CGIAR | INITIATIVE ON Market Intelligence

Women in rural Bihar in India participating in an activity to identify gendered rice trait preferences.

Credit: Melanie Connor, IRRI

CGIAR Research Initiative on **Market Intelligence**

Annual Technical Report 2024

Author: CGIAR Research Initiative on Market Intelligence

Title: Annual Technical Report 2024: CGIAR Research Initiative on Market Intelligence

Suggested citation: CGIAR Research Initiative on Market Intelligence. 2025. Annual Technical Report 2024: CGIAR Research Initiative on Market Intelligence. Montpellier, France: CGIAR System Organization. https://hdl.handle.net/10568/174112

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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.

Acknowledgements

This work is part of the CGIAR Research Initiative on Market Intelligence. We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund: https://www.cgiar.org/funders.

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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.

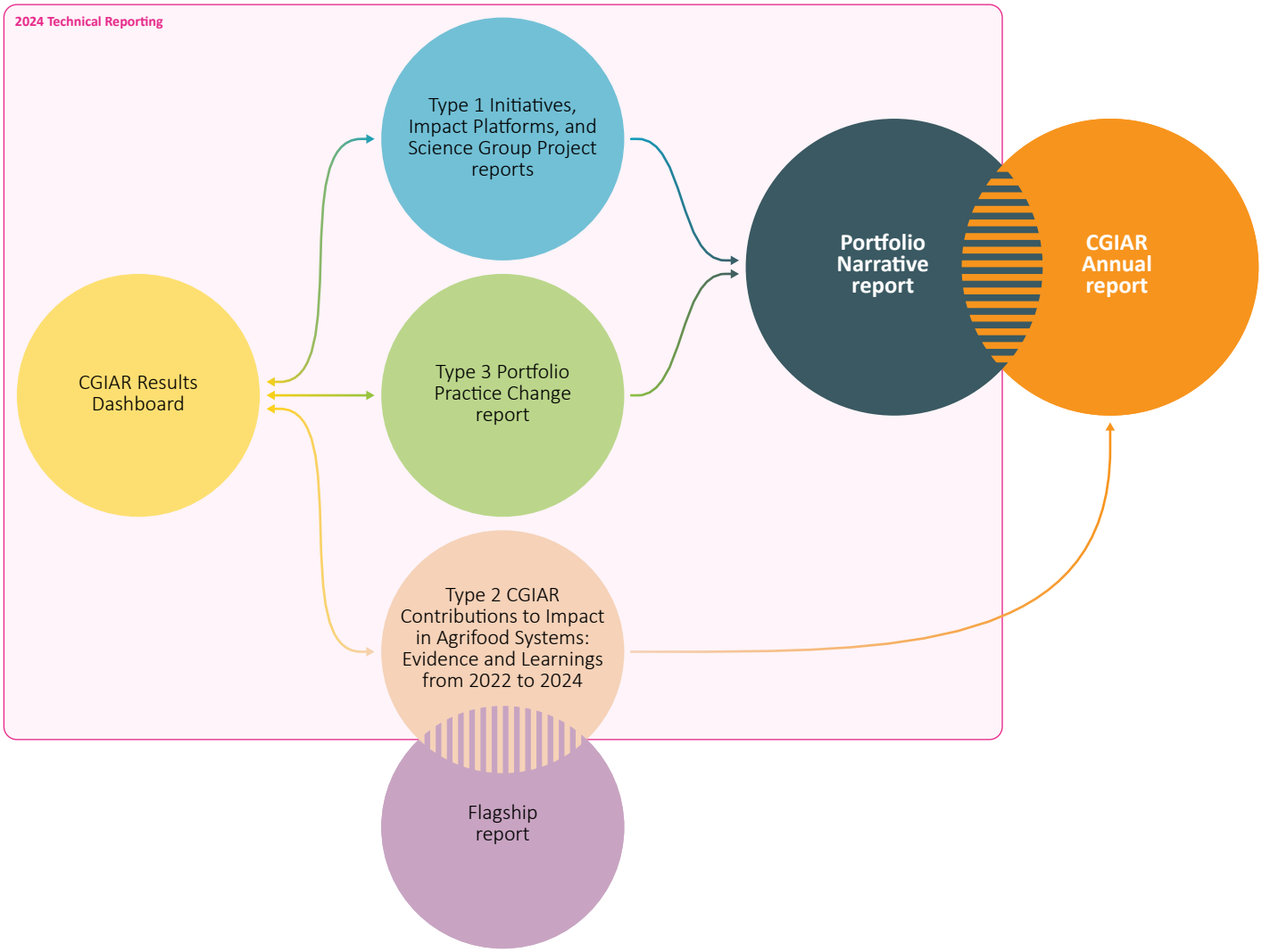

Figure 1. CGIAR's 2024 Technical Reporting components and their integration with other CGIAR reporting products.

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

Initiative name	Market Intelligence
Initiative short name	Market Intelligence
Initiative Lead	Matty Demont (m.demont@cgiar.org)
Initiative Co-lead	Vivian Polar (v.polar@cgiar.org)
Science Group	Genetic Innovation
Start – end date	01 January 2022 – 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** Burkina Faso · Burundi · Cambodia · Colombia · Côte d'Ivoire · Ethiopia · Ghana · India · Kenya · Lao People's Democratic Republic · Madagascar · Nigeria · Peru · Rwanda · Thailand · The Socialist Republic of Viet Nam · Uganda · United Republic of Tanzania
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
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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/market-intelligence/

[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 Market Intelligence (2022–2024) aimed to institutionalize market intelligence, develop transdisciplinary approaches for breeding decisions, strengthen partnerships with global stakeholders, and ensure gender-responsive breeding strategies that address equity gaps in agricultural innovation. The Initiative played a pivotal role in advancing data-driven decision-making, market intelligence integration, and institutional scaling within CGIAR breeding networks. The Initiative strengthened breeding programs, informed investment decisions, and developed innovative tools to enhance the impact of genetic innovations across multiple regions. Concluding its three-year cycle (2022–2024), the Initiative achieved significant milestones, enhancing knowledge-sharing platforms and scaling tools, and influencing breeding investments globally.

Progress on the theory of change: Investment decisions in genetic innovation have often been supply driven, misaligned with the needs of smallholders, consumers, and agro-industry. To address these gaps, Market Intelligence (MI) developed strategic frameworks integrating market intelligence into crop breeding, resulting in improved alignment of genetic innovations with societal, economic, and environmental needs.

Key outcomes:

1. Institutional standards and intelligence sharing: National Agricultural Research and Extension Systems (NARES) and CGIAR partners adopted standardized methodologies for market intelligence and behavioral research. These approaches streamlined target product profile (TPP) design, ensured demand-driven breeding, and introduced innovative tools such as the Tricot approach, participatory foresight analysis, and the Global Market Intelligence Platform (GloMIP).
2. Investment decisions using intelligence: MI's frameworks, including GloMIP's Impact Opportunities portal, enabled focused investment in high-priority breeding pipelines aligned with five CGIAR Impact Areas. The CGIAR Research Initiative on Accelerated Breeding utilized MI data to allocate resources effectively.

3. Behavioral intelligence in seed systems: Behavioral studies informed strategies such as crop insurance bundling and gender-responsive seed promotion models. These findings accelerated varietal adoption and turnover across multiple geographies.
4. Transdisciplinary collaboration for TPP design: Approximately 90 percent of TPP teams were multidisciplinary, fostering inclusive decision-making processes. Gender-responsive protocols enhanced alignment with diverse stakeholder needs.

Work Package (WP) contributions:

1. WP1 on Market Intelligence developed the Seed Product Market Segment Database, hosted by the Breeding Portal and GloMIP, and expanded segmentation for 25 CGIAR crops. Tools such as video-based concept testing and the Investment Game Application (IGA) enabled farmers to co-create future varieties. Gendered approaches were also employed to identify trait preferences of women and marginalized groups.
2. WP2 on TPP Design pioneered transdisciplinary approaches to product design, integrating gender, nutrition, and climate considerations.
3. WP3 on Behavioral Intelligence tested innovative strategies for increasing varietal adoption and turnover, while highlighting challenges faced by women in seed agripreneurship.
4. WP4 on Pipeline Investment Cases focused on impactful innovations such as biofortification, low glycemic index rice, and processing potato traits. Platforms such as GloMIP enhanced evidence-based investment decisions.
5. WP5 on Institutional Scaling and MELIA advanced gender-intentional breeding frameworks, integrating market intelligence into institutional strategies.

Impact Pathways and Partnerships: The Initiative fostered collaboration with NARES, nongovernmental organizations (NGOs), private-sector actors, and global institutions. Partnerships with organizations such as CIRAD and World Vegetable Center (WorldVeg) strengthened scaling efforts, aligning genetic innovation with megatrends and Impact Areas such as climate adaptation, gender equity, and poverty reduction. MI coordinated with other CGIAR programs and Initiatives for strategic collaboration and co-delivery of program results delivery. Most of the complementation was with the Genetic Innovation Science Group and Science Group Projects. Over three years, MI published 468 TPPs and 21 Market Intelligence Briefs, and conducted 151 capacity-building activities.

Key achievements:

- Inclusive breeding pipelines addressing economic and nutritional needs across Impact Areas.
- Gender-responsive frameworks ensuring equitable representation and benefit distribution.
- Innovative tools and strategies promoting sustainable, demand-driven agricultural outcomes.

Challenges and recommendations: While MI achieved significant progress, challenges remain in scaling efforts and integrating behavioral insights into breeding pipelines. Strengthening linkages with CGIAR Science Programs and Accelerators such as Better Diets and Nutrition, Sustainable Farming, and Policy Innovations will be essential for future growth.

Conclusion: MI effectively reshaped genetic innovation strategies within CGIAR, ensuring inclusivity and alignment with market demands. By addressing equity gaps, promoting stakeholder collaboration, and leveraging cutting-edge tools, MI advanced sustainable agricultural development globally.

