CGIAR Technical Reporting 2023

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**EXECUTIVE SUMMARY**

The Science Group Project on Accelerated Varietal Improvement and Seed Delivery of Legumes and Dryland Cereals in Africa (AVISA) increased demand-driven, gender-equitable, and timely access to quality seed and other inputs by small-scale producers through large-scale promotional activities, strengthened links among seed producers, farmers, and grain aggregators, with emphasis on women and young farmers, and in collaboration with partners such as the national agricultural research and extension systems (NARES), the Syngenta Foundation for Sustainable Agriculture (SFSA), the Centre for Behaviour Change Communication (CBCC), and the Tanzania Seed Traders Association (TASTA). The Project also compared various impact pathways to help improve the scalability of dryland crop innovation through consultation with CGIAR-NARES teams. So far, in-country consultations on these impact pathways have involved 188 NARS scientists in 9 countries: Ethiopia, Kenya, Mozambique, Tanzania, and Uganda in East and Southern Africa (ESA), and Burkina Faso, Ghana, Mali, and Nigeria in West and Central Africa (WCA).

Fifty-eight regional market segments were identified in sorghum, pearl millet, finger millet, groundnut, chickpea and pigeon pea across ESA and WCA. Of these, 28 were prioritized to have breeding pipelines. Portfolio management through market segmentation enables strategic investment of subgrants in breeding programs that will create the most impact. Target product profiles for the region were also consolidated and priority traits such as against Striga, blast, rosette and anthracnose are now being addressed by the crop health/pathology network. Agreed breeding schemes were implemented in shared pipelines, i.e. breeding programs co-led by more than one CGIAR-NARES center, addressing the components of genetic gain. Regional trials were implemented to identify founder germplasm for the new breeding programs and attain quick wins by selecting varieties that can be released across countries. Similarly, tricots were implemented with 2,461 farmers.

The IITA team formed a cowpea WCA working group and is now conducting in-country consultations to further refine market segments. Twenty-six market segments for common bean were identified across East Africa. Awareness and demand creation activities were conducted by NARES and non-NARES partners to increase farmer reach on new varieties. Farmers and other actors were reached through promotional activities, including seed fairs, demonstrations, exhibitions, field days, radio talks, participatory variety selection trials, print materials, and small seed packs.

Data-driven decisions are key for the success of delivering rapid genetic gain and improving variety adoption. This project took several steps to improve and enable the use of data in breeding decisions, including the formation of network-level breeding informatics teams, quality assurance/quality control analytical pipelines, and templates that advance decisions and digitization.

Toward the key vision of forming a functional and sustainable CGIAR-NARES network for dryland crops, this Project supported the formation of governance structures and steering committees for the two target regions of sub-Saharan Africa. These steering committees are already operational with elected officials and sub-committees.

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### APPROVED BUDGET

<table>
<thead>
<tr>
<th>Year</th>
<th>Budget (USD)</th>
</tr>
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<tbody>
<tr>
<td>2023</td>
<td>$8.00M</td>
</tr>
<tr>
<td>2024</td>
<td>$12.00M</td>
</tr>
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</table>

1 This is the BMGF-funded portion of the budget. This document reports overall progress across other funding sources such as USAID and ABI.
CGIAR Project on Accelerated Varietal Improvement and Seed Systems in Africa

Progress on science and towards End of Initiative outcomes

Science Group Project-level theory of change diagram

EOPO End of Project Outcome
AA Action Area
IA Impact Area
SDG Sustainable Development Goal

Note: A summary of Work Package progress ratings is provided in Section 3.
EOPO 1: Seed- and grain-sector actors use innovative, gender-intentional impact pathways to drive scaling of new, client-centered varieties.

EOPO 2: CGIAR-NARS-SME networks use market segments, product profiles and pipeline investment cases to orient variety development and deployment toward those that provide larger scale benefits across the 5 Impact Areas.

EOPO 3: Regional networks enhance on-farm performance trials for AVISA crops and cultivar targeting to geographies.

Achievements from CIMMYT Team
- Characterization of the collected germplasm to address national ecosystems in a few selected countries.
- We conducted fingerprinting and quality assurance/quality control protocols.
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EOPO 4: Women, men, youth and disadvantaged socioeconomic groups access affordable, market-demanded and producer preferred, high yielding, resilient variety seed.

