

# CHAPTER 3

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## Accelerating innovation delivery in the Democratic Republic of the Congo: Partnerships, performance, and impact

Leon Nabahungu<sup>1</sup> and Sylvestre Mulumeoderhwa<sup>1</sup>

### Contributors:

Bonnke Safari<sup>2</sup>, Lucien Buzera<sup>2</sup>, René Aganze<sup>3</sup>,  
Jean Claude Nshimiymimana<sup>4</sup>, Eliud Abucheli<sup>5</sup>, Joseph  
Bigirimana<sup>6</sup>, Fekadu Dinssa<sup>3</sup>, Herman Mutabatoba<sup>7</sup>, Francois  
Tsongo<sup>8</sup>, René Civava<sup>9</sup>, Joseph Bahogwere<sup>10</sup>, Rose Wandjo<sup>11</sup>,  
Martin Batasema<sup>12</sup>, and Justin Amani<sup>13</sup>

<sup>1</sup>International Institute of Tropical Agriculture (IITA). <sup>2</sup>Rikolto. <sup>3</sup>World Vegetable Center (WorldVeg). <sup>4</sup>International Potato Center (CIP).

<sup>5</sup>Alliance of Bioversity and CIAT (ABC). <sup>6</sup>International Rice Research Institute (IRRI). <sup>7</sup>AgriForce. <sup>8</sup>Vétérinaires Sans Frontières (VSF). <sup>9</sup>Seed Systems Group (SSG). <sup>10</sup>Service d'Accompagnement et de Renforcement des Capacités d'Autopromotion de la Femme (SARCAF).

<sup>11</sup>National Extension Service (SNV). <sup>12</sup>Espoir pour l'Humanité (EPH Ltd). <sup>13</sup>Tuendeleye Pamoja Cooperative (COOPATU).

## 3.1 Context

At the time of the AID-I GLR initiative's design in late 2022, the Democratic Republic of the Congo (DRC) faced severe food-security challenges exacerbated by high demographic growth and rapid urbanization, which significantly contributed to agricultural land scarcity and eroded production. More than half the population lived below the poverty line, with a distressing one-third of children suffering from malnutrition and stunting. This precarious situation was worsened by limited household-level processing knowledge, insufficient added value for agricultural products, and restricted access to nutritious foods.

The country's diverse ecosystem rendered it highly vulnerable to climate change, affecting almost its entire (over 90%) small-scale farming population. Furthermore, global events like the COVID-19 pandemic and the Russia-Ukraine war severely exacerbated food and fertilizer prices, intensifying existing hardships. Additionally, we cannot ignore the resurgence – in eastern DRC – of armed and ethnic conflicts that continue to disrupt economic, humanitarian, social, and other activities.

Launched in October 2022, the AID-I GLR project aimed to combat these issues by improving agricultural productivity,

enhancing food security, and increasing household incomes in the Great Lakes Region.

Despite a clear need for agricultural advancement, access to and adoption of agricultural technologies in DRC remained significantly limited when the initiative began. And while organizations like CGIAR centers<sup>2</sup> and their partners<sup>3</sup> had developed numerous region-adapted technologies over the preceding 15 years, other development initiatives had not systematically integrated these technologies into their scaling efforts.

Consequently, adoption rates remained persistently low, with women exhibiting even lower uptake compared to men. And although innovations such as improved seeds and cattle genetic improvement were introduced, there had been no large-scale adoption. This was primarily due to the absence of robust, effective, and efficient production and distribution systems, and the low added value or purchasing prices offered to producers.

The AID-I GLR Project was therefore designed with a multi-actor, integrated approach to amplify innovations and ensure their sustainable delivery and uptake.

## 3.2 Adapting and implementing the strategies and approaches developed for DRC

### 3.2.1. Scaling partnerships and market actors

This initiative's partners fell into two distinct groups: scaling organizations and market actors. The scaling organizations built and strengthened necessary partnerships based on their existing networks of grassroots farmer organizations. In South Kivu, the consortium of organizations comprised Rikolto's internationally based structure (Rikolto International), *Service d'Accompagnement et de Renforcement des*

*Capacités d'Autopromotion de la Femme* (SARCAF) – a local NGO operating in the agricultural sector – and VSF-Belgium (for improving animal health and dairy products). In Haut-Katanga Province, *Coopérative des Agriculteurs et Eleveurs du Congo* (COOPAGEL) led an agricultural partnership involving *Bon Berger*, Lugo Farm, and Mimosa.

Market actors comprised various service providers such as AgriForce, *Etablissement Munga (Ets Munga)*, *Espoir pour l'Humanité* (EPH Ltd), and SAGRICIM (seed company):

<sup>2</sup> Alliance of Bioversity and CIAT (ABC), IITA, International Livestock Research Institute (ILRI), International Potato Center (CIP), and International Rice Research Institute (IRRI).

<sup>3</sup> *Institut National des Etudes et Recherches Agronomiques* (INERA), and World Vegetable Center (WorldVeg).

they were crucial for ensuring the sustainability of seed-based innovations.

This group also included state services such as *Institut National des Etudes et Recherches Agronomiques* (INERA) and *Service National de Semences* (SENASA), responsible for the production of high-quality seeds.

To undergird the efforts above, the Seed System Group (SSG) and Science Animation Without Borders (SAWBO) established a

comprehensive system for disseminating innovations (mainly through multi-lingual publicly available videos: <https://shorturl.at/mDufB>), prioritizing innovations developed by CGIAR and its partners.

This structured partnership ensured both effective outreach and market sustainability of agricultural advancements.

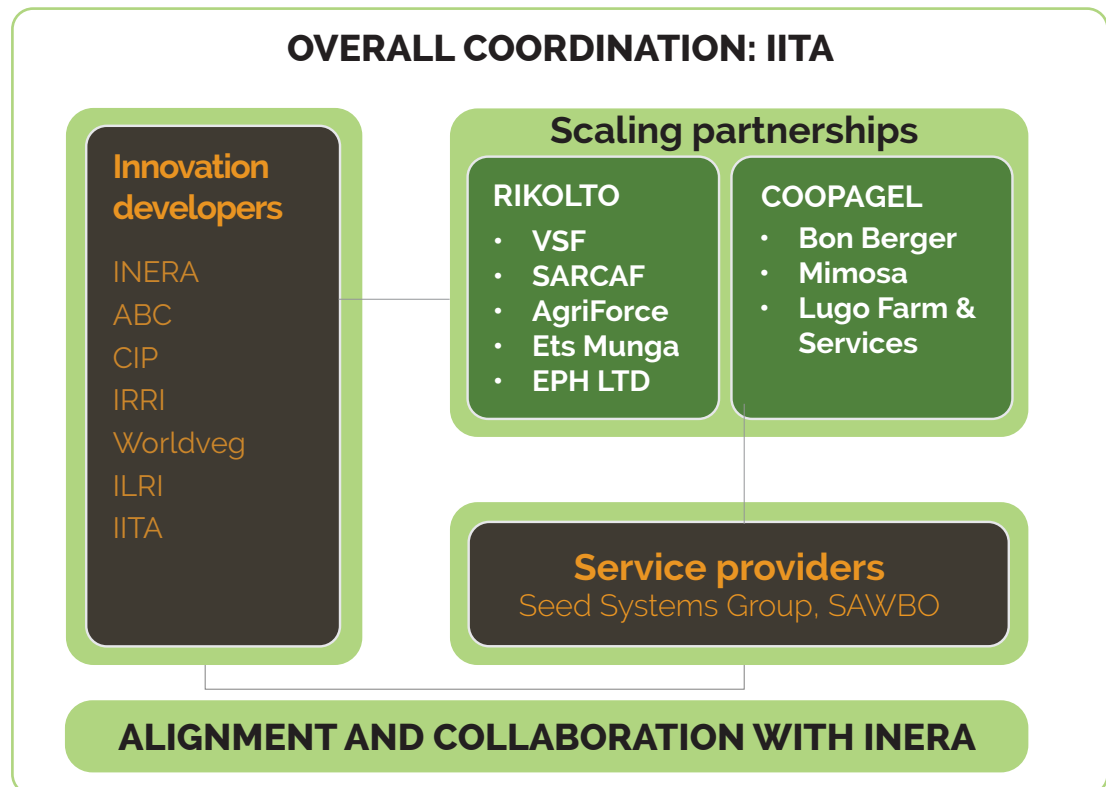


Figure 12: Innovation developers, scaling partnerships, market actors, and service providers in DRC.