	2022	2023	**2024**
PROPOSAL BUDGET	$10.00M	$13.00M	**$16.00M**
APPROVED BUDGET [1]	$7.50M	$6.73M [2]	**$7.71M** [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

- Investment decisions in CGIAR's genetic innovation systems are often supply-driven and potentially out of sync with the demands of smallholders, consumers, and the agro-industry. While genetic innovation yields high returns on investment, these returns tend to fall below potential. Mismatched investments hinder efforts to address key Impact Areas such as gender equality, climate adaptation, and nutrition.
- The adoption of CGIAR-developed crop varieties has been slow, as shown by their high average age in the field. Farmers are often uninformed about new varieties and hesitant to adopt them. Small-scale seed businesses lack incentives to promote new varieties due to weak demand and instead focus on established ones. Little is known about the institutional and behavioral factors influencing varietal replacement, including the roles of traders, processors, and consumers.
- There is a need for demand- and data-driven processes to guide genetic innovation, but these efforts are fragmented within CGIAR. Current product profiles are focused on agronomic and stress tolerance traits, with insufficient attention to traits that impact social outcomes such as gender equality and social inclusion, and nutrition.
- To address this issue, greater collaboration is needed among social scientists, geospatial scientists, nutritionists, and breeding networks to provide relevant market intelligence. Market intelligence refers to strategic information about future crops, market segments, and trait priorities that are aligned to producer and consumer preferences and can inform product profiles, investment decisions, and seed system strategies. Given the long timeline of plant breeding, product profiles must anticipate future trends in markets, policies, climate, and societal needs. However, CGIAR breeding programs lack institutional processes to integrate transdisciplinary teams in product profiling, which is essential as they increasingly focus on upstream research.

SPHERE OF **CONTROL**

Work Packages

Work Package 1

Market Intelligence.

Work Package 2

Target Product Profile Design.

Work Package 3

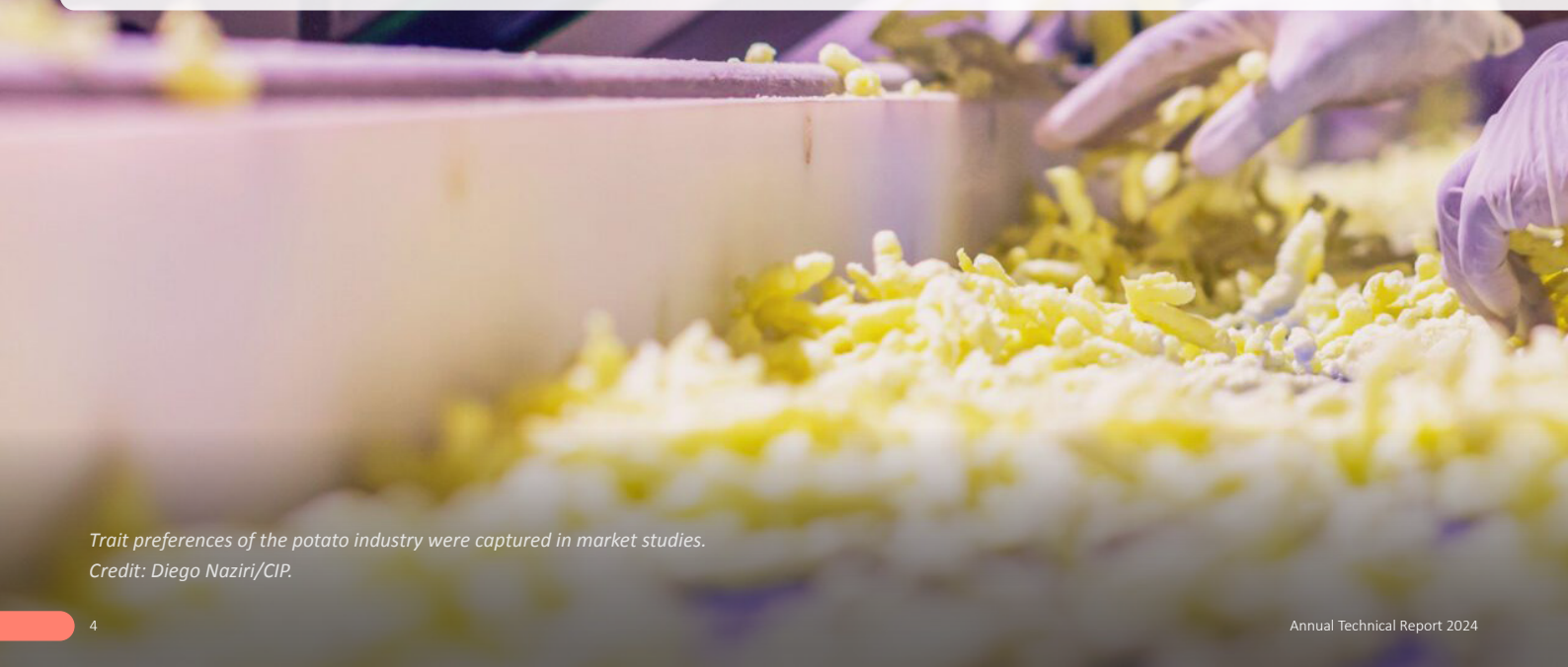
Behavioral Intelligence.

Work Package 4

Pipeline Investment Cases.

Work Package 5

Institutional Scaling and MELIA.



Trait preferences of the potato industry were captured in market studies.
Credit: Diego Naziri/CIP.

SPHERE OF **INFLUENCE**

End-of-Initiative Outcomes

End-of-Initiative Outcome 1

2 3 4 CGIAR and national partners share institutional standards & market and behavioral intelligence.

End-of-Initiative Outcome 2

4 Research leaders and investors make investment decisions in genetic innovation using GloMIP and the Investor Dashboard.

End-of-Initiative Outcome 3

1 3 Seed industry and NGOs use market and behavioral intelligence.

End-of-Initiative Outcome 4

1 2 3 5 3 Transdisciplinary teams across CGIAR and partners co-implement market and behavioral intelligence and co-design of target product profiles.

Action Area Outcomes

Genetic Innovation

2 4 **1** · CGIAR-NARS-SME networks use market segments, target product profiles to orient variety development and deployment towards those that provide larger scale benefits across the 5 Impact Areas.

1 2 **2** · 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** · Integrated seed systems increase the quantity of quality seed of improved varieties available to farmers for priority crops and in selected countries, geographies, and market segments.

SPHERE OF **INTEREST**

Impact Areas

Nutrition, Health & Food Security

1 2 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 2 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 2 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

1 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

1 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.

The Market Intelligence Initiative's representatives from CGIAR Centers and NARES in Eastern and Southern Africa conducted a visit and interview with a private seed company in Zimbabwe to determine how they use tools and market research information in their operation.

Credit: CIMMYT, Zimbabwe

Summary of progress against the theory of change

The evolving complexity of megatrends demands (1) generating and integrating market intelligence across multiple dimensions and (2) delivering it in a user-focused manner. To address this, the Initiative on Market Intelligence established transdisciplinary teams to drive institutional transformation (End of Initiative Outcome [EOIO] 4) from the ground up within Genetic Innovation. The CGIAR Initiative made significant strides in advancing its theory of change during the 2022–2024 cycle. Across its five Work Packages (WPs), the Initiative institutionalized market intelligence, developed behavioral insights, promoted transdisciplinary collaboration, enhanced breeding pipelines through TPPs, and focused on inclusivity, sustainability, and alignment with CGIAR's Impact Areas.

The Initiative reinforced institutional capacity for market intelligence among CGIAR Centers and NARES (**EOIO 1: CGIAR and national partners share institutional standards and market and behavioral intelligence**). This was evident in efforts such as the Tricot approach piloted by IITA and NARES , simplifying evaluation processes for roots, tubers and bananas in Nigeria. Moreover, foresight analysis was employed to predict market segment shifts influenced by megatrends such as climate change and urbanization. Twenty-one Market Intelligence Briefs (MIBs) were published, integrating standardized methodologies into CGIAR-NARES knowledge systems. These methodologies ensured market-driven decisions informed TPP design and varietal acceptance.

MI aligned CGIAR-NARES-SME networks with CGIAR's five Impact Areas, steering pipelines toward funded high-priority market segments (**EOIO 2: Research leaders and investors make investment decisions in genetic innovation using GloMIP and the Investor Dashboard**). Approximately 40 percent of global Impact Opportunities now receive funding, illustrating strategic decision-making. Tools such as GloMIP supported prioritization, demonstrated by the Accelerated Breeding Initiative's pooled funding allocation using its 13-step process. External investments, including from the Swedish Research Council, strengthened breeding programs such as barley in Ethiopia, demonstrating success in combining market intelligence with transdisciplinary collaboration.

Behavioral intelligence findings shaped industry strategies, such as promoting early-maturing maize seeds and bundling crop insurance to de-risk farmer investments (**EOIO 3: Seed industry and NGOs use market and behavioral intelligence**). Seed system actors in Uganda emphasized consumption-related traits, aligning breeding priorities with real-world requirements . Meanwhile, gender-responsive insights revealed barriers to women-led agripreneurship, highlighting areas for advocacy and improvement.

Transdisciplinary collaborations catalyzed efficient, inclusive breeding programs (**EOIO 4: Transdisciplinary teams across CGIAR and partners co-implement market and behavioral intelligence and co-design of TPPs**). Social scientists, gender specialists, and external NARES collaborators helped define and prioritize traits across TPPs, focusing on inclusivity and alignment with Impact Areas. As an example, Uganda's National Agricultural Research Organisation (NARO) partnered with IFPRI to integrate market intelligence into its research programs, fostering equitable outcomes .

WP1 on Market Intelligence developed the Seed Product Market Segment Database and contributed to the GloMIP developed by WP4. Segmentation criteria were refined for 25 CGIAR crops and two WorldVeg crops, supporting evidence-based breeding conversations. Market studies for nonfood crops (such as forage and biofuel) were also carried out. Tools such as the IGA enabled farmer co-creation in product design, integrating preferences such as biotic stress tolerance and grain quality traits. Market researchers identified industry and consumer trait preferences, as well as those of women and marginalized groups (rice, potato, sweet potato).