EOPO 5: CGIAR and NARES Crop Improvement teams taking data-driven decisions.

EOPO 6: National and private seed company breeding programs accelerate the development of varieties that provide larger scale benefits across the 5 Impact Areas.
WP1: Co-create impact through applied social science research that guides prioritization of public and private investments (Socioeconomics and gender integration)

Impact Pathways Co-creation
- 8 AVISA countries (Kenya, Tanzania) each lead from each country.
- 30 representatives (USU [Quito, Quito]) each of 10 countries (Ecuador, Colombia, Peru, Bolivia, Brazil, China, India, South Africa, Ethiopia).
- 188 scientists.

Impact gaps and opportunities
WP2: Prioritize resource investments and provide benchmarks for CGIAR collaborative breeding programs (trait discovery and early testing)

**Outcome**
- One CGIAR-AR Lebanon network adopting high-throughput platforms for trait identification and/or phenotyping.
- CGIAR institutes develop partnership with Advanced Research Institutes to access germplasm.
- Network partners generate reliable performance data for intermediate material.
- National partners breeding programs using modern population improvement approaches.
- National partners giving regional training networks.
- National partners standardizing their breeding infrastructure.
- National partners undertaking infrastructure investments for rapid evaluation of segregating generations.

**Output**
- One CGIAR-AR Lebanon network using market segments, product profiles and pipeline investment cases to assess variety development and deployment toward those that provide larger scale benefits across the five input crops.

**Work Package 2 progress against the theory of change**

<table>
<thead>
<tr>
<th>REGION</th>
<th>CROP</th>
<th>NUMBER OF COUNTRY MARKET SEGMENTS</th>
<th>NUMBER OF REGIONAL UNIQUE MARKET SEGMENTS</th>
<th>NUMBER OF REGIONAL SEGMENTS</th>
<th>NUMBER OF REGIONAL SPLICEOVER SEGMENTS</th>
<th>NUMBER OF REGIONAL PIPELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESA</td>
<td>Songhum</td>
<td>30</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>ESA</td>
<td>Finger millet</td>
<td>21</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>ESA</td>
<td>Pearl millet</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>ESA</td>
<td>Groundnut</td>
<td>23</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ESA</td>
<td>Pigeon pea</td>
<td>13</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESA</td>
<td>Chick pea</td>
<td>21</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WCA</td>
<td>Songhum</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>WCA</td>
<td>Pearl millet</td>
<td>22</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WCA</td>
<td>Groundnut</td>
<td>24</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

The participating breeding programs in ESA and WCA were assessed using the Accelerated Breeding Initiative Transform Breeding Program Questionnaire that helped identify the comparative advantage / impact of the breeding, detailed in the summary table below. Complementing the PDT work was the formation of multidisciplinary researchers and representative actors across all crop value chains. The PDTs identified 58 country-level MS and TPPs, the basis for identifying shared country needs. Country-level MS and TPPs were consolidated into regional breeding pipelines, in addition to their regional market segment and TPPs, the basis for identifying shared country needs. Country-level MS and TPPs were consolidated into regional breeding pipelines, in addition to their regionally targeted investment cases to assess variety development and deployment toward those that provide larger scale benefits across the five input crops.
WP3: Expand on-farm testing networks and scale up the pre-release trials (late testing and variety release)

### Work Package 3 progress against the theory of change

**Core**

- **On-farm testing to select most likely to be adopted cultivars scaled up implemented.**
- **Information on product profiles and past product performance gathered from on-farm trial networks.**
- **Proper transonic process in place to supply seed system with high quality seed.**
- **Feedback and release decisions are made available for release process and regional catalogues.**

**Outcomes**

- **Regional networks enhance on-farm performance trials for Azid crops and variety targeting to geographies.**
- **Seed systems across developing their capacity to connect improved products and deliver increased quantities of quality seed of improved varieties to selected countries, geographies, and market segments.**

**WP3: Expand on-farm testing networks and scale up the pre-release trials**

- **Outcomes:**
  - National partner breeding units register as members of regional on-farm testing platforms.
  - Regional networks enhance on-farm performance trials for Azid crops and variety targeting to geographies.
  - Seed systems across developing their capacity to connect improved products and deliver increased quantities of quality seed of improved varieties to selected countries, geographies, and market segments.