### 3.2.1. Scaling partnerships and market actors

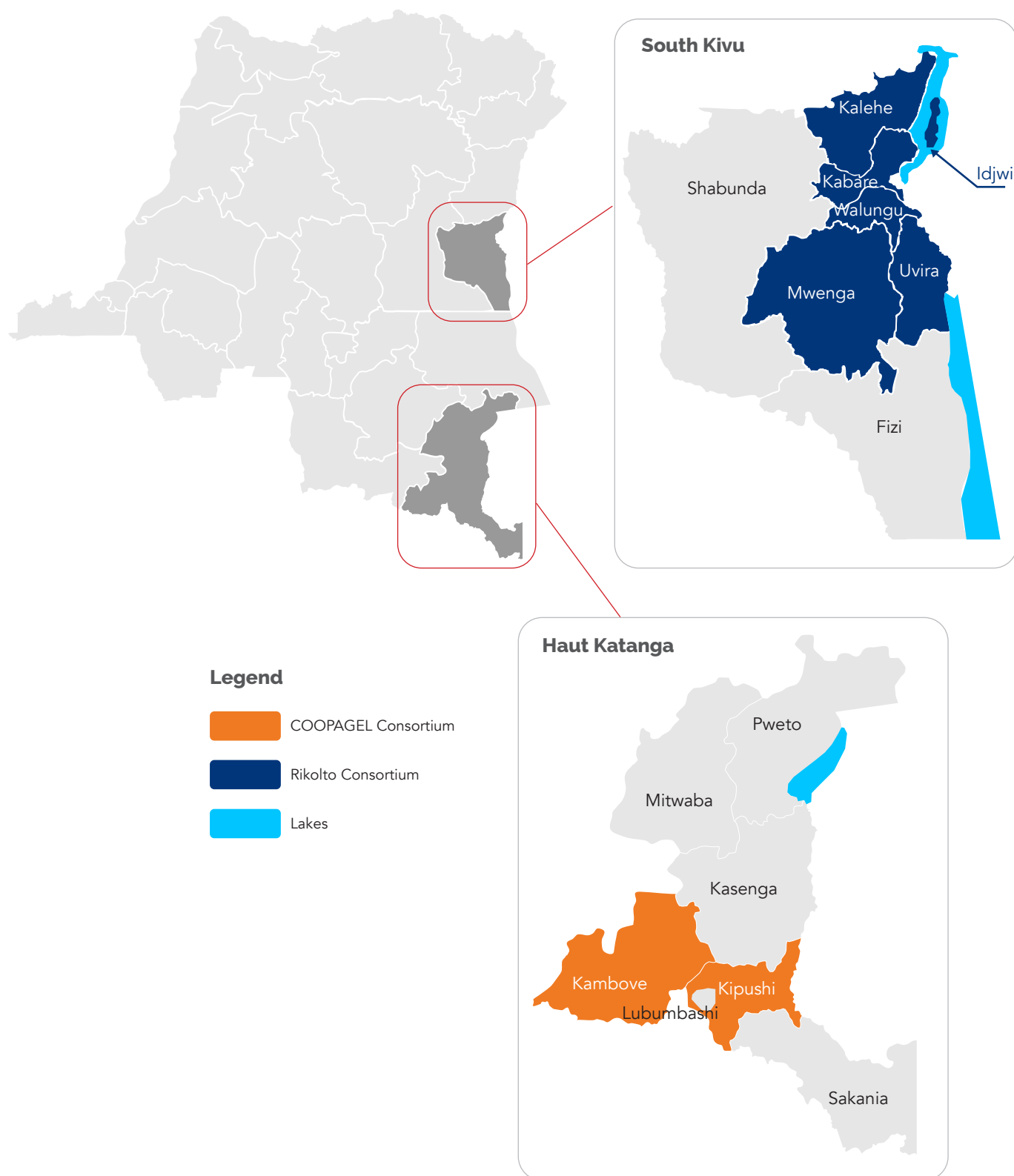


Figure 13: The project's target areas in DRC, showing intervention area (s) by each consortium.

In bringing agricultural innovations to farmers, the project initially targeted six territories (Kabare, Kalehe, Mwenga, Uvira, Idjwi, Walungu) in South Kivu Province during the first year. But by March 2024, in its second year, the initiative significantly

expanded its reach adding Kambove and Kipushi in Haut-Katanga Province.

In total, the initiative aimed to reach 299,353 farmer households across the two provinces.

### 3.2.3. Selection of innovations

The selection of interventions began during the co-creation meeting in Burundi in December 2022, without any field mission having been carried out beforehand. There were pros and cons. While this rapid approach saved time and resulted in the launching of activities without delay, innovation selection essentially relied on the knowledge, exchanges and discussions among the national stakeholders present and involved in the selection process.

In DRC, partnerships led by Rikolto International and COOPAGEL advocated for and backstopped the adoption of new technologies to improve agriculture, animal health, and dairy products.

The first intervention was introducing innovations for improved and resilient seeds (cassava, rice, bananas, orange-fleshed sweet potatoes [OFSP], beans, vegetables, and soybeans), soil fertility management, irrigation, and so on.

The second intervention revolved around livestock farming, with a focus on genetic improvement of cattle, animal nutrition, establishing livestock feed banks, as well as improved access to veterinary services, including artificial insemination (AI).

The consortia focused on introducing the tried, tested, and trusted innovations above. Emphasis was on improved seeds, soil fertility management practices, irrigation-water management, traceability and quality-control systems for specific agricultural commodities (such as the Nyange-Nyange [rice] label), genetic improvement of cattle, improving animal feed, establishing livestock feed banks, promoting forage crops, as well as improved access to animal health services through a network of local private veterinary services.

### 3.2.4. Advisory information

The implementation was mainly carried out thanks to networks of village-based advisors (VBAs) and field demonstrations involving the use of community and individual learning plots, aiming at revamping networks of cooperatives, farmers, livestock breeders, and urban merchants to promote sustainable change. Mass communication played a crucial role in enhancing the reach of innovations

promoted by this project, through enlightening stakeholders on mandatory steps for adoption and sustained use of these new practices. Radio-broadcast programs aired on community radio stations played a key role in relaying the project's messages. The visibility of the project's endeavors was also enhanced through social media, printed materials, and several local-language videos produced by SAWBO.

Awareness activities, field days, and demonstration training sessions greatly contributed to increasing knowledge of the practices and innovations disseminated in project target areas. One aspect of this strategy engaged youth involved in Circle Technology, in collaboration with Soko Letu. These platforms generate customized awareness-raising short-message service (SMS) texts sent to farmers on advisories and project innovations.

