, and if so, which types of partners contribute to reported outcomes. Data indicates that most outcomes (90%) reported partnering with at least one institution. Figure 2 highlights the distribution of CGIAR-reported outcomes in Kenya by main local partners between 2022 and 2024, based on 90 Kenya-specific PRMS entries. County governments are the most frequently reported local partners, contributing to 27 PRMS

outcomes, reflecting strong engagement with decentralized governance structures.² The outcomes were achieved in partnership with 18 County governments (Bungoma, Baringo, Garissa, Isiolo, Kajiado, Kisumu, Kitui, Meru, Nandi, Nakuru, Bomet, Vihiga, Makueni, Machakos, Narok, Siaya, Wajir, and Kakamega) demonstrating that CGIAR initiatives engaged a wide range of sub-national partners rather than repeatedly working with the same counties. This strong local engagement suggests that CGIAR initiatives did not only align with national policies but were also effectively integrated at the sub-national level, and responsive to the diverse conditions across Kenya.

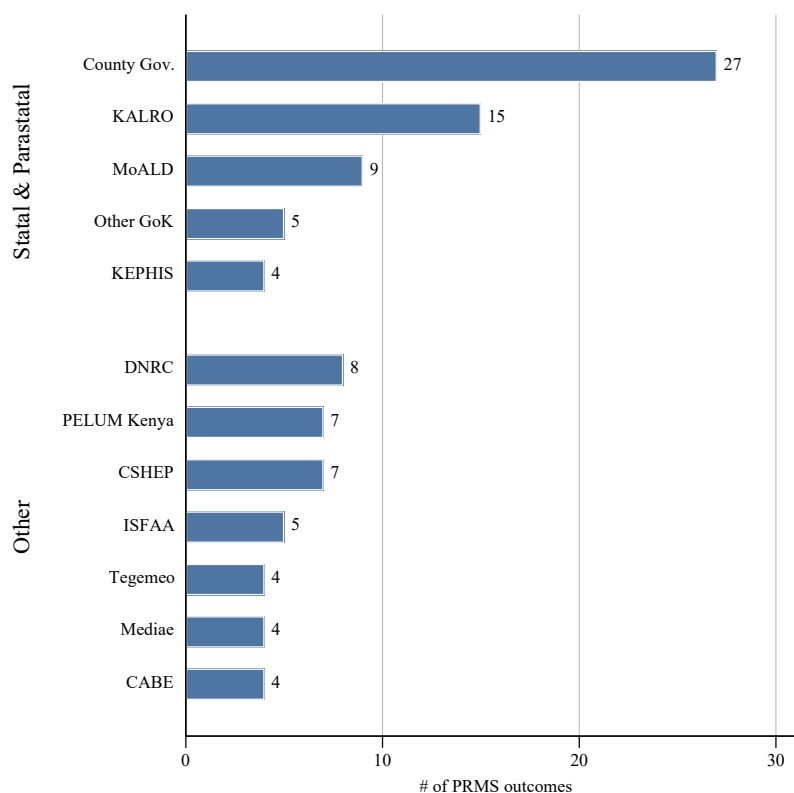
Another major partner is KALRO, which appears in 15 outcomes, reflecting its central role as the country's primary public agricultural research institution. The Ministry of Agriculture and Livestock Development (MALD) is also a key partner, featuring in 9 outcomes, which indicates a close alignment of CGIAR's work with national policy priorities. Meanwhile, organizations like the Dryland Natural Resource Center (DNRC), Participatory Ecological Land Use Management (PELUM) Kenya, and Community Sustainable Agriculture Healthy Environmental Program (CSHEP) each appear 7 to 8 times, underscoring the importance of local NGOs and community-based organizations in driving grassroots adoption, training, and extension. In total, the 12 listed entities represent a balanced mix of national research institutes, government bodies, social enterprises, and civil society groups, suggesting a broad partnership network that integrates policy, research, and community engagement.

Finally, within PRMS, each outcome is mapped to the five CGIAR impact areas, including (1) Climate change mitigation and adaptation, (2) Environmental health and biodiversity, (3) Gender equity, youth, and social inclusion, (4) Nutrition, health, and food security and (5) Poverty reduction, jobs, and livelihoods. In mapping outcomes to these impact areas, initiatives indicate whether the impact area was "Not Targeted," "Significant," or "Principal" in that particular outcome. Figure 3 depicts how these five areas are distributed according to that three-level scale. It suggests that a disconnect might exist between the most natural thematic focus of some of the top reporting initiatives (Agroecology, Nature+, LCSR and Sapling) and the overall significance of impact areas within PRMS outcomes. Indeed, it shows that climate emerges as a top priority, with 25% of outcomes treating it as a principal objective and another 46% highlighting it as significant. In contrast, while Environment and Poverty are addressed in more than two thirds of outcomes they appear less often as a principal objective (5% and 7%, respectively), yet Environment would seem to be the primary target for Agroecology and Nature+. Nutrition is a targeted impact area in 66% of outcomes (8% principal, 58% significant). Overall, these

² Beyond county governments, a wide range of institutional partners contributed to the reported outcomes, reflecting the diverse and collaborative nature of CGIAR's engagement in Kenya. Key partners include national research institutions such as the Kenya Agricultural and Livestock Research Organization (KALRO), which leads agricultural research and innovation in Kenya, and policy institutions like the Ministry of Agriculture and Livestock Development (MoALD), which provides strategic direction and policy support. Regulatory bodies such as the Kenya Plant Health Inspectorate Service (KEPHIS) ensure seed quality, plant health, and biosafety standards, while multi-stakeholder platforms like the Inter-sectoral Forum on Agro-biodiversity and Agro-ecology (ISFAA) promote agroecological policy dialogue across government, academia, and civil society. Non-state actors also played a vital role. These include NGOs such as the Dryland Natural Resource Center (DNRC), which supports sustainable land management and livelihoods in drylands; Community Sustainable Agriculture and Healthy Environmental Programme (CSHEP), which delivers participatory farmer training; and the Centre for African Bio-Entrepreneurship (CABE), which supports smallholder innovation and entrepreneurship. Participatory Ecological Land Use Management (PELUM) is a civil society network advocating ecological agriculture and sustainable land use. Mediae, a hybrid social enterprise/NGO, uses mass media platforms such as TV, on which it broadcasts popular TV shows like *Shamba Shape Up*, to disseminate agricultural knowledge at scale. Lastly, the Tegemeo Institute of Agricultural Policy and Development, affiliated with Egerton University, provides policy-relevant research and analysis to guide evidence-based interventions. Collectively, these partnerships enhanced the reach, relevance, and impact of CGIAR's work across Kenya.

findings highlight climate as a central focus, while environment, poverty, and nutrition often appear as important secondary objectives.

Figure 2. Distribution of PRMS outcomes by main local partners (Kenya, 2022-2024)



Source: Authors' analysis based on PRMS

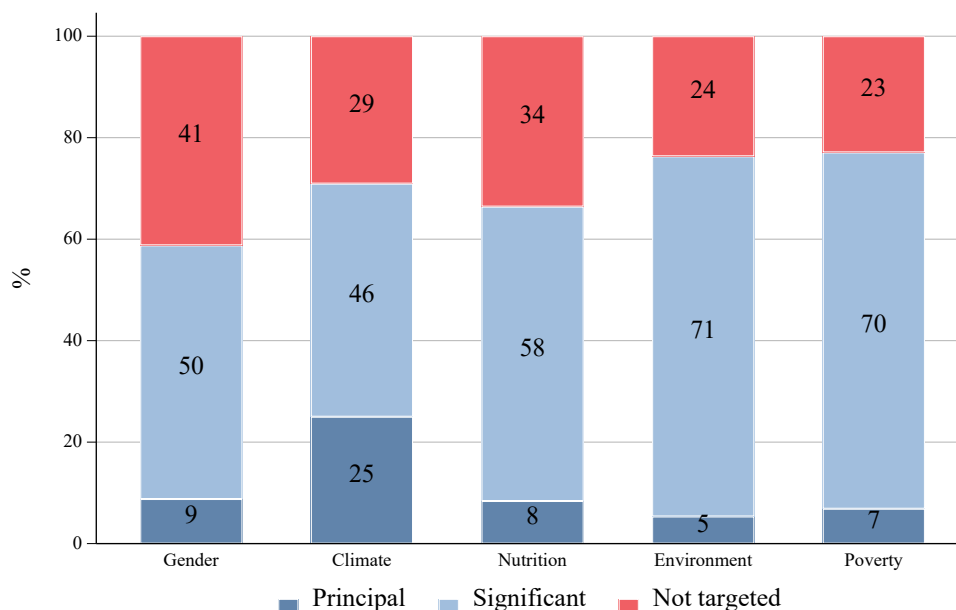
Note: For PRMS outcomes focusing on Kenya only (N=90). We chose to include only the outcomes focused exclusively on Kenya because, for multi-country outcomes, all partners are reported across all countries. This makes it difficult to determine which partner is specifically associated with Kenyan outcomes, as only some can be inferred with confidence. County Gov. stands for County governments, KALRO for Kenya Agricultural and Livestock Research Organization, MoALD for Ministry of Agriculture and Livestock Development, GoK for Government of Kenya, KEPHIS for Kenya Plant Health Inspectorate Service, DNRC for Dryland Natural Resource Center, PELUM for Participatory Ecological Land Use Management, CSHEP for Community Sustainable Agriculture and Healthy Environmental Programme, ISFAA for Inter-sectoral Forum on Agro-biodiversity and Agro-ecology and CABE for Centre for African Bio-Entrepreneurship; DNRC, CSHEP and CABE are NGOs, PELUM is a network of civil society organizations, ISFAA is a multistakeholder and multi-sectoral platform; Tegemeo Institute of Agricultural Policy and Development is a policy research institute; Mediae is a social enterprise/NGO.

Gender remains the area with the greatest scope for more consistent mainstreaming. Despite featuring as a principal concern in 9% of outcomes and as a significant consideration in half, it has the highest proportion of “Not targeted” at 41%, which is again surprising given the large number of outcomes that livestock-focused initiatives such as LCSR and Sapling reported, and the entry points in the livestock sector to increase gender equity. Having said that, gender-related outcomes being fewer is also consistent with what was observed in the 2017–2021 portfolio, and limited reporting of gender-related outcomes may be due to stricter guidelines for researchers on what qualifies as a “significant” or “principal” contribution to gender impact.³

³ This three-level classification (“Not Targeted,” “Significant,” and “Principal”) is used across all five CGIAR impact areas to reflect the degree to which each outcome intentionally contributes to a given area. “Not Targeted” indicates the outcome does not aim to contribute to that impact area. “Significant” means the outcome supports the area in meaningful ways, although it is not the main focus. “Principal” signifies that the impact area is a primary objective of the outcome, shaping its core design and intended results.

Ultimately the discrepancies highlighted between initiatives primary thematic focus and impact area significance may suggest that the current reporting framework displays blind spots, potentially overlooking important nuances in program impact. However, it is important to note that initiatives interpret the guidance on classifying contributions as “principal” or “significant” in different ways, leading to diverse outcomes. For example, the Agroecology initiative may have avoided labeling environmental links as “principal” because it prioritizes multiple connections, such as climate change, poverty, and nutrition, opting instead for several “significant” classifications.

Figure 3. Significance of each impact area in PRMS outcomes (Kenya, 2022-2024) (%)



Source: Authors' analysis based on PRMS

This initial overview paints a clear picture of CGIAR’s diverse contributions in Kenya. The distribution by initiatives and local partners, along with the varied significance attributed to each impact area, underscores distinct thematic groupings. One cluster of outcomes relates to seed systems and agronomy. A second cluster targets nature-positive and agroecological interventions. A third cluster of outcomes will relate to livestock and mixed crop-livestock systems. Co-designed innovations and inclusive finance has also been a major focus for initiatives such as Mitigate+, ClimBer, LCSR and Ukama Ustawi. Finally, we consider social inclusion (Her+, GENDER Impact Platform) and digital innovation as cross-cutting areas. In the following sub-section, we examine these clusters in more detail. In doing so, we describe three types of outcomes: *innovation use* and *other outcomes* on one hand, and *policy change* on the other hand.