WP2 on Target Product Profile Design emphasized inclusive TPPs by engaging regional Product Design Teams (PDTs), exemplified by maize actor collaboration in Ghana and Nigeria. Knowledge products ranged from systematic reviews to studies on regulatory barriers, gendered food profiles, and climate resilience in agrifood systems. The gendered frameworks advanced equitable breeding decisions . For instance, Kenya's table potato study revealed adoption barriers due to gender inequities, prompting mitigation strategies.

To test the behavioral conditions required for adoption of products by farmers and consumers, **WP3 on Behavioral Intelligence** implemented an innovative transdisciplinary collaboration that coordinated a unique meta experiment across six sites and five countries between CGIAR Centers and partners, involving NARES and private sector actors. As a result of sharing behavioral intelligence, NARES started prioritizing market intelligence and behavioral science in research-for-development, and several partners across the six sites expressed a greater willingness to use innovative strategies for promoting new products and varieties.

WP4 on Pipeline Investment Cases contributed 15 knowledge products, pioneering biofortification and crop suitability models. It developed tools such as GloMIP and the Investor Dashboard (models available internally, projected benefit indicators available publicly in Impact Opportunities portal) to align breeding investments with Impact Areas. Pipeline investment cases in biofortification and low-glycemic rice demonstrated potential for addressing malnutrition and global health concerns. Collaborative observatories for crops such as beans and cassava, alongside GloMIP's adoption across CGIAR Centers, ensured impactful innovations in breeding decision-making.

WP5 on Institutional Scaling and MELIA advanced market-intelligence integration and participatory breeding frameworks. Studies analyzed barriers to market-driven innovation, emphasizing behavioral shifts for inclusive breeding practices. Similarly, an experimental study to understand how market intelligence influences investment in breeding pipelines found that it can lead to more concentrated investments in the most promising pipelines. A pilot protocol for gender-intentional TPP development was developed in collaboration with FairTrade. Institutional change supported transdisciplinary approaches, focusing on power dynamics and biases. WP5's outputs positioned CGIAR as a leader in equitable and sustainable genetic innovation.

In conclusion, the 2024 Annual Report underscores the CGIAR Research Initiative on Market Intelligence's impactful contributions to its theory of change. By institutionalizing standardized methodologies, prioritizing gender-intentional approaches, and fostering global partnerships, MI redefined breeding strategies within CGIAR. Its tools and frameworks pave the way for inclusive agricultural research for development, ensuring alignment with CGIAR's five Impact Areas: nutrition, health and food security; poverty reduction, livelihoods and jobs; gender equality, youth and social inclusion; climate adaptation and mitigation; and environmental health and biodiversity.

Varietal trait preferences of women and marginalized sectors were considered in market studies because of their role in food processing and marketing. Credit: Dina Najjar, ICARDA

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

CGIAR and national partners share institutional standards and market and behavioral intelligence.

EOIO 2

Research leaders and investors make investment decisions in genetic innovation using GloMIP and the Investor Dashboard.

EOIO 3

Seed industry and NGOs use market and behavioral intelligence.

EOIO 4

Transdisciplinary teams across CGIAR and partners co-implement market and behavioral intelligence and co-design of target product profiles.

The Initiative made significant progress in strengthening capacity and institutionalizing market intelligence approaches among CGIAR and NARES partners. IITA and NARES partners implemented the Tricot approach for evaluating consumer preferences and on-farm varietal testing of cassava varieties , which is now being tested for roots, tubers and banana crops in Nigeria. Additionally, IITA led the use of foresight analysis to elicit near-future market segments with the PDT to capture rapid megatrend changes (that is, climate change, urbanization, population density, and income).

CGIAR Centers, WorldVeg, and CIRAD adopted the eight-criteria standard for market segmentation, and the first meetings were held to support ILRI and WorldFish in market segmentation of animal and aquatic foods. The Market Intelligence Brief Series was adopted by CGIAR Centers and partners to communicate market intelligence to the target audience. At the end of 2024, 21 briefs were published that featured 7 CGIAR crops. These efforts have successfully integrated standardized market intelligence and breeding methodologies into CGIAR-NARES systems, creating a demand-driven and evidence-based approach to breeding. Transdisciplinary teams applied market intelligence in designing TPPs. To promote the use of state-of-the-art evidence, the evidence catalog in GloMIP enabled the crowdsourcing and synthesis of market intelligence through artificial intelligence.

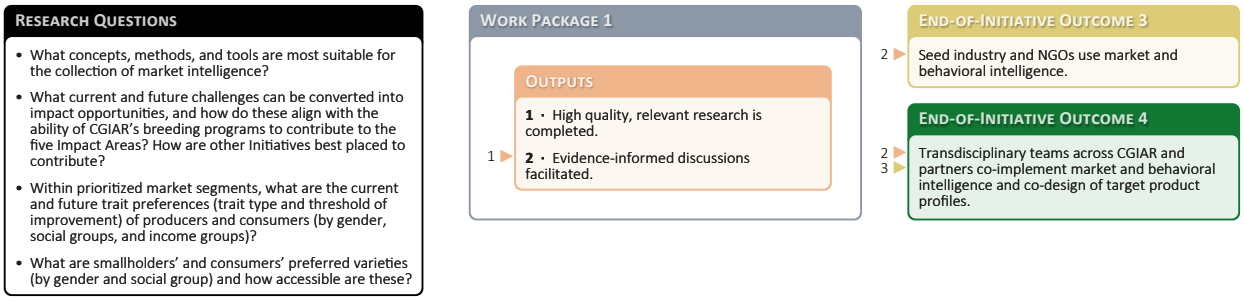
The CGIAR-NARES-SME breeding networks developed pipelines that are aligned with CGIAR's five Impact Areas, with a particular focus on market intelligence and investment cases. About 40 percent of global Impact Opportunities are in funded market segments, which suggests that CGIAR-NARES-SME networks have strategically focused their breeding pipelines on high-priority areas, effectively directing resources in line with the identified Impact Areas. Moreover, the Accelerated Breeding Initiative used a 13-step process for allocating pooled funding to CGIAR Centers, based on GloMIP Impact Opportunities. Quantitative data across the five Impact Areas and Megatrends were used by the CGIAR Science Programs and Accelerators' writing teams to prioritize possible activities and high-level outputs. Research and donor agencies, such as the Swedish Research Council, invested in generation of market intelligence for barley breeding following a transdisciplinary approach (see Key Result Story).

A hybrid maize seed company in Kenya noted that recent findings from product-concept testing in Kenya and Uganda led it to shift its product portfolio by introducing an early-maturing variety. The company learned about these findings at a workshop conducted by the Initiative in November 2022, which presented recent market intelligence. A series of workshops in 2024 at the six sites with coordinated behavioral intelligence trials shared research findings with the seed industry and other seed system actors, after which workshop participants expressed their interest in promoting new products using behavioral intelligence. In Uganda, for instance, this included a stronger emphasis on considering consumption-related traits. In Kenya, workshop findings led to renewed interest in bundling seeds with crop insurance to de-risk farmers' investments in new varieties.

Transdisciplinary collaborations play a pivotal role in ensuring that genetic innovations align with market intelligence insights, gender equity, and socioeconomic impact priorities, making breeding programs more inclusive, efficient, and impactful (see Key Result Story). Approximately 90 percent of the CGIAR TPP development teams were multidisciplinary, with more than 50 percent being transdisciplinary, involving social scientists, gender specialists, and external partners. External collaborators, including NARES, played a key role in defining and prioritizing traits. The transdisciplinary teams used market intelligence from a variety of sources and remained focused on addressing CGIAR's five Impact Areas. They advanced the integration of gender considerations into the breeding pipelines, leading to the development of gender-responsive TPPs. NARES partners such as the NARO in Uganda, for example, partnered with IFPRI and CIP to develop a research program incorporating market and behavioral intelligence.

Section 3: **Work Package progress**

WP1: Market Intelligence



Work Package 1 progress against the theory of change

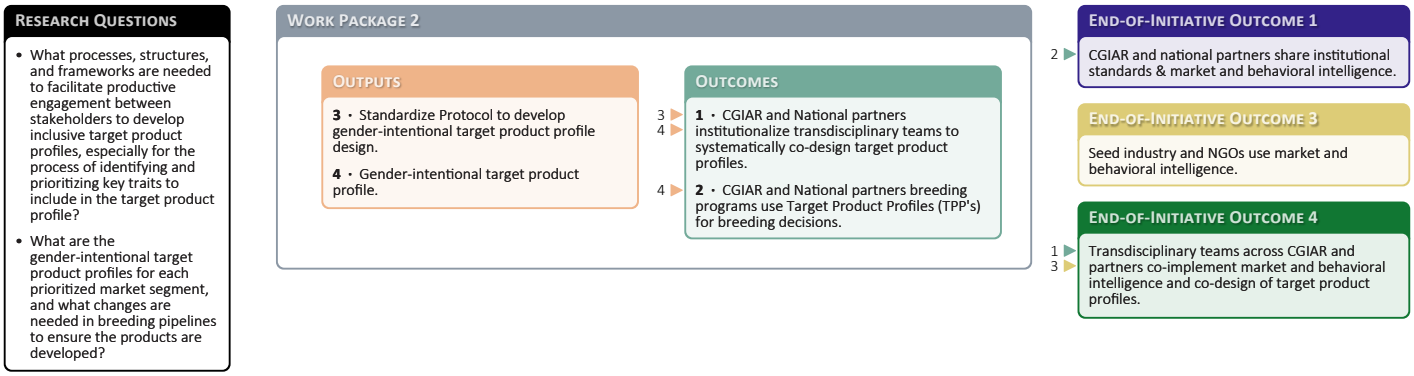
WP1 continued the development of the Seed Product Market Segment Database, hosted in the breeding portal and GloMIP. Eight segmentation criteria were defined and used for the segmentation of 25 CGIAR crops and two WorldVeg crops covering 49 market segments. Diverse tools and methods for the collection of market intelligence for different crops and geographies were presented through the Market Intelligence Brief (MIB) Series, with a total of 21 briefs from different CGIAR Centers, in collaboration with NARES partners, published since 2022.