### 3.2.5. Capacity development

Enhancing partner capacity and skills was crucial for the effective dissemination of the selected innovations targeting thousands of farmers.

In DRC, the implementation model combined both direct and indirect approaches. The aim was to organize training-of-trainer (ToT) sessions for selected lead farmers, provincial agricultural inspectors, private-sector agents, field technicians, and civil society representatives. Prospective trainers, disaggregated by gender and age, were trained in one or more of the innovations promoted by the project. In turn, they trained the farmers – who were selected based on recommendations by their respective cooperatives and organizations – on using project innovations. Notably, at least one demonstration field was set up for each agricultural value chain.

### 3.2.6. Input system

The agricultural input system of the project focused on supporting the production and distribution of seed-related innovations in the region. In this context, three organizations (INERA, SENASEM, and SSG) supported the three institutions – namely AgriForce, *Espoir Pour l'Humanité* (EPH), and Ets Munga – to facilitate innovation production and distribution. A first variety of local hybrid maize was produced, using

parental lines acquired from QualiBasic, allowing the project to continue supporting these seed companies in the production of certified seeds. At the same time, links were established with selected VBAs, in collaboration with Rikolto, to ensure the distribution of seeds and other innovations proposed to the community.

Moreover, discussions and planning sessions with the National Extension Service (SNV), Ministry of Agriculture (MINAGRI), SENASEM, and INERA were crucial in designing the model for sustaining the project's achievements regarding seed supply. Youth incubators, the economic interest group (GAKI), and the Evangelical University in Africa all deepened our understanding of research on the formulation of balanced food diets and portions, and of professionalizing youth enterprises in local food systems, as advocated by AID-I GLR.

### 3.2.7. Village-based advisors

Beyond the technical agricultural aspects, and within the framework of strengthening producer capacities, Rikolto and SARCAF, in collaboration with SNV, initiated the process of formally establishing the VBA model in target rural areas of eastern DRC. This involved awareness sessions, election of leaders, and training VBAs on this new approach, in partnership with local authorities and producer representatives.

This approach was implemented cognizant of the local context and was supported by state-led bodies, especially SNV and MINAGRI.

A fundamental aspect of the project was embodied in the democratic nature governing the conduct of elections within participating villages, under the guidance of local respected leaders, thereby ensuring effective and lasting ownership of the promoted agricultural innovations.

**284,154**



**Small packs of improved  
agricultural technologies  
distributed to farmers,  
along with advisory  
information**



## 3.3 Results in DRC

### Great Lakes Accelerated Innovation Delivery Initiative Rapid Delivery Hub (AID-I GLR) in DRC

October 2022–September 2025

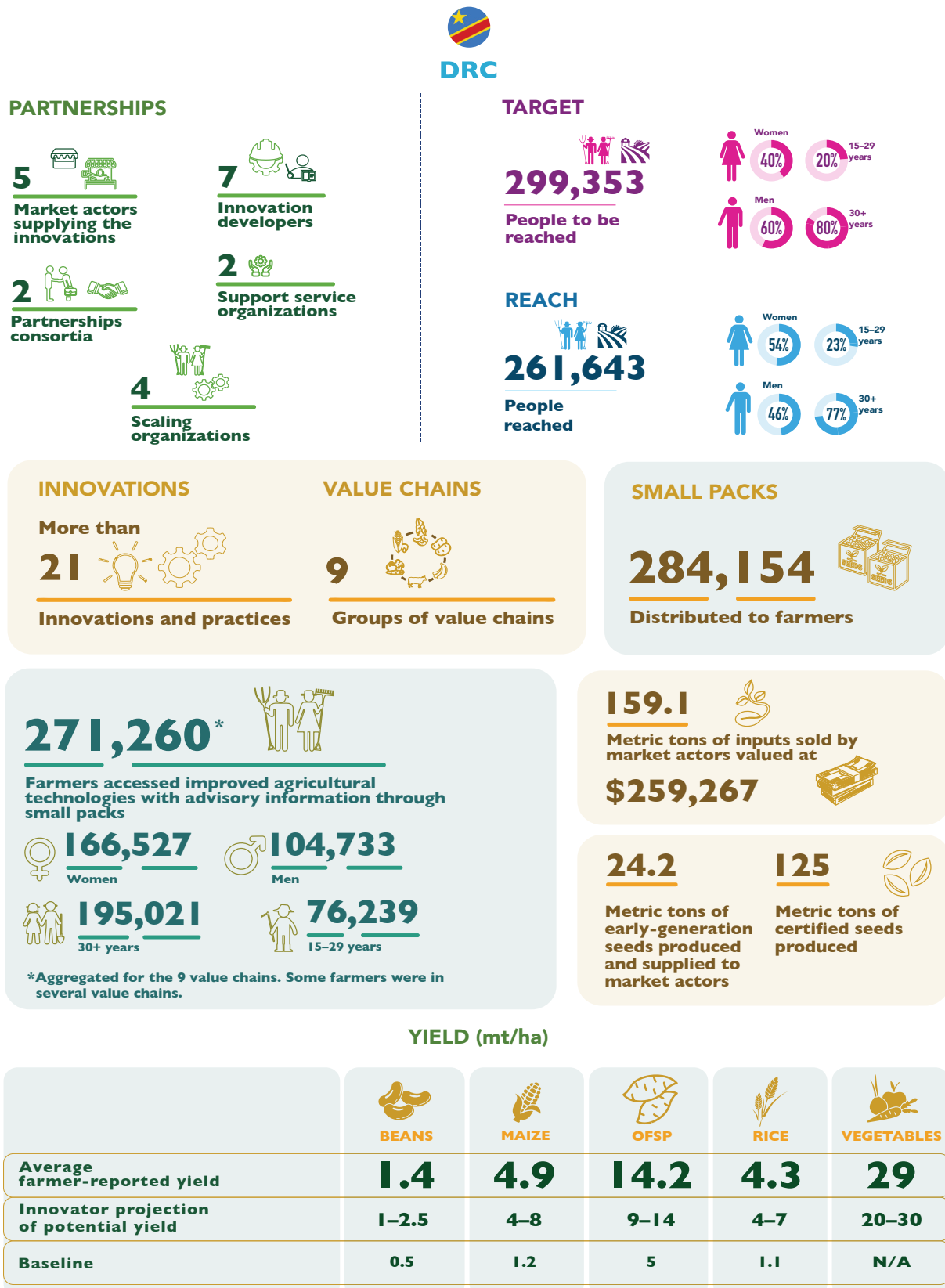


Figure 14: The numbers at a glance - Results of the AID-I GLR Project in DRC.

### 3.3.1. Outputs

#### 3.3.1.1. Scaling partnerships

The partnerships accelerated technology diffusion by integrating diverse organizations, including research, state institutions, the private sector, and development groups. This consortium leveraged members' established presence in implementation sites and their specialized knowledge of producer organizations, turning the challenge of coordinating varied missions into an opportunity for complementarity and synergy. The consortium (Rikolto, SARCAF, VSF) ensured acceleration through clear role definition, efficient guidance, and joint planning and monitoring of activities.

To increase farmers' exposure to technologies, the partnership mobilized extensive networks including farmers, herders, community animal health agents (ACSAs), private veterinarians, and cooperatives. This mobilization included diffusing proven innovations like improved seeds through the establishing 'mother-demo' and community learning units.