**WP3: Update on progress**

- **WP3: Expand on-farm testing networks and scale up the pre-release trials**
  - **Outcomes:**
    - National partner breeding units register as members of regional on-farm testing platforms.
    - Regional networks enhance on-farm performance trials for Azid crops and variety targeting to geographies.
    - Seed systems across developing their capacity to connect improved products and deliver increased quantities of quality seed of improved varieties to selected countries, geographies, and market segments.

**WP3: Summary of key achievements**

- **WP3: Expand on-farm testing networks and scale up the pre-release trials**
  - **Outcomes:**
    - National partner breeding units register as members of regional on-farm testing platforms.
    - Regional networks enhance on-farm performance trials for Azid crops and variety targeting to geographies.
    - Seed systems across developing their capacity to connect improved products and deliver increased quantities of quality seed of improved varieties to selected countries, geographies, and market segments.

**WP3: Update on progress**

- **WP3: Expand on-farm testing networks and scale up the pre-release trials**
  - **Outcomes:**
    - National partner breeding units register as members of regional on-farm testing platforms.
    - Regional networks enhance on-farm performance trials for Azid crops and variety targeting to geographies.
    - Seed systems across developing their capacity to connect improved products and deliver increased quantities of quality seed of improved varieties to selected countries, geographies, and market segments.
WP4: Strengthen currently successful impact pathways and validate innovative approaches to seed production and delivery of recently released varieties (seed systems)

**Output**

- Large-scale promotional activities established and supported by a partnership with extension and delivery systems.
- Quality certified/QDS seed produced by public and private seed entrepreneurs.

**Outcome**

- Women, men, youth and disadvantaged socio-economic groups access affordable, market-demanded and producer preferred, high-yielding, resilient variety seed.

**Table: Work Package 4 progress against the theory of change**

<table>
<thead>
<tr>
<th>CROP</th>
<th>VOLUME OF SEED (TONS)</th>
<th>AREA UNDER THE CROP (HA)</th>
<th>NUMBER OF FARMERS REACHED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorghum</td>
<td>932</td>
<td>11</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Pearl millet</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Finger millet</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Groundnut</td>
<td>0</td>
<td>0</td>
<td>133,000</td>
</tr>
<tr>
<td>Common bean</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Cowpea</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pigeon pea</td>
<td>2</td>
<td>100</td>
<td>333</td>
</tr>
<tr>
<td>Chickpea</td>
<td>12</td>
<td>100</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Total</td>
<td>9,308</td>
<td>377,257</td>
<td>1,886,286</td>
</tr>
</tbody>
</table>

**Activities**

- Adoption of TARI varieties through licensing. This resulted in TARI trained 35 personnel from TARI, the Agricultural Seed Agency to conduct seed fairs, demonstrations, field days, radio talks, and small seed packs (exhibitions, PVS trials, printed materials, and small seed packs) to enhance awareness and demand and to increase access to quality seed of superior varieties in the 3 countries produced breeder and foundation seed amounting to 209 tons. NARS partners in Ethiopia, Madagascar, and Tanzania — while certified seed produced by private and public partners in these countries was 1667 MT. NARS partners collaborated with the common bean seed front, 994 MT of quality declared seed was produced during the reporting period. This was about 39 percent higher than the target due to good crop management practices and preparation of the private sector in dryland crops, stronger partnerships, and enhanced seed production, business, and delivery systems. Additionally, the supply of high-quality seed of improved varieties to target dryland crops among men, women, and youth farmers in ESA countries was increased through enhanced seed production, business, and delivery (production and delivery) increased demand-driven, gender-equitable and timely promotional efforts and devising seed delivery models that support farmers, enabling them to make choices on the best in class improved varieties (not older than 10 years since their release) or to target dryland crops among men, women, and youth farmers in ESA countries.

**Conclusion**

- The project supported mainly the national partners and other actors in the seed value chains to create awareness, to generate awareness and demand and to increase access to quality seed of superior varieties along the seed value chains to target dryland crops among men, women, and youth farmers in ESA countries.

**Note:**

- Volumes and areas with 0 (0) refer to the absence of data or activities in that specific country.