2.1.2. Innovation use and other outcomes

CGIAR activities in Kenya have worked toward advancing **seed systems and agronomy** through multiple innovations that were taken up by next or end users. The Demand-Led Seed Systems model developed by the Pan-Africa Bean Research Alliance (PABRA) has driven an important increase in varietal turnover and seed production, which in turn boosted bean grain production.⁴ Complementing this, the AgWise modular framework leverages extensive data from field trials, climate records, and

⁴ Result 1 (Seed Equal): <https://cgspace.cgiar.org/items/d08e166a-8391-43b7-b39e-b616348a6660>

market trends to provide tailored agronomic recommendations optimizing fertilizer use, planting dates, and cultivar selection.⁵ In addition, Genetic innovation initiatives have developed a robust breeding system for common beans⁶ and other strategic interventions in the legume and rice sectors^{7,8} to further position and promote the adoption of new varieties and improved seeds. Furthermore, robust public–private partnerships have addressed plant health challenges, particularly aflatoxin contamination. CGIAR collaborations involving Farm to Market alliance (FtMA), KALRO, Koppert, IITA, Rotooba, Delish & Nutri have promoted the adoption of Aflasafe (a biocontrol technology that has protected thousands of hectares and trained hundreds of technical advisors) thereby enhancing both food safety and market access.⁹

Outside the adoption of innovations, Seed Equal, the Kenya Agricultural and Livestock Research Organization (KALRO), and PABRA have collaborated in this sector to promote the acceleration of seed production,¹⁰ engaging Murang'a County Government to transform common bean value chains by integrating micronutrient-rich bean varieties like Angaza, Faida, Nyota, and Waithera,¹¹ and by leveraging market intelligence to inform maize seed marketing.¹² On-farm engagements have reached thousands of smallholders and women farmers with quality seed of improved rice varieties,¹³ and national breeding programs have supported the deployment of new products at scale.¹⁴

Use of **nature-positive and agroecological innovations** has supported the transformation of farming practices and sustainable livelihoods. Nature-Positive Solutions enhanced the use of local crops and agrobiodiversity,¹⁵ enabled farm aggregation¹⁶ and opened access to diversified value chains. In Western Kenya, community-led projects, such as the Black Soldier Fly plant took steps toward transforming local farming by turning organic waste into valuable fertilizer and protein-rich livestock feed,¹⁷ while training in formalized circular bioeconomy ventures has enhanced women empowerment through briquettes production.¹⁸ In addition, promoting adoption of sustainable practices ranging from improved farm planning and mulching to water recycling and sustainable pest management practices

⁵ Result 2 (Excellence in Agronomy): <https://cgspace.cgiar.org/items/82818a13-f530-4beb-b6cc-84cce71acd9b>

⁶ Result 40 (Accelerated Breeding): <https://research.aciar.gov.au/rapidcookingbeans/news/brio-news-release>

⁷ Result 41 (Seed equal): <https://www.cgiar.org/news-events/news/irri-and-africarice-collaborate-on-developing-and-delivering-improved-and-localized-rice-varieties-to-smallholder-farmers-in-africa>

⁸ Result 44 and 46 (Seed Equal): <https://cgspace.cgiar.org/items/d08e166a-8391-43b7-b39e-b616348a6660>

⁹ Results 6, 7, 43 and 45 (Plant Health): <https://cgspace.cgiar.org/items/f60cbe5f-c1d6-4bdb-bfde-1fa3e1715bb1> ; <https://cgspace.cgiar.org/items/b13aa734-099b-4d40-9f3a-96e9a40e0bba>; <https://cgspace.cgiar.org/items/06e9832a-7515-4a95-acde-910ff4909177>

¹⁰ Result 133 (Seed Equal): <https://reporting.cgiar.org/reports/result-details/19306?phase=4>

¹¹ Result 104 (Seed equal): <https://www.pabra-africa.org/strengthening-kenyas-bean-production-pabras-engagement-with-policy-makers/>

¹² Result 107 (Market Intelligence): <https://www.cgiar.org/news-events/news/how-maize-seed-companies-use-market-intelligence/>

¹³ Results 143 and 145 (Seed equal): <https://www.irri.org/news-and-events/news/ensuring-quality-seed-supply-improved-rice-varieties-west-kenya-smallholder>

¹⁴ Result 146 (Seed equal): <https://reporting.cgiar.org/reports/result-details/3594?phase=1>

¹⁵ Result 3 (Nature+): <https://cgspace.cgiar.org/items/cd158f95-7b28-4e61-8f4c-f82d2e33e713>; <https://www.cgiar.org/news-events/news/how-kenyan-women-are-leading-the-agroecology-revolution-in-kenya/>; <https://alliancebioiversityciat.org/stories/enhancing-sustainability-community-seed-banks-through-value-addition>

¹⁶ Result 4 (Nature+): <https://www.cgiar.org/news-events/news/nature-and-communities-transform-farming-landscapes-in-western-kenya/>

¹⁷ Result 5 (Nature+): <https://www.cgiar.org/news-events/news/embracing-black-soldier-flies-one-farm-at-a-time-in-kenya/>

¹⁸ Result 56 (Nature+): <https://www.cgiar.org/news-events/news/from-informal-to-formal-empowering-women-in-circular-bioeconomy-business-in-kenya/>

by the Agroecology initiative has been associated with increased yields and reduced input costs in Kiambu and Makueni Agroecology Living Landscapes (ALLs).^{19,20} These efforts were further encouraged by initiatives integrating agroecological principles into local training and business models such as the mango value chain, and the broader engagement of over 1,800 food system actors (FSAs) in Kenya.²¹

Beyond innovation use, CGIAR has fostered an inclusive food systems transformation in the realm of agroecology and nature-positive solutions (see also policy changes below). This was achieved by joining international coalitions²² (the Agroecology Coalition, composed of 37 member countries and 70 member organizations), connecting stakeholders through international networks such as the International Network of ALLs (INALL),²³ formulating recommendations and calls to action with local farmers, policy makers, and community leaders²⁴ and strengthening local capacity through experiential learning modules.²⁵ Interventions have enhanced the dynamics between farmers, input providers, and host centers such as the Community Sustainable Agriculture and Healthy Environmental Program (CSHEP) in Kiambu,²⁶ and elevated the visibility of key centers like the Drylands Natural Resources Center (DNRC) in Makueni,²⁷ while science-based tools like the Holistic Localized Performance Assessment for Agroecology (HOLPA) have enabled stakeholders to prioritize innovations that are sustainable and enhance resilience.²⁸

In the **livestock and mixed crop-livestock systems** space, CGIAR innovations have aimed at boosting productivity and strengthening climate resilience. The Africa Asia Dairy Genetic Gains (AADGG) platform seeking to improve dairy genetics has gained thousands of new adopters in Kenya, as well as Tanzania, Ethiopia, Uganda and Nepal,²⁹ while the adoption of *Urochloa* hybrid improved forage aimed at increasing feed quality has also grown tremendously.³⁰ Complementary digital systems, such as the Kenya Integrated Agricultural Management Information System (KIAMIS)³¹ and climate advisories from the Kenya Meteorological Department³² (KMD), have provided real-time market intelligence and weather forecasts to pastoralists. Moreover, innovative approaches like the Pioneer Positive Deviance

¹⁹ Results 16,17,18, 19 and 25 (Agroecology): <https://alliancebioiversityciat.org/stories/finding-agroecology-practice-vegetable-farms-kiambu-county-kenya>

²⁰ Results 21, 22 and 23 (Agroecology): <https://cgspace.cgiar.org/items/c58d704f-88be-4606-9154-f9f27d89c86c> ; <https://www.cgiar.org/news-events/news/farmer-exchange-visits-accelerate-knowledge-co-creation-for-agroecological-transition/> ; <https://cgspace.cgiar.org/items/1c3eaeaa-e8c1-4085-b0bb-46ee4595c789>

²¹ Result 26 (Agroecology): <https://cgspace.cgiar.org/items/65001fe3-d586-43d9-8003-24cc8a934616>

²² Results 101 and 103 (Agroecology): <https://agroecology-coalition.org/agroecology-coalition/membership/> ; <https://www.cgiar.org/news-events/news/leveraging-agroecology-transitions/>

²³ Result 113 (Agroecology): <https://www.cgiar.org/news-events/news/zimbabwe-kenya-country-exchange-a-learning-opportunity-to-foster-agroecological-transitions/>

²⁴ Result 120 (Agroecology): <https://cgspace.cgiar.org/items/20f758f8-f9f7-40b4-bff1-c05aa5244053>

²⁵ Result 105 (Nature+): <https://cgspace.cgiar.org/items/128fe549-5cc1-432b-a2ec-18c76f18ad29>

²⁶ Results 114,115 (Agroecology): <https://cgspace.cgiar.org/server/api/core/bitstreams/edbce94c-7825-421a-a066-3b1fece60a45/content>

²⁷ Result 118 (Agroecology): <https://cgspace.cgiar.org/items/c58d704f-88be-4606-9154-f9f27d89c86c>

²⁸ Result 117 (Agroecology): <https://cgspace.cgiar.org/items/e1506880-baf8-43a9-95c7-f13882e04633>

²⁹ Results 11 and 62 (SAPLING): <https://cgspace.cgiar.org/items/85ed75c7-37dd-48c0-8934-53272a186401> ; <https://cgspace.cgiar.org/items/00aa7aff-ea1a-4b9e-bac2-ac3ea6ef01fc>

³⁰ Result 12 (SAPLING): <https://cgspace.cgiar.org/items/36557c88-6b12-431a-9628-d771d32190ed>

³¹ Result 33 (LCSR): <https://cgspace.cgiar.org/items/0a6a2023-16fd-45a5-b2b3-3451698cd225>

³² Result 34 (LCSR): <https://cgspace.cgiar.org/items/b0deafae-3da9-424e-bd9d-e5f07d38314b>

method^{33,34} and digital monitoring via the Kenya Agricultural Observatory³⁵ have contributed to improved livestock practices and resource governance. Participatory rangeland management (PRM) activities covering over 1.2 million hectares^{36,37} and supportive policy measures such as the inclusion of PRM in Baringo county's integrated development plan³⁸ have worked toward further enhancing the resilience of Kenya's livestock systems.

Other activities have also yielded significant outcomes beyond innovation use. Television and extension platforms such as the popular farm makeover reality TV show Shamba Shape Up have been delivering gender-sensitive livestock climate information services to millions of farmers weekly.³⁹ Moreover, the Livestock and Climate Initiative has informed Kenya's national transparency reports and climate change action plans through the Kenya's first Biennial Transparency Report to the United Nations Framework Convention on Climate Change (UNFCCC) and Kenya's National Climate Change Action Plan 2023-2027,^{40,41} and PRM has been upscaled through international funding (Swiss Development Cooperation funds and European Union funds).⁴² Monitoring tools, comprehensive biophysical datasets,⁴³ and socially inclusive scaling approaches⁴⁴ have further bolstered resilience strategies.

Fostering participatory knowledge co-production, scaling up innovations and enhancing access to finance and credit have also been central to CGIAR's approach in Kenya between 2022 and 2024. The Living Labs for People (LL4P) in Nandi County in Kenya by the Mitigate+ Initiative^{45,46,47} (also a feature of Agroecology initiative mentioned above with the ALLs) have established collaborative hubs where stakeholders co-design, test, and advance socio-technical innovations for sustainable food systems with mitigation benefits. A targeted scaling strategy for improved livestock feeds and breeds⁴⁸ and tools for pioneer farmer-led scaling⁴⁹ have worked toward accelerating the adoption of proven innovations. A wealth of CGIAR interventions have also focused on helping smallholder farmers manage risks and boost productivity by reducing financing gaps. One initiative advanced risk-contingent credit (RCC), designed to address the specific financial needs of farmers, while also incorporating learning and training to gain insights into crop cycles and drought perceptions.⁵⁰

³³ Result 35 (LCSR): <https://cgspace.cgiar.org/items/f0e03c35-17d7-49cd-927a-f3845823d9d9>

³⁴ Result 39 (LCSR): <https://cgspace.cgiar.org/items/a820390d-fe01-4bbb-bffc-40003e910210>

³⁵ Result 36 (LCSR): <https://cgspace.cgiar.org/items/2d1746e1-ce56-4dfb-8340-c10844f0945b>

³⁶ Result 37 (LCSR): <https://cgspace.cgiar.org/items/e4e160c3-3880-4d3e-8cd5-55e6e353f9af>

³⁷ Result 50 (LCSR): <https://cgspace.cgiar.org/items/500f3729-e8bc-4867-89f4-61e1938577f6>

³⁸ Result 42 (LCSR): <https://www.cgiar.org/news-events/news/participatory-rangeland-management-included-in-baringo-countys-integrated-development-plan-an-important-achievement-for-scaling-readiness/>

³⁹ Result 119 (LCSR): <https://cgspace.cgiar.org/items/d34f5c06-8675-458e-8dc8-823b87029e48;>

<https://cgspace.cgiar.org/items/b738781a-9fd4-4ac9-ae45-2f61c2e2c9fd;>

<https://cgspace.cgiar.org/items/7c1f04d0-8050-4dd4-aeb0-65209ad62eec;>

<https://cgspace.cgiar.org/items/9ce0f3ca-256f-4f44-aea6-727c4bcba292>

⁴⁰ Result 139 (LCSR): <https://cgspace.cgiar.org/items/881a5185-b227-493e-bcad-1deb5b138a3a>

⁴¹ Result 140 (LCSR): <https://aicra.cgiar.org/news/climate-smart-agriculture-critical-focus-third-kenya-national-climate-change-action-plan>

⁴² Results 141 and 142 (LCSR): <https://cgspace.cgiar.org/items/59315020-0251-4041-a103-54d41fb80904>

⁴³ Result 134 (LCSR): <https://cgspace.cgiar.org/items/ac5d50ea-7e24-403f-bc63-e528b8e3e64d>

⁴⁴ Result 135 (LCSR): <https://cgspace.cgiar.org/items/dfa0d846-671f-4350-b939-4d300d8882af>

⁴⁵ Result 31 (Mitigate+): <https://alliancebioiversityciat.org/publications-data/living-labs-people-kenya-outcomes-participatory-action-research-nandi-county>

⁴⁶ Result 63 (Mitigate+): <https://cgspace.cgiar.org/items/bf3e61db-c065-4c59-adf4-166d63b50ce3>

⁴⁷ Result 127 (Mitigate+): <https://cgspace.cgiar.org/items/80fc4840-cee5-4f65-a899-7c02ef481e7c>

⁴⁸ Result 32 (Mitigate+): <https://cgspace.cgiar.org/items/b5ba578f-fed8-4f4d-9d5d-7fa99b953477>

⁴⁹ Result 52 (LCSR): <https://cgspace.cgiar.org/items/13574501-5fc9-4328-8895-4a1a6b17613f>

⁵⁰ Result 53 (ClimBer): <https://cgspace.cgiar.org/items/7e401ed1-114c-4f07-99f1-9a1351fcd69c>

Complementary efforts include developing credit scoring tools for small-scale livestock farmers, enabling them to secure loans, establish credit histories, and better identify and manage climate risks.⁵¹ Moreover, the ShambaShield platform⁵² led by Ukama Ustawi and the Ukama Ustawi CGIAR Food Systems Accelerator⁵³ have successfully raised funding and bridged financing gaps for many smallholder farmers. In addition, CGIAR's ClimBeR interventions have supported the development of climate finance proposals that align with national adaptation strategies, ensuring that local climate resilience efforts are adequately funded.⁵⁴

As discussed earlier, **gender and social inclusion** has not been mainstreamed and was less frequently indicated as either a principal or significant component compared to other impact areas, even though it was meant to be a key cross-cutting theme in Kenya's activities. Most outcomes with important social inclusion components were reported by initiatives or platforms focused on this theme, such as HER+ and the GENDER Impact Platform. For instance, CGIAR's efforts to advance women's leadership in climate-resilient innovations⁵⁵ and enhance stakeholder understanding of gender roles in climate adaptation⁵⁶ have significantly supported the capacity of marginalized groups.

