Refugees from Darfur who crossed the border into Chad to flee ethnic violence from the Rapid Support Forces.
Credit: Sven Torfinn, Panos Pictures

CGIAR Research Initiative on
Fragility, Conflict and Migration

Annual Technical Report 2024

Disclaimers

This publication has been prepared as an output of the CGIAR Research Initiative on Fragility, Conflict and Migration. Any views and opinions expressed in this publication are those of the author(s) and are not necessarily representative of or endorsed by the CGIAR System Organization.

Boundaries used in the maps do not imply the expression of any opinion whatsoever on the part of CGIAR concerning the legal status of any country, territory, city, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Borders are approximate and cover some areas for which there may not yet be full agreement.

The Artificial Intelligence (AI) software ChatGPT was used to support the editing of parts of this report, specifically to improve clarity, grammar, and style. ChatGPT was not used to generate the content of the report. All edits made with AI assistance were reviewed and validated by the authors to ensure accuracy, coherence, and alignment with the original intent.

Table of contents

CGIAR Technical Reporting 2024

CGIAR Technical Reporting has been developed in alignment with CGIAR's Technical Reporting Arrangement. This annual report ("Type 1" Report) constitutes part of the broader CGIAR Technical Report. Each CGIAR Research Initiative/Impact Platform/Science Group Project (SGP) submits an annual "Type 1" Report, which provides assurance on progress towards end of Initiative/Impact Platform/SGP outcomes.

As 2024 marks the final year of this CGIAR Portfolio and the 2022-24 business cycle, this Type 1 Report takes a dual approach to its analysis and reporting. Alongside highlighting key achievements for 2024, the report also provides a cumulative overview of the 2022-24 business cycle, where relevant. This perspective captures the evolution of efforts over the three-year period. By presenting both annual and multi-year insights, the report underscores the cumulative impact of CGIAR's work and sets the stage for the transition to the 2025-30 Portfolio.

The 2024 CGIAR Technical Report comprises:

- **Type 1 Initiative, Impact Platform, and SGP Reports:** These annual reports present progress towards end of Initiative/Impact Platform/SGP outcomes and provide quality-assured results accessible via the CGIAR Results Dashboard.
- **Type 3 CGIAR Portfolio Practice Change Report:** This report provides insights into CGIAR's progress in Performance Management and Project Coordination.
- **Portfolio Narrative:** Drawing on the Type 1 and Type 3 reports, as well as data from the CGIAR Results Dashboard, the Portfolio Narrative synthesizes insights to provide an overall view of Portfolio coherence. It highlights synergies, partnerships, country and regional engagement, and collective progress.
- **Type 2 CGIAR Contributions to Impact in Agrifood Systems: evidence and learnings from 2022 to 2024:** This report offers a high-level summary of CGIAR's contributions to its impact targets and Science Group outcomes, aligned with the Sustainable Development Goals (SDGs), for the three-year business cycle.

The Portfolio Narrative informs the 2024 CGIAR Annual Report – a comprehensive summary of the organization's collective achievements, impacts, and strategic outlook.

Elements of the Type 2 report are integrated into the CGIAR Flagship Report, released in April 2025 at CGIAR Science Week. The Flagship Report synthesizes CGIAR research in an accessible format designed specifically to provide policy- and decision-makers at national, regional, and global levels with the evidence they require to formulate, develop, and negotiate evidence-based policies and investments.

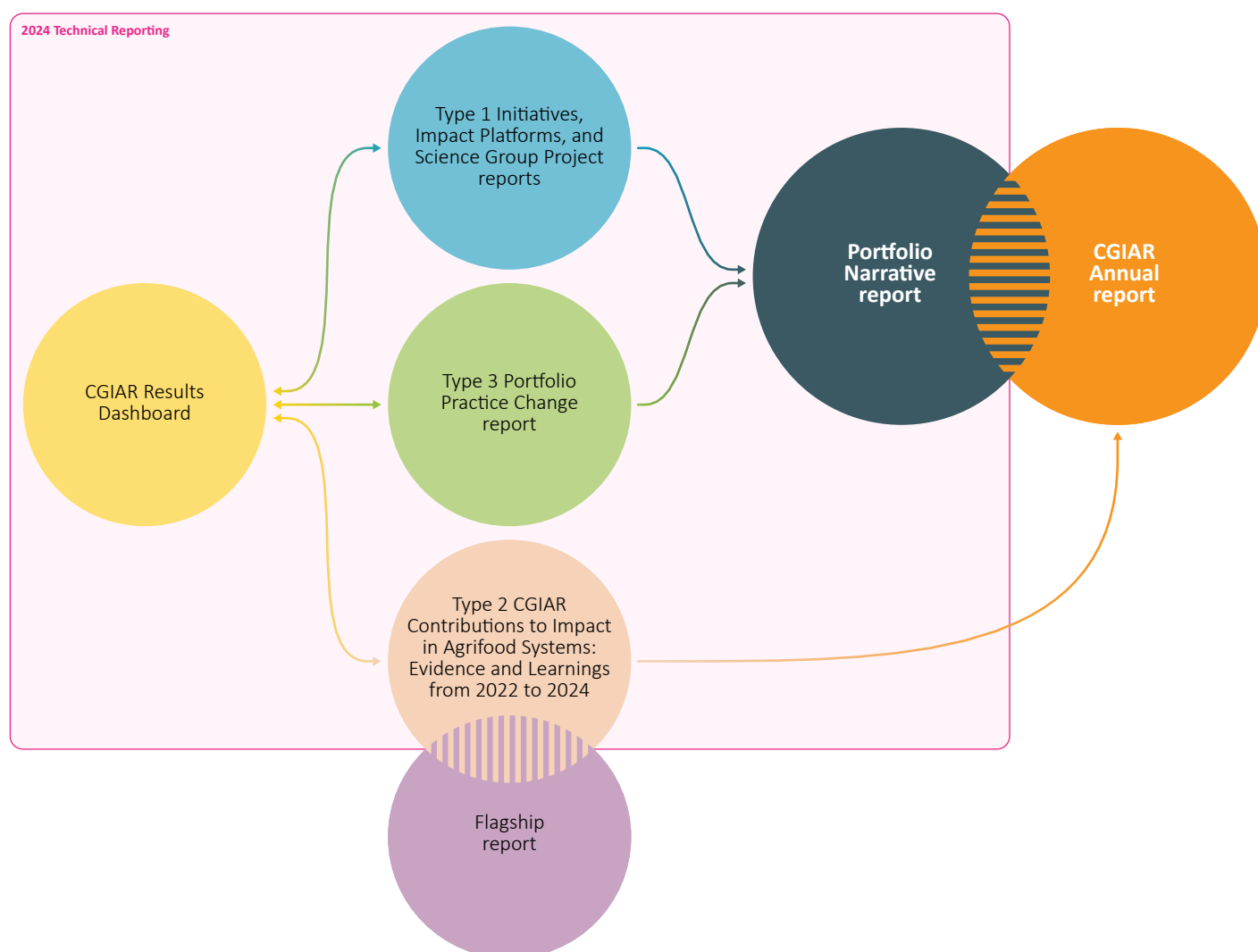The diagram below illustrates these relationships.

Figure 1. CGIAR's 2024 Technical Reporting components and their integration with other CGIAR reporting products.

Section 1: **Fact sheet, executive summary and budget**

Initiative name	Fragility, Conflict, and Migration
Initiative short name	Fragility, Conflict and Migration
Initiative Lead	Katrina Kosec (k.kosec@cgiar.org)
Initiative Co-lead	Peter Laderach (p.laderach@cgiar.org) Sandra Ruckstuhl (s.ruckstuhl@cgiar.org)
Science Group	Systems Transformation
Start – end date	01 April 2023 − 31 December 2024
Geographic scope	**Regions** Central and West Asia and North Africa · East and Southern Africa · Latin America and the Caribbean · South Asia · Southeast Asia and the Pacific · West and Central Africa **Countries** Bangladesh · Burkina Faso · Egypt · Ethiopia · Guatemala · Honduras · Jordan · Kenya · Mali · Mozambique · Niger · Nigeria, Pakistan · Somalia · South Sudan · Yemen · Zambia · Zimbabwe
OECD DAC Climate marker adaptation score[1]	**Score 1: Significant** The activity contributes in a significant way to any of the three CGIAR climate-related strategy objectives—namely, climate mitigation, climate adaptation, and climate policy, even though it is not the principal focus of the activity.
OECD DAC Climate marker mitigation score[1]	**Score 0: Not targeted** The activity does not target the climate mitigation, climate adaptation, and climate policy objectives of CGIAR as put forward in its strategy.
OECD DAC Gender equity marker score[2]	**Score 1B: Gender responsive** On the top of the minimum requirements for 1A, the Initiative/project includes at least one explicit gender equality outcome, and the Initiative/project team has resident gender expertise or capacity. The Initiative/project includes indicators and monitors participation and differential benefits of diverse men and women.
Website link	https://www.cgiar.org/initiative/fragility-conflict-and-migration/

[1] The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) markers refer to the OECD DAC Rio Markers for Climate and the gender equality policy marker. For climate adaptation and mitigation, scores are: 0 = Not targeted; 1 = Significant; and 2 = Principal.
[2] The CGIAR Gender Impact Platform has adapted the OECD gender marker, splitting the 1 score into 1A and 1B. For gender equality, scores are: 0 = Not targeted; 1A = Gender accommodative/aware; 1B = Gender responsive; and 2 = Principal.
These scores are derived from Initiative proposals, and refer to the score given to the Initiative overall based on their proposal.

EXECUTIVE SUMMARY

The CGIAR Research Initiative on Fragility, Conflict, and Migration (FCM) made substantial progress in addressing the complex challenges facing fragile and conflict-affected (FCA) settings. In regions affected by instability, food insecurity, or displacement, evidence-based interventions are critical for shaping effective policies and programs. FCM was established to generate actionable research that informs strategies for prevention, response, and recovery, while strengthening the resilience of food, land, and water systems. Through collaborations with humanitarian organizations, governments, nongovernmental organizations (NGOs), and research institutions, FCM worked to bridge the gap between science and implementation—ensuring that knowledge was translated into real-world impact. In its almost two years, FCM not only contributed to shaping global and national policy discussions, but also drove tangible improvements in disaster preparedness, conflict-sensitive programming, poverty reduction in FCA settings, and sustainable migration governance.

In 2024, FCM generated 790 results, including 489 knowledge products, 98 capacity-sharing outputs, 30 innovation development results, and 104 stakeholder engagement outputs. These contributions led to tangible impacts: FCM research informed 64 outcome results, including 41 policy changes. By leveraging scientific expertise and fostering cross-sectoral partnerships, FCM influenced major decision-making processes and supported the development of innovative solutions to improve resilience in some of the world's most challenging environments.

Key achievements include:

- Influencing major policy decisions: FCM research directly shaped 41 policies, including anticipatory action strategies, migration policy frameworks, and resilience-building initiatives—10 of which reached the implementation stage. In Ethiopia, Jordan, Mali, Pakistan, and Zambia, policymakers applied FCM research to design and strengthen disaster response strategies, ensuring that interventions were data-driven and effective.

- Strengthening humanitarian response: FCM's evidence-based work informed the World Food Programme's (WFP) climate security and anticipatory action strategies, including targeting improvements for resilience programming in Mali and Ethiopia. Research conducted with the United Nations High Commissioner for Refugees (UNHCR) supported the development of climate-sensitive refugee policies and advocacy, addressing the intersection of displacement and environmental shocks. Further, FCM seconded CGIAR researchers to humanitarian agencies, providing real-time technical support and facilitating the integration of scientific evidence into crisis response strategies.

- Scaling groundbreaking innovations: Through the Stability and Peace Accelerator (SAPA), four enterprises developed and deployed cutting-edge solutions, from atmospheric water harvesting in Jordan to solar-powered refrigeration in Nigeria. These enterprises received investment readiness support and technical assistance from FCM, accelerating scalability. Additionally, three innovators in Ethiopia and Pakistan participated in an agribusiness bootcamp to refine their solutions for food system resilience.

- Advancing understanding of conflict and migration: The Migration Propensity Index (MPI) in Guatemala and Honduras provided national governments with critical insights into migration drivers, enabling targeted interventions to reduce forced displacement. Studies on herder-farmer conflicts in Sudan, Nigeria, and Mali shaped peacebuilding strategies by identifying economic and social factors that contribute to resource-based violence. FCM further supported regional policy dialogues on migration governance, ensuring that research findings informed cross-border coordination efforts.

- Supporting local leadership in crisis-affected areas: Research partnerships demonstrated the types of policies and interventions that successfully improve resilience in conflict-affected communities. In Pakistan, FCM research revealed the severe impact of climate-induced migration on women and girls, leading to policy shifts in gender-sensitive disaster preparedness planning. Studies conducted with World Vision in Ethiopia showed that pairing cash transfers with mental health support significantly improves recovery outcomes following conflict—leading to program expansion. In Ethiopia's Somali region, FCM, WFP, and local partners strengthened local leadership by integrating nature-based solutions and leveraging ecological knowledge. And in Nigeria, research with ActionAid supported scaling efforts for a women's advocacy training program, fostering greater civic participation by women.

- Building capacity at scale: More than 16,000 individuals—farmers, policymakers, practitioners, and other decision-makers—were trained in climate risk management, anticipatory action, and conflict- and gender-sensitive programming. Training modules codeveloped with WFP and national governments were institutionalized within government agencies, humanitarian organizations, and NGOS, thus ensuring long-term knowledge transfer.

Beyond these achievements, FCM's work shaped high-level policy discussions, including engagements with the UN Security Council on climate security, humanitarian response strategies by numerous partners, and migration governance. Research findings informed national and regional strategies on social protection, anticipatory action, climate adaptation, migration, and food security, reinforcing the role of science in evidence-based policymaking.

As FCM transitions into the Fragile and Conflict-Affected Food Systems Area of Work under the Food Frontiers and Security Science Program, it will focus on expanding anticipatory action, deepening climate and migration research, and scaling locally developed solutions. Strengthening partnerships with regional climate and disaster risk platforms will be central to this next phase, ensuring that research continues to translate into actionable strategies. Additionally, gender-sensitive programming will remain a priority, addressing structural inequalities that disadvantage vulnerable populations in FCA settings. By leveraging the foundations laid by FCM, the Food Frontiers and Security Science Program is well-positioned to continue driving impact at the intersection of fragility, conflict, and migration—helping communities transition from fragility to stability.

	2022 ▽	2023 ▽	2024 ▾
PROPOSAL BUDGET ▷		$9.00M	$9.00M
APPROVED BUDGET [1] ▷		$7.58M [2]	$9.71M [2]

[1] The approved budget amounts correspond to the figures available for public access through the Financing Plan dashboard.
[2] These amounts include carry-over and commitments.

Section 2: **Progress towards End of Initiative outcomes**

Initiative-level theory of change diagram

This is a simple, linear, and static representation of a complex, non-linear, and dynamic reality. Feedback loops and connections between this Initiative and other Initiatives' theories of change are excluded for clarity.

CHALLENGE STATEMENT

- Hunger and severe malnutrition are surging in fragile and conflict-affected settings (FCASs), which struggle to sustain resilient food, land, and water systems (FLWSs). These challenges are compounded by climate change, unsustainable resource consumption, poor governance, and weak social cohesion. Conflict and forced migration both result from and exacerbate these issues. Economic disruptions such as COVID-19 and the Ukraine-Russia war have increased the risk of food crises, poverty, and conflict. Nearly 670 million people are projected to face hunger by 2030, the same as in 2015 when the Sustainable Development Goals were launched.

- By the end of 2023, an estimated 117.3 million people were forcibly displaced globally, with 80 percent experiencing acute food insecurity. Migration can support livelihoods and resilience but may also strain FLWSs and burden those left behind, especially women. Low- and middle-income countries host the majority of the world's refugees, placing significant pressure on local infrastructure, natural resources, and job markets. Conflict and insecurity remain the primary drivers of food crises, with extreme poverty disproportionately affecting populations in protracted crises. Climate change, which is rapidly intensifying, further pressures livelihoods and ecosystems, exacerbating social inequalities that hinder stability and peace.

- Women, who are often disproportionately affected by shocks and crises, face limited access to power and resources. Addressing the intersection of climate stress and human-made crises is essential to prevent their escalation. Governments and development organizations require robust evidence to develop effective solutions. A globally coordinated response is critical to address the humanitarian crisis and build resilient FLWSs.