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**Annual Technical Report 2023**

**CIMMYT**

**CGIAR Project on Accelerated Varietal Improvement and Seed Systems in Africa**
WP5: Co-develop and implement modern data management principles, governance, and strategy (data and bioinformatics for decision support)

**Output**

- **Flowchart**
  - Flowchart showing the process of data management and decision-making.
  - Description: ADCIN breeding informatics teams (BiTs) framework:
    - Focus areas for data science, enhancing data consciousness among breeding programs.
    - Streamlining the dissemination and access of trial data, enhancing evidence-based decision-making.

**Outcome**

- **Crop improvement teams across network** have implemented advanced bioinformatics strategies, enabling improved efficiency of their breeding programs.
- **Network partners of breeding programs** have access to some form of data management system.
- **Use of Molecular Markers and Advanced Bioinformatics**: This comprehensive platform serves as a central hub for capturing, hosting, and providing access to data management policies and governance frameworks.
- **Advancements in Trial Data Analysis and Support**: Partners across CGIAR and National breeding programs have access to digital management tools.
- **Digital Transformation of Breeding Programs and Visual Analytics**: This innovative interactive tool facilitates precise scheduling and operational oversight.

**Benefits**

- **Greater evidence-based decision-making**: Enhanced capacity for evidence-based, data-driven decision-making processes.
- **Improved efficiency**: Streamlining the dissemination and access of trial data, enhancing evidence-based decision-making.
- **Enhanced data science**: Focus areas for data science, enhancing data consciousness among breeding programs.
- **Data management protocols and tools**: Making extensive use of the research data management systems.
- **Capacity building**: Informatics Working groups equipped to assess the effectiveness of current breeding programs.
- **Product advancement and selection**: Network partners breeding program has helped cater to the specific data needs of network partners.

**Achievements**

- **Network partners**: Capacity built in use of advanced data analysis and bioinformatics tools.
- **Crop scientists, research technicians**: Enhanced data science methodologies to reinforce decision-making processes.
- **Decision-making**: Key processes, crop calendars, trial SOPs, data governance, and strategy.
- **Data science methodologies**: Reinforcing decision-making processes.
- **Enhanced capacity**: Weather睿思, crop operation executives, and data analysts.

**Further Advancements**

- **Network partners** have access to digital management system, modern methodologies, and data science methodologies to reinforce decision-making processes.
- **Partners** have access to some form of data management system.
- **Use of Molecular Markers and Advanced Bioinformatics**: This comprehensive platform serves as a central hub for capturing, hosting, and providing access to data management policies and governance frameworks.
- **Advancements in Trial Data Analysis and Support**: Partners across CGIAR and National breeding programs have access to digital management tools.
- **Digital Transformation of Breeding Programs and Visual Analytics**: This innovative interactive tool facilitates precise scheduling and operational oversight.
WP6: Establish sustainable regional collaborative crop improvement networks with responsibility-based sharing of resources (inclusive regional crop improvement networks)

**Output**
- Network governance principles defined and a network steering committee established with clear responsibilities.
- Network members supported to meaningfully assume greater responsibility for regional breeding efforts.
- Network members facilitated to actively contribute and participate in plans setting and strategy advancement decisions.
- Criteria developed to identify primary network countries and partners and spill over countries and partners.
- Assessments of network member crop improvement programs completed, and customized improvement plans jointly developed.
- Assessments of network member research stations’ infrastructure and network phenotyping network completed, critical gaps and infrastructural investment needs defined.
- Funding proposals submitted by crops network partners.
- Customized capacity development and training for network members conducted based on program assessments and needs assessments.

**Outcome**
- National partners committed to develop a common vision for network success.
- Global crop improvement networks develop capacities to support delivery of crops to smallholder farmers.

**SOC**
- National and private sector companies and donor programs accelerate the development of priorities that will provide larger scale benefits across the five impact areas.