*The partnerships accelerated technology diffusion by integrating diverse sectors (research, state, and private) that transformed varied missions into synergy, leveraging their local anchors for mass deployment. Networks of farmers, herders, and market actors were mobilized to disseminate innovations such as improved seeds (e.g., via mother demos and learning units) and promote bovine artificial insemination. The consortium secured state support for administrative needs, such as vaccine approval, and establishing market links via the VBA network. Furthermore, the network overcame challenges like vaccine inaccessibility by connecting local veterinarians to suppliers in neighboring countries (Burundi and Rwanda).*

— VSF-Coordination,  
AID-I GLR-DRC, 2024

In the livestock sector, efforts focused on promoting bovine artificial insemination and widespread vaccination campaigns against *peste des petits ruminants* (PPR, also known as sheep and goat plague – a highly contagious viral disease). Specific examples of network mobilization include leveraging state entities to facilitate critical operational steps, such as issuing sanitary mandates and registering vaccines against theileriosis and PPR.

The consortium also established market links by connecting farmers directly with agro-dealers through the creation of the VBA network. Notably, when the theileriosis vaccine was unavailable in DRC, the partnership connected private veterinarians to suppliers in neighboring countries, such as Burundi. The consortium also addressed the lack of liquid nitrogen for safe storage and transport of semen for artificial insemination by facilitating a link between inseminators and the production unit in Burundi.

The success of the partnerships is measured by the high acceptance of innovations, strong producer feedback, and significant demand for input packs, leading to requests for model replication across other provinces. After project closure, key relations were maintained, including functional networks of VBAs and private veterinarians, alongside continued collaboration with state services and producer organizations. Rikolto and VSF utilized the AID-I experience to formulate new funding proposals, reinforcing the project's approach in urban food-system



*The partnerships ensured durability through functional VBA and private veterinarian networks and integrating the AID-I GLR model into new programs. Critically, the collaboration influenced SARCAF to adopt sustainable development approaches and small-scale intervention methods, moving beyond its historical emergency focus. Future partnerships require specialized leadership and capacity building aligned with clearly defined roles.*

— Joseph Bahogwerhe, SARCAF

programs. This continuity, alongside the sustained artificial insemination services and Soko Letu's digital monitoring, affirms the project's relevance and legacy, in terms of long-term durability of some aspects of its initiatives, and enduring market links.

The technologies and the AID-I GLR theory of change were successfully integrated into subsequent interventions, including Rikolto's food-system program and new proposals submitted alongside the Belgian non-governmental organizations consortium.

Additionally, the vital business links established between seed providers and South Kivu producers were requested for replication in other provinces like Tshopo and Kwango.

Effective partnership design demands robust capacity building and leadership training for core staff around a shared vision, and specialized objectives towards realizing that common vision.

Future consortia must prioritize a clearer definition of roles and responsibilities, enhance organizational adaptability, and ensure active farmer and herder participation for optimal results.

### 3.3.1.2. Selection of innovations

Following discussions held between national stakeholders and CGIAR experts during the co-creation meeting in December 2022, a comprehensive set of technological innovations was selected for implementation within the framework of the project. This selection utilized materials already tested and validated by other preceding projects, specifically for sweet potatoes and beans. This pragmatic approach deliberately favored the use of

proven materials, which in turn boosted speed and efficiency during project implementation.

The selection process was primarily based on three critical factors:

- agronomic performance
- adaptability to local conditions, and,
- availability of plant material.

Among the key innovations selected were specific varieties known for their superior traits. These include the bean (*Phaseolus vulgaris* L.) variety HM21-7, which is valued for its high productivity and increased resistance to certain diseases. Also selected was hybrid maize (WE5117), chosen for superior yields and demonstrated tolerance to abiotic stresses, particularly drought.

In addition to these core crops, the selection encompassed other complementary agricultural innovations listed in Table 16, covering various supportive strategies and technologies associated with both plant and animal production. Also, several market-gardening crops were chosen, with tangible outcomes within the relatively short timeframe of the project.

It is important to note that no regional integration across the Great Lake countries was achieved as part of this selection. In fact, innovations such as fish farming (pisciculture) and aquaculture, were specifically not selected. This exclusion was primarily because the technologies associated with these domains were neither sufficiently documented nor adequately mastered at the time the selection was being undertaken.

Table 16 shows the various innovations on specific commodities/value chains.

**Rikolto and VSF utilized the AID-I GLR experience to formulate new funding proposals, reinforcing the project's approach in urban food-system programs**

Table 16: Selection of innovations in DRC.

| Value chain                   | Technology or adopted practice                                                                                                                                       | Variety (ies)                                                                                                                               |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Beans                         | Micronutrient-rich (iron and zinc), farmer- and consumer-preferred varieties                                                                                         | HM21-7<br>D6 Kenya (In Haut-Katanga)                                                                                                        |
| Orange-fleshed sweet potatoes | Climate-smart, vitamin A-rich varieties                                                                                                                              | Nasplot 13<br>Nasplot 10 (Kabode)<br>Elengi<br>Mayayi<br>Terembere/Vanderwall<br>Kakamega7                                                  |
| Soybeans                      | Composite varieties                                                                                                                                                  | Kafue<br>TGX888-49C                                                                                                                         |
| Bananas                       | Disease-resistant varieties                                                                                                                                          | Barabesha<br>Musheba locale<br>Gros michel                                                                                                  |
| Rice                          | High-quality seed of improved varieties                                                                                                                              | Mugwiza<br>Komboka<br>Tai<br>Nerica4<br>Vo46                                                                                                |
| Cassava                       | Disease-resistant and -tolerant varieties                                                                                                                            | V8<br>Nabana                                                                                                                                |
| Maize                         | Hybrid maize varieties                                                                                                                                               | WE5117                                                                                                                                      |
| Horticultural crops           | High-quality seed of improved varieties of spinach, carrots, cabbage, beetroots, and eggplants                                                                       | Tomato: Gamhar<br>African eggplant: Benue RZ F1, DB3<br>Cabbage: Tacoma RZ F1<br>Amaranth: Madiira1 and Poli<br>Onion: Red Creole (Holland) |
| Dairy                         | Animal feeding ( <i>Brachiaria mulato</i> and licking block)<br>Artificial insemination<br>Immunization (vaccine against theileriosis and for goat and sheep plague) |                                                                                                                                             |
| Others (miscellaneous)        | Good agricultural practices (GAPs), including the use of fertilizer, manure, and compost; and post-harvest management                                                |                                                                                                                                             |

Ultimately, this set of innovations constituted the technical basis for all planned interventions within the AID-I Project. Consequently, it directly guided the demonstration, dissemination, and monitoring-evaluation activities executed by the implementing partners.

However, some of the choices, notably cassava and bananas, as well as market-gardening crops, were difficult in practice.

The short project timeframe was a mismatch with achieving the complete maturity of long-cycle crops like cassava and bananas. Also, the significant diversity of selected market-gardening crops and varieties complicated monitoring efforts,

ultimately preventing their necessary registration in the national variety catalog.

One significant change that occurred late in the project's timeline in response to direct demand from producers and livestock farmers was the introduction of brachiaria. This had not been part of the initial selection of innovations.

Consequently, the delayed introduction limited the possibilities for propagating brachiaria within the project scope. Still, yield results on integrating brachiaria into maize are presented in Section 3.3.2.3 of the outcomes, and those of a study on the vaccine against theileriosis are summarized in Box 6.