Across all those themes, **digital technologies have served as a unifying force**, enhancing the effectiveness and reach of CGIAR innovations. Digital technologies were at the core of several outcomes related to seed systems and agronomy, from already mentioned precision agronomy platforms that optimize seed systems and crop management^{4,5} to fostering the creation, implementation, and adoption of innovative Agri-tech solutions through challenges such as the Agritech4Kenya Challenge.⁵⁷ From digital surveys integrating on-farm performance assessment with digital tools to generate big data on aquaculture to open-source dashboards that underpin real-time aquaculture monitoring^{58,59}, digital innovation have permeated every facet of CGIAR efforts. In livestock and climate resilience, digital tools (such as the already cited KIAMIS³¹ and mobile applications for dairy profitability⁶⁰) provide actionable insights and timely market intelligence. In parallel, digital climate information services delivered via platforms like Shamba Shape Up and iShamba^{39,61} have broadcasted gender-sensitive agro-advisories that encompass climate literacy, climate-smart agricultural practices, crop insurance, and farming financial literacy. These services reached 1.2 million farmers, with 41% being women. This could significantly contribute to enhanced climate resilience among smallholder farmers, if farmers are indeed able to use and benefit from these services. Moreover, digital platforms have been enabling

⁵¹ Result 61 (LCSR): <https://alliancebioiversityciat.org/stories/climate-credit-scoring-tool-revolutionizing-agricultural-finance-africa>

⁵² Result 122 (UU): <https://www.cgiar.org/news-events/news/shambashield-delivering-inclusive-finance-and-climate-smart-solutions-to-kenyan-farmer/>

⁵³ Result 112 (UU): <https://www.cgiar.org/news-events/news/press-release-cgiar-food-systems-accelerator-programme-will-scale-out-climate-smart-innovations-in-agri-food-systems-in-east-and-southern-africa>

⁵⁴ Result 57 (ClimBeR): <https://www.cgiar.org/news-events/news/innovating-climate-finance-solutions-for-pastoral-and-farming-communities-in-the-horn-of-africa/>

⁵⁵ Result 128 (HER+): <https://cgspace.cgiar.org/items/985a40f7-da9f-40df-ac3e-aed640029480>

⁵⁶ Result 129 (HER+): <https://cgspace.cgiar.org/items/8d838c42-e358-487a-a4a1-5e781e371fe3> ;
<https://cgspace.cgiar.org/items/fc1e76d8-27b8-4e55-b3d5-1bf11d35b58> ;
<https://cgspace.cgiar.org/items/dce97364-a532-4479-8aa2-4143b8a566fe>

⁵⁷ Result 125 (Nature+): <https://www.iwmi.org/blogs/pitching-for-impact-the-journey-of-agri-tech-innovators-in-kenya/>

⁵⁸ Result 8 (Aquatic foods): <https://digitalarchive.worldfishcenter.org/items/9ca9bc34-00af-48e8-aa53-328dbbf139c5>

⁵⁹ Result 10 (Aquatic foods): <https://peskas.org/#tab-3>

⁶⁰ Result 48 (SAPLING): <https://cgspace.cgiar.org/items/90804426-fae4-44c6-88a5-1b596b3cbf4f>

⁶¹ Result 60 (ClimBeR): <https://cgspace.cgiar.org/items/fc0fd094-f8e9-4268-8909-4efe54ca574f>

participatory scaling through above mentioned Living Labs⁴⁵ and risk-scoring tools⁵¹ that improve financial inclusion. Other examples of how digital innovations and data-driven approaches have emerged as powerful enablers across multiple domains include the promotion of comprehensive digital tools (such as the Feed Database aggregating thousands of data points⁶² and the VarScout app for crop varietal data collection⁶³), facilitating evidence-based decision-making, streamlining information flow, and empowering stakeholders across Kenya's agri-food systems.

2.1.3. Policy change outcomes

CGIAR initiatives in Kenya also contributed to **policy changes**, contributing to more impactful and sustainable outcomes. In the seed sector, initiatives have focused on strengthening regulatory frameworks by continuing efforts to revise and finalize seed certification regulations for vegetatively propagated materials in collaboration with Kenya's Ministry of Agriculture and Livestock Development and its partners⁶⁴ and by engaging the Murang'a county government to transform common bean value chains.⁶⁵ These and other efforts have supported the development of policies that underpin inclusive seed systems and market development.⁶⁶

In the area of public health, the One Health initiative took actions that led to concrete government investments in slaughterhouse hygiene in western Kenya⁶⁷ and enabling local governments to operationalize One Health approaches through the establishment of field sites.⁶⁸ At the same time, policy briefs have underscored the urgent need for integrated, multi-sectoral strategies to address aflatoxin contamination in food systems.⁶⁹

A robust policy focus on agroecology and nature-positive approaches has been evident as well. CGIAR-supported initiatives have catalyzed with WWF Africa the formation of action groups to drive sustainable food system transformation⁷⁰ and have provided technical support for the development of the regulations for Access and Benefit-Sharing (ABS) of plant genetic resources for food and agriculture for the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).⁷¹ Local policies such as the integration of an Agroecology Policy into the Vihiga County

⁶² Result 121 (LCSR): <https://alliancebioiversityciat.org/stories/revolutionizing-livestock-feeding-future-feed-databases>

⁶³ Result 123 (UU): <https://www.cgiar.org/news-events/news/varscout-a-digital-app-for-all-seasons-that-is-transforming-crop-varietal-data-collection-and-visualization-and-use/>

⁶⁴ Results 64, 88, and 96 (Seed equal): <https://reporting.cgiar.org/reports/result-details/8246?phase=4> ; <https://reporting.cgiar.org/reports/result-details/1556?phase=1>

⁶⁵ Result 65 (Seed equal): <https://www.pabra-africa.org/engaging-muranga-county-government-to-transform-common-bean-value-chains/>

⁶⁶ Result 89 (Seed equal): <https://reporting.cgiar.org/reports/result-details/1570?phase=1>

⁶⁷ Result 66 (One health): <https://cgospace.cgiar.org/server/api/core/bitstreams/410d6295-cfe3-435d-b78d-f496197dabc7/content>

⁶⁸ Result 67 (One health): <https://reporting.cgiar.org/reports/result-details/19779?phase=4>

⁶⁹ Result 85 (Plant health): "How soon is now? The urgent need to tackle Africa's recurrent aflatoxin crises through integrated, multi-sectoral management strategies"

⁷⁰ Result 68 (Nature+): <https://www.linkedin.com/pulse/world-food-day-call-africa-where-nourishes-people-climate-nature-dwgsf/>

⁷¹ Result 69 (Nature+): <https://reporting.cgiar.org/reports/result-details/14128?phase=4>

Integrated Development Plan⁷² and contributions to the National Agroecology Strategy⁷³ have backed efforts to build ecologically resilient and socially inclusive food systems.

In the realm of climate, land, and environmental governance, CGIAR initiatives have supported policy at multiple levels. The establishment of county-level climate-smart agriculture multi-stakeholder platforms⁷⁴ and investments in conflict-sensitive climate adaptation through Kenya's County Climate Change Fund (CCCCF)⁷⁵ have worked toward strengthening local resilience. CGIAR's contributions to including food system climate actions to the Nationally Determined Contribution (NDC) update⁷⁶ and efforts to standardize GHG emissions monitoring protocols⁷⁷ have informed national climate strategies. Moreover, efforts to incorporate pastoralist perspectives into the National Land Policy⁷⁸ and supporting the development of Isiolo County Rangeland Management bill regulation⁷⁹ have focused on promoting more sustainable land governance. At a regional level, CGIAR's climate security research has influenced the Intergovernmental Authority on Development (IGAD) Climate Adaptation Strategy⁸⁰ and provided input into Kenya's National Climate Change Action Plan III on climate security⁸¹ as well as supporting the use of marginal abatement cost curves to analyze economic costs and trade-offs in dairy farms in Kenya.⁸²

Social protection and gender-responsive policies have also been reinforced through CGIAR's work. Efforts to revise gender mainstreaming guidelines⁸³ and to develop gender strategies within the agri-insurance sector with companies like Sprout⁸⁴ have underscored a commitment to inclusive policy design. In addition, evidence-based research has informed recommendations to improve the Kenya's Economic Inclusion Program (EIP)⁸⁵ and strengthened social protection measures,⁸⁶ while the GENDER Impact Platform's contributions have been endorsed in Kenya's UNFCCC Gender Action Plan.⁸⁷ Further, broader studies in collaboration with the Kenya Institute for Public Policy and Analysis (KIPPRA) have been focusing on projections to help inform the impacts of implementing the Bottom-Up Economic Plan on jobs, indicating that the design of the plan is well-aligned with its objectives of fostering broad based growth and delivering substantial benefits to the most vulnerable.⁸⁸

While innovation use and other outcomes have frequently paved the way for corresponding policy change, the relationship is not always a one-to-one mapping. For example, the Demand-Led Seed

⁷² Result 70 (Nature+): <https://repository.kippira.or.ke/handle/123456789/5184>

⁷³ Results 75 and 87 (Agroecology): <https://www.cgiar.org/news-events/news/325255-autosave-v1/> ; <https://kilimo.go.ke/wp-content/uploads/2024/11/National-Agroecology-Strategy-for-Food-System-Transformation-2024-2033.pdf>

⁷⁴ Result 72 (ClimBer): <https://aicra.cgiar.org/news/strategic-partnership-promote-climate-smart-agriculture-full-gear-kenya>

⁷⁵ Result 73 (ClimBer): <https://cgspace.cgiar.org/items/14ce378d-c0b2-4479-a318-e1b4d65914b2>

⁷⁶ Result 76 (Mitigate+): <https://reporting.cgiar.org/reports/result-details/19260?phase=4>

⁷⁷ Result 78 (LCSR): <https://cgspace.cgiar.org/items/e240d3e1-81c7-4d93-abda-cb21e323d28b>

⁷⁸ Result 79 (LCSR): <https://cgspace.cgiar.org/items/89576e8c-6d5b-48a1-b481-90f299dc24c6>

⁷⁹ Result 80 (LCSR): <https://reporting.cgiar.org/reports/result-details/19740?phase=4>

⁸⁰ Results 93 and 94 (ClimBer): <https://cgspace.cgiar.org/items/d4301149-aaa0-46a5-a26c-cf7ef99f9f6b>

⁸¹ Result 95 (ClimBer): <https://www.cgiar.org/initiative-result/kenyas-new-climate-action-plan-tackles-security-threats/>

⁸² Result 100 (LCSR): <https://www.researchsquare.com/article/rs-3179239/v1>

⁸³ Result 86 (UU): <https://cgspace.cgiar.org/items/f5da3511-d952-4593-854c-6c3cf3a58d87>

⁸⁴ Result 74 (Digital Innovation): <https://reporting.cgiar.org/reports/result-details/19166?phase=4>

⁸⁵ Result 81 (FCM): <https://cgspace.cgiar.org/items/55045331-7f43-48c0-88df-6e0692d55f8f>

⁸⁶ Result 82 (FCM): <https://reporting.cgiar.org/reports/result-details/19128?phase=4>

⁸⁷ Result 83 (Gender Impact platform): <https://cgspace.cgiar.org/items/a6399818-c591-49d1-a3f0-6cf0ca2053a8>

⁸⁸ Result 91 (NPS): <https://cgspace.cgiar.org/items/f9aed9fc-5471-4537-b3ce-45dda839e42e>

Systems model and the AgWise framework, which have advanced varietal turnover and tailored agronomic practices, occur alongside efforts to update seed certification regulations and transform common bean value chains at the county level. Similarly, the uptake of innovations such as Aflasafe reflect a broader policy emphasis on integrated food safety strategies. In agroecology and nature-positive solutions, the promotion of practices finds a parallel in local development plans and national agroecology strategies that incorporate these sustainable approaches. Lastly, innovations that improve livestock productivity and climate risk management run parallel to policy initiatives supporting participatory rangeland management and enhanced climate adaptation measures. However, the diverse nature of CGIAR innovations and the complex pathways through which they influence policy mean that not every outcome directly translates into a specific policy shift. Instead, these efforts collectively contribute to an evolving ecosystem where policy frameworks and on-the-ground innovations continuously interact.

All in all, CGIAR's work in Kenya between 2022 and 2024 documented by 148 PRMS outcomes summarized above has provided significant support to efforts aimed at enhancing the country's agricultural systems. Its integrated, digitally enabled innovations have contributed to improvements in productivity and sustainability across seed systems, agroecology, plant health, aquaculture, and livestock production, while also helping to build capacity for scaling and participatory approaches. Moreover, a broader range of contributions (from bolstering agroecological practices and seed systems to facilitating data-driven decision-making and increasing institutional capacity) have helped to underpin a more resilient and inclusive agri-food system in Kenya. In parallel, the policy change results reflect CGIAR's role in strengthening regulatory frameworks and informing national strategies through active engagement with government agencies and local stakeholders. Together, these findings suggest that CGIAR's contributions have provided an important foundation for ongoing improvements across the sector.