**Work Package progress rating summary**

<table>
<thead>
<tr>
<th>WORK PACKAGE</th>
<th>PROGRESS RATING &amp; RATIONALE</th>
</tr>
</thead>
</table>
| 1 | Progress rating
- On track
- Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change. |

| 2 | Progress rating
- Delayed
- Annual progress clearly falls behind on track. |

| 3 | Progress rating
- Off track
- Annual progress slightly falls behind. |

| 4 | Progress rating
- On track
- Deviations/issues/delays/risks do not manage appropriately. |

| 5 | Progress rating
- Delayed
- Deviations/issues/delays/risks jeopardize success of Work Package. |

| 6 | Progress rating
- Off track
- Deviations/issues/delays/risks jeopardize success of Work Package. |

**Definitions**
- **On track**: Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change.
- **Delayed**: Annual progress clearly falls behind on track.
- **Off track**: Annual progress slightly falls behind.
- **Deviation**: Deviations/issues/delays/risks do not manage appropriately.
- **Impact**: Deviations/issues/delays/risks jeopardize success of Work Package.
This section provides an overview of 2023 results reported by the AVISA. These results align with the CGIAR Results Framework and AVISA’s theory of change. Source: Data extracted from the CGIAR Results Dashboard on 10 April 2024.

### Key results

#### Overview of reported results

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Other outputs</th>
<th>Innovation development</th>
<th>Capacity sharing for development</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>47</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Percentage of reported results tagged to CGIAR Impact Areas

- Nutrition, health and food security: 67%
- Poverty reduction, livelihoods and Jobs: 57%
- Gender equality, youth and social inclusion: 61%
- Climate adaptation and mitigation: 39%
- Environmental health and biodiversity: 34%
- Other outcomes: 28%

#### Number of innovations by readiness levels

- Proven innovation: 0
- Uncontrolled testing: 0
- Prototype: 1
- Semi-controlled testing: 0
- Model/early prototype: 1
- Controlled testing: 1
- Proof of concept: 0
- Formulation: 0
- Basic research: 0
- Idea: 0

#### Number of individuals trained by AVISA

- Female: 48
- Male: 138

#### Number of results by country

- Number of results: 18

#### Number of innovations

- Research organizations and universities: 1892
- Government: 651
- NGO: 455
- Private company (other than financial): 283
- Organization (other than financial or research): 260
- Financial institution: 206
- Other: 126
- Foundation: 53
- Public-Private Partnership: 8
**Partnerships**

### External partners contributing to results, per country

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Number of Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research organizations and universities</td>
<td>1892</td>
</tr>
<tr>
<td>Government</td>
<td>651</td>
</tr>
<tr>
<td>NGO</td>
<td>455</td>
</tr>
<tr>
<td>Private company (other than financial)</td>
<td>283</td>
</tr>
<tr>
<td>Organization (other than financial or research)</td>
<td>260</td>
</tr>
<tr>
<td>Financial Institution</td>
<td>206</td>
</tr>
<tr>
<td>Other</td>
<td>126</td>
</tr>
<tr>
<td>Foundation</td>
<td>53</td>
</tr>
<tr>
<td>Public-Private Partnership</td>
<td>8</td>
</tr>
</tbody>
</table>

### Colors represent the number of different partners which collaborated on results achieved in a specific country. One result can impact different countries and therefore the same partner can be associated with more than one country. Source: Data extracted from the Results Dashboard on 10 April 2024.

### Partnerships and Accelerated Varietal Improvement and Seed Systems in Africa's impact pathways

AVISA is implemented in 16 countries, 9 from WCA and 7 from ESA, and in each country, the main partners are NARS. This includes 11 NARS from WCA:

- Council for Scientific and Industrial Research-Savanna Agricultural Research Institute (CSIR-SARI/Ghana)
- Institut d’Économie Rurale (IER/Mali)
- Institute of the Environment and Agricultural Research (INERA/Burkina Faso)
- L’Institut National de la Recherche Agronomique du Niger (INRAN/Niger)
- Institut de Recherche Agricole pour le Développement (IRAD/Cameroon)
- Institut Sénégalais de Recherches Agricoles (ISRA/Senegal)
- Institut Togolais de Recherche Agronomique (ITRA/Togo)
- Institut Tchadien de Recherche Agricole pour le Développement (ITRAD/Chad)
- Institute for Agricultural Research (IAR/Nigeria)
- Lake Chad Research Institute (LCRI/Nigeria)
- Bayero University Kano (BUK/Nigeria).

AVISA’s main partners in ESA are:

- Ethiopian Institute of Agricultural Research (EIAR/Ethiopia)
- Kenya Agricultural and Livestock Research Organization (KALRO/Kenya)
- National Agricultural Research Organisation (NARO/Uganda)
- Tanzania Agricultural Research Institute (TARI/Tanzania)
- Zambia Agriculture Research Institute (ZARI/Zambia)
- National Research Council of Malawi (NRCM/Malawi)
- South Sudan, Zimbabwe, and Mozambique.