- A systems approach, inclusive of women's and youth voices, is essential to promote gender equity, social inclusion, and practical solutions. CGIAR is uniquely positioned to generate evidence for transformative policies and programs that enhance resilience, mitigate conflict, promote peacebuilding, and ensure long-term sustainability in FCASs.

RESEARCH QUESTIONS

- How can integrated interventions along the humanitarian-development-peace nexus effectively prevent, respond to, and support recovery from crises in fragile and conflict-affected settings through tailored and targeted approaches to food, land, and water systems?

- What strategies can enhance resilience and long-term development in fragile and conflict-affected food systems, with a focus on inclusivity, sustainability, and the critical roles of women and youth?

SPHERE OF **CONTROL**

WORK PACKAGES

WORK PACKAGE 1

ANTICIPATE: Anticipatory Action and Governance.

WORK PACKAGE 2

BRIDGE: Conflict and Emergency Operations.

WORK PACKAGE 3

STABILIZE: Stabilizing Individual and Community Livelihoods.

WORK PACKAGE 4

ACCELERATE: Stability and Peace Accelerator Partnership and Grant Mechanism.

WORK PACKAGE 5

Learning Support for a Sub-Saharan Africa Multi-Country Climate Resilience Programme for Food Security.

END-OF-INITIATIVE OUTCOMES

ACTION AREA OUTCOMES

IMPACT AREAS

END-OF-INITIATIVE OUTCOME 1

1 ▶
5 ▶ Governments and humanitarian and development partners in at least three conflict-affected situations utilize conflict-sensitive anticipatory action or disaster risk reduction approaches to help prepare for and mitigate compound crises featuring interconnected, conflict, food, land, and water system risks.

END-OF-INITIATIVE OUTCOME 2

2 ▶
5 ▶ Humanitarian and/or development stakeholders in three FCASs utilize the Initiative's Climate, Peace and Displacement Partnership and tools and recommendations to inform and integrate fragility, conflict, and migration programming along the humanitarian, development and peace (HDP) nexus.

END-OF-INITIATIVE OUTCOME 3

3 ▶
5 ▶ Governments, UN agencies, or NGOs in at least three FCASs either implement new programming or strengthen gender equality, social inclusion and conflict sensitivity dimensions of existing policies and programming to help improve livelihoods and food security, including for youth, while promoting gender equality in FCASs.

END-OF-INITIATIVE OUTCOME 4

4 ▶
5 ▶ Eight local innovators design and deploy, in partnership with CGIAR scientists as part of the initiative grant mechanism, scalable interventions that promote FLWs resilience, peace-building, and/or gender equality in FCAs characterized by abnormally high migration.

SYSTEMS TRANSFORMATION

1 ▶
2 ▶
3 ▶
4 ▶ **1** · CGIAR partners develop and scale innovations that contribute to the empowerment of women and other social groups in food, land, and water systems.

1 ▶
2 ▶
3 ▶
4 ▶ **2** · Global and regional institutions, such as funding agencies, international organizations, and coordinating bodies use CGIAR research evidence in the development of strategies, policies, and investments to drive sustainable transformation of food, land, and water systems contributing to livelihood, inclusion, nutrition, environmental and climate resilience objectives.

1 ▶ **3** · National and sub-national government agencies use CGIAR research results to design or implement strategies, policies and programs which have the potential to transform food, land and water systems contributing to livelihood, inclusion, nutrition, environmental and climate resilience objectives.

NUTRITION, HEALTH & FOOD SECURITY

1 ▶
3 ▶ · End hunger for all and enable affordable health diets for the 3 billion people who do not currently have access to safe and nutritious food.

POVERTY REDUCTION, LIVELIHOODS & JOBS

1 ▶
3 ▶ · Reduce by at least half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.

GENDER EQUALITY, YOUTH & SOCIAL INCLUSION

1 ▶
3 ▶ · Close the gender gap in rights to economic resources on, access to ownership of, and control over land and natural resources, for more than 500 million women who work in food, land, and water systems.

CLIMATE ADAPTATION & MITIGATION

2 ▶
3 ▶ · Equip 500 million small-scale producers to be more resilient to climate shocks, with climate adaptation solutions available through national innovation systems.

ENVIRONMENTAL HEALTH & BIODIVERSITY

2 ▶
3 ▶ · Stay within planetary and regional environmental boundaries: consumptive water use in food production of less than 2500 km3 per year (with a focus on the most stressed basins), zero net deforestation, nitrogen application of 90 Tg per year (with redistribution towards low-input farming systems) and increased use efficiency, and phosphorus application of 10 Tg per year.

A community nutrition scholar leads a session with a group of women in Bangladesh.
Credit: CIP Bangladesh

Summary of progress against the theory of change

FCA settings present some of the most pressing challenges to global food security, stability, and resilience. As an estimated two-thirds of the world's extreme poor are expected to reside in FCA settings by 2030, the need for science-based solutions has never been more urgent. The FCM Initiative operated on the premise that science-based solutions are essential before, during, and after shocks and crises in FCA settings. During its three-year cycle beginning in April 2023, FCM encompassed three core areas: Prevention and Preparedness (Work Package [WP] 1), Response and Transformation (WP2), and Recovery and Resilience (WP3). Complementing these, FCM accelerated local innovations that address HDP nexus priorities through WP4 and provided comprehensive learning and decision support to the WFP and other key partners through WP5.

FCM's theory of change posited that equipping governments, humanitarian actors, NGOs, and other development stakeholders with targeted, evidence-based solutions would enable better preparedness, response, and recovery from shocks and crises, ultimately contributing to sustainable food, land, and water systems. The Initiative worked flexibly across multiple countries, recognizing the transboundary nature of conflict, migration, and displacement while responding to partner demand amid evolving crises. Importantly, FCM also leveraged broader cross-Initiative collaborations (see section 6).

In nearly two years, FCM substantially advanced its research agenda in FCA settings—generating fresh evidence on anticipatory action, social protection, humanitarian response, resilience-building, and migration dynamics. From 2023 to 2024, FCM delivered 790 results, including:

- 489 knowledge products, all available in FCM's curated Research Collection—spanning 47 journal articles, 107 reports, 104 briefs, 72 blogs, and 47 working papers, among others, as well as 68 monitoring, evaluation, learning, and impact assessment (MELIA) knowledge products;

- 98 capacity-sharing outputs, helping to strengthen expertise in FCA contexts;

- 30 innovation development results, fueling new solutions to fragility and conflict;

- 104 other outputs capturing extensive stakeholder engagement activities; and

- a podcast series called From Fragility to Stability, which released biweekly episodes with key FCM partners to deepen understanding of fragility, conflict, and migration dynamics, as well as sharing research on effective policies, programming, and financial mechanisms to address challenges.

Partnerships and codesign with governments, humanitarian organizations, NGOs, and research institutions were central to FCM's success. These partnerships translated into tangible impact. Between 2023 and 2024, FCM's research and innovations directly contributed to 69 outcome results, including five Innovation Packages and 41 policy change outcomes—with 31 at stage one (research uptake by key stakeholders, policy change in progress) and 10 at stage two (policies enacted). Substantial capacity sharing underpinned these outcomes. From 2023 to 2024, FCM trained 16,365 individuals—39.2 percent women, 25.7 percent men, and 35.1 percent of unspecified gender.

Cross-Initiative collaboration also played a critical role, with FCM codeveloping hundreds of results with 29 other CGIAR Research Initiatives, including 330 with the Climate Resilience Initiative, 85 with the Gender Equality Initiative, 67 with the National Policies and Strategies Initiative, and 46 with the Livestock and Climate Initiative. These activities contributed to FCM's success in shaping policies, strengthening capacities, and driving meaningful change in FCA settings.

Prevention and preparedness

WP1 considered how preparedness measures and effective governance can prevent and mitigate shocks and crises in FCA food systems. Research in Jordan (Output 1.5), which informed the design of the UK-funded Jahez Project, provided targeted disaster risk reduction for refugee-hosting communities, applying FCM's

Integrated Host Community Vulnerability Framework (Output 1.5, Outcome 1.1, End of Initiative outcome [EOIO] 1). Studies in Ethiopia's Tigray (Output 1.5) and Somali (Output 1.5) regions integrated climate risk modeling into WFP (Output 1.5) and UNHCR (Output 1.5) programming (Outcome 1.1, EOIO 1). In Pakistan (Output 1.5), research (Output 1.5) shaped flood early warning and response systems, while in Zambia (Output 1.5), research informed drought risk management systems (Outcome 1.1, EOIO 1). Research on school-calendar misalignment with peak farming periods in Madagascar sparked critical policy discussions with the World Bank and UNESCO (Output 1.9). In Mali (Output 1.10), collaboration with WFP informed anticipatory action policies (Outcome 1.1, EOIO 1), while research in Nigeria and Nepal outlined how anticipatory action programming can empower women (Output 1.8). In Guatemala and Honduras, the MPI (Output 1.4) and internal MPI (i-MPI) (Output 1.4) helped governments target interventions more effectively. Furthermore, the United Kingdom's Foreign, Commonwealth and Development Office (FCDO) shared FCM research for the G7 Apulia Initiative's recommendations to address irregular migration (Output 1.1, EOIO 1).

Response and transformation

WP2 focused on how short-term responses to compound humanitarian crises can be better aligned with long-term development and peace objectives. FCM evidence informed both immediate humanitarian action and long-term resilience programming (Outcome 2.1, EOIO 2). The Climate Security Observatory (CSO) (Output 2.6) was launched in collaboration with the Climate Resilience Initiative for 13 countries, and informed WFP and five government programs (Outcome 2.1, EOIO 2, and Outputs 2.1 and 2.2). In 2025, studies on political violence in the Sahel enhanced WFP's risk assessment tools (Outputs 2.4 and 2.11). FCM researchers presented findings at the UN Security Council, informing global discourse on the intersection of climate, conflict, and migration (Output 2.8). Studies on herder-farmer conflicts in three countries provided policy recommendations to mitigate violence and promote peacebuilding (Output 2.7). The WFP, HSA Group, and the World Bank also acknowledged the value of FCM research on the effectiveness of school feeding programs in emergency settings (Output 2.1, Outcomes 2.1, and EOIO 2)

Recovery and resilience

WP3 analyzed how programs, policies, and interventions can be best designed to build resilience for communities and individuals in FCA food systems while promoting inclusion of women and youth. Demand-driven partnerships and impact evaluations led to direct program improvements and policy uptake. Research with World Vision in Ethiopia demonstrated how combining cash transfers with mental health support enhances recovery in conflict-affected communities, leading to program expansion (Outcome 3.1, EOIO 3). Studies on biofortified seeds and inputs in Nigeria revealed high demand among internally displaced persons (IDPs), demonstrating the feasibility of agricultural recovery even in fragile settings (Output 3.2). In Pakistan, studies on climate-induced migration informed public and nonprofit responses, with a particular focus on gendered impacts (Outcome 3.2, EOIO 3). And research with ActionAid Nigeria supported scaling efforts for a women's advocacy training curriculum, which was incorporated into broader programming (Outcome 3.2, EOIO 3).

Cross-cutting collaboration and partner support

Building on these efforts and cutting across other WPs, FCM advanced local innovations tackling HDP nexus priorities through WP4 while also delivering extensive learning and decision support to WFP and other key partners via WP5.

WP4 facilitated scaling of innovations (Outputs 4.1, 4.2, and 4.8, Outcome 4.1, EOIO 4), strengthened private-sector engagement (Outputs 4.4 and 4.5, Outcome 4.3), and provided key learning support to humanitarian actors (Output 4.7, Outcome 4.3, EOIO 4). The SAPA selected and supported four high-impact enterprises addressing water security, hydroponic farming, solar-powered food storage, and conflict prediction (Output 4.3, Outcome 4.1, EOIO 4). Innovators received financial, technical, and business support, including workshops and bootcamps, with promising scaling prospects (Output 4.6, Outcome 4.1, EOIO 4).

WP5 codeveloped 29 research projects with WFP across 13 countries (Outputs 5.1–5.11), strengthening disaster risk financing (Output 5.3), school meal and social protection programs (Outputs 5.6 and 5.7), and agricultural resilience strategies (Outputs 5.3 and 5.7). Further, WP5 addressed capacity strengthening needs of partners through technical exchange, dialogue, trainings, and secondments (Outputs 5.9 and 5.11). Important cadres of practitioners and decision-makers were trained in climate risk management, anticipatory action, and conflict-sensitive programming, ensuring sustainable research impact. Through these outputs, WP5 strengthened anticipatory action initiatives (Outcome 5.1, EOIO 1), social protection responses, and climate security measures (Outcomes 5.2 and 5.3, EOIOs 2 and 3) in FCA food systems.

Reflections on the challenge statement and future directions

FCM generated actionable evidence that influenced national and global policy responses, strengthened collaborations with humanitarian and development actors, and built a foundation for sustainable anticipatory action and resilience-building—integrating science into decision-making at multiple levels. As CGIAR investment moves forward, the lessons from FCM provide a roadmap for future research and engagement in fragile contexts, reinforcing the need for science-driven, locally responsive solutions to mitigate crises and build resilient food systems.

Under CGIAR's 2025–2030 Research Portfolio, the FCM agenda will be integrated with CGIAR's Food Frontiers and Security Science Program, specifically within the Fragile and Conflict-Affected Food Systems Area of Work, fostering innovation across an even more diverse portfolio of marginalized geographies. This shift reflects a necessary evolution toward a more integrated, systems-based approach. While the FCM Initiative focused on the intersections of fragility, migration, and food security, the new area of work situates these challenges within a larger set of frontier food systems—which also include urban and island food systems. These systems share fundamental vulnerabilities, such as reliance on external supply chains, exposure to systemic shocks, and structural constraints on food production. They are also all commonly neglected in global food system narratives. Recognizing frontier food systems as innovation hubs can generate new insights into resilience-building, equitable food access, and sustainable development in some of the most vulnerable and rapidly evolving food landscapes.

Moving forward, this area of work will emphasize expanding anticipatory action initiatives by strengthening partnerships with regional climate and disaster risk platforms, as well as governments at all levels. It will also prioritize scaling innovations to drive inclusive and sustainable solutions for conflict-affected populations. Additionally, the research will deepen the integration of climate and migration studies into global humanitarian response frameworks, ensuring that policies and programs are informed by robust evidence. Furthermore, enhancing gender-sensitive programming remains a key objective, addressing structural inequalities that disproportionately impact vulnerable populations in FCA settings. The FCA area of work will continue collaborating with CGIAR Centers, humanitarian partners, NGOs, and national governments to ensure its research contributes meaningfully to evidence-based policymaking and programmatic transformation in these challenging environments.

Progress against End of Initiative Outcomes

This infographic provides a concise summary of the Initiative's progress toward achieving its Theory of Change End-of-Initiative outcomes for the 2022-2024 period. By drawing on reported results, it offers a comprehensive synthesis of progress made against the established outcome targets, highlighting the Initiative's overall impact and key achievements at the conclusion of this three-year cycle.

EOIO 1

Governments and humanitarian and development partners in at least three conflict-affected situations utilize conflict-sensitive anticipatory action or disaster risk reduction approaches to help prepare for and mitigate compound crises featuring interconnected, conflict, food, land, and water system risks.

EOIO 2

Humanitarian and/or development stakeholders in three FCASs utilize the Initiative's Climate, Peace and Displacement Partnership and tools and recommendations to inform and integrate fragility, conflict, and migration programming along the humanitarian, development and peace (HDP) nexus.

EOIO 3

Governments, UN agencies, or NGOs in at least three FCASs either implement new programming or strengthen gender equality, social inclusion and conflict sensitivity dimensions of existing policies and programming to help improve livelihoods and food security, including for youth, while promoting gender equality in FCASs.

EOIO 4

Eight local innovators design and deploy, in partnership with CGIAR scientists as part of the initiative grant mechanism, scalable interventions that promote FLWs resilience, peace-building, and/or gender equality in FCAs characterized by abnormally high migration.

Significant progress toward this outcome was achieved through humanitarian and government partnerships. Research and technical support for cocreated anticipatory approaches strengthened resilience when applied to partners' investments and institutional development in FCA settings. In Jordan, research and scenario planning informed community-driven disaster risk reduction strategies in refugee-hosting communities. In Ethiopia's Tigray and Somali regions, partners integrated climate risk modeling and community-driven analysis into programs addressing flood preparedness, agricultural livelihoods, food security, and resilience. In Mali, research helped shape WFP's long-term anticipatory action strategy, and in Nigeria and Nepal, stakeholder-driven research outlined ways anticipatory action programming could better empower women. In Pakistan, decision-makers embedded FCM research into anticipatory approaches in flood early warning and response systems. In Zambia, research supported water resource planning. In Madagascar and Malawi, research showed that adjusting school calendars according to local farming cycles supported children's outcomes and strengthened resilience, driving policy discussions with the World Bank and UNESCO. The MPI in Guatemala and Honduras revealed groups more prone to migrate (both externally through the e-MPI and internally through the i-MPI). The index was used to monitor migration sentiments and inform targeting of interventions to address vulnerabilities. This dynamic and collaboratively developed portfolio ensured the WP surpassed EOIO targets.