271,260

Farmers accessed improved agricultural technologies

### 3.3.1.3. Delivering agricultural innovations to farmers

The distribution of small packs of seed packets was particularly effective for stimulating farmer interest and active participation. This strategy offered them the opportunity to directly experiment with improved seeds while comparing their performance to traditionally used local varieties.

By reducing the volume and acquisition cost, these miniaturized forms allowed producers – including those with limited financial resources – to access innovations free of major economic risks.

The small-pack approach acted like a free sample kit at a market. By offering a small, low-risk test portion of the new varieties, farmers could personally verify the quality and superiority of the product in their own environment, driving confidence and encouraging them to return later to purchase larger quantities of the product.

Methodologically, the approach was distinguished by its inclusive, participatory, and non-discriminatory nature. This favored the participation of a large number of farmers, regardless of their farm size, gender, or socioeconomic status. This approach thus enabled reaching a significant number of beneficiaries, while triggering and reinforcing technological curiosity, and inspiring confidence in the new varieties.

The results observed directly in farmers' fields and multiplication plots contributed to validating the effectiveness of the improved seeds, thereby consolidating the credibility of the promoted innovations.

Furthermore, the availability of small packs through agro-dealers and village-based

advisors (VBAs) facilitated physical and geographical access to improved seeds. This increased accessibility stimulated local demand (see seed-company sales in Table 22), as farmers satisfied with the observed performance in yield, disease resistance, and harvest quality, expressed a growing interest in acquiring larger volumes. This strategy proved to be an effective gateway for the large-scale dissemination and adoption of agricultural innovations. It also contributed to strengthening the links between producers, input distributors, and other actors in the value chain, thus promoting a dynamic of progressive, sustainable, and economically viable adoption of improved agricultural technologies.

Table 17 shows the number of small packs distributed to different participants by gender and age-group. Between February 2023 and March 2025, a total of 236,453 small seed packs were distributed, covering selected innovations and thus exposing 225,151 farmers to these innovations. This accounted for 77% of the project's target (i.e., 307,381). The packs comprised maize, beans, OFSP, vegetables and horticultural crops, soybeans, rice, cassava, and bananas. Accompanying the seed packs were 40,616 small packs of fertilizer and 2,685 packs of biopesticides.

Thanks to VSF's intervention through its network of community animal health agents, 3,675 doses of vaccines against bovine theileriosis and small ruminant diseases were administered, and 725 cows were artificially inseminated in an effort to improve genetics.

In sum, the total number of farmers reached through small packs or other inputs was 271,260.

#### Box 6: The impact of the tropical theileriosis vaccine on cattle

*Tropical theileriosis is a widespread cattle disease caused by Theileria parva and transmitted by Hyalomma ticks. A study revealed the overall perceived effectiveness of the vaccine as highly positive (83.8%), with rates reaching 100% in Walungu and Kabare, although Uvira reported a significantly lower positive perception, at 58%.*

*Vaccination demonstrated clear beneficial effects, significantly reducing overall morbidity in women (e.g., from 85% to 39% in Kabare) and resulting in dramatic drops in mortality rates, which fell to 0% in Kabare.*

*The economic and productive benefits were also substantial, as observed by improved live*

*weight (87%) and higher milk quality (81%).*

*Average milk production saw significant increases, such as rising from 1.9 liters to 7.5 liters per cow in Uvira.*

*The preventive effect also substantially reduced annual costs, including expenses for theileriosis treatment, acaricides, and veterinary labor.*

*While the perceived cost-benefit ratio varied regionally, these savings and production improvements suggest the vaccination is economically advantageous.*

Table 17: Distribution of small packs of technologies in DRC in metric tons.

| Packs of technologies distributed | Target  | Actual  | % progress | Farmers reached by small packs |         |        |         | Total   |
|-----------------------------------|---------|---------|------------|--------------------------------|---------|--------|---------|---------|
|                                   |         |         |            | Women                          | Men     | 15–29  | 30+     |         |
| Seeds                             |         |         |            |                                |         |        |         |         |
| Maize                             | 73,410  | 76,099  | 104%       | 47,408                         | 27,556  | 20,019 | 54,945  | 74,964  |
| Beans                             | 52,158  | 97,110  | 186%       | 60,399                         | 32,692  | 27,661 | 65,430  | 93,091  |
| OFSP                              | 52,043  | 8,438   | 16%        | 4,533                          | 2,695   | 1,828  | 5,400   | 7,228   |
| Rice                              | 32,950  | 23,530  | 71%        | 11,427                         | 12,014  | 7,111  | 16,330  | 23,441  |
| Vegetables                        | 46,695  | 17,512  | 38%        | 8,417                          | 5,560   | 3,744  | 10,233  | 13,977  |
| Fodder                            | 0       | 221     | 0%         | 87                             | 131     | 27     | 191     | 218     |
| Bananas                           | 9,075   | 924     | 10%        | 407                            | 443     | 256    | 594     | 850     |
| Cassava                           | 39,000  | 10,655  | 27%        | 5,830                          | 3,866   | 1,981  | 7,715   | 9,696   |
| Soybeans                          | 2,050   | 1,964   | 96%        | 819                            | 867     | 650    | 1,036   | 1,686   |
| Total 1                           |         | 236,453 | 77%        | 139,327                        | 85,824  | 63,277 | 161,874 | 225,151 |
| Other inputs                      |         |         |            |                                |         |        |         |         |
| Fertilizer                        | 76,362  | 40,616  | 53%        | 25,093                         | 15,253  | 11,716 | 28,630  | 40,346  |
| Bio-pesticides                    | 11,472  | 2,685   | 23%        | 989                            | 583     | 561    | 1,011   | 1,572   |
| Vaccine                           | 9,850   | 3,675   | 37%        | 1,050                          | 2,427   | 658    | 2,819   | 3,477   |
| Artificial insemination           | 870     | 725     | 83%        | 68                             | 646     | 27     | 687     | 714     |
| Total 2                           | 98,554  | 47,701  | 48%        | 27,200                         | 18,909  | 12,962 | 33,147  | 46,109  |
| Grand total                       | 405,935 | 284,154 | 70%        | 166,527                        | 104,733 | 76,239 | 195,021 | 271,260 |

### 3.3.1.4. Capacity development

Agricultural promoters played a central role in the operational implementation of the project, ensuring sensitization, mobilization, and coordination among the various actors involved, which also conferred local and multi-level ownership.

Their actions reinforced the participation of direct beneficiaries while ensuring the involvement of local authorities, community associations, and basic structures in the process of adopting agricultural innovations.

Technically, the promoters contributed significantly to capacity building among smallholders through the establishment of demonstration fields (demo plots). These participatory mechanisms played an essential pedagogical role. They facilitated the diffusion of improved seeds, supported

learning-by-doing, and helped to forge a direct connection between agro-dealers and farmers.

In terms of training, 21,541 people (58% women and 14% youth) attended the various cascade training sessions.

As envisioned, the training started with the training of trainers (ToT), which benefited 2,755 people, including lead farmers (2,396), government extensionists (137), individuals from private-sector entities (104), and civil society representatives (118) (Table 18).

In Haut-Katanga – to which the project was extended in March 2024 – the training event reached at least 734 participants, including 367 women and 80 youth. Among them, 61 people attended the training of trainers (including 17 women and 7 youth); and 673 smallholders participated in the training designed for them, including 350 women and 159 youth.