Gathering existing market intelligence often starts with a synthesis of existing stakeholder evidence to inform discussions on the expectations and requirements of actors along the value chains and the implications for current and future market segments and product design. A protocol to carry out a systematic literature review as a tool for evidence synthesis was designed. To actively involve farmers as co-creators of future varieties, several new participatory methods were piloted, which can be scaled across crops and geographies. Video-based product concept testing (VPCT), for example, uses multiple stakeholder engagements to identify new product concepts and support evidence-based dialogues with breeding programs to confirm current strategic investments, as compared to alternative priorities and new potential directions. The IGA enables farmers to co-create ideal future varieties by strategically allocating a fixed breeding investment fund among 10–11 varietal trait improvements that could enhance their most preferred varieties while accounting for breeding costs.

Current and future challenges across crops and geographies all point to the adverse impacts of climate change and the need to prioritize climate-adaptation traits, for example, for drought resistance in maize in Uganda or rice in Kenya. Agronomic traits such as water-use efficiency and nutrient-use efficiency in rice in Kenya were also highlighted. With regard to cropping system diversification, intercropping for both maize and rice in Kenya stood out. Market intelligence was also conducted for nonfood crops, specifically for forage and crops for biofuel production.

Consumer preferences were assessed for sweet potato in Viet Nam. The absence of external defects was the main sought-after characteristic in fresh roots, followed by flavor, texture, weight, size, color, and shape. While both genders preferred medium- to large-sized roots (elongated shape) and smooth peels, women paid more attention to the color of the peel and uniformity of root size, while men were more attracted to the firmness of the root.

WP2: Target Product Profile Design



Work Package 2 progress against the theory of change

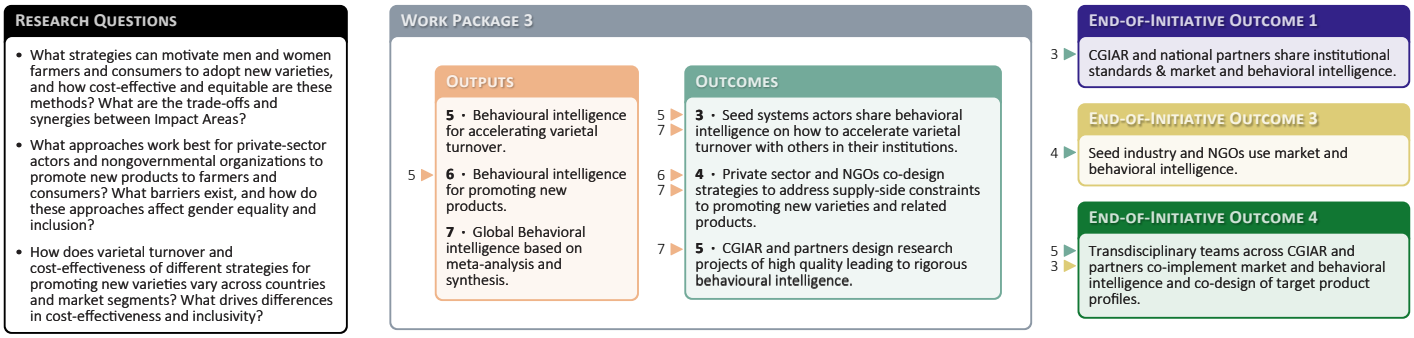
In 2024, WP2 in collaboration with the CGIAR Initiative on Accelerated Breeding made significant progress in developing structures and frameworks to facilitate productive engagement between stakeholders to develop inclusive TPPs through national and regional PDT meetings. For instance, IITA held several PDT meetings with maize value chain actors in Ghana and Nigeria to define TPPs. The TPPs were subsequently uploaded to the Breeding Portal and GloMIP.

WP2 also produced various knowledge products. These include a systematic review, surveys, and breeder interviews by CIP scientists to assess the impact of the Breeding Program Assessment Tool and CGIAR Research Program (CRP) evaluations on TPP development. Another knowledge product by Root, Tuber and Banana (RTB) CRP scientists focused on prioritizing food quality traits for RTB crops, which resulted in the Gendered Food Product Profile to support socially inclusive decisions and trait prioritization. Another study led by scientists from ICARDA focused on addressing challenges in agrifood systems, emphasizing climate resilience, nutritional value, and benefits to marginalized groups including increased productivity and income generation. ICARDA scientists further explored gender-based preferences for barley seed traits and their implications for agricultural productivity and food security in Ethiopia (see Key Result Story). Scientists from CIAT conducted a study to address regulatory framework barriers in Colombia to ensure innovations in seed genetic material contribute to nutritional demands and the Sustainable Development Goals. Scientists from CIP assessed the gender implications of TPPs for table potato in Kenya using the G+ tools. Findings from the study highlighted the importance of gender-responsive strategies to mitigate inequities and enhance adoption.

Scientists from IFPRI and CIAT developed an SOP that describes the stages involved in the treatment process of the grain samples to be analyzed (beans, maize, and rice) to subsequently quantify the total phytate content by spectrophotometry.

In collaboration with WP1, WP2 held a workshop in Harare in October 2024 to facilitate knowledge sharing among scientists from various CGIAR Centers and selected NARES partners. Finally, a presentation on transdisciplinary research approaches for crop science research covering theory, practice, and implications for research design was shared through an online webinar on 5 November, 2024.

WP3: Behavioral Intelligence



Work Package 3 progress against the theory of change

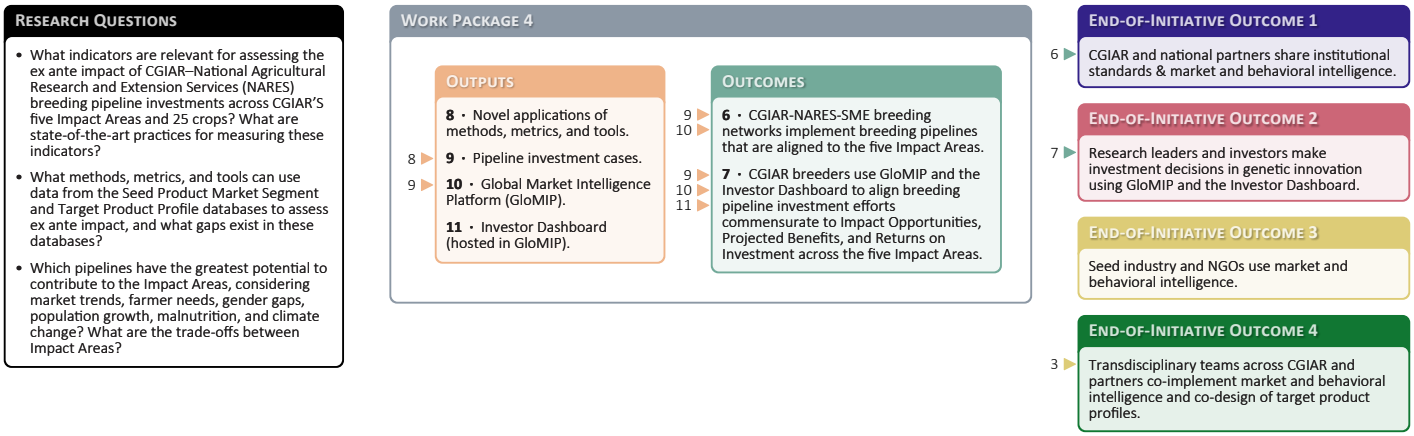
WP3 tested various seed promotion strategies (including seed trial packs, consumer-targeted activities, nudges, crop insurance, and agro-advisories) to generate behavioral intelligence aimed at increasing varietal adoption, turnover, and seed replacement (output 1). In Kenya, providing crop insurance increased technology adoption among men farmers; for women farmers, de-risking alone was not enough. Studies in Ethiopia and India found that farmers often consume what they grow and production-consumption decisions are interlinked, providing an opportunity for gender analysis. Research in Uganda showed that integrating and promoting consumer traits is key to increasing varietal adoption. Text reminders were effective as nudges for short-term seed replacement. In Nigeria, varietal turnover was hindered by limited investments in promoting newer varieties and inconsistent performance compared to older varieties.

Behavioral intelligence for promoting new products (output 2) focused on women-led business models for seed distribution. Research on tilapia seed production in Ghana, maize and sorghum seed marketing in Kenya, and chicken seed dissemination in Tanzania showed that time flexibility, profitability, and family or external support are key factors for women's success in agripreneurship. Studies from Uganda found evidence of gender discrimination in the seed sector, challenging the ability of women-led businesses to promote new products; women were perceived to provide lower-quality seed than men and women's customers negotiated for lower seed prices.

Synthesis and meta-analysis work (output 3) was partially completed. All but one of WP3's six coordinated trials collected follow-up data and a Market Intelligence Brief offers a synthesis of qualitative baseline findings across the six studies. Analyses of endline data are underway. Continuing its innovative collaboration across CGIAR Centers in Breeding for Tomorrow, the WP3 team will pool data from the six trials as well as a systematic review to conduct meta-analyses of various demand-side innovations to accelerate varietal turnover. To that end, WP3 contributed to developing meta-analysis software that addresses gaps in available packages. WP3 is also collaborating with Seed Equal through a special issue in Agricultural Systems to provide a platform for publishing CGIAR research.

By sharing and validating these findings with partners, WP3 partners started thinking differently about how to accelerate varietal turnover. For instance, workshop participants from the maize seed sector in Kenya stated an increased interest in using crop insurance to de-risk the adoption of new varieties as part of their seed marketing strategies, and Uganda's NARO launched a research program to better understand farmer and consumer behaviors.