Substantial progress was achieved through a new partnership with UNHCR, providing evidence, data, and insights to support their work to mitigate the vulnerability of 120 million refugees, displaced people, and their hosts and to potentially influence policies in 135 countries. CGIAR informed UNHCR's new Strategic Plan for Climate Action and its regional plans; its 2023 Global Trends report; and its first-ever report on conflict, climate, and displacement. CGIAR also evaluated its climate-resilient shelters initiative in Mozambique and its Sustainable Land Management and Ecosystem Restoration Project in Bangladesh; and informed its Vulnerability and Assessment Framework. CGIAR secondments to UNHCR headquarters and regional bureaus continuously supported UNHCR's climate risk management and refugee insurance program. In Jordan, CGIAR helped WFP understand how best to increase access to finance for refugees and host communities, while at the same time building social cohesion within and between these groups. The resulting research-backed recommendations form an integral component of a proposed WFP flagship program. As national authorities work to better manage risks to human security emerging from climate and conflict-induced migration, they called on CGIAR to develop trainings and workshops for civil servants and partners. Throughout 2023–2024, more than 4,000 practitioners and decision-makers were trained.

Progress was achieved through building demand-driven partnerships that adapted learnings and sharing results with external stakeholders who can further implement them into their programming. In Nigeria, FCM researchers partnered with ActionAid to develop, implement, and evaluate a training to build women's advocacy skills and engage men to promote women's community engagement in fragile communities experiencing farmer-herder conflict. This research motivated ActionAid to seek ways to scale the curriculum to new areas and incorporate the learnings into their programming more broadly. In Ethiopia, researchers worked with World Vision to evaluate a program that paired social protection with mental health services. The initial evidence and partnership led to the expansion of the program to another post-conflict region of the country, with a focus on cost-effectively providing for the unique needs of those recovering from conflict. In Pakistan, a study on climate-induced migration revealed severe food and water insecurity, with disproportionate impacts on women and girls. A range of public and nonprofit sector actors indicated that this evidence would be incorporated into their programming across Punjab. Additionally, leaders at WFP noted that research conducted in partnership with FCM researchers had transformative impacts on programming offered in FCA food systems.

Progress was achieved through a jointly designed and implemented FCM-WFP's SAPA that supported scaling of high-impact innovations for food, land, and water systems in FCA settings. To identify priority areas, FCM worked with Briter Bridges to conduct a market assessment of food, land, and water system actors. Three innovation themes were identified: water and resilience in Jordan, nutrition in Nigeria, and digital tools for displacement in Kenya. Four out of 214 innovators were selected: (1) Aquaporo's atmospheric water harvesting device in Jordan; (2) iPlant's vertical farming technology to integrate the use of solar energy in Jordan; (3) Koolboks' introduction of solar-powered refrigeration in Nigeria to reduce food losses; and (4) Conflict Forecast's digital tool to predict service delivery disruption due to conflict in Kenya. To expedite innovation deployment, the enterprises completed a six-month sprint acceleration where they participated in FCM-led Innovation Packages and Scaling Readiness (IPSR) workshops, were provided with US$30,000 equity-free grants from FCM, benefited from technical assistance from CGIAR scientists, and received business support along with investment readiness coaching by the WFP Innovation Accelerator. Additionally, three innovators operating in FCA food systems in Ethiopia and Pakistan took part in an FCM-organized Agribusiness Bootcamp.

Section 3: **Work Package progress**

WP1: Anticipate—Anticipatory action and governance

How can the impacts of shocks and stressors in FCA food systems be prevented or mitigated through preparedness measures and effective governance?

WORK PACKAGE 1

OUTPUTS

1.1 · FLWS fragility and risk indicator typology for monitoring socio-ecological risks and informing early action.

1.2 · Risk model, risk assessment framework, and guidance for strengthening risk targeting in climate adaptation interventions in FCASs.

1.3 · Early warning/forecasting component integrated into existing Famine Early Warning Systems Network (FEWSNET), and other dashboards as feasible (e.g., FSP, Integrated Food Security Phase Classification).

1.4 · Reports on migration trends with recommendations.

1.5 · Case studies of water and climate vulnerability in communities hosting displaced persons to inform integrated disaster risk reduction.

1.6 · Scenario case studies synthesizing learning from crisis response strategies, to inform disaster risk reduction and anticipatory action design and operations.

1.7 · Toolkit for crisis scenario analysis for stress-testing disaster risk reduction approaches.

1.8 · Policy brief (and case studies) offering practical recommendations on how crises put women at risk, building women's resilience to crises, and empowering women in disaster risk reduction initiatives in FCASs.

1.9 · Case studies, with replication potential, of interventions and governance arrangements promoting crisis prevention, poverty reduction, resilience, and accountability.

1.10 · Policy brief and case studies outlining strategies promoting social cohesion, trust, and violence reduction, and preenting unintended destabilizing effects of development and humanitarian programming relevant to disaster risk reduction.

1.11 · Global learning series to convene practitioners and subject-matter experts.

OUTCOMES

1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
1.10
1.11

1.1 · Design and/or operations of three crisis preparedness and early action initiatives.

END-OF-INITIATIVE OUTCOME 1

1.1 ▶ Governments and humanitarian and development partners in at least three conflict-affected situations utilize conflict-sensitive anticipatory action or disaster risk reduction approaches to help prepare for and mitigate compound crises featuring interconnected, conflict, food, land, and water system risks.

Work Package 1 progress against the theory of change

WP1 drove transformative efforts to advance anticipatory action, disaster risk reduction, and good governance for inclusive hazard preparedness and mitigation in FCA settings. By codeveloping nature-based solutions (Output 1.5) and targeting biophysical risks (Output 1.5), the research informed projects that address socioeconomic and biophysical vulnerabilities while improving environmental health.

Using participatory modeling, climate risk assessments, scenario planning, and gender-responsive approaches (Output 1.5), WP1 showed how proactive policies and investments in preparedness significantly reduce hazard impacts while fostering stability. In Jordan, the UK-funded Jahez Project applied the Integrated Host Community Vulnerability Framework to understand challenges and promote resilience in host and refugee populations (Output 1.5). FCM research on climate migration (Output 1.5) guided the Provincial Disaster Management Authority in Punjab, Pakistan to adopt gender-responsive disaster plans and Rescue 1122 (Emergency Services Department) to integrate findings (Output 1.5) into community training modules addressing localized migration challenges (Output 1.5). Governments in Honduras and Guatemala adopted the MPI (Output 1.4) to monitor migration sentiment in a large-scale survey and monitor migration patterns among project beneficiaries, and target policies addressing migration vulnerabilities. Utilizing advanced conflict analyses and systems approaches (Output 1.3), FCM researchers improved the scenario development process of the Famine Early Warning Systems (FEWS NET), then operational in 29 countries.

Key 2024 results further highlight WP1's impact and progress against WP Outcome 1.1 ("the design and/or operations of three crisis preparedness and early action initiatives"). Collaborations with national governments, WFP (Output 1.5), and UNHCR (Output 1.5) informed disaster preparedness strategies in Ethiopia's Tigray (Output 1.5) and Somali (Output 1.6) regions, integrating climate risk modeling and localized planning (Output 1.5) to promote livelihood security (Output 1.5) and flood risk management (Output 1.5), and informing WFP training and investment design under the Mandera Triangle Climate and Resilience Project. A report supported by Zambia's Disaster Management and Mitigation Unit (Output 1.6) was supporting anticipatory action and preparedness and disaster risk strategies in hard-to-reach regions. In Mali, research with 3,000 community leaders (Output 1.10) influenced WFP's $1.7 billion Country Strategy Programme, embedding effective anticipatory action with local government engagement as a core strategy. In Nigeria and Nepal (Output 1.8), collaboration with dozens of partners supported the generation of a suite of recommendations to make anticipatory action programming more gender responsive. FCM contributions informed the FAO Regional Office for the Near East and North Africa's two-year regional strategy. CGIAR research in Malawi also led to policy discussions with the World Bank, and partners' interest in reforms aligning school schedules with agricultural cycles to reduce disruptions and improve education and poverty outcomes across sub-Saharan Africa (Output 1.9).

The assumptions that research could translate into impact were confirmed and addressed through continuous collaboration with FCM partners including through a series of webinars with Anticipation Hub (Output 1.11), virtual field trips (Output 1.11), a toolkit for anticipatory action in conflict-affected settings (Output 1.7), community training programs, research dissemination workshops, and stakeholder engagement initiatives (Outputs 1.8 and 1.9).

WP2: Bridge—Conflict and emergency operations

WORK PACKAGE 2

OUTPUTS

2.1 · Synthesis of evidence on drivers and contexts in migration and fragility hotspots and corridors.

2.2 · Online dashboard revealing spatial and temporal conflict hotspots, their FLWS drivers, and impacts at national, subnational, and local levels, with a special focus on conflicts among pastoralists and other land users.

2.3 · National, subnational, and hotspot/corridor specific gender- and age-disaggregated migrant and beneficiary vulnerability profiles.

2.4 · Triangulation of methods to assess near real-time household vulnerabilities for gender- and age-sensitive targeting, tested in contrasting contexts.

2.5 · Institutional and policy-level analysis of migration, migrant communities' key concerns, and how they influence decision-making of migrants.

2.6 · Country and subnational level analysis of drivers and root causes, including causal pathways, to inform programming and policies.

2.7 · Case studies on scenarios, impacts, and good practices for addressing herder-farmer conflicts.

2.8 · Policy engagement, including roundtables, briefs, and videos.

2.10 · A toolkit to rapidly assess the potential/likely contributions of agricultural and climate investments to achieving peace and security.

2.11 · Policy recommendations on the efficiency of alternative humanitarian aid delivery modalities.

OUTCOMES

2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.10
2.11

2.1 · Long-term sustainability and resilience supported by evidence and evaluations by three institutions/partnerships.

END-OF-INITIATIVE OUTCOME 2

2.1 · Humanitarian and/or development stakeholders in three FCASs utilize the Initiative's Climate, Peace and Displacement Partnership and tools and recommendations to inform and integrate fragility, conflict, and migration programming along the humanitarian, development and peace (HDP) nexus.

Work Package 2 progress against the theory of change

WP2 progressed significantly on its four impact pathways, promoting effective emergency response. To improve understanding of conflict hotspots and migration corridors, FCM and the Climate Resilience Initiative (ClimBeR) jointly launched the CSO (Output 2.2) for 13 countries in Latin America, Africa, and Asia in 2023, and in 2024 the global displacement module (Output 2.2). The CSO informed policies and programming processes of WFP in Mali, Burkina Faso, and Kenya (Output 2.11); the governments of Mozambique and Zimbabwe (Output 2.11); the government and the International Organization for Migration in Guatemala; Mediterranean dialogues (Output 2.8); and partners in the Horn of Africa (Outcome 2.1). The WP presented the CSO in a United Nations Security Council session convened by the Swiss representation (Outcome 2.1).

To support increased efficiency through tailored identification and targeting of beneficiaries, the WP assessed WFP's climate resilience programs and studied political violence in the Sahel (Output 2.4). WP2 also replicated ACLED's conflict index, which was integrated in WFP's data architecture (Output 2.4). The team compiled household datasets for Niger, Sudan, and Burkina Faso, and analyzed the interaction between shocks and coping strategies (Output 2.3). WP2 studied climate and gendered migration patterns in Southern Africa and Zimbabwe (Output 2.3); the climate, conflict, and human mobility nexus in Honduras and Mali (Output 2.1); and refugees, IDPs, and host communities' preferences and concerns in Jordan and Sudan (with WFP) and Zimbabwe (with UNHCR) (Output 2.3).

To improve understanding of displacement and conflict dynamics for effective, context-specific programming, WP2 mapped public debates about the climate security–human mobility nexus in Jordan and Mozambique using social media analysis, and developed TeleCatch (Output 2.5) to extract and analyze content in public Telegram channels. The Climate Peace and Displacement partnership (Output 2.6) delivered the first Africa Climate Mobility Academy, providing mentorship and financial support to 22 researchers, nurturing existing networks and centers of excellence in Africa (Output 2.6), and increasing output and visibility of African science in partnership with leading journals. In collaboration with the FCDO-funded Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC), the WP studied causes and impacts of farmer-herder conflicts in Sudan, north central and southwestern Nigeria, and Mali (Output 2.7). The team also developed evidence and organized side events at UNFCCC/COP29, UNCCD/COP16, and CBD/COP16 (Output 2.8).

To support increasing climate investments in FCA settings and leverage sustainability principles in emergency contexts, WP2 launched the Climate Security Programming Dashboard (Output 2.10). For the Green Climate Fund, the team developed eight guidance notes for peace-informed programming (Output 2.10). Through a peer-reviewed thought piece and a podcast series (Output 2.8), WP2 discussed the importance of using climate financing wisely to address multiple crises. Finally, the WP studied and discussed at high-level policy forums the power of partnership to address Yemen's food crisis and strengthen food system resilience (Output 2.11), where WFP, HSA Group, and the World Bank acknowledged the value of FCM research for delivering school feeding programs in emergency settings (Outcome 2.1).

Assumptions on the importance of the research (assumption 1), the timeliness of interventions (assumption 2), the demand for food, land, and water system research (assumption 3), and the effectiveness of partnership (assumption 4) were confirmed and continuously refined through close collaboration with partners, including seconding CGIAR staff to partner organizations.

WP3: Stabilize—Stabilizing individual and community livelihoods

How can programs and policies be best designed to build resilience for communities and individuals in FCA food systems while promoting the inclusion of women and youth?

WORK PACKAGE 3

OUTPUTS

3.2 · New research findings on the ways in which studied programs and their components advance stable livelihoods in FCASs.

3.3 · Dissemination of research findings through discussion papers, policy briefs, and/or blog posts.

3.4 · Review of existing evidence and conceptual framework addressing (1) migration's role in stabilizing FCASs and (2) the relationship between climate adaptation and migration.

3.5 · Information products providing new evidence documenting the effectiveness of studied programming on (1) stability among migrants and host communities and (2) on migration decisions.

3.6 · New evidence evaluating the role of migration in the stabilization of FCASs.

3.7 · Dissemination of research findings through discussion papers, policy briefs, and blog posts.

3.8 · Data collection guidance covering new methods for measuring women's empowerment in FCASs and among migrants.

3.9 · Information products providing new evidence documenting the effectiveness of programming in FCASs and among migrants in promoting women's empowerment may act as a mechanism to achieve stability.

3.10 · Dissemination of research findings through discussion papers, policy briefs, and/or blog posts.

OUTCOMES

3.2 ▶
3.6 ▶ **3.1** · Design and implementation of innovative approaches to programming to promote stability for migrants and others in fragile and conflict-affected systems.

3.4 ▶
3.5 ▶ **3.2** · Improved
3.8 ▶ knowledge of
3.9 ▶ programming design for youth and women's empowerment and stability.

END-OF-INITIATIVE OUTCOME 3

3.3 ▶
3.7 ▶ Governments, UN agencies, or
3.9 ▶ NGOs in at least three FCASs either
3.10 ▶ implement new programming or
3.1 ▶ strengthen gender equality, social
3.2 ▶ inclusion and conflict sensitivity dimensions of existing policies and programming to help improve livelihoods and food security, including for youth, while promoting gender equality in FCASs.

Work Package 3 progress against the theory of change

WP3 made significant progress by generating evidence and outcomes on programming and policies that promote recovery and resilience, leading to achievement of both WP outcomes. Working along three impact pathways, the WP invested in demand-driven partnerships and conducted causal impact evaluations and other studies, leading to increased knowledge and capacity among partners. Stakeholders began scaling successful programs.