NARS are working closely with farmers’ organizations, seed companies, NGOs and other value chain actors.

AVISA’s partners were selected using criteria established by CGIAR to prioritize collaboration. Thus, for each crop, the area occupied by the crop based on recent data from the UN Food and Agriculture Organization was used to select priority countries:

- Level 1 countries: area covered by the crop is more than 1m ha, with available market segments and willing to collaborate.
- Level 2 countries: 200,000–1,000,000 ha, with available market segments and willing to collaborate.
- Level 3 countries: less than 200,000 ha, or country with civil unrest.

In addition to area occupied by the crop, a second criterion—the capacity of the partner— was considered. Each NARS program was assessed using the "ABI-Transform Breeding Program Questionnaire," available on the Excelling in Breeding platform. The data from these assessments present the comparative advantages of each partner. These results combined with the area of the crop in each country were used to define the contribution of partners to the regional activities, especially for population development and material testing.

The NARS partners are co-designing and co-implementing crop improvement activities with CIMMYT. Based on the two criteria above, some NARS, such as IER/Mali, INERA/Burkina Faso, ISRA/Senegal, ITRA/Togo, and IAR/Nigeria for sorghum, are co-sharing the development of regional pipelines.

Use of this model of collaboration is helping to develop the capacity of NARS in terms of their human resources, infrastructure, equipment, and technical expertise, which helps to sustain CGIAR’s interventions.

IITA in Nigeria hosted the Dryland Crops Program partners, led by Kevin Pixley, for a visit to the cowpea experimental field in Wudil, Kano State, Nigeria.

Credit: Ousmane Boukar/IITA
CGIAR Portfolio linkages

ACCELERATED VARIETAL IMPROVEMENT AND SEED SYSTEMS IN AFRICA’S INTERNAL PORTFOLIO NETWORK

Portfolio linkages and Accelerated Varietal Improvement and Seed Systems in Africa’s impact pathways

Communications and Learning

SUPPORTING RATIONALE

Communication and Learning

Overight and Monitoring, Evaluation and Learning at Work Package (WP) level

Strengthen Resource Efficiency and Innovation

Integrate and Enhance tricot Training and Utilisation across All Partners

Strengthen Data Management, Quality Control, and Infrastructure Support

Promote Gender Equity and Policy Reform

RECOMMENDATION
Key result story

Youth and Women Quality Centre (YWQC) Model for Enhanced Adoption of New Varieties in Tanzania

Low adoption of quality seed of new and improved groundnut and sorghum varieties is attributed to inadequate awareness among farmers, inadequate linkages to, and collaboration with, key value chain actors, perceptions on cost, limited participation of smallholder farmers in seed production, inadequate infrastructure for seed production and storage, and weak regulatory frameworks, among other factors.

To address these gaps in Tanzania and other African countries, and in partnership with the Centre for Behaviour Change and Communication (CBCC), we are operationalizing the Youth and Women Quality Centers (YWQC) concept in the Momba and Mbozi districts of southern Tanzania. The YWQC is a last-mile behaviour change community-led hub with the goal of increasing demand for and adoption of improved varieties through social and behavior change approaches.

Currently, there are four operational centres targeting 21 villages and more than 4,313 smallholder farmers, mainly youth and women in rural underserved communities. Enhancing access to improved seeds is poised to create a lasting and beneficial impact on food security and poverty alleviation.

Key functions of the YWQCs in seed sector development include:
1. Creating and aggregating seed demand
2. Improving access to seeds, inputs, and modern technologies
3. Facilitating extension support and demonstrations
4. Supporting local seed production (e.g., using quality declared seed, a seed-producer implemented system for production of seed that meets at least a minimum standard of quality but does not entail formal inspection by the official seed certification system)
5. Facilitating business links with various stakeholders
6. Building the capacity of farmers and local seed multipliers/enterprises
7. Facilitating collective marketing of agricultural produce, enabling aggregators, off-takers, and processors to access quality produce
8. Collection and analysis of marketing information
9. Allowing farmers to access reliable and accurate market information. The YWQCs are managed by registered groups of youth and women champions under the guidance of dedicated extension officers.