2.2. Unlocking insights on impacts: Lessons from published studies in collaboration with CGIAR researchers in Kenya (2022-2025)

This section introduces a comprehensive dataset of 56 peer-reviewed published impact evaluations and assessment (IE/IA) studies that examine CGIAR interventions in Kenya from 2022 to early 2025.⁸⁹ The dataset includes detailed study characteristics, methodologies, and various impact indicators. It categorizes interventions across multiple impact areas and maps geographic coverage across Kenya's counties. This systematic collection not only complements outcomes reported in PRMS (which often provides qualitative, narrative descriptions of activities led by CGIAR centers) but also offers quantitative, granular insights into the design, outcomes, and measured impacts of interventions. By examining this dataset, we can derive rich lessons on what works, the magnitude of impacts achieved, and areas for future innovation, thereby deepening our understanding of CGIAR's contributions beyond general activity reports.

It is important to note that while the studies included in this paper were selected based on their publication within the reference period (2022 to early 2025), many of these studies are based on data collected and innovations implemented in prior years. This inherent lag means that the reported outcomes may reflect earlier phases of intervention and technology development and may not capture

⁸⁹ The studies were identified using the Ares search tool on CGSpace. Papers were selected from the pool of those identified as impact assessment/impact evaluation. Other publications with key findings may not have been included if they did not meet the inclusion criteria of impact evaluation/assessment.

the very latest advancements in practice. At the same time, many initiatives built on work done in the period prior to 2022 will have reported these publications as knowledge products and will have used results from those impact evaluations in stakeholder engagements that ultimately helped achieve the outcomes reported in PRMS from 2022 to 2024.

2.2.1. Overview of published IE/IA related to Kenya

Table 1 offers a detailed snapshot of the 56 Kenya related peer-reviewed IE/IA studies from 2022 to 2025. Trends in publication timing reveal a significant concentration of studies in 2023 (43%) and 2024 (29%), with a smaller share in 2022 (25%) and unsurprisingly only minimal representation from 2025 (4%). This suggests that research efforts with a focus on Kenya have ramped up considerably in recent years, although it could also be that initiatives encouraged researchers and centers to report publications through CGSpace in order to be included in the PRMS, and not all authors had prepared to do that for the first year of reporting (2022 publications).

Table 1. Kenya IE/IA published between 2022 and 2024: selected statistics

Indicator	Mean
Year of publication	
2022 (%)	25
2023 (%)	43
2024 (%)	29
2025 (%)	4
Average # years between data collection and publication	4.23
Journal ranking (%)	
Rank A*	2
Rank A	29
Rank B	32
Rank C	4
Rank NR	34
Authorship / Affiliation	
Average # of CGIAR centers represented per journal article	1.18
# of journal articles with researchers from:	
IFPRI	20
ILRI	16
IITA	10
ABC	7
CIP	5
CIMMYT	4
Africa Rice	1
ICRISAT	1
IRRI	1
Impact areas (%)	
Nutrition, health, and food security	48
Gender equity, youth, and social inclusion	29
Poverty reduction, jobs, and livelihoods	20
Climate change mitigation and adaptation	21
Environment	7
Data collection	
Article covers multiple countries (%)	32
Kenya sample:	
Average sample size (households)	575
Article covers multiple counties in Kenya (%)	48
# of counties covered on average	2.57
Journal article methodology (%)	

Indicator	Mean
Other	45
Modelling	14
RCT	11
Qualitative	9
Endogenous switching regression	7
Matching	4
IV	4
Longitudinal, not IE	4
Other fixed effects	2
Number of observations	56

Source: Authors' elaboration based on IE/IA dataset

Journal rankings⁹⁰ indicate that while a portion of the IE/IA studies is published in higher-tier outlets (Rank A* at 2% and Rank A at 29%), a considerable share appears in mid-tier (Rank B at 32%) or non-ranked journals (34%). Publishing in high-ranking academic journals is not necessarily indicative of strong alignment between research findings and policy relevance. In many cases, non-ranked or more specialized journals can offer valuable, context-specific insights that are highly pertinent to policymakers and practitioners working in the field. Therefore, the prominence of non-ranked publications should not be viewed as a negative reflection on the quality or applicability of the research. At the same time, the peer review process of higher-ranked outlets is more rigorous, which increases the credibility of the published findings, and as a result, publications in high-ranked outlets tend to be cited by other impactful work more widely and could leave a greater mark on policy dialogues.

Regarding CGIAR affiliation, the data reveal a modest degree of cross-institutional collaboration, with an average of 1.18 CGIAR centers represented per journal article, indicating that while some level of partnership exists, many studies tend to be produced by researchers from a single center. IFPRI leads the contribution, appearing in 20 articles, closely followed by ILRI with 16 and IITA with 10, which underscores their prominent roles in the research landscape in Kenya. In contrast, contributions from other centers are noticeably lower. This uneven distribution highlights a concentration of scholarly output among a few key institutions, potentially reflecting differences in research focus, resource allocation, or institutional priorities across the CGIAR.

An important factor determining the quality of an impact evaluation is sample size, as it is directly related to a study's statistical power to detect impacts. The average sample size of quantitative studies was 575 households. This provides a useful basis for statistical analysis, especially descriptive analyses and impact evaluations with variation in exposure to an intervention at household level. When intervention exposure is similar for all households within a cluster, for instance a village or market, and a study may have included, say, 20 households per cluster, then an average sample of 575 households implies an average of 30 clusters. If this is divided between at least two study arms (treatment and control), one would be left with 15 clusters on average, which would be relatively small scale for a rigorous and credible impact evaluation. This would also limit the generalizability of findings across Kenya's diverse agricultural environments. Smaller-scale studies often provide deep, context-specific

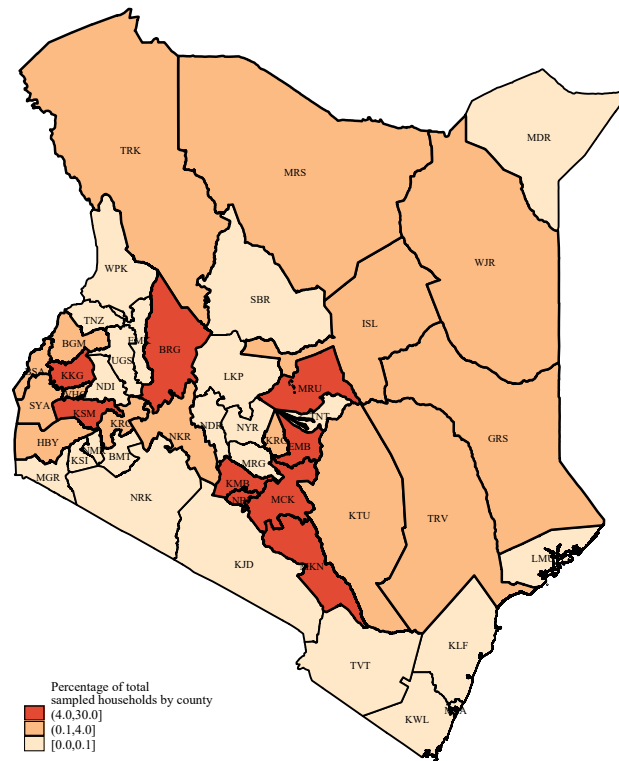
⁹⁰ Based on IFPRI journal Ranking 2012-2024. IFPRI's Publication Ranking Guide, established in 2011 and regularly updated, systematically categorizes peer-reviewed journals, books, and other publications into A*, A, B, and C classes. This ranking system, initially based on the Excellence in Research for Australia (ERA) initiative and continuously refined using both quantitative metrics like impact factors and qualitative assessments of editorial quality and field recognition, serves to guide researchers toward high-quality publication outlets. Its emphasis on scientific rigor and visibility makes it a useful indicator for assessing the dissemination and potential policy and academic influence of research, including impact assessment and evaluation studies.

insights but may face challenges when extrapolating results to a national level, underscoring the need for a careful balance between depth and breadth in research design.

Regarding impact areas, despite PRMS outcomes highlighting climate as a top priority in CGIAR activities, the peer-reviewed studies in our dataset reveal a contrasting focus: only 21% of publications target climate change mitigation and adaptation, with environmental impacts receiving even less attention (7%). Nearly half of the studies (48%) address nutrition, health, and food security, followed by studies evaluating impacts on social dimensions such as gender equity (29%), suggesting a mismatch between the outcomes on which initiatives were focused, and the research they published in that same period. This disparity may be partly due to methodological factors: many impact assessment studies rely on household surveys that capture indicators such as poverty or nutrition but often omit measures of soil health and biodiversity. In addition, many methodological challenges exist in evaluating climate outcomes. Moreover, researchers may assume that sustainable practices inherently yield positive environmental effects, leading them to concentrate on potential synergistic effects or tradeoffs in other impact areas. As such, critical environmental and climate-related impacts may be overlooked, highlighting significant scope for further investigation into environmental sustainability and climate resilience in Kenya, and for publishing more on CGIAR innovations in this space.

With respect to geographic coverage, 32% of studies are multi-country while 68% concentrate exclusively on Kenya. Of all Kenya-focused studies, 33 provide precise sample sizes by county, which is used in Figure 4 to present the geographical distribution of sampled households/individuals. The map illustrates the percentage distribution of sampled households/individuals by county, based on data from the 33 Kenya-focused peer-reviewed studies that reported county-level sample sizes. Darker shades indicate counties that contributed a higher share of the total sample across studies. A significant number of studies are concentrated in a few counties, with the highest samples recorded in counties that are more accessible from Nairobi. Nairobi accounts for over one-fifth of the total, with a cluster of six studies focused on consumer behavior (Owuor et al. 2023, Muunda et al. 2023), nutrition (Gichohi-Wainaina et al. 2023, Chege et al. 2022), and food safety (Watson et al. 2024, Isanovic et al. 2023) in low-income urban settings. Counties like Machakos, Baringo, and Embu also contribute notable figures. Given Nairobi's limited agricultural activity, its dominance in the sample appears somewhat misaligned with CGIAR's core mandate of advancing agricultural systems, particularly in rural contexts. The geographic targeting of research could be calibrated to better reflect and serve the actual distribution of farming communities across Kenya (Figure 5).

Figure 4. Geographical distribution of sampled households in journal articles (2022-2025) (% households)

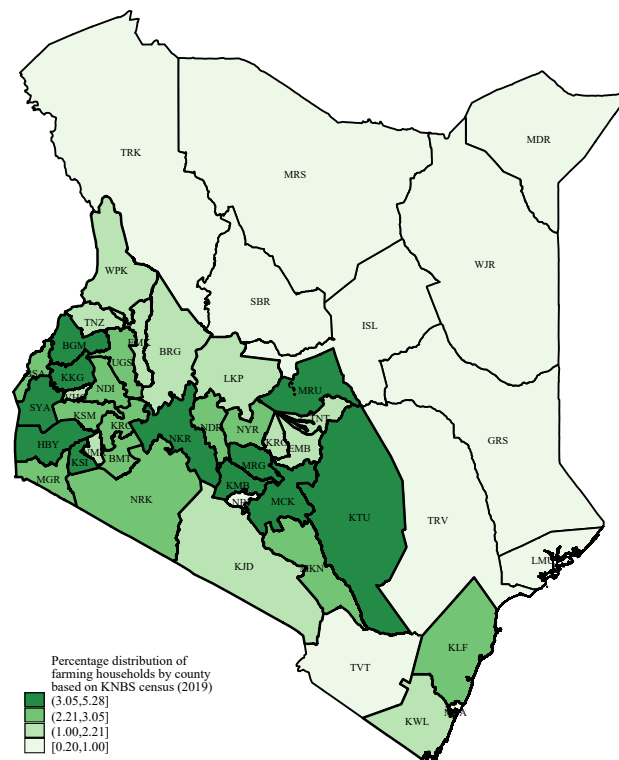


Source: Authors' elaboration based on IE/IA dataset

Note: % of total sampled households by county. Shading indicates each county's share (%) of the total sampled households from 33 Kenya-focused peer-reviewed studies reporting county-level data; darker shades represent higher shares.

In contrast, several counties remain unrepresented or sparsely sampled; for example, counties such as Bomet, Elgeyo Marakwet, Kilifi, Kisii, Laikipia, Mandera, Narok and others show no or minimal representation. This uneven distribution is further highlighted by the fact that 52% of the studies focused on a single county while 48% covered multiple counties, with an average of 2.6 counties per study. Such a mix offers both detailed local analysis and broader regional perspectives, yet the heavy reliance on single-county studies may restrict the applicability of the results to Kenya's diverse agricultural landscapes and agroecological zones. Overall, while the concentrated sampling in certain areas provides valuable in-depth insights, the uneven geographical distribution underscores the need for a more balanced approach to ensure that the diverse agricultural contexts across Kenya are adequately captured. All of this should be interpreted keeping in mind that county-level data was available for only 33 studies, highlighting the need for improved data documentation in future work.