First, researchers studied how programming can improve livelihoods in FCA food systems. In partnership with World Vision in Ethiopia, researchers examined how combining cash transfers with group therapy can rebuild resilient livelihoods (Outputs 3.2 and 3.3). In 2024, this work led to expansion into a post-conflict area to understand how such programming can be cost-effectively delivered there (Outcome 3.1). Researchers also developed evidence on nature-based solutions and circular bioeconomy principles in displacement settings, as well as on urban agriculture's role in resilience among IDPs in northern Ethiopia (Output 3.2). In northern Nigeria, FCM researchers, HarvestPlus, and private- and public-sector partners studied demand for a bundle of biofortified seeds and other inputs among communities with IDPs. Results show that subsidized demand for these inputs is high, even among IDPs, providing evidence that agricultural support can be key even in difficult areas (Outputs 3.2 and 3.3).

Second, researchers generated evidence on building resilient livelihoods for migrants and host communities. Alongside World Vision, FCM evaluated a multidimensional graduation program for ultra-poor IDPs and their communities in Baidoa, Somalia, with

results supporting development of similar programs (Outputs 3.2, 3.5, and 3.7). In Punjab, Pakistan, researchers collaborated with local partners to explore the impacts of extreme climate events on migrant communities and the role of a digital ecosystem in building resilience, revealing the need for gender-responsive, inclusive solutions (Outputs 3.6 and 3.7, and Outcome 3.2).

Finally, to understand how to build women's empowerment in FCA settings, researchers partnered with the Gender Equality Initiative in a study with World Vision examining the engagement of women in sustainable land management practices in Ethiopia (Output 3.9) and a MELIA study with ActionAid Nigeria that analyzed the effects of training women to engage with local leaders and training men to support them on women's livelihoods, participation in community decision-making, and influence (Outputs 3.9 and 3.10). Positive results supported plans for scaling the curriculum in other ActionAid activities (Outcome 3.2). Researchers also combined evidence to publish lessons about measurement of women's empowerment in FCA settings (Output 3.8).

Assumptions related to partners recognizing needs and being open to collaboration (assumptions 1 and 2) and the needs of beneficiaries being embedded in programming (assumption 3) were validated through the positive results detailed above. Researchers were able to overcome the risks of working in FCA areas (assumption 4). Results also show improvements in women's empowerment are achievable (assumption 5), though continued research on women's empowerment's contribution to stability is needed (assumption 6).

WP4: Accelerate—Stability and peace accelerator partnership and grant mechanism

WORK PACKAGE 4

OUTPUTS

4.1 · Stability and Peace Accelerator Partnership (SAPAP) Local Innovator Guideline on how to develop locally generated FLWS solutions for humanitarian and emergency context, leveraging CGIAR science.

4.2 · A list of potential locally sourced FLWSs innovations that address HDP priorities.

4.3 · Four capacity building activities that increase local innovators' skills in developing solutions that address short-term emergency goals while promoting resilience and sustainability.

4.4 · Stability and Peace Accelerator Partnership (SAPAP) grant system established.

4.5 · Eight innovations addressing HDP priorities selected and funded.

4.7 · New partnerships for delivery and stronger partnership networks across the HDP nexus.

4.8 · Multistakeholder knowledge-sharing platform and communication events.

IO · IPSR Output: CGIAR and partner capacity on innovation and scaling strengthened.

OUTCOMES

4.1
4.2
4.3
4.4
4.5

4.1 · Eight local innovators' skills increased in developing solutions.

4.7
4.8

4.3 · Stronger partnerships and networks to support programming and investments across the HDP nexus.

END-OF-INITIATIVE OUTCOME 4

IO
4.1
4.3

Eight local innovators design and deploy, in partnership with CGIAR scientists as part of the initiative grant mechanism, scalable interventions that promote FLWs resilience, peace-building, and/or gender equality in FCAs characterized by abnormally high migration.

Work Package 4 progress against the theory of change

WP4 progressed toward its outcomes by promoting resilience of food, land, and water systems in FCA settings through implementation of the SAPA. This enterprise acceleration program supported innovation scaling through demand-driven technical assistance in FCA settings. This support expanded investment opportunities for entrepreneurs, enabling them to scale innovations that enhanced water security for producers in Jordan, food and nutrition security for consumers in Nigeria, and better informed programming by humanitarian actors in Kenya.

The design of the SAPA was informed by food, land, and water actors in the HDP nexus conducted by CGIAR scientists and Briter Bridges. Actionable innovation themes were subsequently identified: water and resilience in refugee and host communities in Jordan; digital solutions for climate security and migration in Kenya; and resilient food systems and nutrition in Nigeria (Output 4.1).
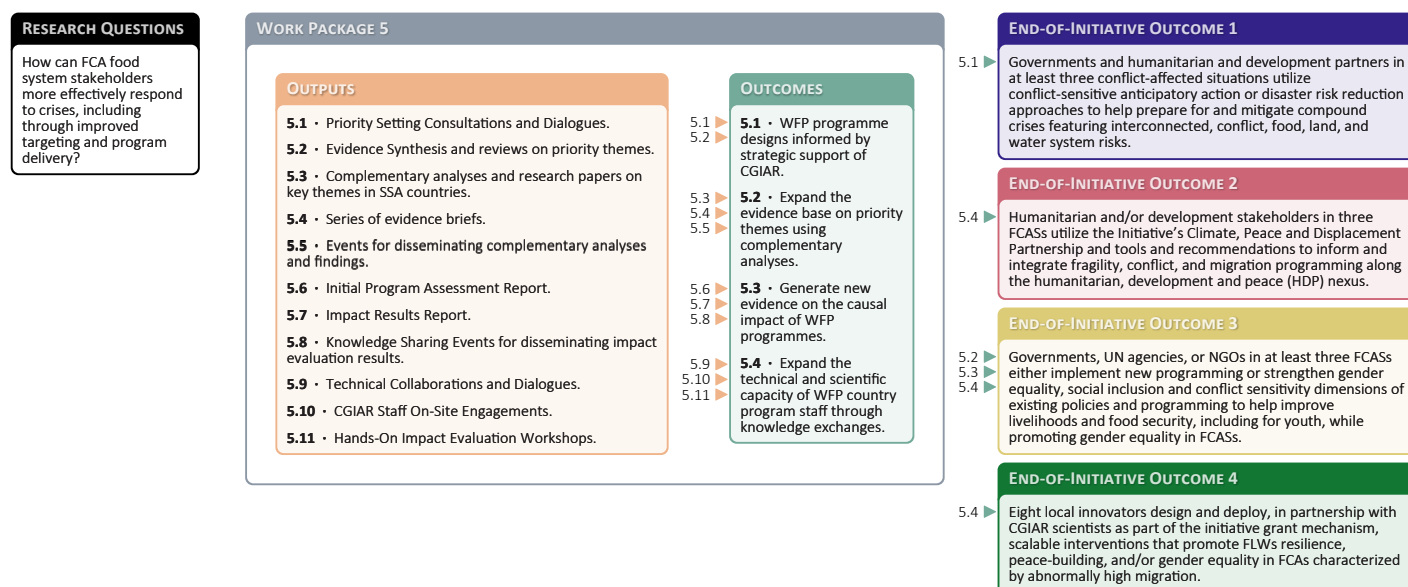
A call for applications was launched in January 2024, attracting 214 submissions (Output 4.2). The FCM team selected four innovations: Aquaporo developed Stream, a water harvesting device, aimed at enhancing water security in Jordan; iPlant introduced the Green Spin hydroponic farming unit to small-scale farmers in Jordan's FCA settings; Koolboks provided solar-powered cold storage solutions to reduce food spoilage in Nigeria's FCA settings; and Conflict Forecast provided a digital tool designed to predict conflict impacts on service delivery in FCA settings (Output 4.3).

The innovators received a grant of US$30,000 (Outputs 4.4 and 4.5) from the FCM Initiative. CGIAR scientists and WFP then provided technical and investment readiness coaching and marketing skills to speed up the deployment of these innovations. The innovators also successfully completed the WFP Innovation Accelerator bootcamps and participated in FCM-led IPSR workshops (Output 4.8). The IPSR workshops allowed innovators to engage with diverse stakeholders who could support their scaling ambitions (Output 4.6). The enterprises pitched their innovations to a wider audience, including potential investors (Output 4.7).

As a result of the SAPA program, innovators made strides in scaling their innovations in FCAS: Aquaporo was named the AidEx 2024 Aid Innovation Challenge winners (Outcome 4.1); iPlant signed a memorandum of understanding with Jordan's national agricultural research service; Koolboks secured two partners who were engaged in further scaling their innovation; and Conflict Forecast identified 15 stakeholders interested in using their tool (Outcome 4.3).

Assumptions related to the untapped potential of local innovations in FCAS and the role of CGIAR science-based technical assistance in strengthening capacity of local innovators to contribute to addressing HDP nexus priorities (assumptions 1 and 2) were validated through the outcomes achieved by the accelerator program. The IPSR workshops and networking activities such as the showcase event confirmed the interest of innovators and stakeholders to share information and lessons and jointly develop coherent HDP interventions (assumptions 3 and 4).

WP5: Learning Support for a Sub-Saharan Africa Multi-country Climate Resilience Programme for Food Security

RESEARCH QUESTIONS

How can FCA food system stakeholders more effectively respond to crises, including through improved targeting and program delivery?

WORK PACKAGE 5

OUTPUTS

5.1 · Priority Setting Consultations and Dialogues.

5.2 · Evidence Synthesis and reviews on priority themes.

5.3 · Complementary analyses and research papers on key themes in SSA countries.

5.4 · Series of evidence briefs.

5.5 · Events for disseminating complementary analyses and findings.

5.6 · Initial Program Assessment Report.

5.7 · Impact Results Report.

5.8 · Knowledge Sharing Events for disseminating impact evaluation results.

5.9 · Technical Collaborations and Dialogues.

5.10 · CGIAR Staff On-Site Engagements.

5.11 · Hands-On Impact Evaluation Workshops.

OUTCOMES

5.1
5.2
5.1 · WFP programme designs informed by strategic support of CGIAR.

5.3
5.4
5.5
5.2 · Expand the evidence base on priority themes using complementary analyses.

5.6
5.7
5.8
5.3 · Generate new evidence on the causal impact of WFP programmes.

5.9
5.10
5.11
5.4 · Expand the technical and scientific capacity of WFP country program staff through knowledge exchanges.

END-OF-INITIATIVE OUTCOME 1

5.1 ▶ Governments and humanitarian and development partners in at least three conflict-affected situations utilize conflict-sensitive anticipatory action or disaster risk reduction approaches to help prepare for and mitigate compound crises featuring interconnected, conflict, food, land, and water system risks.

END-OF-INITIATIVE OUTCOME 2

5.4 ▶ Humanitarian and/or development stakeholders in three FCASs utilize the Initiative's Climate, Peace and Displacement Partnership and tools and recommendations to inform and integrate fragility, conflict, and migration programming along the humanitarian, development and peace (HDP) nexus.

END-OF-INITIATIVE OUTCOME 3

5.2 ▶
5.3 ▶
5.4 ▶
Governments, UN agencies, or NGOs in at least three FCASs either implement new programming or strengthen gender equality, social inclusion and conflict sensitivity dimensions of existing policies and programming to help improve livelihoods and food security, including for youth, while promoting gender equality in FCASs.

END-OF-INITIATIVE OUTCOME 4

5.4 ▶ Eight local innovators design and deploy, in partnership with CGIAR scientists as part of the initiative grant mechanism, scalable interventions that promote FLWs resilience, peace-building, and/or gender equality in FCAs characterized by abnormally high migration.

Work Package 5 progress against the theory of change

WP5 successfully delivered a comprehensive portfolio and action plan cocreated with WFP, encompassing 29 research activities across 13 African countries focused on three pillars: (1) scaling up disaster risk financing; (2) transforming food systems through sustainable school meals and clean cooking; and (3) supporting smallholder farmers to build production and livelihood resilience. This strategic support to WFP enhanced social protection programming (Outcome 5.1); expanded the evidence-base on priority themes and programs (Outcome 5.2), including evidence on the impact of WFP's interventions (Outcome 5.3); and strengthened analytical partners' capacity (Outcome 5.4).

WP5 research shaped WFP's anticipatory action programming. In Mali, FCM influenced WFP's approach to community engagement within its $1.7 billion Country Strategy Programme (Output 5.3). Research in Southern Africa evaluated the cost-efficacy of anticipatory action initiatives versus post-shock transfers to inform WFP's strategies (Output 5.3). Work in Ethiopia (Output 5.7), Somalia (Output 5.3), and the Sahel region (Output 5.3) identified effective approaches for targeting and integrating social protection with climate change adaptation strategies to enhance resilience (Outcome 5.3).

Additionally, climate security mapping in Mali (Output 5.2) and Kenya (Output 5.2) identified climate hotspots to improve the effectiveness of WFP's resilience interventions. Mapping analyses in Ethiopia's Somali region (Output 5.3) and Nigeria, codesigned with WFP and local partners, informed nature-based resilience strategies and identified water management gaps (Output 5.9). These insights supported flood mapping, program design, and training updates for WFP, partners, and governments (Outcome 5.4). The findings drove tailored interventions and innovative projects, reinforcing data-driven programming for long-term resilience in conflict-affected areas, including refugee and host communities (Outcome 5.3), and

were integrated into WFP's Country Strategy Programme to enhance food and water security in Nigeria (Outcome 5.1).

In collaboration with WFP, WP5 also conducted research on sustainable and planet-friendly home-grown school feeding programs and procurement systems, while also supporting initiatives in Malawi (Output 5.4), Nigeria (Output 5.3), and Tanzania. Complementing these efforts, WP5 partnered with WFP and national stakeholders to conduct reviews (Output 5.2) and impact evaluations of recently introduced livelihood interventions (Outcome 5.3) that support smallholder farmers in building production and livelihood resilience. These included the Economic Inclusion Program in Kenya (Outputs 5.6 and 5.11) and agricultural inputs support intervention in northeastern Nigeria (Output 5.6). Moreover, WP5 adopted the Climate Security Sensitivity Tool to assess the climate sensitivity of WFP's resilience programs in Burkina Faso (Output 5.2) and Mali (Output 5.2). Other studies examined household coping strategies in response to compounded shocks, including political violence, in the Sahel region (Output 5.3).

Other WP5 activities raised global awareness about the complex relationship between conflict and climate change using CGIAR's CSO (Outcome 5.1). WP5 facilitated technical capacity and knowledge sharing arrangements with WFP, including through secondments designed to enhance WFP's regional- and country-level analytical capacity through technical backstopping (Outcome 5.4 and Output 5.10).

The assumptions related to WFP's commitment to support the CGIAR-WFP collaboration (assumption 1) as well as those related to amenable local political conditions (assumptions 2 and 3) proved to be realistic and critical inputs for realizing the outputs and outcomes achieved through WP5.

People displaced by extreme flooding, called the worst in 100 years, travel by cart through a waterlogged village in Bangladesh. A government disaster report stated that more than 3 million people were stranded by the flooding, which also damaged tens of thousands of properties and displaced nearly 200,000 people. Credit: G.M.B. Akash/Panos Pictures

Work Package progress rating summary

WORK PACKAGE	PROGRESS RATING & RATIONALE
0	**On track** WP1 successfully advanced anticipatory action and disaster risk reduction, exceeding expectations—and reported targets—by integrating conflict and migration risks into early warning systems, strengthening governance, and delivering actionable solutions in fragile contexts. Codesigning and coproducing research and analysis with scaling partners was critical to achieving these outcomes, ensuring relevance, uptake, and impact.
1	**On track** WP2 achieved all outputs and outcome targets and related EOIOs as described in the WP progress section of this report. More than three humanitarian and/or development stakeholders were using the WP's tools and recommendations to inform and integrate fragility, conflict, and migration programming along the HDP nexus. This was demonstrated through 33 outcome results for EOIO 2.
2	**On track** WP3 achieved all output and outcome targets and associated EOIOs as described in the WP progress section of this report. the WP achieved three policy changes and other outcomes results for Outcome 3.1 against a target of two. For Outcome 3.2, WP3 achieved 10 policy change and other outcome results against a target of two. This led to exceeding the target of two results in achieving the EOIO, with 12 results. Outputs 3.2 through 3.10 were achieved through the production and dissemination of knowledge products. Outcomes were achieved through the uptake of these knowledge products by partners and stakeholders.
3	**On track** WP4 successfully ran the first SAPA cohort of four innovators. Due to the Initiative ending after 21 months, three additional SMEs were supported through a Bootcamp co-organized with the CGIAR Research Initiative on Diversification in East and Southern Africa. Overall, seven local innovators had their skills developed against a target of eight.
4	**On track** WP5 significantly exceeded its targeted outcome values. For Outcome 5.1, the WP surpassed the target of two by delivering five key policy changes, with CGIAR research directly shaping WFP operations across multiple African countries. For Outcome 5.2, WP5 exceeded the target of one by delivering five policy change outcomes, strengthening resilience strategies and social protection policies. Likewise, for Outcomes 5.3 and 5.4, the WP outperformed expectations with two and three policy change outcomes, respectively, against a target of one each.