WP4: Pipeline Investment Cases



Work Package 4 progress against the theory of change

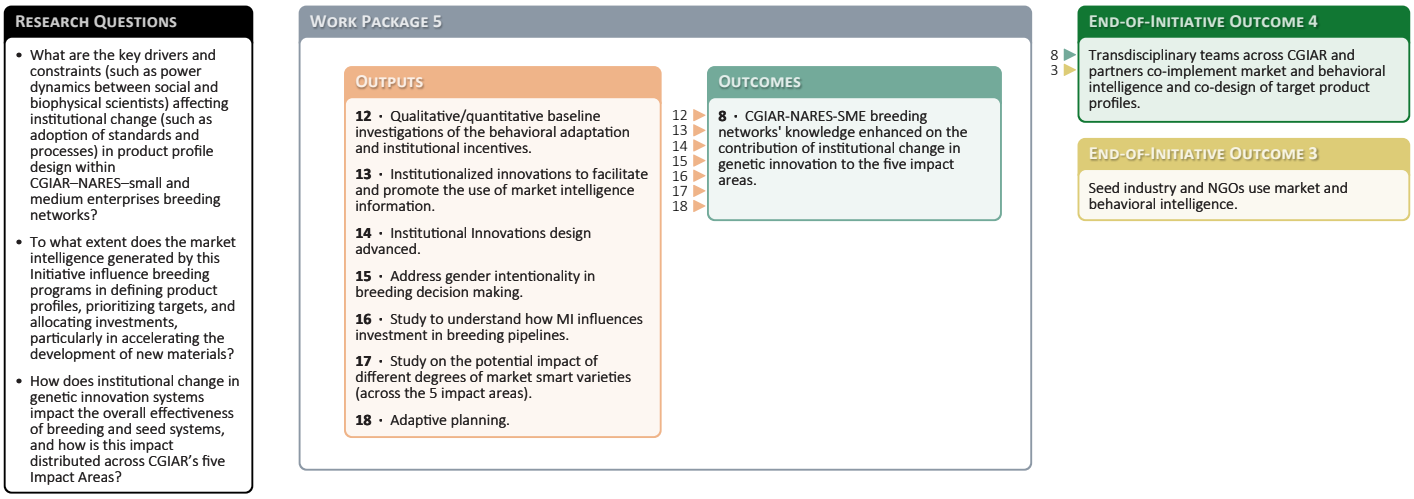
WP4 officially launched GloMIP on 7 June, 2024, and further developed 15 knowledge products, nine innovation developments, and one capacity sharing for development, contributing to the two WP outcomes. Novel applications of methods, metrics, and tools pioneered research into developing biophysical suitability models for crops and the biofortification of key crops such as rice and potatoes to combat malnutrition. A poster on investment prioritization was developed for the WP1–2 workshop, serving as a blueprint for the Product Design Standard currently being developed under the Breeding for Tomorrow Program. Pipeline investment cases provided further evidence of the potential of (1) biofortification of different crops, (2) low glycemic index rice to address diabetes concerns, (3) breeding for processing potato traits in the Andes, and (4) hybrid maize seeds in Mexico. WP4 was successful in developing several open-access platforms, such as observatories for crops such as cassava, beans, bananas, and rice, and the GloMIP. These tools provide invaluable data for stakeholders across various sectors. Innovation development outputs include the precursor to the Investor Dashboard, of which several indicators have been made available for use in GloMIP's Impact Opportunities to support evidence-based R&D investment decisions and capacity building.

In addition, WP4 focused on knowledge sharing and capacity development, with outputs such as the GloMIP communication strategy and online accessibility of the Seed Product Market Segment Database. We continued to showcase GloMIP at various workshops, meetings, and events. The Impact Opportunities Portal was pivotal in guiding the allocation of the 2024 Accelerated Breeding Initiative's pooled funding to Centers.

These efforts spurred breeding networks to align with CGIAR's Impact Areas and encouraged breeders to use GloMIP to align breeding pipeline investment efforts with impact opportunities, projected benefits, and returns on investment across the five Impact Areas.

Overall, from 2022 to 2024, WP4 developed a robust strategy to address global challenges in food security, health, and sustainability by promoting cutting-edge research, facilitating data-driven decisions, and fostering international collaboration. The outputs benefited a wide range of stakeholders, from smallholder farmers to researchers and investors, ensuring the positive impact of agriculture across CGIAR's five Impact Areas.

WP5: Institutional Scaling and MELIA



Work Package 5 progress against the theory of change

WP5 advanced institutional scaling, market intelligence integration, and gender-responsive breeding strategies through multiple knowledge products and innovation adoption studies, supporting progress toward institutional change in genetic innovation.

Key studies explored how market intelligence shapes breeding investments and how institutional innovations enhance decision-making. A study on barriers to using market intelligence in plant breeding provided insights into behavioral and institutional factors affecting market-driven breeding approaches. A related experiment demonstrated that by reducing ambiguity, market intelligence can help programs prioritize investments in breeding pipelines, but warned that decision-makers may overextrapolate from studies that yield imprecise estimates of a pipeline's probability of success. Another study assessed the impact of market-smart varieties across CGIAR's Impact Areas, offering evidence to refine breeding priorities.

WP5 also played a key role in participatory and gender-responsive breeding approaches, particularly through the design of a Standardized Protocol for Gender Intentional TPP development. This standard, developed in collaboration with FairTrade Africa, is ready for piloting. Research on gender intentionality in breeding decision-making highlighted how power dynamics, institutional norms, and gender biases shape breeding targets. These results emphasize the importance of more inclusive research frameworks at all levels.

The Initiative contributed to institutional change by fostering transdisciplinary collaboration across CGIAR and partners. A qualitative baseline study provided a foundation for understanding institutional incentives and behavioral change. These efforts aligned with WP5's final outcome, which envisions breeding teams effectively implementing market and behavioral intelligence strategies to drive impact-oriented breeding decisions.

By strengthening institutional frameworks, refining market-driven breeding strategies, and integrating gender-responsive approaches, WP5 helped CGIAR breeding networks to better align breeding investments with projected benefits across CGIAR's five Impact Areas. These efforts enhanced the ability of CGIAR Centers to ensure genetic innovation is demand-driven, inclusive, and sustainable.

Work Package progress rating summary

WORK PACKAGE	PROGRESS RATING & RATIONALE
1	On track WP1 advanced the Seed Product Market Segment Database, hosted by GloMIP and the Breeding portal. A total of 691 Market segments were defined, including 49 vegetable market segments covering tomato and pepper using the eight segmentation criteria. WP 1 met its output targets and its outcomes. Outputs were communicated through 21 Market Intelligence Briefs that cut across different Centers, including NARES partners, and crops. Market Intelligence Briefs synthesized stakeholder evidence to inform product design. Tools such as VPCT and IGA involved farmers in co-creating varieties by piloting participatory methods and prioritizing trait investments. The current focus is on using market intelligence to define future market segments that account for climate adaptation traits and are critical for maize in Uganda and rice in Kenya, alongside agronomic traits and intercropping diversification traits.
2	On track WP2 met its output targets and outcomes. In collaboration with Accelerated Breeding, NARES, and national value chain actors, TPPs continued to be defined using a template. The focus is now on updating the template to ensure TPPs are in demand, impactful, feasible, and gender intentional, which will form the basis of the Product Design Standard currently being developed under the Breeding for Tomorrow Program. In addition, various knowledge products were generated to develop structures and frameworks that ensure productive engagement of transdisciplinary teams to prioritize traits important for farmers, consumers, and end users. These include evaluating the impact of breeding program evaluations on TPP development, ensuring inclusivity in TPP development using the G+ tool, and developing protocols for phenotyping new traits.
3	On track WP3 met its 2024 output targets by publishing behavioral intelligence on effectiveness for various strategies that work to accelerate varietal turnover (Output 1) and the opportunities and challenges that women seed entrepreneurs face in promoting new products (Output 2). Baseline findings from the six coordinated behavioral intelligence trials were published, and in all but one site, follow-up data collection to measure adoption was completed. As a result of WP3 activities, seed industry and NGOs shared behavioral intelligence within their institutions (Outcome 1), strategies for promoting new products were co-designed with partners (Outcome 2), and the new transdisciplinary way of working across WP3 was adopted by other teams and even led NARES to change its research-for-development focus to prioritize market and behavioral intelligence (Outcome 3).
4	On track WP4 met its 2024 output targets by successfully convening several Centers to deliver novel applications of methods, metrics, and tools (Output 1, target 2024), which can be used to build pipeline investment cases (Output 2, target 2024) and the Investor Dashboard (Output 4, target 2024, models available internally, projected benefit indicators available publicly in Impact Opportunities portal). It officially launched GloMIP (Output 3, target 2024) and made the first set of projected benefits indicators from the Investor Dashboard publicly available in the Impact Opportunities portal. GloMIP is being used by CGIAR breeders to align breeding pipelines with the five Impact Areas (Outcome 1) and by donors to prioritize investments (Outcome 2). GloMIP also enabled WP4 and other WPs to make progress in EOIOs 1 and 2 (see Key Result Story).
5	On track WP5 met its 2024 output targets by advancing institutional scaling, market intelligence integration, and gender-responsive breeding strategies. It delivered key studies on market intelligence, participatory variety selection, and gender intentionality, strengthening CGIAR breeding networks and ensuring demand-driven, inclusive, and sustainable genetic innovation aligned with CGIAR's Impact Areas.

Definitions

On track

- Progress largely aligns with Plan of Results and Budget and Work Package theory of change.
- Can include small deviations/issues/delays/risks that do not jeopardize success of Work Package.

Delayed

- Progress slightly falls behind Plan of Results and Budget and Work Package theory of change in key areas.
- Deviations/issues/delays/risks could jeopardize success of Work Package if not managed appropriately.

Off track

- Progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas.
- Deviations/issues/delays/risks do jeopardize success of Work Package.

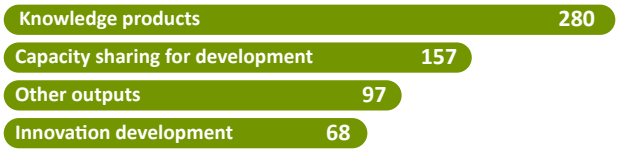
Section 4: **Quantitative overview of key results**

This section provides an overview of results reported and contributed to, by the CGIAR Initiative on Market Intelligence from 2022 to 2024. These results align with the CGIAR Results Framework and Market Intelligence's theory of change. Further information on these results is available through the CGIAR Results Dashboard.

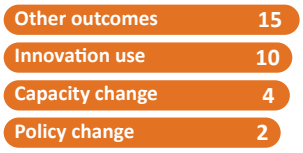
The data used to create the graphics in this section were sourced from the CGIAR Results Dashboard on 7 April 2025. These results are accurate as of this date and may differ from information in previous Technical Reports. Such differences may be due to data updates throughout the reporting year, revisions to previously reported results, or updates to the theory of change.