Youth and Women Quality Centers’ last-mile behavior change model

The YWQC - behaviour change model, that puts the farmer at the centre and responds to their needs such as information, motivation, skills, access, linkages, opportunities, alignment with government, coordination, building synergies.

The project recruited and built the capacity of 45 women and youth champions to disseminate innovative farming techniques and technologies. They reached 4,313 farmers (44 percent male, 56 percent female) through social behavior change interventions led by youth champions. To increase the availability of seed of improved varieties at the last mile, 18 youth and women representatives received training on seed production protocols and guidelines and were certified to produce seed at “quality declared seed” levels, producing 8,872 kg (4172 kg groundnuts, 4700 kg sorghum) of quality declared seed in the 2022/2023 season. By availing seed to farmers in the project sites, the YWQCs created and consolidated demand for 10,000 kg of improved groundnut seeds from 1,660 farmers and 3,200 kg of improved sorghum seeds from 1,109 farmers. Partnerships have been forged with five seed companies, supplying 2,200 kg (1,200 kg sorghum, 1,000 kg groundnuts) of certified seeds, and collaborations with the Tanzania Agricultural Research Institute, The Centre for Behaviour Change and Communication ∙ Five seed companies: Palvic Agro Co., Rieta Agroscience Co., Zasse Agricultural Seed and Food Co. Ltd, Mbozi Highland Economic Group Ltd., and Singidan Seed Co., Ltd.
Research Institute (TARI) supplied 450 kg of certified groundnut seeds. In 2023, the YWQCs facilitated the establishment and supervision of 107 demonstration and tricot plots on sorghum and groundnut in conjunction with extension officers, TARI, and seed companies. The YWQCs also established partnerships with 15 social institutions including churches, schools, and farmer organizations to advocate for new, quality, and improved seed varieties in hard-to-reach last mile areas.

The tangible effects of these interventions were assessed through a cross-sectional study conducted in 2023 involving 1,194 farmers. The study revealed significant improvements in the adoption rates of quality seeds for sorghum, rising from 6.3 percent to 32.7 percent in the 2022/2023 season. Similarly for groundnut, there was a notable increase in adoption from 2 percent to 26.7 percent. Additionally, there was a discernible influence observed among women farmers, as evidenced by a slight rise in land allocation for these crops, with acreage increasing from 0.5 to 1 acre. Further, by enhancing the skills and knowledge of 2,155 women and youth in good agronomic practices, financial literacy, and postharvest management, 168 jobs were created in the seed business. The collective net income from the four YWQCs recorded in the last quarter of 2023 was US$ 4,854 from five revenue lines:

1. Equipment rental services
2. Commissions from marketing and sales of quality seed
3. Quality declared seed production and distribution
4. Commissions from marketing and sales of postharvest equipment
5. Commissions from marketing and sales of crop protection products.

The implementation of this project has provided insights into programs seeking to intervene at a community level using a social and behavior change approach that incorporates such models as the Youth and Women Quality Centre. To increase demand, adoption, and investment in seeds of improved varieties, it is vital to design a context-specific model that places farmers at the centre by addressing information needs, motivations, norms, and access, among other key concerns or our stakeholders.

Press release

Demand for new seeds of improved varieties among farmers, especially women, has increased. Initially, our farmers believed that only maize requires new seeds. After getting training from youth champions and the extension officers, in the last season farmers showed a great demand for improved seeds.

The Youth and Women Quality Centre has enhanced proximity to seeds and services. . . . Before, I had to spend Tshs. 3,000 (Kshs. 1,500) each way to travel to town to buy seeds; the Centre is close by and I only have to walk to the Centre to get the seeds.

Through the Youth and Women Quality Centre, we expanded markets because it linked us with farmers who need improved seeds.

When I came here, I didn’t know there exist many names for groundnuts, I only knew about white groundnut and red groundnut. When I came to hear of Mnanje Naliendele varieties, I realized there are various varieties of groundnuts, each with a specific name.

Press release
A farmer proudly displays a harvest of groundnuts during a farmers’ field day at the groundnut demonstration plot in Tanga Region, Tanzania.

Credit: Justin Butindi/TARI

Hamath Diop is a seed producer from Senegal. He is also a member of COPAM cooperative which is involved in producing and selling foundation and certified seeds of sorghum and other crops.

Credit: Marion Aluoch/CIMMYT