Definitions
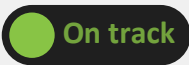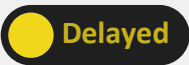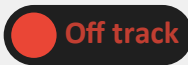
On track	**Delayed**	**Off track**
☑ Progress largely aligns with Plan of Results and Budget and Work Package theory of change.	⚠ Progress slightly falls behind Plan of Results and Budget and Work Package theory of change in key areas.	☒ Progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas.
☑ Can include small deviations/issues/delays/risks that do not jeopardize success of Work Package.	⚠ Deviations/issues/delays/risks could jeopardize success of Work Package if not managed appropriately.	☒ Deviations/issues/delays/risks do jeopardize success of Work Package.

Palestinians in the Gaza Strip gather to receive food supplies at a UNRWA school after some European and North American countries announced the cessation of support for the UN, on 24 January, 2024.
Credit: Anas-Mohammed/Shutterstock

Section 4: **Quantitative overview of key results**

This section provides an overview of results reported and contributed to by the CGIAR Research Initiative on Fragility, Conflict, and Migration from April 2023 to December 2024. These results align with the CGIAR Results Framework and Fragility, Conflict and Migration's theory of change. Further information on these results is available through the CGIAR Results Dashboard.
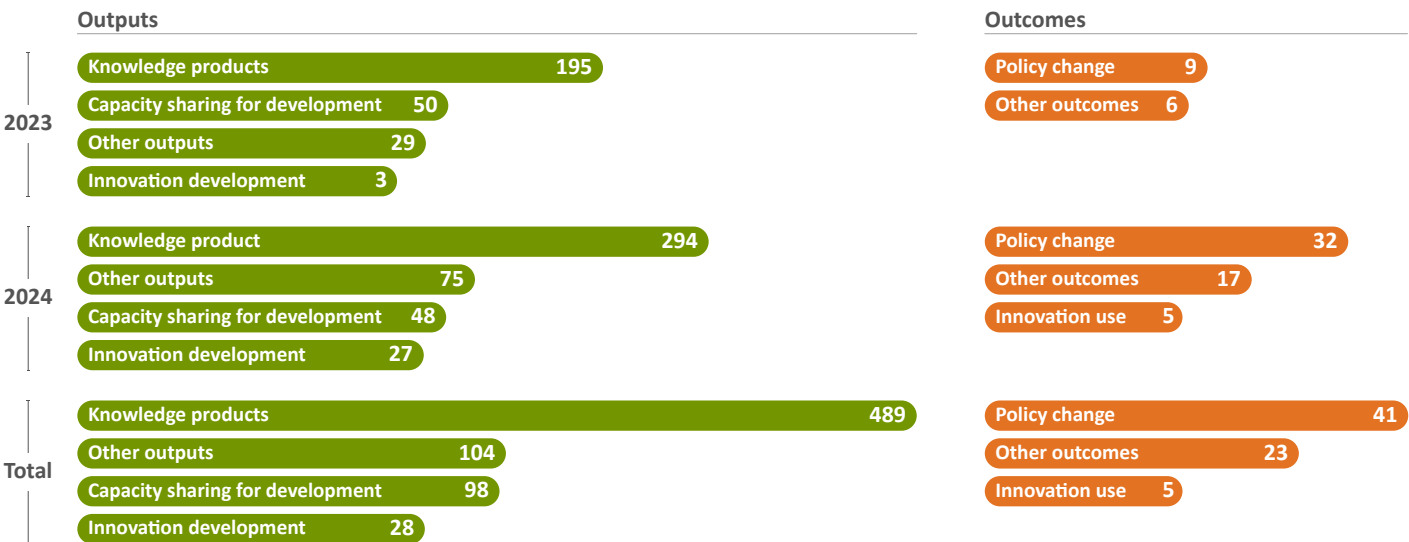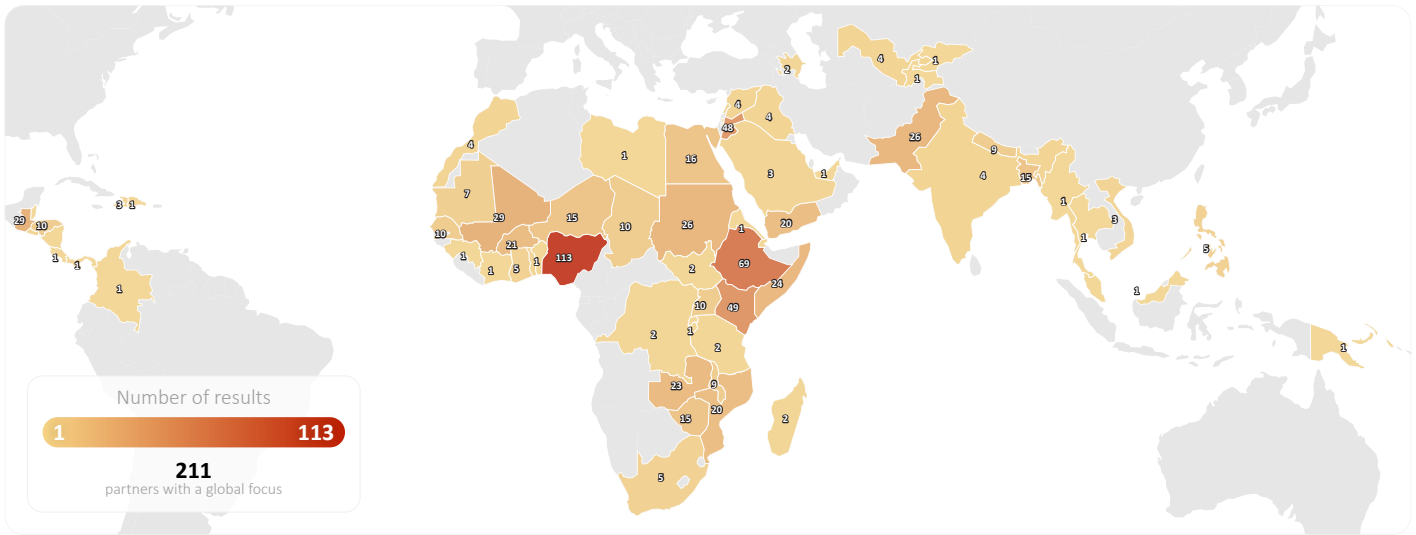
The data used to create the graphics in this section were sourced from the CGIAR Results Dashboard on 8 April, 2025. These results are accurate as of this date and may differ from information in previous Technical Reports. Such differences may be due to data updates throughout the reporting year, revisions to previously reported results, or updates to the theory of change.
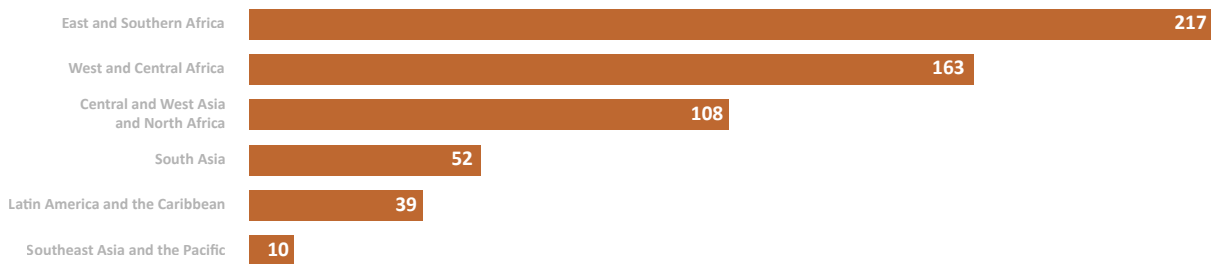
OVERVIEW OF RESULTS PER CATEGORY

Outputs

2023
- Knowledge products — 195
- Capacity sharing for development — 50
- Other outputs — 29
- Innovation development — 3

2024
- Knowledge product — 294
- Other outputs — 75
- Capacity sharing for development — 48
- Innovation development — 27

Total
- Knowledge products — 489
- Other outputs — 104
- Capacity sharing for development — 98
- Innovation development — 28

Outcomes

2023
- Policy change — 9
- Other outcomes — 6

2024
- Policy change — 32
- Other outcomes — 17
- Innovation use — 5

Total
- Policy change — 41
- Other outcomes — 23
- Innovation use — 5

From 2023 to 2024, FCM delivered 790 results, including 489 knowledge products; 98 capacity-sharing outputs, helping strengthen expertise in FCA contexts; 30 innovation development results, fueling new solutions; 104 other outputs capturing extensive stakeholder engagement activities; and 69 outcome results, including four Innovation Packages and 41 policy change outcomes—with 31 at stage one (research uptake by key stakeholders, policy change in progress) and 10 at stage two (policies enacted).

NUMBER OF RESULTS BY IMPACT AREA CONTRIBUTION

Nutrition, health and food security — 790
(73, 327, 390)

Poverty reduction, livelihoods and Jobs — 790
(143, 154, 493)

Gender equality, youth and social inclusion — 790
(285, 121, 384)

Climate adaptation and mitigation — 790
(120, 378, 292)

Environmental health and biodiversity — 790
(30, 354, 406)

- ● **2 = Principal:** Contributing to one or more aspects of the Impact Area is the principal objective of the result. The Impact Area is fundamental to the design of the activity leading to the result; the activity would not have been undertaken without this objective.
- ● **1 = Significant:** The result directly contributes to one or more aspects of the Impact Area. However, contributing to the Impact Area is not the principal objective of the result.
- ○ **0 = Not targeted:** The result has been screened against the Impact Area, but it has not been found to directly contribute to any aspect of the Impact Area as it is outlined in the CGIAR 2030 Research and Innovation strategy.
- ● **Not applicable:** Pertains to 2022 reported results when only information on Gender and Climate impact area tagging was available.

FCM contributed to all five CGIAR Impact Areas, with climate change adaptation and mitigation being the most common Impact Area, followed by poverty reduction, livelihoods, and jobs and gender equality, youth, and social inclusion.

Geographic focus on results

Number of results
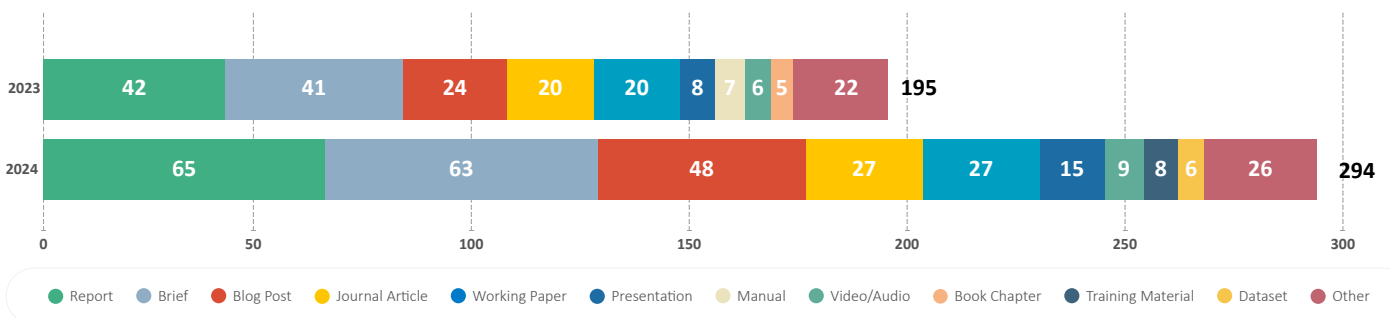
1 — 113

211
partners with a global focus

Notes: Results with a global focus: 211. Countries targeted: Bangladesh, Burkina Faso, Egypt, Ethiopia, Guatemala, Honduras, Jordan, Kenya, Mali, Mozambique, Niger, Nigeria, Pakistan, Somalia, South Sudan, Yemen, Zambia, and Zimbabwe.

OVERVIEW OF RESULTS PER REGION

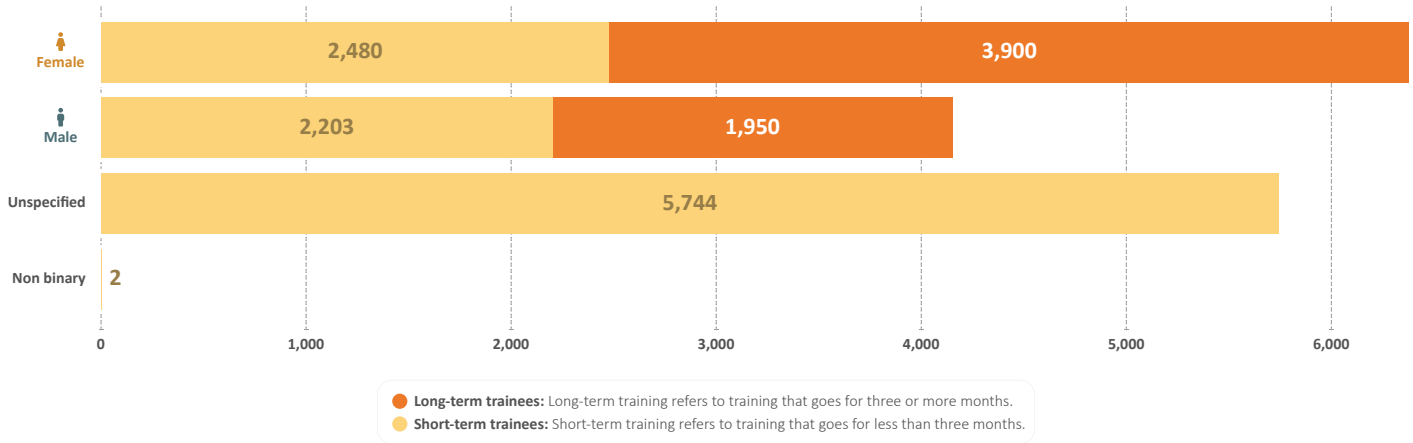|	
East and Southern Africa	217
West and Central Africa	163
Central and West Asia and North Africa	108
South Asia	52
Latin America and the Caribbean	39
Southeast Asia and the Pacific	10

FCM worked across all CGIAR regions, focusing on FCA settings. Most of the work in 2023–2024 focused on East and Southern Africa (217 results), West and Central Africa (163 results), and Central and West Asia and North Africa (108 results), followed by South Asia (52 results), Latin America (39 results), and Southeast Asia and the Pacific (10 results).