Overview of results by category

Outputs

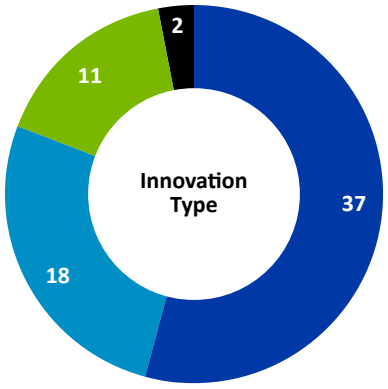


Outcomes



During its 2022–2024 cycle, Market Intelligence generated 633 results with a strong focus on knowledge products such as generating market intelligence evidence (280 results), capacity-sharing activities that supported institutional change (157 results), and innovation development (see details below), such as new standards and methods for market and behavioral intelligence research and investment prioritization (68 results).

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.

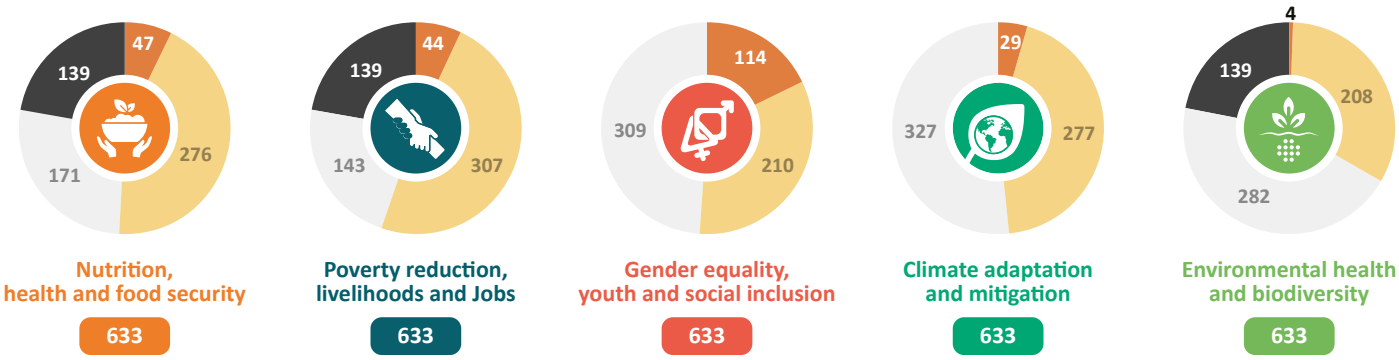
POLICY/ORGANIZATIONAL/INSTITUTIONAL INNOVATION
Innovations that create enabling conditions, including policy, legal and regulatory frameworks; business models; finance mechanisms; partnership models; public/private delivery strategies.

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.

Half (54 percent) of all innovations were classified as technological innovations, followed by policy and organizational innovations (26 percent) and capacity development (16 percent), demonstrating the Initiative's efforts to engender institutional change in CGIAR Genetic Innovation systems. Given the Initiative's role in augmenting the capacity of existing CGIAR crop breeding pipelines, most innovations (74 percent) aimed to generate gradual, systematic improvements, while also proposing some radical (16 percent) and disruptive innovations (10 percent) to help breeding maximize its return on investment.

Number of results by Impact Area contribution



Nutrition, health and food security
633

Poverty reduction, livelihoods and Jobs
633

Gender equality, youth and social inclusion
633

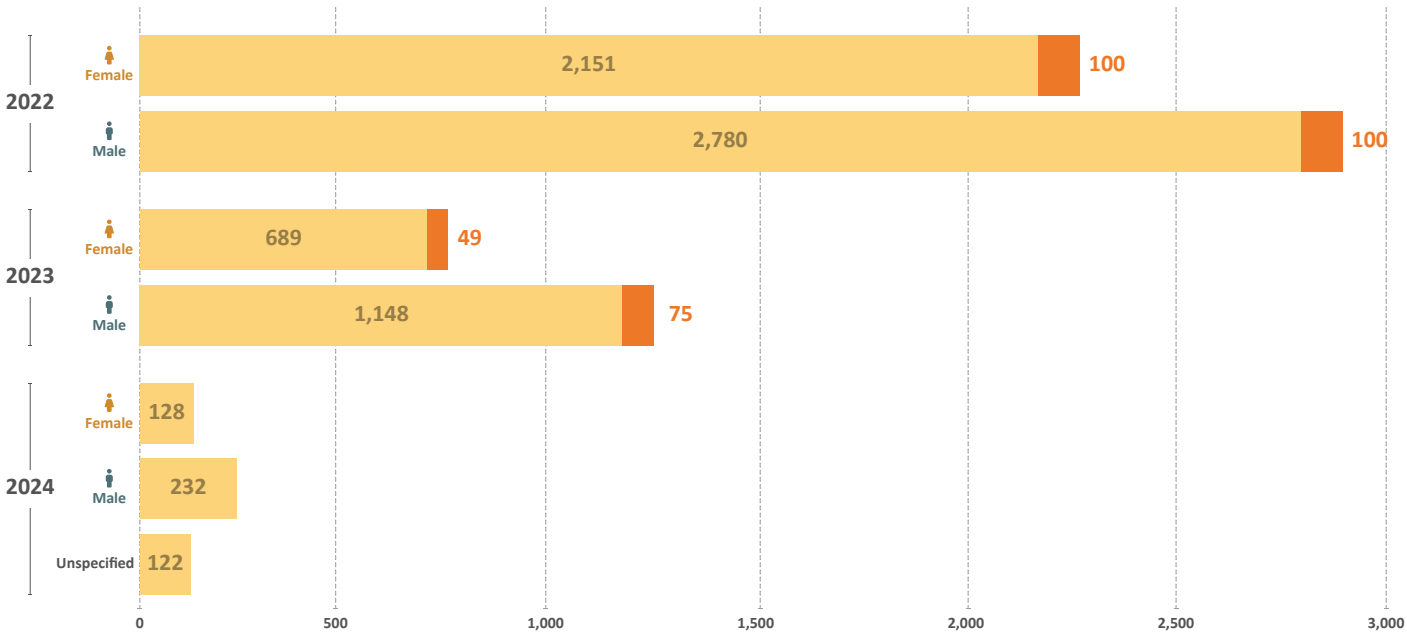
Climate adaptation and mitigation
633

Environmental health and biodiversity
633

- **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.

Market Intelligence systematically generated and synthesized evidence across all five Impact Areas to support demand-driven, inclusive, and impactful genetic innovations in a world affected by several megatrends, such as climate change (44 percent of results). To mainstream gender intentionality, one of the main principal focuses was on gender equality and youth inclusion, with 18 percent of results principally focusing on that Impact Area.

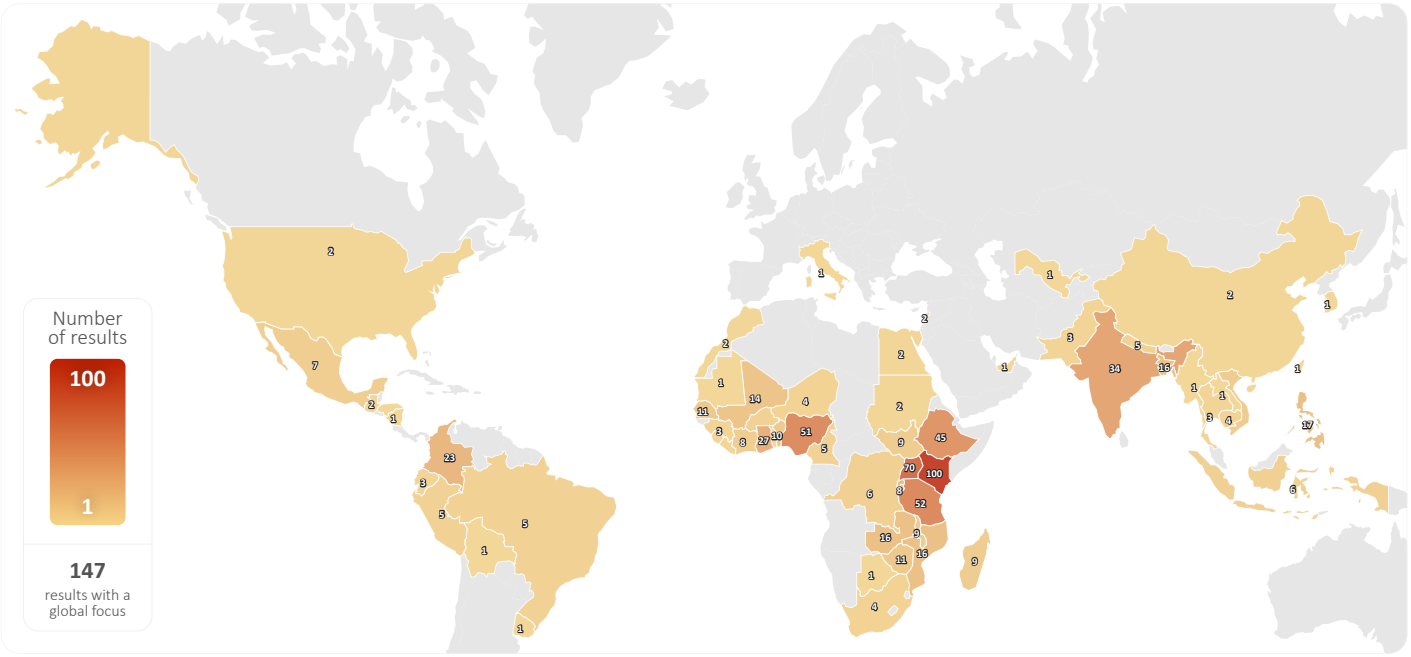
Number of individuals trained by the initiative



- **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.

During the 2022–2024 cycle, the Initiative initially aimed to set up engagements with breeding networks and capacity sharing focused on the MI framework, an approach which gradually shifted to delivery. A total of 7,574 individuals were trained, of which 41 percent identified as female.