Table 18: Training conducted in DRC.

| Type               | Trainees        | Target        | Actual        | Total participants |              |              |               | % achieved |
|--------------------|-----------------|---------------|---------------|--------------------|--------------|--------------|---------------|------------|
|                    |                 |               |               | Women              | Men          | 15–29 yrs    | 30+ yrs       |            |
| ToT                | Lead farmers    | 2,837         | 2,396         | 1,605              | 791          | 521          | 1,875         | 82%        |
|                    | Government      | 96            | 137           | 31                 | 106          | 21           | 116           | 113%       |
|                    | Private sector  | 187           | 104           | 17                 | 87           | 18           | 86            | 50%        |
|                    | Civil society   | 81            | 118           | 25                 | 93           | 14           | 104           | 94%        |
|                    | <i>Subtotal</i> | <i>3,201</i>  | <i>2,755</i>  | <i>1,678</i>       | <i>1,077</i> | <i>574</i>   | <i>2,181</i>  | <i>86%</i> |
| Farmer training    | Smallholders    | 21,451        | 18,786        | 10,762             | 8,024        | 2,408        | 15,806        | 88%        |
| <b>Grand total</b> |                 | <b>24,652</b> | <b>21,541</b> | <b>12,440</b>      | <b>9,101</b> | <b>2,982</b> | <b>17,987</b> | <b>87%</b> |

To enhance knowledge, use, and adoption, 285 demonstration plots were established for beans, maize, OFSP, rice, vegetables, cassava, bananas, and soybeans. Farmers were directly involved in the management of the demos, but whenever there was either sensitization or a field day taking place at the demonstration plot, other members of the hosting cooperative would also join to learn from the demo.

Overall, the training and demonstration plots significantly contributed to the improved adoption of agricultural technologies by

farmers, a fact validated by documented success stories.

Practical experiences show that young entrepreneurs and women developed business models centered on project-supported banana plantations, sweet potatoes, and market-gardening crops.

These crops successfully served as a pillar for mobilizing household income for small-scale producers, notably at the Kitumaini Center in Kabare and Ngali in Walungu.

Table 19: Demonstration plots established.

| Commodity    | Demonstration plots |            | % achieved |
|--------------|---------------------|------------|------------|
|              | Target              | Actual     |            |
| Maize        | 30                  | 45         | 150%       |
| Beans        | 56                  | 104        | 186%       |
| OFSP         | 24                  | 13         | 54%        |
| Rice         | 160                 | 20         | 13%        |
| Vegetables   | 20                  | 32         | 160%       |
| Cassava      | 12                  | 12         | 100%       |
| Bananas      | 6                   | 7          | 117%       |
| Soybeans     | 24                  | 52         | 217%       |
| <b>Total</b> | <b>332</b>          | <b>285</b> | <b>86%</b> |

Besides deploying small packs and establishing demonstration plots, innovations were disseminated through other scaling events, including field days and sensitization campaigns. A total of 125,404 farmers (47.4% women, 18.3%

youth) were reached through these scaling events. Of this figure, it should be noted that in Haut-Katanga, only 2,237 people (1,099 women and 822 youth) were reached through awareness creation or participation in the activities of the rural days.

Table 20: Scaling events held, and composition of participants in DRC.

| Event         | Target No. of participants | Actual participants |               |               |                |                | % achieved  |
|---------------|----------------------------|---------------------|---------------|---------------|----------------|----------------|-------------|
|               |                            | Women               | Men           | 15–29 yrs     | 30+ yrs        | Total          |             |
| Field days    | 6,549                      | 2,651               | 3,597         | 1,342         | 4,906          | 6,248          | 95%         |
| Sensitization | 74,261                     | 56,450              | 62,145        | 21,397        | 97,198         | 118,595        | 160%        |
| Agri-shows    | 2,620                      | 388                 | 173           | 148           | 413            | 561            | 21%         |
| <b>Total</b>  | <b>83,430</b>              | <b>59,489</b>       | <b>65,915</b> | <b>22,887</b> | <b>102,517</b> | <b>125,404</b> | <b>150%</b> |

In brief, the most effective capacity reinforcement methods were training of trainers, field days, and practical field training using demonstration plots. These modalities successfully promote proximity, confidence, and the use of local languages, which is essential for effective knowledge transfer. Their high effectiveness stems from emphasizing learning by doing (*apprentissage par la pratique*). And although complementary methods created synergy, these practical approaches, coupled with joint public-authority visits, helped build trust and reinforced stakeholder learning and inclusion.

The training conducted in the field concretely reinforced the specific skills of agricultural promoters and seed companies. This capacity building confirmed the effectiveness of the AID-I GLR interventions, demonstrated by an increase in seed production and animal productivity.

But while the acquisition of technical knowledge was successful, resource constraints, especially financial and material limitations, prevented beneficiaries from reaching the maximum application level. Therefore, technical gains alone are insufficient if resource constraints persist.

Finally, to sustain the impact of these interventions, future support must transition from technical assistance to strengthening the organizational and institutional management of producer organizations and cooperatives. Complementary efforts are needed to reinforce internal management, leadership, and the acquisition of legal texts to allow these structures to function autonomously and manage acquired benefits sustainably. An improved follow-up structure between innovation developers and scale-up partners is also necessary, as insufficient tracking exacerbates material and financial limitations felt by beneficiaries.

### 3.3.1.5. Strengthening seed systems

Strengthening seed systems is vital for sustaining access to the germplasm that was promoted by the project. To better

disseminate and monitor the agricultural technologies and practices advocated by the project, the scaling partners, in collaboration with relevant government agencies, conducted several awareness-raising sessions to set up village-based councils.

Overall, 380 VBAs, of whom 147 were women, were democratically elected in six territories of South Kivu. Then, in early January 2025, the process of registering these VBAs by SNV-MINAGRI commenced.

Unfortunately, it could not be completed due to the prevailing unfavorable insecurity brought about by the war.

In better news, despite the odds, at least 30 private agro-dealers, including some VBAs, were trained by SSG and Farm Input Promotions Africa (FIPS). The purpose is to plug them into the network so they supply affordable, proven agricultural inputs to target beneficiaries and communities.

In addition, the project strengthened the technical and commercial capacities of three seed companies in DRC: AgriForce, EPH Ltd, and Ets Munga in South Kivu Province, through providing support to SSG.

Aided by CGIAR, INERA-Mulungu, and SENASEM, the project ensured the availability of early-generation seeds (EGS) as the basis for all seed systems for selected crops.

With SSG's support, the three seed companies produced 124.9 metric tons (mt) of certified seed, including 73.62 tons of hybrid maize seed and 51.3 tons of beans.

The project, with support from CGIAR centers and SSG, successfully produced 24.2 tons of EGS. This total includes 3.1 tons of new hybrid maize varieties (1.535 tons of WE5117 variety, and 1.55 tons of CML395, CML539, and CML566), 5.9 tons of beans by ABC, and 11.4 tons of orange-fleshed sweet potatoes by CIP. Additionally, 3.81 tons of rice seeds were produced, with contributions from IRRI, INERA, and SENASEM (Table 21).