KNOWLEDGE PRODUCTS BY TYPOLOGY

2023: 42 | 41 | 24 | 20 | 20 | 8 | 7 | 6 | 5 | 22 — **195**

2024: 65 | 63 | 48 | 27 | 27 | 15 | 9 | 8 | 6 | 26 — **294**

Legend: ● Report ● Brief ● Blog Post ● Journal Article ● Working Paper ● Presentation ● Manual ● Video/Audio ● Book Chapter ● Training Material ● Dataset ● Other
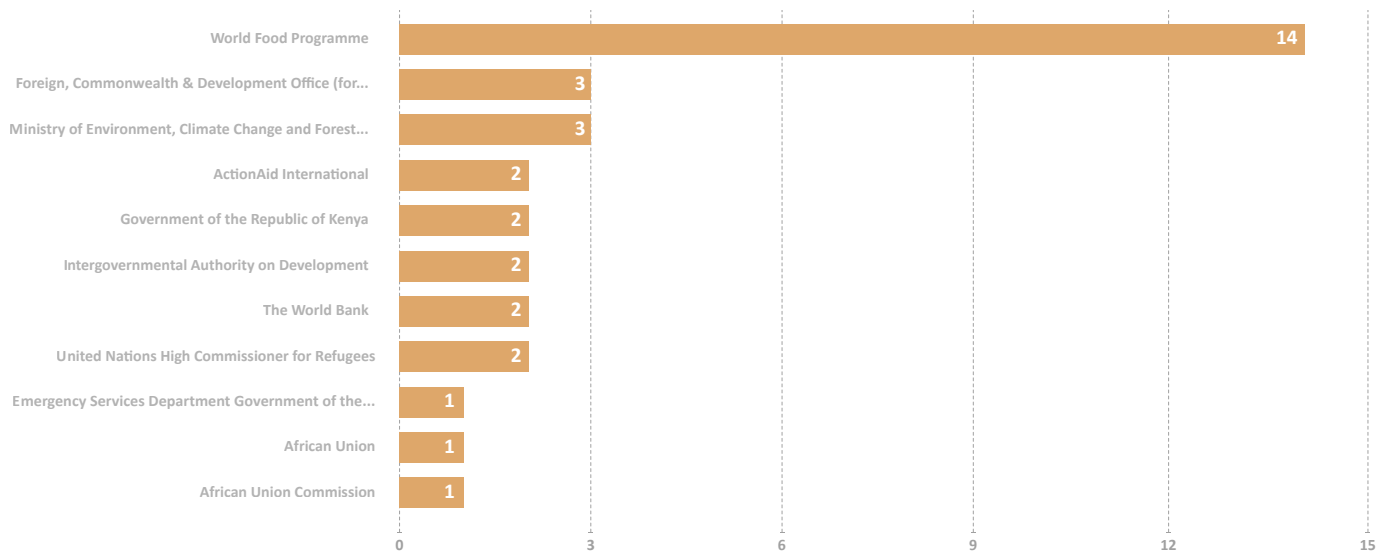
FCM produced 489 knowledge products across 2023–2024, all available in [FCM's curated Research Collection](#). Reports were the most common product (107), followed by briefs (104), blogs (72), journal articles (47), and working papers (47).
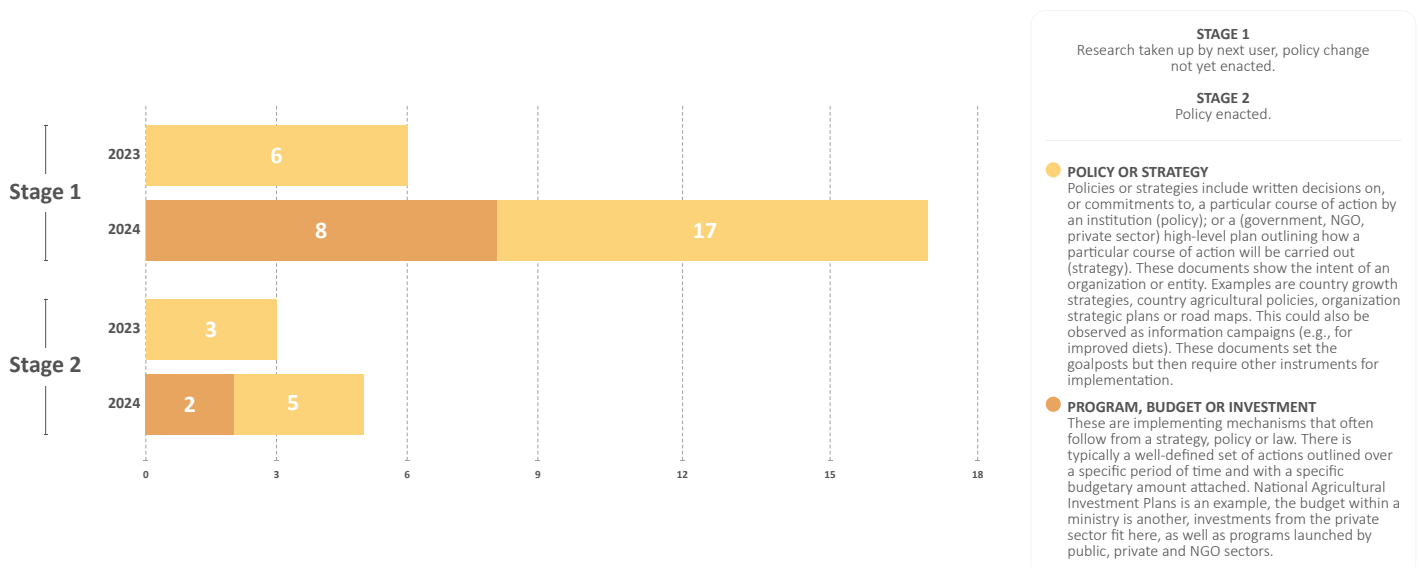
NUMBER OF INDIVIDUALS TRAINED BY THE INITIATIVE

	Short-term	Long-term
Female	2,480	3,900
Male	2,203	1,950
Unspecified	5,744	
Non binary	2	

(Scale: 0 – 6,000)

Long-term trainees: Long-term training refers to training that goes for three or more months.
Short-term trainees: Short-term training refers to training that goes for less than three months.

FCM achieved 98 capacity-building results between 2023 and 2024, collaborated with 139 partners across seven Centers, and trained 16,279 individuals—39.2 percent women, 25.5 percent men, and 35.3 percent of unspecified gender.
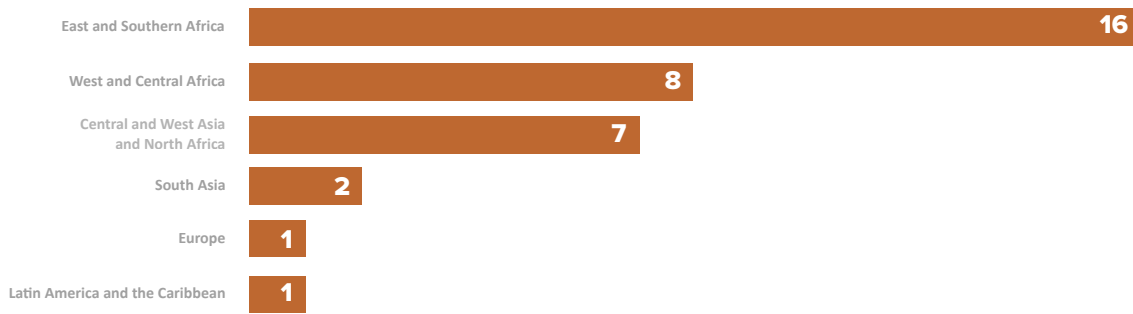
ORGANIZATIONS WHOSE POLICY HAS CHANGED

Organization	Value
World Food Programme	14
Foreign, Commonwealth & Development Office (for...	3
Ministry of Environment, Climate Change and Forest...	3
ActionAid International	2
Government of the Republic of Kenya	2
Intergovernmental Authority on Development	2
The World Bank	2
United Nations High Commissioner for Refugees	2
Emergency Services Department Government of the...	1
African Union	1
African Union Commission	1

(Scale: 0 – 15)

POLICIES BY STAGE AND BY TYPE

Stage	Year	Program, budget or investment	Policy or strategy
Stage 1	2023		6
	2024	8	17
Stage 2	2023		3
	2024	2	5

(Scale: 0 – 18)

STAGE 1
Research taken up by next user, policy change not yet enacted.

STAGE 2
Policy enacted.

● **POLICY OR STRATEGY**
Policies or strategies include written decisions on, or commitments to, a particular course of action by an institution (policy); or a (government, NGO, private sector) high-level plan outlining how a particular course of action will be carried out (strategy). These documents show the intent of an organization or entity. Examples are country growth strategies, country agricultural policies, organization strategic plans or road maps. This could also be observed as information campaigns (e.g., for improved diets). These documents set the goalposts but then require other instruments for implementation.

● **PROGRAM, BUDGET OR INVESTMENT**
These are implementing mechanisms that often follow from a strategy, policy or law. There is typically a well-defined set of actions outlined over a specific period of time and with a specific budgetary amount attached. National Agricultural Investment Plans is an example, the budget within a ministry is another, investments from the private sector fit here, as well as programs launched by public, private and NGO sectors.
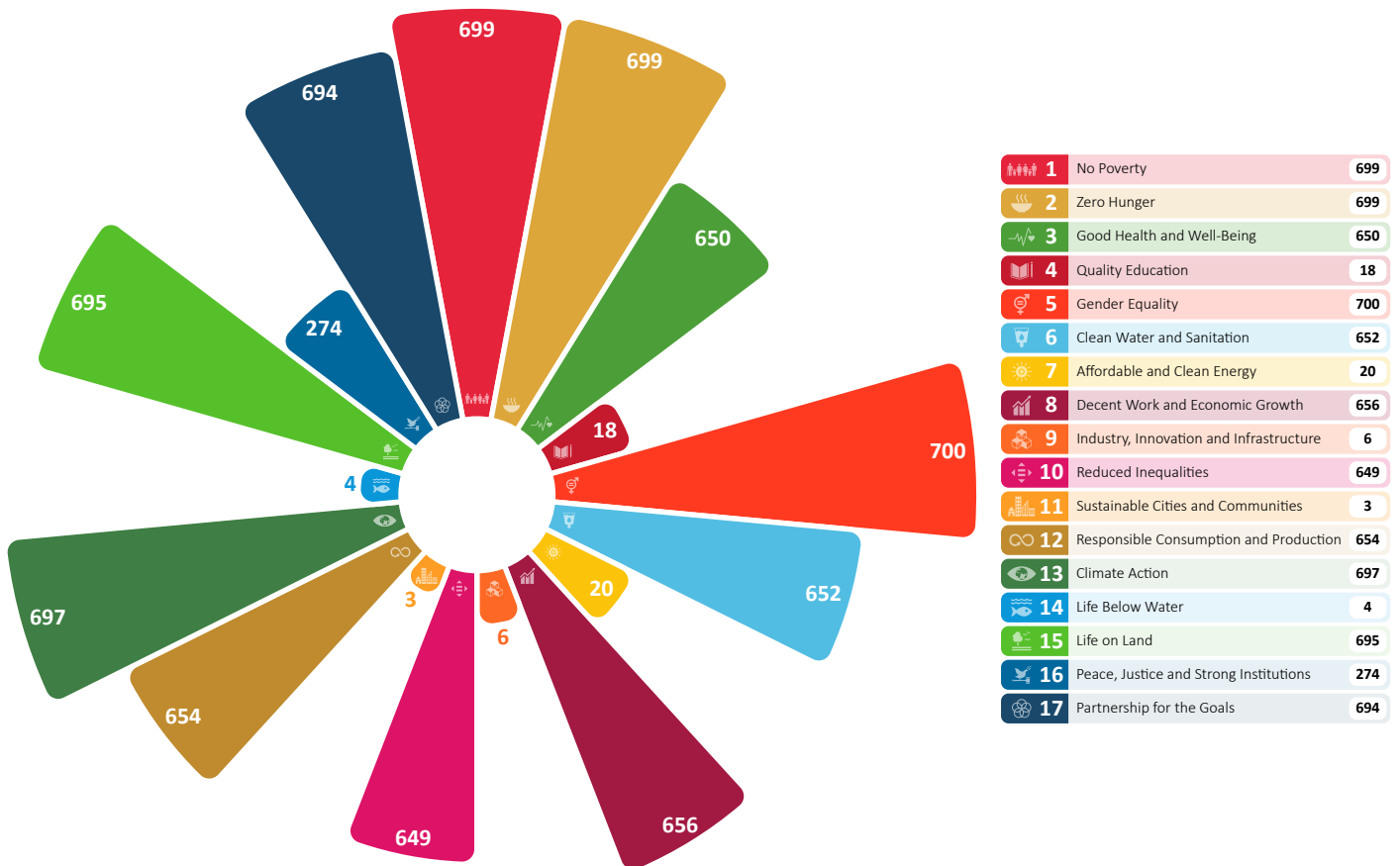
Between 2023 and 2024, FCM's research and innovations directly contributed 41 policy change outcomes—with 10 being programs, budgets, or investments and 31 being policies or strategies themselves. Of these policy change outcomes, 31 were at stage one (research uptake by key stakeholders, policy change in progress) and 10 at stage two (policies enacted). The organization for whom our research informed the largest number of policy changes was WFP.
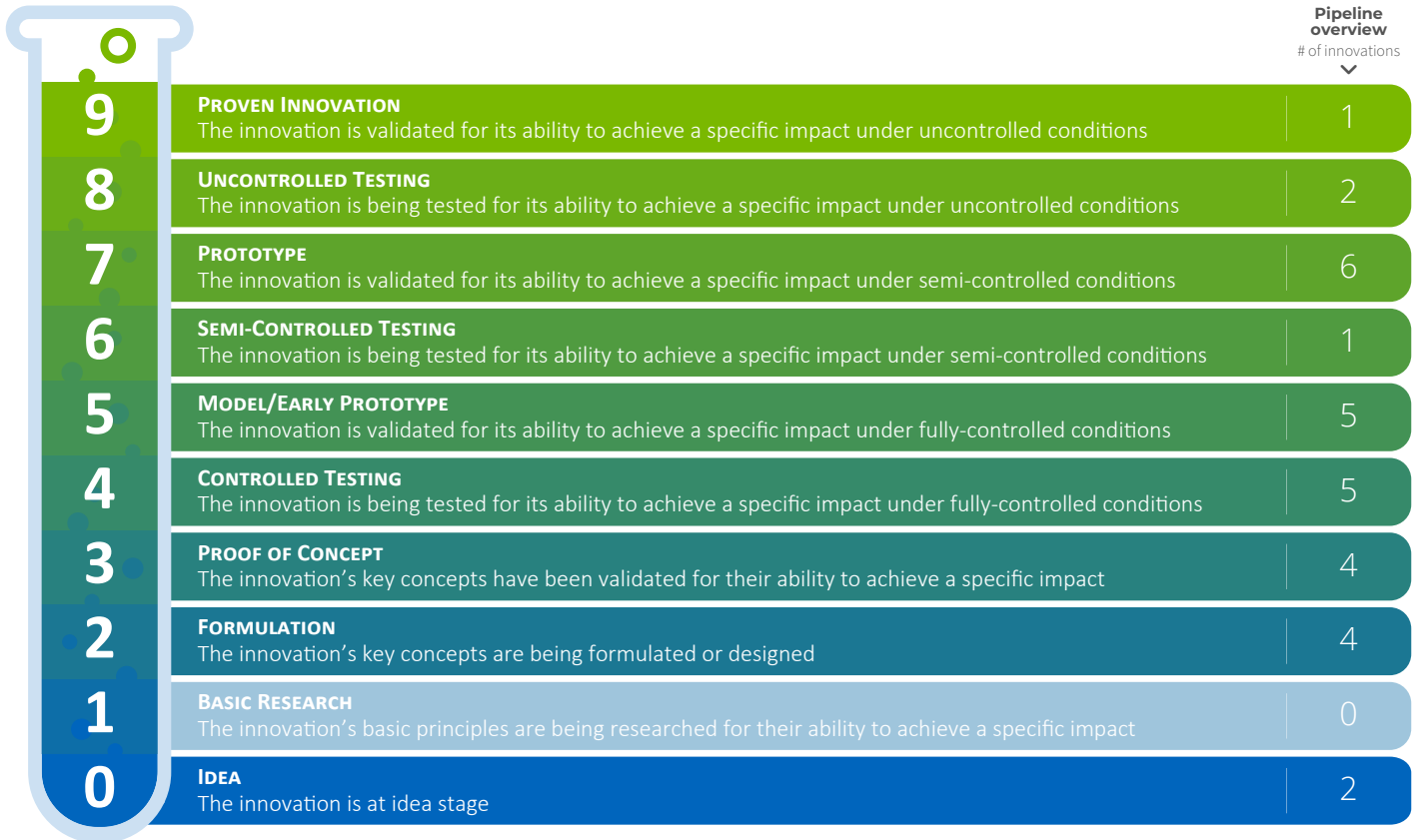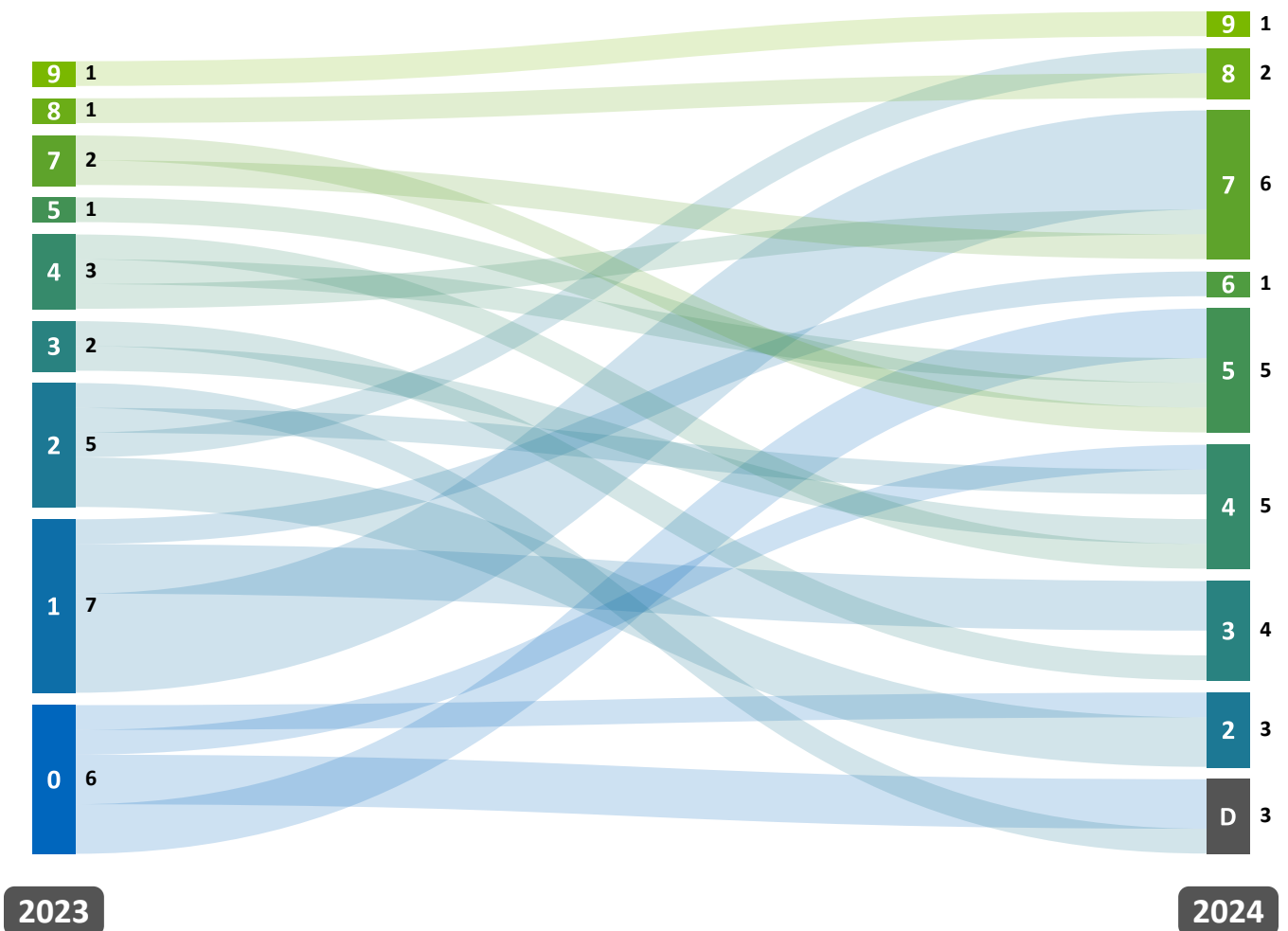
Policies by Region