Figure 5. Geographical distribution of farming households in Kenya (% households)



Source: KNBS (2019)

Note: Percentage distribution of farming households by county

Methodologically, the studies employ a diverse range of approaches. A notable 45% are classified as “Other,” indicating the use of hybrid methods beyond conventional categories. Traditional robust techniques that use experimental methods, like randomized controlled trials (RCTs), are used in only 11% of the studies, a relatively low rate that underscores the challenges inherent in implementing RCTs in real-world agricultural settings. Indeed, although evidence from well-designed RCTs tends to be the most credible type of evidence, their broader application may be hindered by operational constraints, logistical difficulties, and ethical considerations. Establishing an intellectual platform or intangible asset through which researchers can share tools to overcome such challenges and help others implement high-quality evaluations (for instance software and guidelines on how to do power calculations) could be important. Other methodologies include modelling (14%), qualitative approaches (9%), and quasi-experimental methods such as endogenous switching regression (7%), matching (4%), and instrumental variables (4%). The modest use of longitudinal studies (4%) further suggests that capturing long-term impacts remains an area ripe for further exploration. This is not surprising given the short-term nature of CGIAR research programs and initiatives, combined with annual funding cycles, but opportunities to start more longitudinal work could be an important consideration in the design of Science Programs.

Finally, similarly to Rao (2025) on the assessment of the quality of evidence supporting CGIAR contributions to the 2022 aspirational system level outcome targets, our analysis highlights various methodological challenges. For example, there are limitations stemming from the use of cross-sectional survey data and a lack of detailed contextual information regarding the interventions and the need for greater transparency and the adoption of methodological pluralism to improve the robustness and scalability of impact assessments. This convergence suggests that while current evidence credibly

underpins CGIAR’s impact, there remains a need for improved research designs and reporting protocols to fully capture the breadth of outcomes and to address potential biases in evaluating interventions.

2.2.2. Main findings from IE/IA studies

What can we really learn from that research? This sub-section provides a compelling synthesis of the study results revealing key lessons about gender inclusion, nutrition, productivity, and resilience in Kenyan agriculture.

1. Gender and social inclusion drive intervention success

A consistent finding across multiple studies is that **gender-responsive and socially inclusive approaches markedly enhance agricultural outcomes**. For example, tailored extension methods—such as animated brochures and videos—have been shown to significantly improve farmers’ understanding of and willingness to pay for innovative financial products, with particularly strong effects among women (Timu et al. 2024). Qualitative research and behavioral experiments also reveal that intra-household decision-making is gendered, with men predominantly controlling certain choices (e.g., vaccine use, purchased inputs) and women influencing others (e.g., livestock treatment, maize end uses), indicating that interventions must address these dynamics to be effective (Kariuki et al. 2022, Voss et al. 2023, Mutua et al. 2024). In addition, youth-targeted agribusiness empowerment programs have positively influenced job creation and agripreneurship skills, demonstrating that inclusive strategies can support broader rural development (Adeyanju et al. 2023, Adeyanju et al. 2024). Furthermore, studies examining agricultural insurance and credit products point to persistent gender disparities that call for more tailored product designs (Timu and Kramer 2023, Timu et al. 2025).

2. Nutrition and food security improvements are attainable, but challenges persist

Several studies have highlighted that **targeted interventions can significantly improve nutritional outcomes and food security**. Task shifting in the treatment of children malnutrition (delegating specific responsibilities to health workers with less training and lower qualifications) has led to higher recovery rates among malnourished children (Donfouet et al. 2024), while locally designed food hygiene interventions targeting caregivers show promise for improving their behaviors in low-income settings (Watson et al. 2024). Nutrition-sensitive agricultural approaches and climate-smart interventions have been associated with marked improvements in dietary diversity and reductions in food insufficiency (Grant et al. 2024, Radeny et al. 2022). Nutrition awareness campaigns are shown to further increase the utilization of biofortified crops, such as orange-fleshed sweet potato, with positive implications for addressing micronutrient deficiencies (Mulwa et al. 2022, Ojwang’ et al. 2022). However, the adverse impacts of COVID-19 on farm input use, agricultural production, and overall food security underscore ongoing vulnerabilities, including among low-income urban populations (Chege et al. 2022, Tabe-Ojong 2022, Mutegi et al. 2024), while studies on dairy consumption indicate that despite widespread production, its contribution to overall diets remains low (Muunda et al. 2023, Ecker et al. 2024).

3. Innovations in inputs and market structures boost productivity yet structural constraints remain

Evidence from the literature indicates that **innovations in seed selection, forage adoption, and input subsidies can lead to significant gains in agricultural productivity and income**. For instance, while farmers’ decisions regarding hybrid maize seed purchases are heavily influenced by brand loyalty and prior experience (Rutsaert et al. 2024), Krishna et al. (2023) show that the adoption of CGIAR-related maize germplasm during 1995-2015 has yielded high economic returns, although methodological limitations apply as nationally representative data on varietal adoption are rarely available in Sub-

Saharan African countries including Kenya. Moreover, input subsidy programs and supermarket contracts for farmers who can meet contractual requirements have been shown to be successful in increasing crop yields and farm incomes (Ochieng and Ogutu 2022, Marinus et al. 2023a, Marinus et al. 2023b). Nevertheless, these interventions often fall short of enabling a living income or benefiting all smallholder farmers due to persistent structural constraints such as limited market access and income diversification, cash flow issues, and market imperfections (Milner et al. 2022, Ochieng and Ogutu 2022, Marinus et al. 2023b).

4. Risk management strategies and institutional innovations enhance climate resilience

Several studies highlight the critical role of **innovative strategies (ranging from farmer-friendly delivery of veterinary services to advanced insurance products) in mitigating risks and bolstering resilience**. A choice experiment with dairy farmers, for example, shows that tailoring institutional innovations to farmers' conditions could significantly increase adoption rates (Maina et al. 2024). Similarly, index-based livestock insurance (IBLI) has been shown to be effective in increasing household income and reducing exposure to downside risks, thereby offering a promising tool for climate risk management (Shikuku and Ochenje 2025).

5. Consumer behavior insights and food safety concerns shape market dynamics

A wealth of **consumer preferences and behavior studies provide nuanced insights into food safety, quality, and dietary choices** that are critical for market development. Experimental evidence indicates that both men and women are willing to pay a premium for biofortified products like orange-fleshed sweet potato puree, though women's willingness tends to be higher (Wangithi et al. 2023, Owuor et al. 2023). Hedonic pricing models applied to rice quality reveal heterogeneous consumer preferences that inform breeding and value-chain interventions (Twine et al. 2023). Meanwhile, investigations into food safety indicate that providing consumers with information (especially when combined with tangible test results) can significantly shift consumption towards safer food brands (Kariuki and Hoffmann 2022, Isanovic et al. 2023) although other factors such as food prices, and the role of food standards regulation bodies remain important (Gichohi-Wainaina et al. 2023).

Despite these robust insights, several limitations already highlighted by the studies' descriptive statistics emerge. Many investigations rely on relatively small sample sizes or are confined to localized geographic areas, which may limit the generalizability of findings across Kenya's diverse agro-ecological zones. The heterogeneity of methodologies (ranging from randomized controlled trials and quasi-experimental designs to qualitative and simulation approaches) complicates cross-study comparisons and synthesis. Moreover, while the literature extensively covers nutrition, gender, and market dynamics, there is a notable underrepresentation of research focused on climate change mitigation and environmental impacts, despite these being critical impact areas. Addressing these gaps through more coordinated, large-scale, and methodologically harmonized studies will be essential for informing policies that foster sustainable, resilient, and inclusive agricultural development.

2.3. Key challenges and considerations in consolidating CGIAR outcomes

Next, we consider the implications of these findings for how to consolidate CGIAR contributions to outcomes at the country level. This section is not intended as a methodological guide for statistically aggregating results from disparate studies. Rather, it aims to provide higher level reflections on the findings reported above. The mere effort of combining CGIAR outcomes presents both opportunities and challenges, particularly when drawing from diverse data sources such as the PRMS and peer-

reviewed papers. While these sources provide valuable insights into the reach and effectiveness of CGIAR interventions, their integration requires careful attention to methodological consistency, thematic alignment, and the broader implications of reported findings. Indeed, it is quite certain that reported outcomes and results highly differ in terms of how they influence policy, funding decisions, agricultural practices, or even future research directions.

Beyond this limitation, a synthesis of the contributions from both data sources undoubtedly reveals a mixed picture. Indeed, while aggregated findings paint an overall picture of progress, they also expose discrepancies between the reported outcomes and the broader systemic changes needed to achieve sustainable, equitable growth in Kenya's agricultural sector. On one hand, CGIAR's interventions have spurred notable advancements in innovation use, whether through enhanced seed systems, the introduction of digital platforms, or the implementation of climate-resilient practices. These efforts have catalyzed improvements in productivity and sustainability. On the other hand, the consolidated evidence points to significant challenges.

One key consideration is the extent to which outcomes from different initiatives reinforce or complement one another. PRMS data captures a broad range of interventions, often showcasing improvements in technology adoption, capacity building, and stakeholder engagement. However, these reported outcomes frequently lack explicit links to other initiatives, making it difficult to assess whether they contribute to systemic change or exist as isolated successes. Indeed, while individual projects may have demonstrated success in their specific focus areas, demonstrating synergy between initiatives is rarely done. For example, the evidence indicates that although several outcomes report partnering with multiple stakeholders, very few PRMS entries document contributions from other initiatives in a manner that clarifies how these collaborative efforts generate complementary benefits. Without clearer documentation of synergies, the aggregated impact of CGIAR's work may appear fragmented rather than integrated. Capturing such synergies more clearly through PRMS would be important for the next phase of the CGIAR, where Science Programs are encouraged to work more closely together.

Additionally, the current PRMS reporting predominantly details the activities undertaken ("what was done") without clearly articulating the actual benefits achieved by these innovations. While the descriptions provide a comprehensive account of the activities, they often lack a focus on how these activities have translated into real-world improvements and broader results (such as clear policy change achieved following research-based policy recommendations, population reached by an activity, or innovation use observed). Future reporting should shift its emphasis from a process-oriented narrative to one that captures these tangible achievements and results, ensuring that they are clearly demonstrated, whereby reported activities only serve as a description of how those results were achieved.

Furthermore, peer-reviewed impact assessment studies add depth to the analysis by evaluating outcomes within specific research frameworks, often with rigorous methodologies. However, while the scope of CGIAR's work is broad, these studies tend to focus on a narrow set of interventions, typically co-authored with multiple institutions but including CGIAR researchers from a single center. This concentration raises concerns about the diversity of perspectives and the potential for gaps in the overall assessment of CGIAR's influence and risks obscuring the diverse methodological approaches that could enrich our understanding of a sector's evolution. Additionally, while peer-reviewed research provides valuable causal insights, it is not always directly aligned with the broader reporting mechanisms used in PRMS, further complicating efforts to synthesize findings across sources. In fact, we observe a potential disconnect in the theory of change, from research through publication to policy change or innovation adoption. It appears that many of the outcomes realized on the ground lack a corresponding

body of peer-reviewed evidence, raising concerns about whether the innovations promoted are demonstrably effective. Addressing this gap is essential to ensure that the impacts of these initiatives are both measurable and substantiated by rigorous research.

Another critical issue is the challenge of capturing long-term impacts. Many reported outcomes focus on short- to medium-term changes, such as increased adoption of improved crop varieties or enhanced farming practices. While these are important indicators of progress, they do not always translate into sustained improvements in farmer livelihoods, market resilience, or policy transformation. Aggregating CGIAR outcomes thus requires a nuanced approach that accounts for both immediate successes and the structural barriers that may limit long-term impact.

In sum, achieving a more integrated assessment requires stronger documentation of cross-initiative synergies, broader representation across disciplines and areas of expertise in peer-reviewed research, and a balanced focus on both short-term adoption and long-term systemic change. Addressing these considerations will enhance the ability to draw actionable insights from CGIAR's work and strengthen its contribution to sustainable agricultural development.

3. Alignment of CGIAR contributions to the Kenya Bottom-Up Economic Transformation Agenda (BETA)

Since 2008, Kenya's development has been steered by the Vision 2030 framework, implemented through successive five-year Medium-Term Plans (MTPs) that propelled notable economic growth and helped the country achieve its current status of a Lower Middle-Income country. However, challenges like climate variability, the COVID-19 pandemic, and global market disruptions meant that not all Vision 2030 goals were met by mid-2023, when the Third MTP (MTP III) ended. The country has now embarked on its final five-year plan under Vision 2030, the Fourth Medium Term Plan (MTP IV). This plan is uniquely aligned with the Kenya Kwanza Administration's Bottom-Up Economic Transformation Agenda (BETA), which prioritizes investments in sectors that create jobs and drive inclusive growth, particularly among smallholders and informal enterprises. It is built upon five strategic pillars: agriculture; the micro, small, and medium enterprise (MSME) economy; housing and settlement; healthcare; and the digital superhighway and creative economy. BETA's approach emphasizes a value chain strategy, targeting high-impact sectors such as leather and leather products, textile and apparel, dairy, edible oils, tea, rice, the blue economy, minerals, forestry, and construction/building materials. Other chains like maize, potatoes, pyrethrum, beef, coffee, apiculture, and indigenous poultry are targeted as well because of their current scale and importance for the Kenyan economy. By integrating BETA into MTP IV, Kenya is ensuring that its final phase of Vision 2030 not only addresses past shortcomings but also lays a solid foundation for future economic transformation and long-term development planning.

Following the MTP IV report from the National Treasury and Economic Planning (2024), we now analyze CGIAR contributions sector by sector, evaluating how its interventions have aligned with or may have helped inform BETA priorities, and identifying areas where gaps remain. CGIAR's work in Kenya is most impactful when it serves or informs these national priorities, ensuring that its research and innovations directly contribute to transforming these key value chains in ways that align with the country's development objectives. This is why it is important to understand the degree of alignment of CGIAR contributions to support and or inform the Kenya BETA /MTP IV (The National Treasury and Economic Planning 2024).