Table 21: Production of early-generation and certified seeds in DRC.

| Seed               | Commodity         | Total produced (mt) |
|--------------------|-------------------|---------------------|
| EGS                | Maize             | 3.1                 |
|                    | Beans             | 5.9                 |
|                    | Rice              | 3.8                 |
|                    | OFSP              | 11.4                |
|                    | <i>Subtotal 1</i> | <i>24.2</i>         |
| Certified          | Maize             | 73.6                |
|                    | Beans             | 51.3                |
|                    | <i>Subtotal 2</i> | <i>124.9</i>        |
| <b>Grand total</b> |                   | <b>149.1</b>        |

Participating seed companies expanded their network by entering distribution agreements with agro-dealers in various areas. The three market players, who were also members of scaling partnerships, reported an increase in their geographical

reach. For example, Ets Munga, AgriForce, and EPH Ltd sold 159 tons of seed: 87.18 being maize and 71.97 beans. These sales amounted to 264,097 United States dollars (USD), including USD 133,302.5 from maize seed sold in South Kivu (Table 22).

Table 22: Sales by participating market stakeholders in DRC.

| Company      | Inputs | 2024               |                            | 2025 Semester 1    |                            | Overall                  |                            |
|--------------|--------|--------------------|----------------------------|--------------------|----------------------------|--------------------------|----------------------------|
|              |        | Quantity (mt) sold | Total value of sales (USD) | Quantity (mt) sold | Total value of sales (USD) | Total quantity (mt) sold | Total value of sales (USD) |
| EPH Ltd      | Beans  | 4.5                | 6,120                      | 14.8               | 20,128                     | 19.3                     | 26,248                     |
| AgriForce    | Maize  | 16.6               | 24,900                     | 39.554             | 57,262.07                  | 56.154                   | 86,991.5                   |
|              | Beans  | 13.5               | 26,980                     | 21.383             | 42,290                     | 34.883                   | 69,270                     |
| Ets Munga    | Beans  | 10.6               | 20,906                     | 7.185              | 14,370                     | 17.785                   | 35,276                     |
|              | Maize  | 15.4               | 23,099                     | 15,626             | 23,212                     | 31.026                   | 46,311                     |
| <b>Total</b> |        | <b>60.6</b>        | <b>102,005</b>             | <b>98.548</b>      | <b>162,092</b>             | <b>159.148</b>           | <b>264,097</b>             |



*In brief, the most effective capacity reinforcement methods were training of trainers, field days, and practical field training using demonstration plots. These modalities successfully promote proximity, confidence, and the use of local languages, which is essential for effective knowledge transfer. Their high effectiveness stems from emphasizing learning by doing (apprentissage par la pratique). And although complementary methods created synergy, these practical approaches, coupled with joint public-authority visits, helped build trust and reinforced stakeholder learning and inclusion.*

### Box 7: Introduction and diffusion of hybrid maize by SSG

*Coordinated by SSG, the introduction and use of hybrid maize varieties was one of the project's major successes. It marked an important step in promoting local seed production, thus contributing to the strengthening of national capacity in improved agricultural technologies.*

*A closely related milestone and legacy is the in-depth knowledge and technical mastery of hybrid maize technology by the main actors in the value chain. These key actors include INERA and partner seed companies such as AgriForce, EPH, and Ets Munga. This local boost in capacity constitutes a lasting achievement of the project, guaranteeing the continuity and autonomy of activities related to the production and diffusion of hybrid seeds.*

*Prior to this intervention, hybrid seeds were imported, primarily from Zambia, Kenya, and Uganda. This external dependency not only limited producers' access to quality seeds but also hindered the development of a competitive national seed sector. In response, SSG provided technical and material support to INERA for the initial supply of hybrid maize parental seeds. Approximately 10 varieties were introduced and subjected to varietal confirmation trials in different agroecological zones. Following these evaluations, WE517 was selected for its superior agronomic performance (high yield, stability, and tolerance to variable climatic conditions).*

*INERA subsequently undertook the production of basic seeds as well as the maintenance of the parental lines (CML566 × CML395 and CML539). The basic seeds produced by INERA were then transferred and distributed to partner seed companies (AgriForce, EPH, and Ets Munga), which produced and marketed the certified seed.*

*This certified seed was utilized both for direct sale to farmers and for the small-pack approach, distributed by VBAs to promote large-scale adoption of hybrid seeds.*

*To assure system sustainability, value-chain actors followed an integrated model. In this model, INERA was responsible for genetic maintenance and basic seed production, while the seed companies ensured the multiplication and distribution of commercial seeds via agro-dealers and VBAs. This mechanism allowed for the strengthening of the resilience of the national seed system and laid the foundations for technological autonomy in the production of hybrid seeds.*

*Unfortunately, the positive momentum initiated was interrupted by the unfolding socio-political crisis which led to war, resulting in a breakdown of production, dissemination, and technical monitoring. This interruption came at a critical moment, just when the technology was enjoying strong enthusiasm and growing adoption by seed producers and farmers alike.*

*But there is also hope. In the medium and long term, the sustainability of this innovation requires the implementation of continuity strategies, guaranteeing the cyclical production of seeds based on a master scheme (basic seed production in season  $n-1$  for certified seed production in season  $n$  or  $n+1$ ). These future strategies should rely on institutional strengthening, coordination among sector actors, and securing national research and production capacities, in order to consolidate the project's achievements and ensure the durability of the hybrid seed system at the national level.*

#### 3.3.1.6. Gender equality and social inclusion

The consortium integrated a robust set of strategies within its gender equality and social inclusion (GESI) framework that enabled it to successfully exceed the target set for women's participation. The initial strategy focused on identifying and selecting beneficiaries from existing local structures, such as peasant organizations, women's groups, agricultural cooperatives, and village savings and credit associations (AVECs), where women often constituted the majority. To foster lasting behavioral change, the project implemented

transformative approaches, including the start, awareness, support and action (SASA) approach, which mobilized communities to redistribute responsibilities and promote the joint management and allocation of resources between men and women within households.

Furthermore, gender discussion sessions (GDDs) were held to encourage men, women, and youth to reflect on their experiences and behaviors to exclude violence and promote egalitarianism. The project used the engaging youth through accountable practice (EYAP) approach, specifically aimed at encouraging youth

to fight against sexual and gender-based violence and promote positive masculinity. These integrated methods ultimately led to a palpable reduction in violence and ensured men increased their consideration for their spouses, thus enabling women's participation in household decision-making.

Addressing structural obstacles, particularly limited access to credit and land, was central to advancing the socioeconomic empowerment of women

and youth. To counter the challenge of credit access, SARCAF encouraged small-scale producers, through sensitization and training, to structure themselves into AVECs. Capacity reinforcement sessions were provided to women and youth on essential skills like savings, simple accounting, and credit management. This organization into AVECs not only increased farmers' bargaining power but also enabled members to mobilize finances, gain mutual trust, enhance social cohesion, and access

### **Box 8: The restoration of South Kivu's banana sector**

*Once considered the 'banana granary' of the Great Lakes Region, the banana and plantain sector in South Kivu has sadly been in decline since 2010 across territories such as Walungu, Kabare, and Kalehe.*

*This regression was caused by devastating agronomic constraints, including diseases like banana xanthomonas wilt and fusarium wilt. It is further exacerbated by systemic issues such as the use of non-adapted traditional cultivation techniques, lack of technical support, and the absence of agricultural credit needed for entrepreneurial development.*

*In response, the Tuendeleye Pamoja Cooperative (COPATU) partnered with Rikolto and IITA in 2023 and 2024 to introduce new agronomic technologies, including the establishment of a macro propagation site and a farmer field school (FFS).*

*The initiative quickly demonstrated strong community engagement and success in promoting GAPs. Out of 125 cooperative members trained, women represented 71.2% (89 women), reflecting the critical importance of the restoration efforts for household economics and nutrition. Thanks to the technical support from Rikolto and IITA, the first phase of macro propagation successfully produced 6,613 healthy plantlets; 5,413 of these were distributed to 260 households (including 159 women) to ensure families had healthy, disease-resistant planting stock.*