Region	Policies
East and Southern Africa	16
West and Central Africa	8
Central and West Asia and North Africa	7
South Asia	2
Europe	1
Latin America and the Caribbean	1

Contributions to SDGs

		SDG	Value
	1	No Poverty	699
	2	Zero Hunger	699
	3	Good Health and Well-Being	650
	4	Quality Education	18
	5	Gender Equality	700
	6	Clean Water and Sanitation	652
	7	Affordable and Clean Energy	20
	8	Decent Work and Economic Growth	656
	9	Industry, Innovation and Infrastructure	6
	10	Reduced Inequalities	649
	11	Sustainable Cities and Communities	3
	12	Responsible Consumption and Production	654
	13	Climate Action	697
	14	Life Below Water	4
	15	Life on Land	695
	16	Peace, Justice and Strong Institutions	274
	17	Partnership for the Goals	694

FCM researchers contributed to a broad set of SDGs, with No Poverty, Zero Hunger, Gender Equality, Climate Action, Life on Land, and Partnerships for the Goals being the most critical SDGs targeted.

Number of innovations and their readiness levels

9 — Proven Innovation
The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions — **1**

8 — Uncontrolled Testing
The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions — **2**

7 — Prototype
The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions — **6**

6 — Semi-Controlled Testing
The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions — **1**

5 — Model/Early Prototype
The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions — **5**

4 — Controlled Testing
The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions — **5**

3 — Proof of Concept
The innovation's key concepts have been validated for their ability to achieve a specific impact — **4**

2 — Formulation
The innovation's key concepts are being formulated or designed — **4**

1 — Basic Research
The innovation's basic principles are being researched for their ability to achieve a specific impact — **0**

0 — Idea
The innovation is at idea stage — **2**

Innovations readiness levels progression (2023-2024)

2023

2023 values: 9 → 1; 8 → 1; 7 → 2; 5 → 1; 4 → 3; 3 → 2; 2 → 5; 1 → 7; 0 → 6

2024 values: 9 → 1; 8 → 2; 7 → 6; 6 → 1; 5 → 5; 4 → 5; 3 → 4; 2 → 3; D → 3

2024

9 Proven Innovation · **8** Uncontrolled Testing · **7** Prototype · **6** Semi-Controlled Testing · **5** Model/Early Prototype · **4** Controlled Testing · **3** Proof of Concept · **2** Formulation · **1** Basic Research · **0** Idea · **D** Discontinued

Innovations by typology
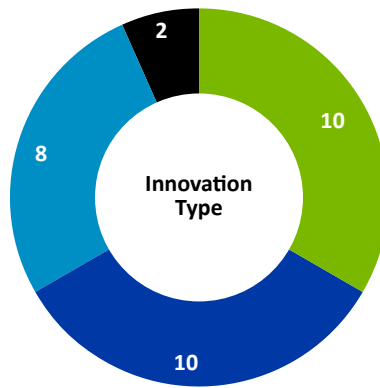
● **TECHNOLOGICAL INNOVATION** Innovations of technical/material nature, including varieties/breeds, crop and livestock management practices, machines, processing technologies, big data, and information systems.	● **POLICY/ORGANIZATIONAL/INSTITUTIONAL INNOVATION** Innovations that create enabling conditions, including policy, legal and regulatory frameworks; business models; finance mechanisms; partnership models; public/private delivery strategies.	● **CAPACITY DEVELOPMENT INNOVATION** Innovations that strengthen capacity, including farmer, extension or investor decision-support services; accelerator/ incubator programs; manuals, training programs and curricula; online courses.	● **OTHER INNOVATION** Unknown or the type does not work for the innovation.

FCM advanced its 30 innovations, most of which moved to the stage of controlled testing, model/early prototype, or higher in 2024. By 2024, eight were already at the prototype or uncontrolled testing stage, and one was at the proven innovation stage. FCM also produced four Innovation Packages in 2024.

Fragility, Conflict and Migration's external partners
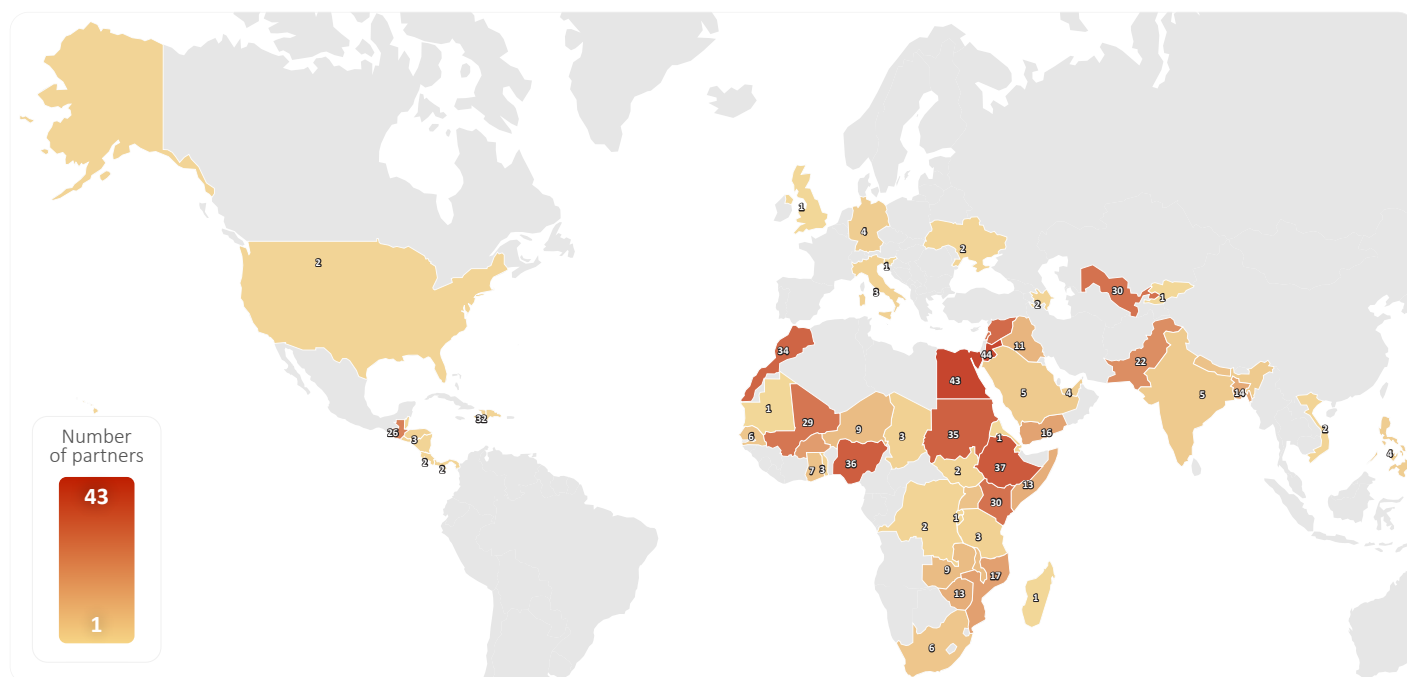
Color legend represents the number of different partners in a specific country which collaborated on results achieved between 2023 and 2024. Data extracted from the Results Dashboard.

Partnerships and Fragility, Conflict and Migration's impact pathways

Partnerships were central to the success of the FCM Initiative, enabling the codesign, implementation, and application of research that drove policy change and investment shifts. Between 2023 and 2024, FCM collaborated with 345 partners—national governments, humanitarian agencies, development partners, and research institutions—across all five WPs to ensure scientific evidence translated into action. These integrative scaling, demand, and innovation partnerships fostered coordinated action across the HDP nexus, supporting transitions away from fragility and conflict and toward long-term resilience.

Strategic role of partnerships in achieving outcomes

FCM's partnerships influenced governance reforms, early warning systems, anticipatory action strategies, conflict-sensitive programming, private-sector innovation, and investment mobilization. Governments and development actors increasingly requested CGIAR research to guide disaster preparedness, migration policies, and resilience programs. By bridging sectors and disciplines, these partnerships ensure resilience-building efforts integrate emergency response with long-term sustainability.

Key partnership highlights (2024)

Work Package 1—Anticipate: Enhancing early warning and disaster preparedness

FCM research strengthened partnerships between governments and humanitarian agencies to reduce disaster impacts through anticipatory action and preparedness strategies. Ethiopia's National Disaster Risk Management Commission applied FCM's climate risk modeling to flood preparedness. In Pakistan, the Provincial Disaster Management Authority integrated gender-responsive disaster risk frameworks. In Zambia, the Disaster Management and

Mitigation Unit adopted FCM's research to inform national disaster preparedness. In Mali, FCM research informed WFP's Country Strategy Programme, integrating anticipatory action to mitigate climate and conflict risks. In Guatemala and Honduras, the MPI helped national governments monitor migration sentiment and adapt policies.

Work Package 2—Bridge: Conflict and emergency response partnerships

Partnerships with WFP led to the integration of the CSO into programming in Mali, Burkina Faso, and Kenya, along with conflict and migration analyses informing resilience strategies. Collaboration with UNHCR addressed displacement challenges in Jordan, Zimbabwe, and Mozambique. The Africa Climate Mobility Academy supported 22 researchers, amplifying African science. SPARC research on farmer-herder conflicts in Sudan, Nigeria, and Mali strengthened understanding of climate-related security risks.

Work Package 3—Stabilize: Strengthening livelihoods and social protection

ActionAid in Nigeria expanded women's advocacy training using FCM's research, empowering conflict-affected communities and the women in them. In Somalia, World Vision applied FCM insights to expand cash transfer programs for IDPs and host communities, ensuring economic resilience strategies were data-driven and sustainable. In Pakistan, local partners integrated FCM's findings on climate-induced migration into NGO programming, helping refine policy interventions supporting at-risk populations.

Work Package 4—Accelerate: Scaling innovations for fragile food systems

FCM fostered partnerships to scale innovations that strengthen food systems in fragile settings, with a focus on private-sector collaboration and investment readiness. SAPA supported scalable resilience solutions, helping enterprises refine their models and attract funding. SAPA participants received investment readiness coaching to expand their impact and integrate resilience-focused technologies into fragile contexts. These partnerships highlight the role of innovation in addressing climate and conflict challenges while ensuring economic sustainability.

- Private-sector partnerships:
  - **Jordan:** Aquaporo's atmospheric water harvesting device
  - Nigeria: Koolboks' solar-powered refrigeration systems
  - **Kenya:** Conflict Forecast's conflict-prediction digital tool

Work Package 5—Learn: Informing humanitarian and development policy

FCM codeveloped 29 research projects across 13 countries with WFP and national governments to support disaster risk financing and resilience-building. Dedicated funding from the Norwegian government enabled direct CGIAR support to WFP programs, strengthening research application in humanitarian settings. In Nigeria, research on water stress in geographies hosting displaced persons informed WFP's Country Strategy Programme, contributing to policy interventions addressing displacement challenges. In Kenya, Ethiopia, and Mali, WFP and governments applied FCM evaluations to refine national social protection policies and anticipatory action strategies, ensuring more effective responses to climate-related risks.

In Mozambique and the Sahel, the Climate Security Sensitivity Tool helped guide climate-adaptive programming and policy decisions.

Impact of collaborative approaches

- **Policy influence:** FCM research informed 43 policy changes, including disaster risk strategies, social protection frameworks, and migration policies.
- **Institutional strengthening:** Government partnerships integrated anticipatory action and resilience strategies into governance structures.
- **Capacity building:** More than 16,000 farmers, policymakers, and humanitarian actors participated in codesigned learning initiatives.

Looking ahead: Sustaining and expanding partnerships

As FCM transitions into the Food Frontiers and Security Science Program, the focus remains on:

- Strengthening engagement with regional climate and disaster risk management platforms
- Expanding national government collaborations to inform policy frameworks and investments
- Scaling codesigned initiatives with humanitarian, development, and private-sector actors