In the Production Sector (MTP IV/BETA: page 118), which encompasses agriculture and livestock production, cooperatives and MSMEs, investment, trade, and industry, CGIAR's work has been notable. Research and innovation projects, such as the Demand-Led Seed Systems model and the AgWise framework, have helped improve seed production and agronomic practices, supporting staple crops like maize and rice. In the livestock sub-sector, interventions such as Aflasafe have helped reduce aflatoxin contamination in milk, while Participatory Rangeland Management has enhanced pasture management and livestock resilience. These contributions support the value chain approach that aims to transform smallholder farming from subsistence to surplus production, contributing indirectly to job creation and income stability. However, gaps exist in other high-priority value chains identified by BETA. Despite significant work in staple crops and livestock, there has been comparatively limited focus on sectors such as leather and leather products, and areas like coffee and indigenous poultry. These sectors, crucial for diversifying Kenya's economy and reducing import dependency, could represent opportunities for further engagement by CGIAR.

The Infrastructure Sector (MTP IV/BETA: page 138), covering roads and transport, energy and petroleum, ICT and the digital economy, land and housing, and water and irrigation, is another critical pillar for economic transformation. While not entirely agriculture-related, this sector is not irrelevant to CGIAR's work given its focus on systems transformation approach for food, land, and water systems. In fact, its contribution primarily involved digital innovations, including developing precision agronomy platforms and mobile applications that offer real-time climate and market information. Such tools help bridge the gap between research and practice by improving decision-making among smallholders and facilitating more effective market linkages. Although these digital solutions support infrastructure indirectly by enhancing agricultural productivity and resource allocation, CGIAR's contributions to physical infrastructure remain limited, which reflects its research mandate rather than a shortfall in impact. However, this topic is not foreign to CGIAR research work. Indeed, research on the impacts of electrification and transport infrastructure exist even though they are not at the forefront of CGIAR's current research priorities in Kenya. For instance, past and ongoing research on electrification, spanning studies in Bangladesh, Ethiopia, Peru, El Salvador, and sub-Saharan Africa, has examined diverse dimensions such as the influence of electric irrigation on crop diversification and groundwater access, the gender-specific benefits of rural electrification, employment effects, and even reductions in indoor air pollution (Banerjee et al. 2024, Beniwal and Kishore 2024, Arega et al. 2024, Varshney et al. 2022, Dasso and Fernandez 2015, Barron and Torero 2017, Bernard 2012). Meanwhile, studies focusing on transport infrastructure have highlighted its role in enhancing market access, influencing labor allocation, and improving nutrition outcomes by linking remote rural areas to urban centers (Iimi et al. 2020, Mottaleb and Rahut 2019, Diao et al. 2019, Headey et al. 2018). These findings, although addressing contexts beyond Kenya, are critically important as they underline the broader complementarities between energy, transport infrastructure, and agricultural development. Such evidence is particularly pertinent for Kenya, given current Government's objectives.

Within the Social Sector (MTP IV/BETA: page 155), which comprises health, education, labor and social protection, and gender, culture, and youth initiatives, CGIAR's agriculture-related social outcomes have helped generate evidence-based insights that inform policy through studies and projects emphasizing gender-responsive approaches, nutritional improvements, and inclusive agricultural practices. These efforts indirectly support BETA's objectives by ensuring that economic growth is accompanied by improvements in human capital and social welfare.

The Environment and Natural Resources Sector (MTP IV/BETA: page 172), which includes environmental and climate change issues, forestry, wildlife, tourism, mining, the blue economy, and related areas, has seen significant CGIAR contributions through agroecological research and climate-smart interventions. CGIAR's work on sustainable farming practices, biodiversity conservation, and digital monitoring of environmental conditions helps inform strategies for managing natural resources and mitigating climate risks. These contributions are critical for reducing production costs and ensuring long-term sustainability in agriculture. Nonetheless, CGIAR's portfolio shows relatively limited engagement with certain components of this sector, particularly in the blue economy, area that is increasingly important for Kenya's overall resource management and economic diversification under BETA and where the CGIAR could use the expertise of centers such as World Fish.

Finally, in the Governance and Public Administration Sector (MTP IV/BETA: page 187), which covers security, legal services, public sector reforms, and policy development, CGIAR's contributions are unsurprisingly largely indirect. Through robust research and the dissemination of evidence-based policy recommendations, CGIAR has helped shape agricultural policies and rural development strategies. For example, the CGIAR initiative on Agroecology contributed to developing a national strategy for agroecology, to scale up pioneering approaches such as the mapping of organic resources to identify investment opportunities for fully exploiting underutilized materials in agroecological transitions. (Adoyo et al. 2024). The strategy is led by the Kenyan Ministry of Agriculture, Livestock, Fisheries and includes gender and social inclusion as one of the priority themes to be addressed. Such collaborations support institutional frameworks and inform public administration practices in sectors closely related to agriculture and food systems.

In summary, CGIAR's contributions, when analyzed alongside MTP IV's sectoral priorities, demonstrate strong alignment in areas such as agricultural innovation, livestock resilience, digital agriculture, and environmental sustainability. These interventions have helped drive improvements in key value chains that underpin job creation, income stability, and inclusive growth. However, it is worth questioning whether the current agricultural research agenda is targeting the most critical issues, such as soil health and fertilizer management, to directly address the government's evolving knowledge needs in these areas. Furthermore, gaps remain, indicating opportunities for CGIAR to expand its impact. By addressing these gaps and forging deeper partnerships with stakeholders across underrepresented sectors, CGIAR can further ensure that its research and innovations directly support Kenya's ambitious transformation agenda as outlined in the Bottom-Up Economic Transformation Agenda for 2023–2027.

4. Focus on innovations at scale

To illustrate CGIAR outcomes in Kenya, this section presents three case studies: Aflasafe, Participatory Rangeland Management (PRM), and Index-Based Livestock Insurance (IBLI). They highlight how selected CGIAR innovations have achieved scale and influence in Kenya's food system. These cases were chosen because they demonstrate the diverse pathways through which CGIAR initiatives translate research and partnerships into tangible outcomes. Together, they demonstrate the enabling conditions, stakeholder engagement strategies, and policy linkages that have facilitated the scaling of innovations and provide concrete examples of CGIAR's broader contributions described in earlier sections.

4.1. Aflasafe

Aflatoxin contamination poses a major threat to agricultural productivity, particularly in maize, sorghum, groundnuts, and milk which are important value chains in Kenya. Exposure to high aflatoxin levels can lead to severe health effects, including liver cirrhosis and stunting in children (Hoffmann et al. 2018). Further, beyond health risks, aflatoxin contamination negatively impacts food security, trade, and economic development.

The International Institute of Tropical Agriculture (IITA), in collaboration with the Agricultural Research Service of the United States Department of Agriculture (USDA ARS), developed Aflasafe, a biocontrol technology designed to minimize aflatoxin contamination in maize, groundnuts, and sorghum. This innovation prevents the growth of aflatoxin-producing fungi on crops, significantly reducing contamination levels. Nigeria was the first sub-Saharan African country to register Aflasafe in 2014. Thereafter, the Kenyan government approved Aflasafe KE01 for widespread use in 2015.

One of the successful strategies utilized by IITA in scaling up the product in Kenya was partnering with government and private businesses. In Kenya, KALRO is the authorized manufacturer of Aflasafe, and distributed by Koppert Biological Limited. KALRO provided their land allocated in Katumani, Machakos County, for the construction of a manufacturing facility, which was funded by various donors. IITA played a key role in offering technical support, overseeing the factory's construction and commissioning. IITA transferred Aflasafe KE01 technology to KALRO enabling local production and in addition trained staff and provides technical support ensuring continuous manufacturing and distribution.

Granting KALRO the license to manufacture Aflasafe KE01 provided incentives and promoted large-scale manufacturing and distribution ensuring farmers access the product. By establishing exclusive partnerships, IITA attracts investment from both public and private sector stakeholders to support the establishment of Aflasafe production facilities, promote the product, expand distribution networks, and enhance awareness through sensitization and advocacy efforts. Aflasafe KE01™ has made a significant contribution to improving food safety and reducing aflatoxin contamination in Kenya. A single annual application provides multi-year and multi-crop benefits, making it a cost-effective solution with high returns on investment and substantial health benefits. Farmers across several counties have successfully reduced aflatoxin levels by 80% to 99% by applying Aflasafe KE01 in maize fields⁹¹. In 2019, approximately 95,000 farmers treated over 120,000 hectares, ensuring the production of maize and ground nuts with safe aflatoxin levels. Large-scale adoption of Aflasafe has played a critical role in enhancing food safety in treated areas⁹². In the 2024 CGIAR PRMS outcome reporting, Plant Health Initiative reported that 7,830 hectares were protected with Aflasafe, benefiting 7,830 farmers. Additionally, 285 village-based advisors were trained by Koppert, further strengthening technical capacity and promoting the widespread adoption of Aflasafe for aflatoxin control.

4.2. Participatory Rangeland Management (PRM)

Participatory Rangeland Management (PRM) is a community led project designed to enhance communities' ability to govern and manage their rangelands, particularly in the context of climate

⁹¹<https://www.kalro.org/download/brief-on-aflasafe-modular-manufacturing-plant-at-kalro-katumani-kenya/?wpdmdl=2276&refresh=67e2b17755e0e1742909815>

⁹²<https://www.cgiar.org/annual-report/performance-report-2019/aflasafe/#:~:text=Approximately%2095%2C000%20farmers%20treated%20more,areas%20where%20crops%20were%20treated.>

change. It follows a structured, step-by-step process that reinforces local management institutions, empowers women, and helps communities develop and implement effective rangeland management plans often utilizes a framework called the "Four Legs" which includes: establishing and governing rangeland units, managing the rangeland unit, utilizing a landscape approach and building relationships with government and customary institutions.

Initially tested in Ethiopia prior to the 2022 portfolio, PRM was later piloted in Kenya and Tanzania through the CGIAR Research Initiative on Livestock and Climate with Resource Conflict Institute (RECONCILE). In Kenya, PRM was piloted in Baringo South and Baringo North sub-Counties. This was in Mogotio Subcounty (Koitegan), Tiaty (Paka Hills), Marigat (Irong Conservancy), and Baringo North (Kabarion Conservancy) funded by the EU and supported by the International Land Coalition⁹³. ILRI and RECONCILE have been collaborating with the Baringo County government to integrate Participatory Rangeland Management (PRM) into county development planning and broader policy frameworks. In 2023, Baringo county included the adoption, application and upscaling of PRM as a key strategy to deal with the county's challenges of drought and resource conflict in the 2023-2027 Baringo County Integrated Development Plan (CIDP).

In November and December 2021, African Research and Economic Development Consultants (AFREDEC), contracted by ILRI under the Livestock CRP (CGIAR Research Program), conducted a study to assess the impact of piloting Participatory Rangeland Management (PRM) in Kenya and Tanzania. The findings highlighted significant improvements in rangeland conditions, reported by 96.1% of participating communities in Kenya and 93.4% in Tanzania. Additionally, over 90% of community members in both countries noted increased participation in rangeland governance and management. These outcomes were largely attributed to PRM training provided to both government officials and communities, the establishment of functional PRM coordination platforms, multi-stakeholder dialogues, and the development of strong partnerships.

In 2024, the Intergovernmental Authority on Development (IGAD), through its Center for Pastoral Areas and Livestock Development (ICPALD), launched a PRM manual to scale up innovation across East and the Horn of Africa. ILRI, through the Livestock and Climate Initiative, played a key role in developing the manual. As part of this effort, the EU has integrated PRM into Pastoralism and Livestock Adaptation to Climate Change in Eastern Africa project, which will be implemented across cross-border clusters in Ethiopia, Kenya, Tanzania, Uganda, Sudan, and South Sudan. This initiative presents an opportunity to introduce PRM into new countries and further expand its adoption with the technical support of the ILRI initiative on Livestock and Climate Initiative.

4.3. Index-based livestock insurance (IBLI)

Index-based livestock insurance (IBLI) responds to the challenges inherent in offering conventional indemnity insurance in remote, drought-prone regions such as Kenya's arid and semi-arid lands. Traditional insurance products designed to reimburse verified losses often become unfeasible in such settings due to high transaction costs, as well as moral hazard (that is, insurance encouraging riskier behavior) and adverse selection (which occurs when high-risk individuals are more likely to enroll in insurance than low-risk individuals), which are often unobservable behaviors that drive up insurance costs. Instead, IBLI leverages a remotely sensed index of forage availability which is an objective, low-cost proxy that correlates strongly with livestock productivity and mortality to trigger payouts when

⁹³ <https://www.cgiar.org/news-events/news/participatory-rangeland-management-included-in-baringo-countys-integrated-development-plan-an-important-achievement-for-scaling-readiness/>

range conditions signal elevated risk. Originally piloted in Marsabit county in 2010 by ILRI in partnership with Cornell University and USAID's BASIS Research Programme, the IBLI scheme was designed to protect pastoralists from drought-induced herd losses without the prohibitive costs associated with individual loss verification. Over time, the program has evolved to refine its index methodology and address basis risk, ensuring more accurate and timely payouts, and rapidly expanded across Kenya to counties such as Isiolo (2013), Wajir (2013), Garissa (2015), and Mandera (2015) in its early years. During that period, IBLI's evolution in Kenya has been marked by both significant milestones and persistent challenges. The product encountered supply-side issues such as missed sales seasons, untrained agents, and fluctuating insurer participation, which led to inconsistent uptake among pastoralists.