Geographic focus of results



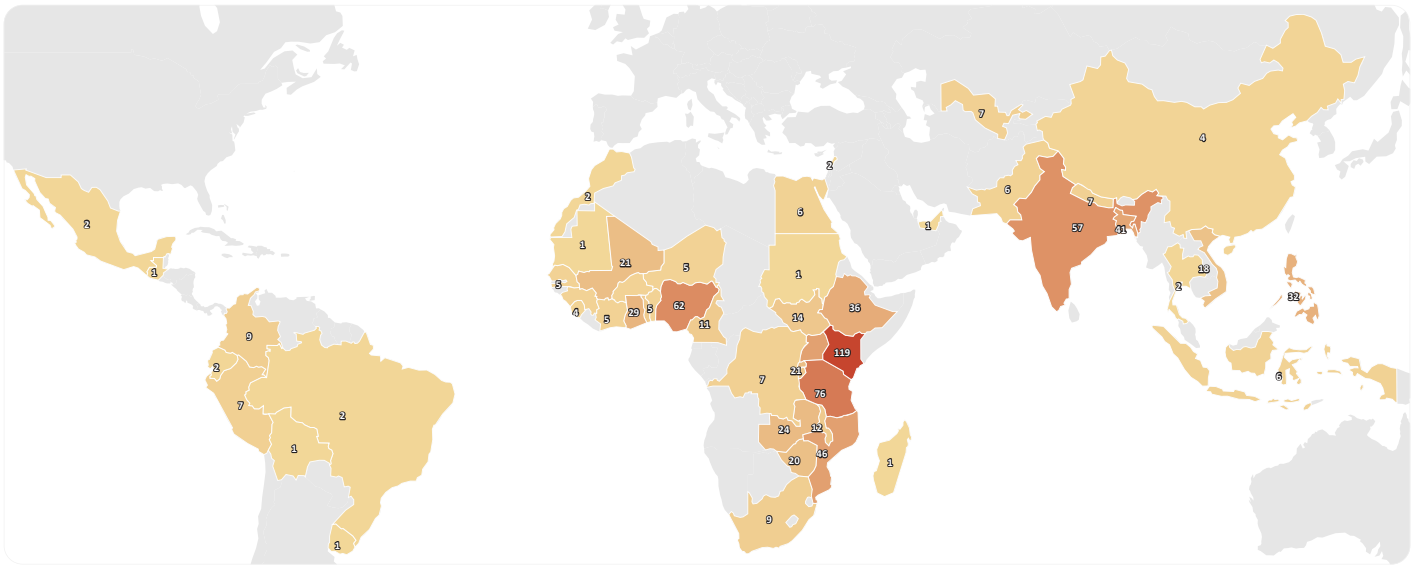
One result can impact multiple countries and can therefore be represented multiple times.

The global map vividly illustrates our partner engagements across diverse regions worldwide from 2022 to 2024. Partnerships were more common in East and Southern Africa, West and Central Africa, and in South and Southeast Asia, with some partners in Latin America, North Africa, the Middle East, and East Asia as well.

Varietal trait preferences of women and marginalized sectors were considered in market studies because of their role in food processing and marketing. Credit: Dina Najjar, ICARDA

Section 5: **Partnerships**

Number of Partners by Country



Geographic distribution of results achieved with external partners.

Partnerships and Market Intelligence's impact pathways

Market Intelligence's theory of change was centered on collaboration with external partners across three key dimensions: (1) demand, involving NARES, NGOs, the private sector, donors, and investors; (2) (technical) innovation, engaging organizations such as CIRAD, WorldVeg, and Syngenta Foundation for Sustainable Agriculture (SFSA); and (3) scaling, supported by partners including SFSA, WorldVeg, and NARES. A significant risk was the limited willingness of demand partners to engage, emphasizing the importance of proactive engagement activities. Evidence presented in Section 2 highlights active promotion of EOIOs 3 and 4 by the seed industry, NARES, and CGIAR partners.

By 2024, 151 capacity-building and evidence-sharing activities were conducted through workshops, shared documentation, and replicable tools, and by publicly sharing more than 690 seed product market segments, 468 TPPs and 21 Market Intelligence Briefs via GloMIP. These activities targeted WP1's audience—including seed industry SMEs, NGOs, NARES, and CGIAR breeding teams—leading to the documented adoption of market intelligence.

In WP1, collaboration with the scaling partner WorldVeg led to the definition of 49 new market segments, with 25 for tomato and 24 for pepper. Furthermore, WP1 also collaborated with CIRAD to collect market intelligence for cassava and rice in West Africa.

In WP2, collaboration with NARES partners and Accelerated Breeding led to the development of national TPPs aligned with CGIAR's protocol. These efforts incorporated NARES' expertise in socioeconomics, gender, policy, and farmer associations, showcasing progress toward EOIOs 1 and 4. A partnership with Fairtrade Africa enabled advancing the protocol for gender-intentional TPP design (see WP5).

In WP3, progress on EOIOs 1 and 3 was made thanks to partnerships with institutions such as KALRO (Kenya), EIAR (Ethiopia), NASC and NAERLS (Nigeria), NARO (Uganda), and Odisha's Department of Agriculture (India). These partnerships facilitated research on varietal turnover and demand-side strategies. Seed industry partners, including SeedCo, Dryland Seeds, and others, collaborated to develop strategies for varietal turnover under EOIO 2. Progress toward EOIO 4 was marked by a multi-country coordinated experiment on behavioral intelligence standards, working closely with institutions such as Ahmadu Bello University (Nigeria), Bahir Dar University (Ethiopia), and University of Arizona (United States).

WP4 substantially facilitated partnerships by making GloMIP publicly accessible starting in mid-2023 (see 2023 Key Result Story). The Independent Advisory and Evaluation Service (IAES) Genetic Innovation Science Group (GISG) Evaluation Report 2024 concluded:

[...] the development, availability and accessibility, and potential of TPPs (GloMIP) has been widely recognized by internal and external stakeholders (developers as well as targeted users). The use of GloMIP transcended the CGIAR sphere and it is already informing GI efforts at country and regional level. As one internal stakeholder noted during an interview: "We have developed product profiles in the region with the GloMIP, with a team including breeders, social scientists, agronomists, and pathologists. We have successfully created four product profiles as a team in the region. These profiles have been applied in Uganda, Kenya, Ethiopia, Zambia, and Malawi. We are now looking to implement them in other countries where they are not yet a commodity" (p. 27).

In WP5, progress on EOIO 4 involved a key partnership with Fair Trade Africa to develop a Standardized Protocol for Gender-Intentional TPPs, ensuring gender integration in breeding pipelines. This collaboration strengthened inclusive breeding frameworks within CGIAR, enhancing the development of market-driven, gender-responsive varieties that meet diverse farmer needs.

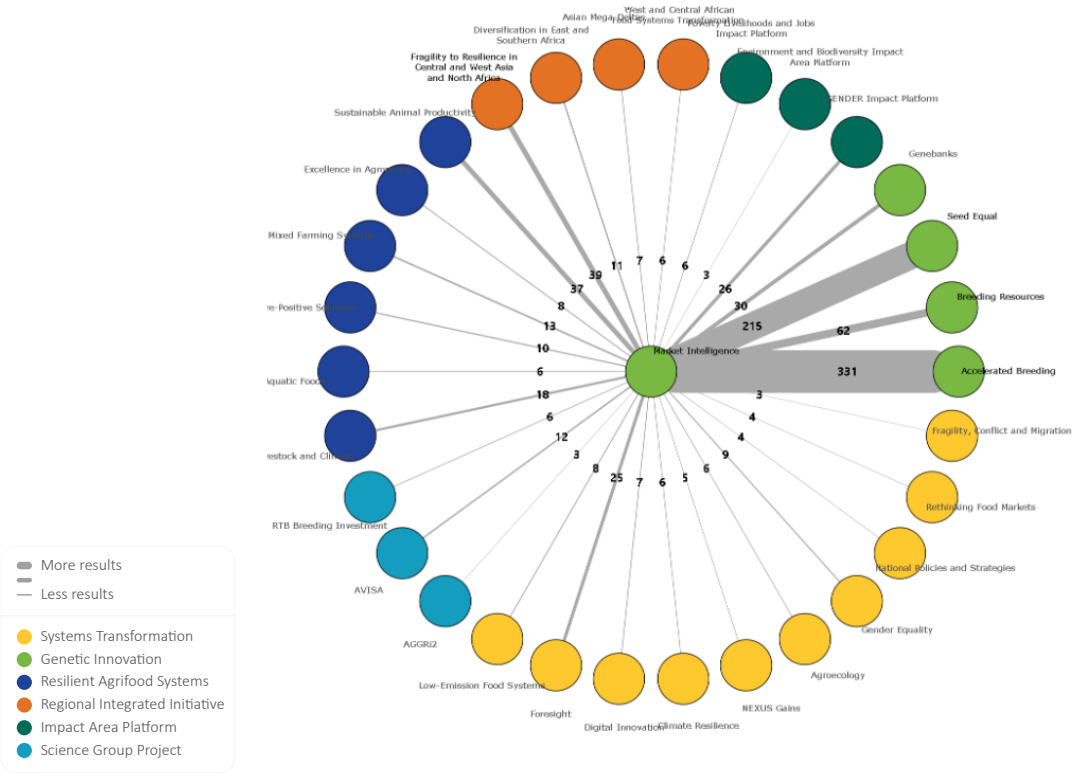
Partnerships with CIRAD, WorldVeg, SFSA, and others enhanced scaling efforts for genetic innovation across crops and geographies, advancing EOIOs 1 and 4. In particular, Market Intelligence was instrumental in scaling the approach to market segmentation. Examples include the collaboration with WorldVeg, the inclusion of ICRISAT in 2024, and the first discussions with ILRI and WorldFish

at the end of 2024 on the scaling of market intelligence for animal and aquatic foods in preparation for their integration in the CGIAR Breeding for Tomorrow Program. Investors such as Gates Foundation continued to demonstrate interest in tools like GloMIP for investment decisions, contributing to EOIO 2. Additionally, initiatives such as the special issue on gender-intentional crop breeding fostered collaboration with global academic and research institutions. CIRAD, WorldVeg, and SFSA representatives actively participated in the 2023 MELIA workshop, furthering the Initiative's goals.