By driving collective action across the HDP nexus, FCM laid the foundation for sustainable resilience, helping communities transition away from fragility and toward long-term stability.
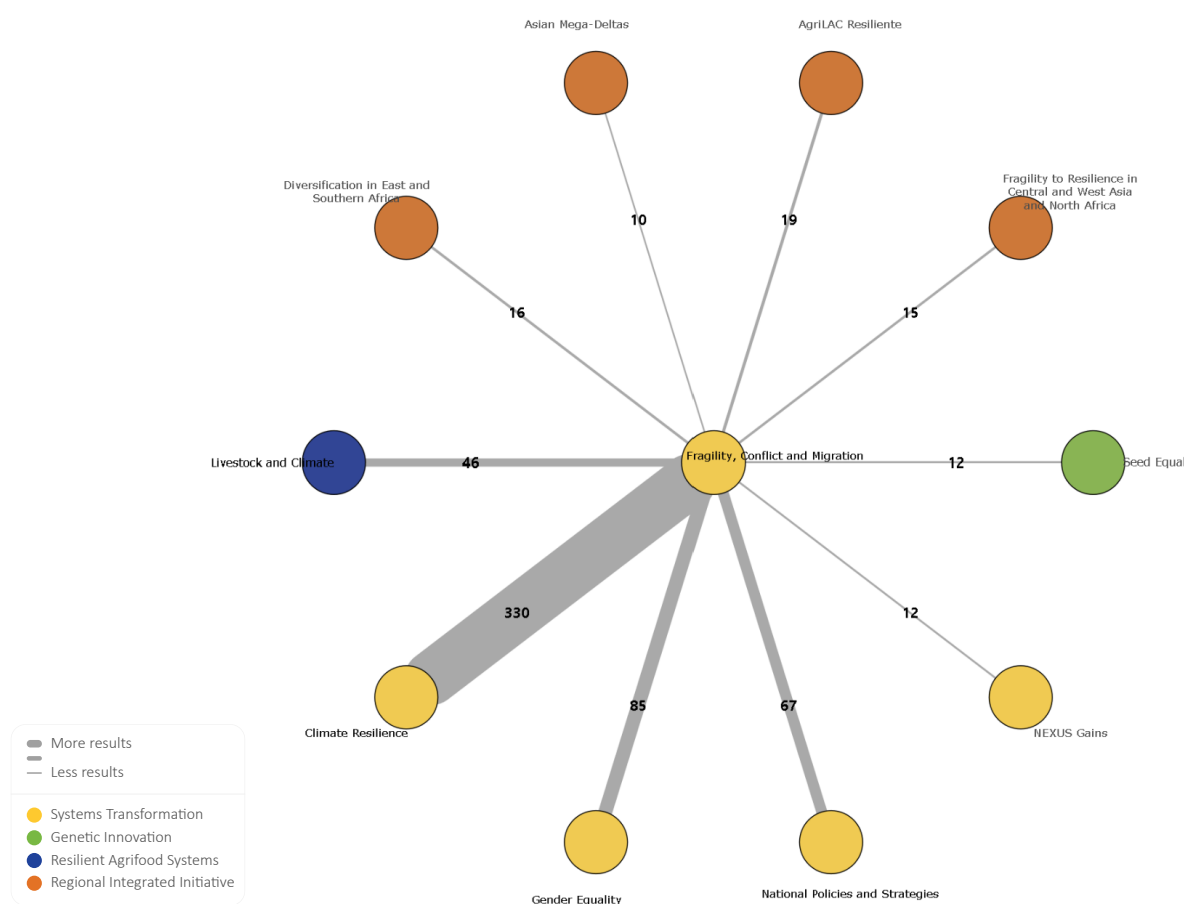
Top 10 partner Typologies by number of results
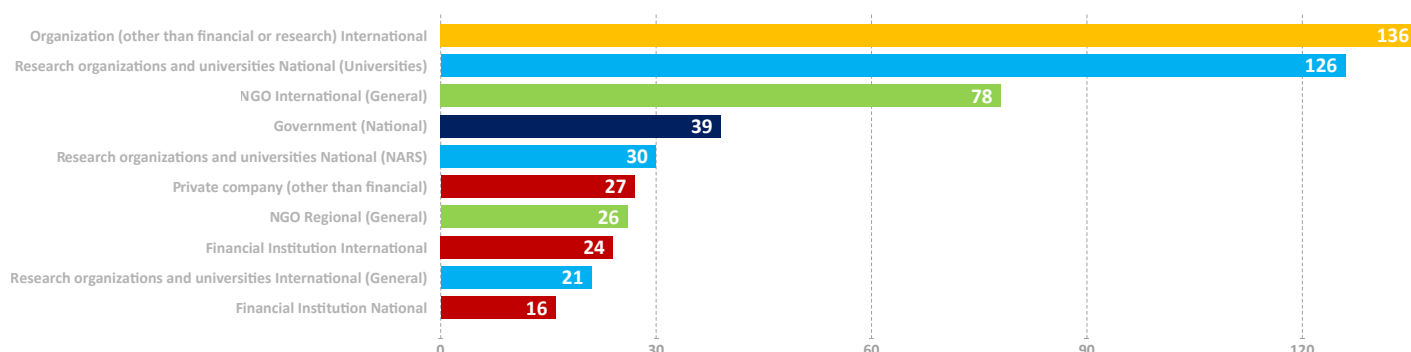
Top 10 contributing partners by number of results
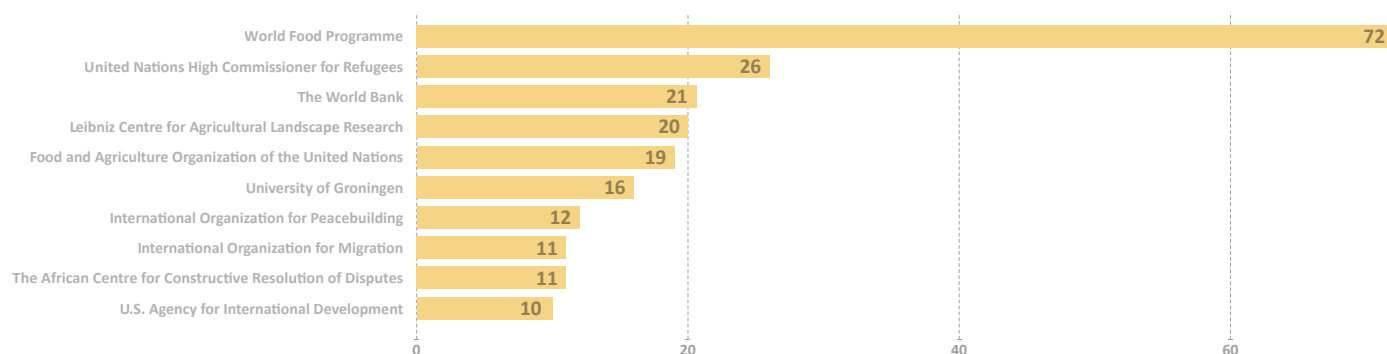
Section 6: **CGIAR Portfolio linkages**

FRAGILITY, CONFLICT AND MIGRATION'S INTERNAL NETWORK OF COLLABORATIONS

The diagram presents the internal collaborations of the FCM Initiative with other CGIAR Initiatives, Impact Area Platforms, and Science Group Projects. Connections are sized according to the number of shared reported results, highlighting the depth of collaboration across the CGIAR Portfolio. A results threshold filter is applied (set to a minimum of 10 results) to focus the view on the most significant collaborations. Thicker lines represent stronger collaborative links based on a higher number of shared results.

Portfolio linkages and Fragility, Conflict and Migration's impact pathways

FCM served as CGIAR's thought leader for work in FCA food systems and displacement contexts, positioning CGIAR on the topic globally and coordinating discourses among partners and other CGIAR Initiatives. For example, with the **National Policies and Strategies Initiative**, FCM co-convened a workshop on fragility bringing together eight CGIAR Initiatives with key public and private-sector stakeholders. With the Gender Equality and Climate Resilience Initiatives, FCM co-convened a three-part webinar and podcast series about the benefits of climate adaptation for peace and security, social protection, and disaster-related displacement, underpinned by a peer-reviewed publication, and submitted a CGIAR pledge to enhance climate resilience of and humanitarian responses to refugees, host communities, and other displaced peoples in FCASs, in support of UNCHR's Global Compact on Refugees framework. FCM organized panel discussions and side events at all three COPs in 2024 and submitted joint proposals with UNHCR on behalf of CGIAR to support Sudan with evidence on fragility and displacement.

FCM and the **Climate Resilience Initiative** worked complementarily: Climate Resilience focused on countries in less-fragile settings and FCM in FCASscountries. FCM additionally contributed expertise on migration and displacement. In 2023, the Initiatives jointly launched the CSO for 12 countries and the Climate Security Programming Dashboard to inform policies, programs, and finance in FCASs. Through the CSO and its evidence, FCM and the Climate Resilience

Initiative jointly informed national strategies in Zambia and Kenya and regional strategies in Central America and the Horn of Africa,. They also informed the operations and policies of UNHCR and WFP—both globally and in specific countries, including Mali, Burkina Faso, Niger, Mozambique, and Jordan.

Collaboration with the **Gender Equality Initiative** strengthened FCM's gender, youth, and intersectional research. The Initiatives codeveloped training manuals (and evaluated these trainings) with ActionAid Nigeria for women and their husbands, and ActionAid subsequently used the manuals to train women and men in areas facing farmer-herder conflicts. Partnering with the Gender Equality Initiative and World Vision, FCM evaluated a program encouraging women to engage in sustainable land management practices in Ethiopia. The Initiatives jointly studied gender and age gaps in women's voice and agency across African countries, ways to ensure anticipatory action programming is gender responsive, and women's aspirations within their communities amid conflict. FCM collaborated extensively on evidence reviews, analyses of country strategies, impact assessments, and dissemination on how social protection influenced women's climate resilience. Together, the Initiatives published a series of webinars on adaptive social protection in the Sahel, Jordan, and India that informed partners' ability to support climate adaptation and reduce poverty.

With the **National Policies and Strategies Initiative**, FCM generated actionable evidence and organized important joint events to inform rehabilitation and rebuilding of livelihoods in conflict-affected communities in Ethiopia. Some of this research sought to evaluate the impact of cash transfers and the targeting of social assistance in FCA settings. These post-conflict data were used to estimate the implication of armed conflict on several household and community-level outcomes.

FCM and the **Livestock and Climate Initiative** collaborated on evidence and solutions to farmer-herder conflict. Working with the FCDO-funded SPARC project, researchers applied a political economy and food production lens in Sudan, Mali, and Nigeria highlighting the multidimensional drivers related to insecurity and poor governance, and how gender dimensions of conflict are largely ignored. FCM also joined forces on a Participatory study using GIS in Isiolo County, Kenya, and highlighted the value of gender-specific knowledge in rangeland resource mapping and conflict resolution.

CGIAR's approach to scaling innovations through accelerator programs reflects a strategic effort to drive transformative change in food systems. FCM's SAPA built on a proven end-to-end methodology for science-based technical support in agribusiness acceleration. Originally conceptualized through the AICCRA Zambia Acceleration Program, this methodology was refined within the CGIAR Food Systems Accelerator and further expanded through the WE4F Innovation Hub. By applying this approach beyond the agribusiness ecosystem, the accelerator extended its impact to FCAs, fostering resilience, stability, and sustainable food systems transformation.

The CGIAR Research Initiative AgriLAC Resiliente and FCM worked closely with the Human Mobility and Climate Change working group in Guatemala on the nexus between climate change, human security, and human mobility. Both Initiatives cohosted the Second and Third Climate Change and Human Mobility National Forums in 2023 and 2024, respectively. At the regional level, the Initiatives supported the update of the Climate Change Regional Strategy led by the Central American Commission for Environment and Development of the Central American Integration System, based on CGIAR's novel climate security conceptual framework documented in a joint study by AgriLAC Resiliente, Climate Resilience, and FCM. This process was also discussed at a side event co-organized during COP28.

FCM also collaborated very productively, but less extensively, with the CGIAR Research Initiatives on Diversification in East and Southern Africa; Asian Mega-Deltas; Fragility to Resilience in Central and West Asia and North Africa; Seed Equal; and NEXUS Gains. Overall, FCM jointly produced research with 29 Initiatives, Impact Platforms, and large-scale CGIAR projects across all Centers.

Truck with migrants. EU Civil Protection and Humanitarian Aid.

CGIAR-WFP Collaboration Strengthens Humanitarian and Resilience Programming in Africa

From early warning systems to conflict-sensitive interventions, CGIAR's partnership with WFP enhanced food security, resilience, and climate adaptation for vulnerable populations.

Children wait for transportation after receiving food donated by the World Food Programme, in Kabul, Afghanistan.
Credit: Free Malaysia Today

Primary Impact Area

Other relevant Impact Areas targeted

Contributing Initiative

Fragility, Conflict and Migration

Contributing Centers

IFPRI · CIAT · IWMI

Contributing external partners

World Food Programme · Government of the Republic of Kenya · University of Bamako

Geographic scope
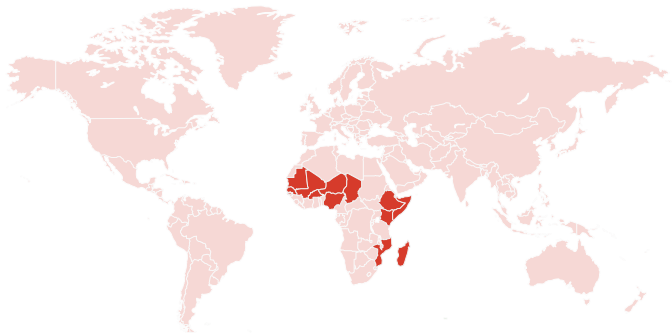
Regions: East and Southern Africa (ESA) · West and Central Africa (WCA)

Countries: Nigeria · Madagascar · Mauritania · Chad · Mozambique · Ethiopia · Mali · Somalia · Kenya · Burkina Faso · Niger · Senegal

CGIAR's partnership with WFP strengthened crisis response by embedding research into humanitarian operations. This collaboration informed anticipatory action, social protection, and climate security strategies by generating actionable evidence. CGIAR's technical expertise shaped resource allocation, refined disaster preparedness, and enhanced resilience-building efforts implemented by the agency. Through codesigned analytical tools and policy insights, the partnership helped WFP optimize responses to crises, benefiting vulnerable communities grappling with conflict and climate-related risks.

As crises grow more frequent, complex, and prolonged, enhancing the effectiveness and integration of response efforts has become increasingly important. Rolling out effective humanitarian response and resilience programs requires partnerships that enable learning, testing, and evaluation of promising innovations and interventions. Bolstered by decades of collaboration between CGIAR and WFP, a generously funded partnership initiative was launched in 2023. CGIAR and WFP staff cocreated research priorities and a plan of action, which led to solutions, codesigned alongside key stakeholders, ensuring actionable research tailored to the needs and priorities of WFP and local partners. Linking CGIAR research with ongoing operations informed the design of anticipatory action initiatives, social protection responses, and climate security interventions in sub-Saharan Africa.

Strengthening anticipatory action

Through FCM, CGIAR's direct technical and analytical support informed WFP's crisis response strategies, shifting from reactive post-emergency aid to proactive pre-shock interventions that enhance food security and disaster preparedness efforts. These efforts deepened the evidence base for anticipatory action initiatives in vulnerable regions, generating direct practical evidence on gender-responsive anticipatory action. Through conceptual and empirical cost-effectiveness analysis, CGIAR supported WFP to identify optimal resource allocation across anticipatory and post-emergency responses as well as complementary responses to improve the effectiveness of anticipatory initiatives such as early warning systems. CGIAR also provided technical support to assess water and climate vulnerabilities among refugee-hosting communities. In Nigeria, research focused on water system vulnerabilities in conflict-affected areas by identifying risks related to water availability and quality. In Ethiopia, CGIAR analyzed climate variability and water access challenges, integration of nature-based solutions in resilience and food security programs, knowledge and skill gaps in water resources management, and tools for flood mapping and management in drought-prone areas. Related research, now integrated into WFP's

Mali Country Strategy Programme, informed anticipatory action programming.

Informing programming

FCM's research enhanced WFP's social protection strategies and school feeding programs across diverse contexts. CGIAR's work in Somalia provided critical insights to the Baxnaano safety net program, ensuring the program's next phase is grounded in data-driven decision-making. The partnership refined WFP's approach to social protection and shaped the design of nutrition-sensitive interventions benefiting 1.2 million individuals, including 200,000 women. In Kenya, CGIAR, WFP, and the Kenyan government collaborated to evaluate the impact of their economic inclusion program. CGIAR and WFP ensured that the evaluation design was feasible and addressed important evidence gaps, including those related to program sustainability and impact durability. Related work in Ethiopia and the Sahel region identified effective ways of targeting and integrating social protection and climate change adaptation strategies.

Advancing climate security

Alongside WFP and other stakeholders, FCM codesigned analytical tools that enhanced understanding of climate and conflict vulnerabilities. Through the Climate Security Observatory and the Climate Security Sensitivity Tool (CSST), the CGIAR-WFP partnership provided actionable evidence to inform WFP's programs and climate investments to ensure interventions were effectively targeted and conflict-sensitive. CGIAR identified climate security hotspots in Mali and Kenya, helping WFP enhance resilience interventions and emergency preparedness. By applying the CSST in Burkina Faso and Niger, CGIAR assessed WFP's Community-Based Participatory Planning approach and the Foreign Policy Instrument Nexus Project. In Mozambique's Cabo Delgado province, CGIAR worked closely with WFP and the government of Mozambique to characterize the complex climate-conflict nexus and codesign environmental peace-building solutions addressing root causes of fragility.

Overall, integrating CGIAR research into operational planning strengthened WFP's capacity to implement proactive, data-driven interventions that safeguard vulnerable populations from conflict- and climate-induced shocks. FCM's support facilitated technical capacity and knowledge-sharing arrangements with WFP, including through secondments of CGIAR scientists who offered technical backstopping to WFP regional and country offices.

Link to all 2023 and 2024 Key Result Stories posted to the Fragility, Conflict and Migration website.

> We are really proud of this partnership with CGIAR, and also the support we are getting from NORAD ... This research program demonstrates that when researchers and implementers come together to analyze, to generate, and to apply evidence in real time, we create adaptable and impactful partnerships capable of addressing most of the urgent challenges that we see today.'
>
> Arif Husain, Chief Economist, World Food Programme

2022 key result story

CGIAR Secondments Strengthen WFP's Technical and Scientific Capacity in the Subsaharan Africa

2023 key result story

Strengthened Kenya's Social Protection Policies Through Evidence-Based Collaboration

CGIAR Research Initiative on

INITIATIVE ON
**Fragility, Conflict,
and Migration**

CGIAR