Initially introduced as a microinsurance product, IBLI's potential was recognized when the Government of Kenya incorporated it into its social protection framework through the Kenya Livestock Insurance Program (KLIP) in 2015. This meso-scale approach began by subsidizing coverage for around 5,000 households in two counties and expanded by 2017 to approximately 18,000 households annually. Despite these figures, IBLI has struggled to achieve broad scale due to ongoing market instability and operational setbacks. Nonetheless, the scheme has continued to attract significant investment aimed at further scaling its impact. For instance, in June 2022 the World Bank approved the De-risking, Inclusion and Value Enhancement of Pastoral Economies in the Horn of Africa (DRIVE) program, an initiative designed to help 250,000 households across Djibouti, Ethiopia, Kenya, and Somalia better manage drought risk and adapt to climate change. DRIVE, which intends to mobilize over USD 570 million in private capital, positions IBLI as a central element in expanding digital drought insurance, enhancing savings, and improving pastoralists' connectivity to livestock value chains.

IBLI initially emerged as a collaborative innovation spearheaded by ILRI, with the institute actively fostering public-private partnerships and effectively serving as an innovation incubator. CGIAR initiatives have also played a role in IBLI's evolution through researchers' collaboration in studies that have refined IBLI's design and brought its impact to light. Indeed, in Kenya, the launch of IBLI in January 2010 was preceded by a comprehensive baseline survey in Marsabit County in September 2009, with follow-up surveys conducted annually through 2013 and later in 2015 and 2020⁹⁴. Data were collected by a consortium of the International Livestock Research Institute (ILRI), Cornell University, Syracuse University, the University of California at Davis, the University of Sydney, and the Institute of Developing Economies-JETRO, supported financially by the US Agency for International Development (USAID). These sustained research efforts have resulted in a wealth of peer-reviewed journal articles, offering insights into IBLI's pricing sensitivity, demand dynamics, and impact on household resilience, as well as informing crucial design adjustments to address basis risk. Recently, a 2024 working paper by Barrett et al. revealed that IBLI drove long-term changes, especially raising educational attainment from about 5% to 20% by lowering risk exposure rather than through direct cash payouts. Meanwhile a publication by Shikuku and Ochenje (2025) implemented as part of the CGIAR Research Initiative on Livestock and Climate found that IBLI boosts household income and cuts downside risk among northern Kenyan pastoralists. This robust evidence base clearly highlights the pivotal role that CGIAR initiatives and related partnerships have played in not only refining IBLI but also in demonstrating its substantial benefits as a resilience mechanism for pastoral communities. Although the PRMS database contains few 2022-2024 entries on IBLI, this likely reflects the system's rule that initiatives report only when they can document new or expanded use. Nonetheless, the absence

⁹⁴ <https://data.mel.cgiar.org/dataverse/ibli>

of a fresh “use” outcome alongside the recent impact-assessment study suggests a missed opportunity to capture and communicate the latest uptake of IBLI within CGIAR’s results framework. (Barrett et al. 2024, ARID Kenya 2018, ILRI 2023, Jensen et al. 2024, Lung et al. 2021, Shikuku and Ochenje 2025).

5. Conclusion

Our analysis of CGIAR’s contributions to Kenya’s agricultural and food systems outcomes during the 2022–2024 initiative phase reveals a variety of findings. Drawing on 148 outcomes from the Performance and Results Management System (PRMS) as well as 56 peer-reviewed impact studies, the paper illustrates how CGIAR’s interventions have helped enhance seed systems, optimize agronomic practices, and promote climate-resilient and sustainable farming practices among other things. These efforts have not only shown potential for productivity gains in staple, dryland and micronutrient-rich crops but have also supported critical innovations in livestock management which have contributed to improved food safety and strengthened resilience among pastoral communities.

The findings further demonstrate that CGIAR’s integrated approach, characterized by strong partnerships with local governments, research institutions, and community organizations, has been instrumental in informing policy changes and supporting local-level initiatives. The evidence also indicates a wealth of outcomes in areas such as agroecology and digital innovation aimed at enhancing both environmental sustainability and market access. These contributions align well with Kenya’s Bottom-Up Economic Transformation Agenda (BETA) integrated in the Fourth Medium Term Plan (MTP IV), particularly in the realms of agricultural transformation, financial inclusion, and environmental stewardship. Yet, the paper also highlights important gaps. While CGIAR has excelled in advancing staple crop and livestock interventions, there is comparatively limited engagement with higher-value agricultural sectors and value chains such as processed livestock products. Moreover, the geographical concentration of activities, often skewed towards areas with better accessibility, suggests a need for more balanced representation across Kenya’s diverse agro-ecological zones. The integration of CGIAR outcomes across initiatives also remains fragmented, underscoring the challenge of linking individual successes into a coherent, systemic transformation that fully supports national development objectives. Finally, our analysis revealed a narrow focus in peer-reviewed impact assessment studies that often involve CGIAR researchers from the same centers, a disconnect in the theory of change from research to publication to policy and innovation uptake, and limited mechanisms to verify whether PRMS reported outcomes are based on rigorous, diverse evidence, including multidisciplinary contributions.

A dedicated section within PRMS could help address these issues. This section would enable researchers to (i) report how their publications have been cited or discussed, detailing mentions in policy dialogues, evidence of presentations, and any resultant policy changes or innovation adoptions; (ii) ensure the systematic documentation of whether reported outcomes relied on additional evidence sources, including peer-reviewed research, and document the nature of the evidence alongside pertinent citations, leveraging existing system capabilities for linking where possible; (iii) incorporate information on whether and how outcomes were achieved through multidisciplinary or transdisciplinary approaches to ensure that diverse perspectives are recognized and contribute to a more robust quality control process; and (iv) capture the contribution of different partners and CGIAR initiatives to any reported outcomes, understanding that improved reporting here is intertwined with fostering greater

real-world interaction and collaboration. Indeed, while reporting on contributions is theoretically possible, the real challenge might be the siloed nature of initiative's work itself.

Moving forward to the Science Programs phase, addressing these gaps will be critical. Expanding research into underrepresented value chains and enhancing cross-science programs synergies could help CGIAR further inform and support Kenya's economic transformation agenda. By deepening partnerships with a broader range of stakeholders and aligning more closely with the strategic priorities of BETA and MTP IV, CGIAR can continue to play a pivotal role in driving inclusive growth, resilience, and sustainability in Kenya's agricultural sector.

References

- Adoyo, B.; Awiti, A.; Kuria, A.; Chege, C.G.K.; Anyango, E.; Fuchs, L.E.; Guettou Djurfeldt, N.; Bolo, P.; Wanyama, R.; Korir, H.; Nyawira, S.; Onyango, K. (2024) CGIAR Initiative on Agroecology: Technical report from the Kenya End-of-Initiative Results Dissemination
- Agency for Rangeland Information and Development in Kenya. 2018. Index-based livestock insurance as an innovative tool against drought loss: Good practices and impact analysis from northern Kenya. Wageningen, The Netherlands: CTA
- Arega, T., Ringler, C., and Mekonnen, D. (2024) Impact of electrification on the welfare of rural households in Ethiopia: A gendered perspective. Presentation. CGIAR.
- Banerjee, A., Chakraborty, S. and Varshney, D. (2024) Impact of Pump Electrification on Crop Diversification in Bangladesh: Evidence from the Bangladesh Integrated Household Survey.
- Barrett, C.B., Jensen, N., Morsink, K., Norimoto, Y., Son, H. H., Banerjee, R., Teufel, N. (2024) Long-run Effects of Catastrophic Drought Insurance
- Barron, M., and Torero, M. (2017) Household electrification and indoor air pollution. *Journal of Environmental Economics and Management*
- Beniwal, E., and Kishore, A. (2024) Rural Electrification and the changing energy irrigation nexus in Bihar. 32nd International Conference of Agricultural Economists Conference, August 2-7, 2024, New Delhi, India.
- Bernard, T. (2012) Impact Analysis of Rural Electrification Projects in Sub-Saharan Africa. The World Bank Research Observer
- Chege, C.G.K.; Onyango, K.; Kabach, J.; Lundy, M, (2022) Effects of COVID-19 on dietary behavior of urban consumers in Nairobi, Kenya. *Frontiers Sustainable Food Systems*
- Dasso, R., and Fernandez, F. (2015) The effects of electrification on employment in rural Peru. *IZA Journal of Labor & Development*
- Diao, X., Dorosh, P. A., Kedir, J. M., Kennedy, A., and Thurlow, J. (2019) Employment and livelihoods: Connecting Africa's rural and urban areas for rural revitalization.
- Gichohi-Wainaina, Wanjiku N.; Kee-Tui, Sabine Homann; Zoethout, Manon; Talsma, Elise F.; Edel, Immaculate; and Hauser, Michael. (2023) Determinants of dietary diversity and drivers of food choice among low-income consumers in urban Kenya, Malawi and Zimbabwe. *Journal of Human Nutrition and Dietetics*

- Headey, D., Stifel, D., Youc, L., Guo, Z. (2018) Remoteness, urbanization, and child nutrition in sub-Saharan Africa. *Agricultural Economics*
- Hoffmann, Vivian, Kelly Jones, and Jef L. Leroy. 2018. The Impact of Reducing Dietary Aflatoxin Exposure on Child Linear Growth: A Cluster Randomised Controlled Trial in Kenya. *BMJ Global Health*
- Imi, A., You, L., Wood-Sichra, U., and Humphrey, R. M. (2020) Spatial Autocorrelation Panel Regression: Agricultural Production and Transport Connectivity. *Networks and Spatial Economics*
- Isanovic, S., Constantinides, S.V., Frongillo, E.A., Bhandari, S., Samin, S., Kenney, E., Wertheim-Heck, S., Nordhagen, S., Holdsworth, M., Dominguez-Salas, P., Ambikapathi, R., Laar, A., Patil, C.L., Kulkarni, B., Bukachi, S.A., Ngutu, M. and Blake, C.E. (2023) How perspectives on food safety of vendors and consumers translate into food choice behaviors in six African and Asian countries. *Current Developments in Nutrition*
- Jensen ND, Fava FP, Mude AG, et al. (2024) *Escaping Poverty Traps and Unlocking Prosperity in the Face of Climate Risk: Lessons from Index-Based Livestock Insurance*. Cambridge University Press.
- Kenya National Bureau of Statistics (KNBS) (2019) 2019 Kenya population and housing census. Volume IV: Distribution of population by Socio-Economic characteristics
- Lung, F., Stutley, C., Zewdie, Y. and Fava, F. 2021. A regional approach to drought index-insurance in Intergovernmental Authority on Development (IGAD) countries: Volume 1: Main report—Operational and technical feasibility assessment. ILRI Research Report 75. Nairobi, Kenya: ILRI
- Mottaleb, K. A., and Rahut, D. B. (2019) Impacts of Improved Infrastructure on Labor Allocation and Livelihoods: The Case of the Jamuna Multipurpose Bridge, Bangladesh. *European Journal of Development Research*
- Muunda, E., Mtimet, N., Bett, E., Wanyoike, F. and Alonso, S. (2023) Milk purchase and consumption patterns in peri-urban low-income households in Kenya. *Frontiers in Sustainable Food Systems*
- Owuor, A.A.; Otieno, D.J.; Okello, J.J.; Oluoch-Kosura, W.; Dufour, D. (2023) Assessment of consumers' preference for orange-fleshed sweet potato puree chapati: a case of rural and urban consumers in kenya. *J Sci Food Agric*
- Rao, X. (2025) *Assessment of the Quality of Evidence Supporting CGIAR Contributions to the 2022 Aspirational System Level Outcome Targets*. CGIAR report
- Shikuku, Kelvin Mashisia, Ochenje, Ibrahim. (2025) *Impact of index insurance on downside income risk: Evidence from northern Kenya*. *Applied Economic Perspectives and Policy*
- The National Treasury and Economic Planning (2024) *FOURTH MEDIUM TERM PLAN 2023 – 2027: “Bottom-Up Economic Transformation Agenda for Inclusive Growth”*
- Varshney, D., Banerjee, A., Chakraborty, S., and Mukherji, A. (2022) *The energy-irrigation nexus in Bangladesh: implications of rapid rural electrification on informal groundwater markets*. New Delhi, India: International Water Management Institute (IWMI). CGIAR Initiative on Transforming Agrifood Systems in South Asia (TAFSSA); Solar Irrigation for Agricultural Resilience (SoLAR).