Initiative on Market Intelligence End of Initiative Workshop participants from CGIAR Centers, CIRAD, and WorldVeg, wearing GloMIP shirts in Lima, Peru. Credit: Neale Marvin Paguirigan, IRRI

Section 6: **CGIAR Portfolio linkages**

Market Intelligence's internal network of collaborations



The diagram presents the internal collaborations of Market Intelligence 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 three 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 Market Intelligence's impact pathways

Market Intelligence's theory of change was intricately linked with CGIAR's portfolio. As demonstrated in the network graph, throughout the Initiative cycle robust partnerships were established with Genetic Innovation Initiatives, particularly Accelerated Breeding (329 results), Seed Equal (215 results), and Breeding Resources (62 results). The seamless interoperability between GloMIP and the Breeding Portal (see 2023 Key Result Story) played a key role in the integration of the Genetic Innovation portfolio. This was recognized by the IAES GISG Evaluation Report 2024 which praised both the Initiative and GloMIP for their integrative role:

The integration of the Global Market Intelligence Platform (GloMIP) and the Breeding Portal marks a significant achievement in CGIAR GI toward more effective digital tools for breeding pipelines, promoting collaboration and transparency. By implementing a cohesive data management approach, these platforms drive CGIAR genetic innovations to new heights [...] The evaluation team found several examples of collaborative processes that supported the production of high-quality scientific outputs. One is the integration between the GloMIP and the Breeding Portal that now aims at also integrating Seed Equal data and information [...] The integration of these platforms underlines CGIAR's commitment to findable, accessible, interoperable, and reproducible (FAIR) data principles, open science, responsible innovation, and equal partnerships (pp. 19–20; 26).

Accelerated Breeding contributed significantly to co-developing a protocol for designing TPPs, ensuring they were impactful, gender-intentional, demand-driven, and feasible. Its standardized matrix of traits, value propositions, and Impact Area tagging enabled WP4 to achieve substantial progress in developing the Investor Dashboard, involving several Centers, HarvestPlus, and Accelerated Breeding itself. This matrix also helped GloMIP link traits to Impact Areas consistently, enabling the evaluation of TPPs (WP2) for their impact and alignment with the beneficiaries' urgent needs as outlined in the market segments (WP1). Value propositions provided an effective handle on the substantial set of traits—requiring substantial effort to standardize quantitative measurements and targets—that enabled the combination of feasibility (traits within a value proposition were genetically correlated compared to traits across value proportions) and impactfulness (value propositions were more direct inputs into different impact models).

Additionally, Market Intelligence leveraged this system to identify gender-linked traits, allowing the Initiative to report the share of gender-intentional TPPs in PRMS (WP2, output 2). Accelerated Breeding organized a series of workshops, including capacity-building sessions with NARES, on breeding program costing, contributing essential inputs for pipeline investment cases (WP4, output 2). These collaborative efforts played a crucial role in advancing multiple outputs and EOIO 2.

In WP3, close collaboration with Seed Equal resulted in co-designing behavioral intelligence research, while Seed Equal's WP5 on policies partnered with WP3 studies to address both demand- and supply-

side challenges to accelerating varietal turnover, furthering EOIOs 1 and 3.

Outside Genetic Innovation, Market Intelligence established strong linkages with Excellence in Agronomy (37 results), which aligned with its recommendations in the 2023 Annual Report (p. 23) to foster linkages with the CGIAR Sustainable Farming Program. Similarly, its linkage with Foresight (25 results) demonstrated its strategic move to strengthen its capacity in foresight, which was included under new and emerging work in the proposal for the CGIAR Breeding for Tomorrow Program (p. 25).

The Initiative also actively contributed to CGIAR's Impact Area Platforms, particularly those focused on Climate, Poverty, Gender, and Nutrition. WP5, in collaboration with the Gender Impact Platform, co-developed the Gender Strategy for Genetic Innovation, fostering close interaction with other Genetic Innovation Initiatives. Market Intelligence also played a pivotal role in supporting W3 projects within Genetic Innovation, such as RTB Breeding.

Despite this progress, there remains a need to strengthen links with newly designed Science Programs, in particular Better Diets and Nutrition, Policy Innovations, Scaling for Impact, and Sustainable Farming.

Joint Market Intelligence and Seed Equal Science Day and Workshop in Addis Ababa, Ethiopia.
Credit: Seed Equal Initiative

Section 7: **Key result story**

Breeders refocus products to serve multistakeholder needs

Market Intelligence refocused crop breeding in Africa by aligning products with farmer, processor, and consumer needs through transdisciplinary collaboration.

Popular barley varieties were tested to assess trait preferences among a group of women processors in Ethiopia.
Credit: Dina Najjar, ICARDA

Primary Impact Area

Other relevant Impact Areas targeted

Contributing Initiative

CGIAR Initiative on Market Intelligence · CGIAR Initiative on Accelerated Breeding

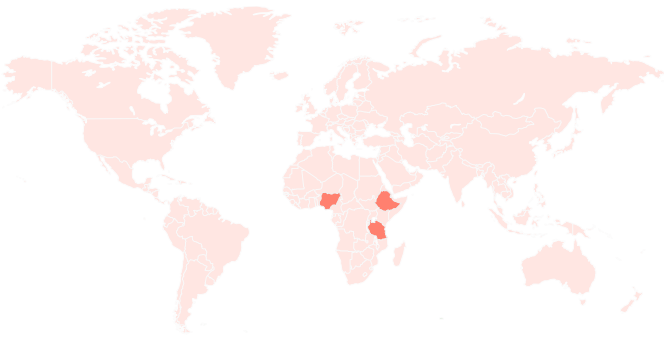
Contributing Centers

CIP · CIMMYT · ICARDA

Contributing external partners

NARES · Agricultural Research Institute – Tanzania · Bonga Agricultural Research Center – Ethiopia

Geographic scope



Regions: West and Central Africa · Eastern and Southern Africa

Countries: Nigeria · Tanzania · Ethiopia

The CGIAR Research Initiative on Market Intelligence steered crop breeding by integrating market needs into target product profiles (TPPs). With 468 TPPs developed since 2022, this approach bridged social and biological sciences to address diverse stakeholder preferences, emphasizing traits beyond yield. Success stories include multistakeholder-driven sweet potato breeding in Nigeria, groundnut enhancement in Tanzania, and barley improvements in Ethiopia. These efforts prioritized inclusivity, nutrition, and economic growth, thus benefiting farmers, processors, and marginalized groups, while advancing sustainable and equitable agricultural outcomes globally.

The CGIAR Initiative on Market Intelligence (MI) steered product design in agricultural breeding to cater to stakeholders' needs. However, coordination between social and biophysical scientists was challenged by (1) a lack of common language to integrate findings on market intelligence into product design, and (2) unclear roles and responsibilities of social scientists in priority setting in breeding. This led to limited consideration of traits beyond yield that are important to multiple stakeholders.

Since the start of the Initiative in 2022, 468 TPPs were developed or revised. TPPs are blueprints of the traits, including measurements and thresholds, that new seed products must include to meet the requirements of farmers, processors, and consumers. The design of TPPs requires reliable market intelligence on these stakeholder requirements. In some cases, TPP design teams did have access to institutionalized market intelligence and thus designs incorporated best assumptions on the requirements. These success stories describe three cases of how MI steered breeding directions.

Case 1: CIP established transdisciplinary teams for conducting market intelligence research to inform sweet potato breeding prioritization. Social scientists from MI used GloMIP to identify geographies with the highest impact opportunities. The research identified West Africa as the world's largest sweet potato production region, representing more than a third of global production. After revising the sweet potato market segmentation, 30 segments were identified, up from 14, with four of West Africa's segments ranking among the largest globally. GloMIP analysis highlighted significant opportunities to improve nutrition and food security, and reduce poverty. Based on these findings, CIP's sweet potato breeding team made an evidence-based decision to launch a breeding program in Nigeria, targeting the region's largest impact opportunities.

Case 2: Fieldwork carried out by CIMMYT on groundnut in Tanzania led breeding priorities to be refocused. Market intelligence revealed that size and color were critical for both consumers and processors. Small-to-medium groundnuts, predominantly tan in color, were used for peanut butter production that required specific oil content, while large groundnuts were preferred for snacking. CIMMYT updated market segments and product profiles to reflect these preferences. The research also found limited use of groundnuts for oil production, suggesting it as a future market segment. Additionally, while there was debate about breeding for dual-purpose seeds (grain for food and biomass for fodder), CIMMYT showed that most farmers in Tanzania did not use groundnut biomass for fodder and advised against prioritizing it for breeding in the region.

Case 3: The barley breeding team at ICARDA implemented a multistakeholder approach in Ethiopia that focused on women and marginalized groups (such as landless populations) who play a key role in barley processing. Three key traits were incorporated into the breeding program: white grain color for a 20 percent increase in market value, higher zinc and iron content for improved nutrition, and lignin content for better livestock feed. The approach retained black barley, which is preferred by landless women for brewing local beverages. Two TPPs were developed—one for white barley and another for black barley—leading to more inclusive and sustainable agricultural outcomes, with greater adoption in Ethiopia's highland regions, where barley is a staple crop, especially for making injera. By working with transdisciplinary teams, the project aligned breeding goals with the needs of farmers and industry. The Swedish Research Council funded the development of these barley varieties through a participatory approach, focusing on diverse preferences beyond yield. National Agricultural Research and Extension Systems gained valuable insights into stakeholder engagement and ways to strengthen collaboration in inclusive agricultural development and prioritize the needs of underrepresented groups.

> Working with interdisciplinary teams to better align breeding objectives with farmer and industry needs will result in better varieties and higher adoption. The gender research layer will ensure that we leave no one behind, especially women farmers, producers, and processors, whose needs have traditionally been overlooked.
>
> Miguel Sanchez, Senior Scientist, Lead Barley Breeder, ICARDA, Rabat, Morocco

2022 key result story

2022 Key Result Story: Collaborative inclusive target product profile development

2023 key result story

2023 Key Result Story: Global Market Intelligence Platform (GloMIP)

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Market Intelligence

CGIAR Market Intelligence Initiative Team Through the Years: A photo collage showing activities with the team and with partners.
Credit: CGIAR Initiative on Market Intelligence