Watson, J., Okumu, N.O., Wasonga, J.O., Majiwa, H., Kiarie, A., Masudi, S.P., Ochieng, L., Alumasa, L., Mutisya, C., Cook, E.A.J. and Cumming, O. (2024) A proof-of-concept randomised controlled trial of an intervention designed to improve food hygiene behaviours among caregivers of young children living in low-income areas of Nairobi, Kenya. PLOS Water"

All journal articles in dataset in section 2.2

Adeyanju, D., Mburu, J., Gituro, W., Chumo, C., Mignouna, D. & Mulinganya, N. (2023) Impact of agribusiness empowerment interventions on youth livelihoods: insight from Africa. Heliyon

Adeyanju, D.F., Mburu, J., Gituro, W., Chumo, C., Mignouna, D., Mulinganya, N. & Ashagidigbi, W.M. (2023) Can young agripreneurs improve their skills through agripreneurship empowerment programmes? Evidence from Africa. Heliyon

Adeyanju, Dolapo; Mburu, John; Gituro, Wainaina; Chumo, Chepchumba; Mignouna, Djana B.; and Mulinganya, Noel (2024) Harnessing the job creation capacity of young rural agripreneurs: A quasi-experimental study of the ENABLE program in Africa. Social Sciences and Humanities

Adeyanju, Dolapo; Mburu, John; Gituro, Wainaina; Chumo, Chepchumba; Mignouna, Djana; Ogunniyi, Adebayo; Akomolafe, John Kehinde; and Ejima, Joseph. (2023) Assessing food security among young farmers in Africa: Evidence from Kenya, Nigeria, and Uganda . Agricultural and Food Economics

Alulu, V.H., Shikuku, K.M., Lepariyo, W., Paliwal, A., Galgalo, D., Gobu, W. and Banerjee, R. (2024) The impact of forage condition on household food security in northern Kenya and southern Ethiopia. Food Security

Aragie, Emerta; Balić, J.; Morales, C.; and Pauw, Karl. (2023) Synergies and trade-off between agricultural export promotion and food security: Evidence from African economies. World Development

Chege, C.G.K.; Onyango, K.; Kabach, J.; Lundy, M, (2022) Effects of COVID-19 on dietary behavior of urban consumers in Nairobi, Kenya. Frontiers Sustainable Food Systems

Donfouet, Hermann Pythagore Pierre; Daniel, Tewoldeberhan; Wilunda, Calistus; Mwaniki, Elizabeth; Njiru, James; Zerfu, Taddese Alemu; et al. (2024) The impacts of task shifting on the management and treatment of malnourished children in Northern Kenya: A cluster-randomized controlled trial. Health Policy and Planning

Ecker, Olivier; and Pauw, Karl. (2024) Dairy consumption and household diet quality in East Africa: Evidence from survey-based simulation models. Food Policy

Farnworth, Cathy Rozel; Galie, Alessandra; Gumucio, Tatiana; Jumba, Humphrey; Kramer, Berber; and Ragasa, Catherine (2024) Women's seed entrepreneurship in aquaculture, maize, and poultry value chains in Ghana, Kenya, and Tanzania. Frontiers in Sustainable Food Systems

Geng, X., Janssens, W. and Kramer, B. (2023) Liquid milk: Savings, insurance and side selling in cooperatives. Journal of Development Economics

Gichohi-Wainaina, Wanjiku N.; Kee-Tui, Sabine Homann; Zoethout, Manon; Talsma, Elise F.; Edel, Immaculate; and Hauser, Michael. (2023) Determinants of dietary diversity and drivers of food

- choice among low-income consumers in urban Kenya, Malawi and Zimbabwe. *Journal of Human Nutrition and Dietetics*
- Grant, F.K.; Amunga, D.; Kwikiriza, N.; Malit, J.; Moyo, M.; Mulwa, C.; Mwaura, L. (2024) Nutrition-Sensitive agricultural interventions and maternal and child nutrition outcomes in Arid and Semi-Arid lands of Kenya. *Current Developments in Nutrition*
- Hammond, J., Pagella, T., Caulfield, M.E., Fraval, S., Teufel, N., Wichern, J., Kihoro, E., Herrero, M., Rosenstock, T.S. and Wijk, M.T. van (2023) Poverty dynamics and the determining factors among East African smallholder farmers. *Agricultural Systems*
- Harold Glenn A. Valera, Sindhu Bharathi, Jean Balie and Valerien Olivier Pede, Sumathi Chakravarthy, Badri Gopalakrishnan (2023) The impacts of reforming agricultural policy support on cereal prices: a CGE modeling approach. *Journal of Economic Studies*
- Hoffmann, V., Kariuki, S., Pieters, J. and Treurniet, M. (2023) Upside risk, consumption value, and market returns to food safety. *American Journal of Agricultural Economics*
- Isanovic, S., Constantinides, S.V., Frongillo, E.A., Bhandari, S., Samin, S., Kenney, E., Wertheim-Heck, S., Nordhagen, S., Holdsworth, M., Dominguez-Salas, P., Ambikapathi, R., Laar, A., Patil, C.L., Kulkarni, B., Bukachi, S.A., Ngutu, M. and Blake, C.E. (2023) How perspectives on food safety of vendors and consumers translate into food choice behaviors in six African and Asian countries. *Current Developments in Nutrition*
- Kariuki, J., Galie, A., Birner, R., Chagunda, M., Jakinda, S., Milia, D. and Ojango, J.M.K. (2022) Does the gender of farmers matter for improving small ruminant productivity? A Kenyan case study. *Small Ruminant Research*
- Karyadi, Elvina; Reddy, J. C.; Dearden, Kirk A.; Purwanti, Tutut; Asri, Eriana; Roquero, Loreto B.; Srivastava, Anuj; et al. (2023) Antenatal care is associated with adherence to iron supplementation among pregnant women in selected low-middle-income-countries of Asia, Africa, and Latin America & the Caribbean regions: Insights from Demographic and Health Surveys. *Maternal and Child Nutrition*
- Krishna, V.V., Lantican, M.A., Prasanna, B.M., Pixley, K., Abdoulaye, T., Menkir, A., ... & Erenstein, O. (2023) Impact of CGIAR maize germplasm in sub-Saharan Africa. *Field Crops Research*
- Laub, M., Necpalova, M., Van de Broek, M., Corbeels, M., Ndungu, S.M., Mucheru-Muna, M.W., ... & Six, J. (2024) Modeling integrated soil fertility management for maize production in Kenya using a Bayesian calibration of the DayCent model. *Biogeosciences*
- Magambo Kanyenji, G.; Oluoch-Kosura, W.; Moraa Onyango, C.; Karanja, S.N. (2022) Does the adoption of soil carbon enhancing practices translate to increased farm yields? A case of maize yield from Western Kenya. *Heliyon*
- Maina, K. W., Parlasca, M. C., Rao, E. J. O., & Qaim, M. (2024) Farmer–friendly delivery of veterinary services: Experimental insights from the Kenyan dairy sector. *Journal of Agricultural Economics*
- Maina, K.W., Ritho, C.N., Lukuyu, B.A. and Rao, E.J.O. (2022) Opportunity cost of adopting improved planted forage: Evidence from the adoption of *Brachiaria* grass among smallholder dairy farmers in Kenya. *African Journal of Agricultural and Resource Economics*

- Marinus, W., Descheemaeker, K., van de Ven, G.W., Vanlauwe, B. & Giller, K. (2023a) Narrowing yield gaps does not guarantee a living income from smallholder farming—an empirical study from western Kenya. *PloS ONE*
- Marinus, W., van de Ven, G.W., Descheemaeker, K., Vanlauwe, B. & Giller, K. (2023b) Farmer responses to an input subsidy and co-learning program: intensification extensification, specialization, and diversification?. *Agronomy for Sustainable Development*
- Masuda, Yuta J.; Waterfield, Gina; Castilla, Carolina; Kang, Shiteng; and Zhang, Wei. (2022) Does balancing gender composition lead to more prosocial outcomes? Experimental evidence of equality in public goods and extraction games from rural Kenya. *World Development*
- Milner, D., Wolf, L., Wijk, M.V. and Hammond, J . (2022) Market access and dietary diversity: A spatially explicit multi-level analysis in southern and western Kenya. *Frontiers in Sustainable Food Systems*
- Mulwa, C. K.; Heck, S.; Maru, J.; Mwema, J.; Campos, H. (2022) Effect of nutrition awareness on utilization of Orange Fleshed Sweetpotato among vulnerable populations in Kenya. *Food Security*
- Mutegi, J.; Adolwa, I.; Kiwia, A.; Njoroge, S.; Gitonga, A.; Muthamia, J.; Nchanji, E.; Mairura, F.; Majumdar, K.; Zingore, S.; Oberthur, T.; Kiremu, M.; Kansime, M. (2024) Agricultural production and food security implications of Covid-19 disruption on small scale farmer households: Lessons from Kenya. *World Development*
- Mutua, E., Namatovu, J., Campbell, Z.A., Tumusiime, D., Ouma, E. and Bett, B. (2024) A qualitative study on the effects of intra-household decision-making patterns on utilization of preventive and curative veterinary practices in communities affected by Rift Valley fever in Kenya and Uganda. *Gender, Technology and Development*
- Muunda, E., Mtimet, N., Bett, E., Wanyoike, F. and Alonso, S. (2023) Milk purchase and consumption patterns in peri-urban low-income households in Kenya. *Frontiers in Sustainable Food Systems*
- Njuguna, L., Biesbroek, R., Crane, T.A., Dewulf, A. and Tamas, P. (2023) Do government knowledge production and use systems matter for global climate change adaptation tracking? Insights from Eastern Africa. *Regional Environmental Change*
- Ochieng, Dennis O.; and Ogutu, Sylvester O. (2022) Supermarket contracts, opportunity cost and trade-offs, and farm household welfare: Panel data evidence from Kenya . *World Development*
- Ojwang', S. O.; Okello, J. J.; Otieno, D. J.; Nyikal, R. A.; Muoki, P. N. (2022) Using preschoolers to improve caregivers' knowledge, attitude, and practices relating to biofortified crops: Evidence from a randomized nutrition education trial in Kenya. *Food Science & Nutrition*
- Osiemo, J.; Sibiko, K.W.; Ng Ang A, S.K.; Notenbaert, A.M.O. (2024) Are dairy farmers willing to pay for improved forage varieties? Experimental evidence from Kenya. *Food Policy*
- Otieno, W.A., Nyikal, R.A., Mbogoh, S.G. and Rao, E.J.O. (2023) Adoption of farm biosecurity practices among smallholder poultry farmers in Kenya—An application of latent class analysis with a multinomial logistic regression. *Preventive Veterinary Medicine*

- Owili, S. O., Otieno, D. J., Chimoita, E. L., & Baijukya, F. P. (2024) Factors influencing adoption of agro-ecological pest management options for mango fruit fly under information constraints: a two-part fractional regression approach. *International Journal of Pest Management*
- Owuor, A.A.; Otieno, D.J.; Okello, J.J.; Oluoch-Kosura, W.; Dufour, D. (2023) Assessment of consumers' preference for orange-fleshed sweet potato puree chapati: a case of rural and urban consumers in Kenya. *J Sci Food Agric*
- Radeny M, Rao E, Ogada M, Recha J, Solomon D. (2022) Impacts of climate-smart crop varieties and livestock breeds on the food security of smallholder farmers in Kenya. *Food Security*
- Rutsaert, P., Donovan, J., Murphy, M., & Hoffmann, V. (2024) Farmer decision making for hybrid maize seed purchases: Effects of brand loyalty, price discounts and product information. *Agricultural Systems*
- Shikuku, Kelvin Mashisia, Ochenje, Ibrahim. (2025) Impact of index insurance on downside income risk: Evidence from northern Kenya. *Applied Economic Perspectives and Policy*
- Tabe-Ojong, Martin Paul Jr. (2022) Ecological shocks and non-cognitive skills: Evidence from Kenya. *Ecological Economics*
- Tabe-Ojong, Martin Paul Jr.; Gebrekidan, Bisrat Haile; Nshakira-Rukundo, Emmanuel; Börner, Jan; and Heckelei, Thomas. (2022) COVID-19 in rural Africa: Food access disruptions, food insecurity and coping strategies in Kenya, Namibia, and Tanzania. *Agricultural Economics*
- Tabe-Ojong, Martin Paul Jr.; Heckelei, Thomas; and Rasch, Sebastian. (2023) Aspirations and investments in livestock: Evidence of aspiration failure in Kenya. *Agricultural Economics*
- Tabetando, Rayner; Fani, Djomo Choumbou Raoul; Ragasa, Catherine; and Michuda, Aleksandr. (2023) Land market responses to weather shocks: Evidence from rural Uganda and Kenya. *European Review of Agricultural Economics*
- Tesfaye A, Radeny M, Ogada MJ, Recha JW, Ambaw G, Chanana N, Huyer S, Demeke G, Solomon D. (2022) Gender empowerment and parity in East Africa: evidence from climate-smart agriculture in Ethiopia and Kenya. *Climate and Development*
- Timu, Anne G., Shee, Apurba, Ward, Patrick S., You, Liangzhi. (2025) Evaluating the gendered credit constraints and uptake of an insurance-linked credit product among smallholder farmers in Kenya. *The Journal of Development Studies*
- Timu, Anne G.; and Kramer, Berber. (2023) Gender-inclusive, -responsive, and -transformative agricultural insurance: A literature review. *Global Food Security*
- Timu, Anne G.; Manoti, Dismas; Shee, Apurba; You, Liangzhi (2024) Impacts of gender inclusive extension approaches on farmer understanding and willingness to pay for bundled financial services. *Current Research in Environmental Sustainability*
- Twine, E.E., Ndindeng, S.A., Mujawamariya, G., Adur-Okello, S.E. and Kilongosi, C. (2023) Consumer preferences for rice in East Africa. *British Food Journal*

- Voss, R. C., Gitonga, Z. M., Donovan, J., Garcia-Medina, M., & Muindi, P. (2023) Can I speak to the manager? The gender dynamics of decision-making in Kenyan maize plots. *Agriculture and Human Values*
- Wairimu Kariuki, Sarah; and Hoffmann, Vivian. (2022) Can information drive demand for safer food? Impact of brand-specific recommendations and test results on product choice. *Agricultural Economics*
- Wangithi, C.M.; Nyangaresi, A.M.; Srinivasulu, R.; Moyo, M.; Muzhingi, T.; Kawarazuka, N. (2023) Consumer willingness to pay a premium for orange-fleshed sweet potato puree products: a gender-responsive evidence from Becker–DeGroot–Marschak experimental auction among low- and middle-income consumers in selected regions of Nairobi, Kenya. *Frontiers in Sustainable Food Systems*
- Watson, J., Okumu, N.O., Wasonga, J.O., Majiwa, H., Kiarie, A., Masudi, S.P., Ochieng, L., Alumasa, L., Mutisya, C., Cook, E.A.J. and Cumming, O. (2024) A proof-of-concept randomised controlled trial of an intervention designed to improve food hygiene behaviours among caregivers of young children living in low-income areas of Nairobi, Kenya. *PLOS Water*
- Yami, M., Abioye, O., Sore, S., Mugisho, A. & Yami, M., Abioye, O., Zainatou Sore, S., Mugisho, A. & Abdoulaye, T. (2024) Factors influencing gender and youth integration in agricultural research and innovation in Africa. *livestock*

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