*Building on this momentum, the cooperative established a second propagation site specifically for commercial sale, aiming for long-term sustainability. This commercial phase was deemed a "great success" by COPATU, generating USD 1,020.5 from the sale of 2,181 plantlets, marking the first time*

*such revenue was generated from banana plantlet sales in the Walungu territory.*

*In addition, between July and September 2025, COPATU sold 93 bunches of plantains harvested from the FFS, netting USD 377 – an achievement unheard of before the AID-I GLR interventions.*

*This success translated into household prosperity: Mapendo Mitima, a farmer, sold five large bunches for 100,000 Congolese francs (CDF, equivalent to USD 40): at CDF 20,000 (USD 8) per bunch, this was a significant increase from his previous sales of CDF 5,000–8,000 (USD 2.2–3.5). With these earnings, he bought school supplies and enhanced his savings.*

*Similarly, Morogoro Buhendwa sold 12 bunches for CDF 180,000 (USD 72), which financed essential roofing materials for his house construction.*

*In summary, the interventions under the AID-I GLR Project have brought significant change, providing farmers with substantial knowledge of new agronomic technologies across multiple crops and access to high-quality planting material, allowing them to increase their yields.*

*Unfortunately, despite these monumental achievements, the massive and daily displacement of beneficiaries due to ongoing armed conflicts (wars) across all territories of South Kivu has, regrettably, brought everything back to 'zero' for the moment, as farmers are forced to abandon their environments and seek refuge in more peaceful neighboring areas.*

*This ongoing crisis acts like a destructive storm sweeping through a well-tended garden, wiping away the successful harvest and the promise of future growth.*

credit based on their capacity. Critically, this financial empowerment enabled women to secure credit for individual income-generating activities, or to accumulate savings which they then used to buy or rent agricultural land.

Regarding land access limitations, SARCAF encouraged producers to rent fields under contract for significant durations covering multiple cultivation seasons. The project also promoted the system of *métayage* (sharecropping) with large land concessionaires, and SARCAF engaged in lobbying with institutions like INERA Mulungu, NFUNDIKO plantation, and Saint Pie X from Murhesa in Kabare, to secure access to plots for agricultural activities.

### 3.3.2. Outcomes

Among the principal achievements, the project successfully transferred new agricultural technologies and reinforced social cohesion within communities. Other notable results – which attest to the effectiveness of the participatory model and the relevance of the actions carried out – included better collaboration between VBAs, agricultural monitors, and producers,

as well as a distinct increase in yields for participating households. This integrated and locally anchored approach allowed for a better understanding of the promoted technologies and favored their adoption at the local level.

#### 3.3.2.1. Use of improved technologies by farmers, as recommended

A September 2024 survey showed that all the technologies and practices promoted among the selected farmers had been applied. OFSP and vegetables had the lowest percentage of application, at 50% and 24% respectively. These low percentages can be explained by seed shortage in the local market, as well as relatively more limited dissemination, because most participants who had only recently been exposed to OFSP technologies had not however undergone training or participated in field days.

Over the three-year lifespan of the project, 128,758 farmers (comprising 60% women and 27% youth) applied the various innovations and related practices (Figure 16 and Table 43 in Annexes).

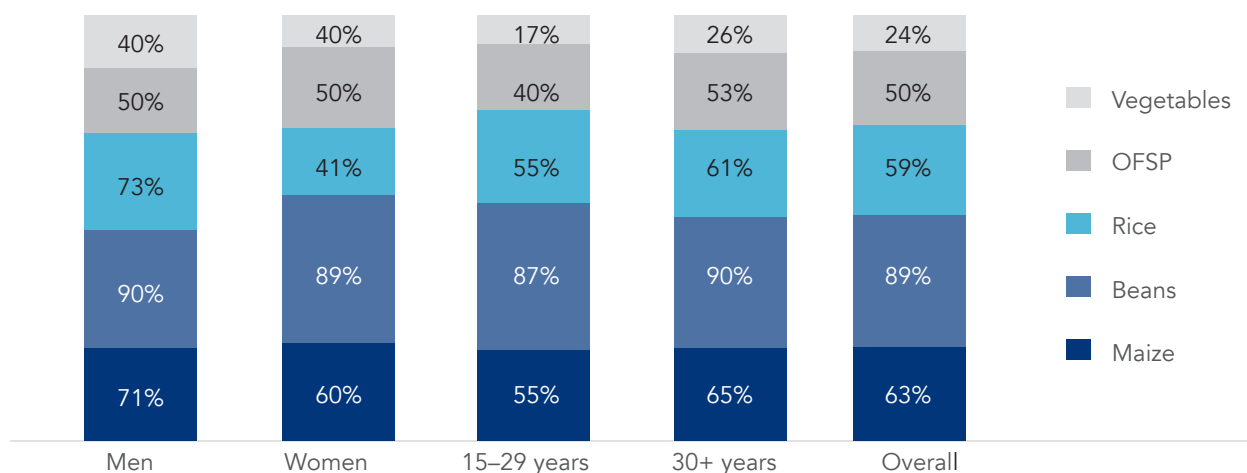


Figure 15: Rate of application of technologies in DRC.

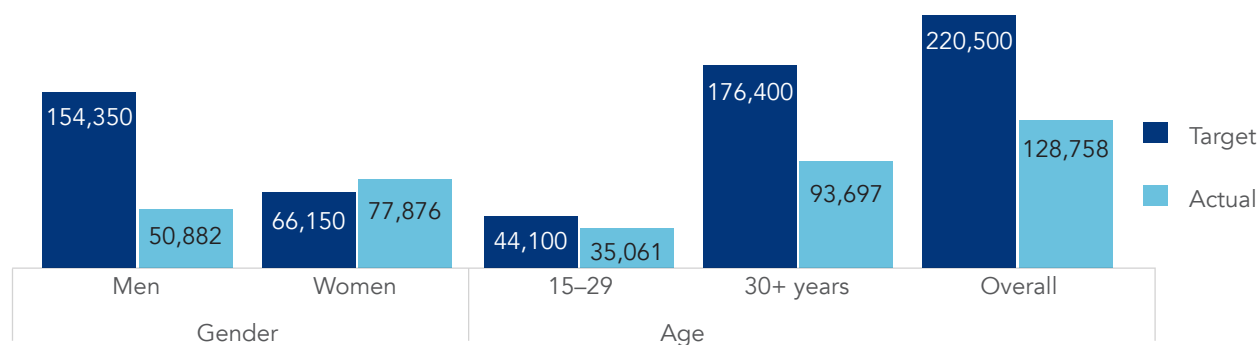


Figure 16: Number of individuals who applied improved agricultural management practices or technologies, with AID-I GLR assistance in DRC.

These results clearly demonstrate that the VBA model facilitated the rapid adoption of technology packages and the use of promotion techniques through community and individual learning plots, while also providing services and monitoring throughout the entire implementation area.



*In the words of Herman Mutabataba, Managing Director of AgriForce, a market actor, "This approach is effective because it allows farmers to arrive at their own personal opinions on the seeds. Additionally, it enables us to rapidly reach a large number of farmers. Information spreads fast and in real time. The small-pack approach is gradually being integrated into our marketing strategy, where sales agents are the primary link between farmers and AgriForce."*

This vital partnership significantly enhances proximity with agricultural producers, as VBAs serve as direct links facilitating the diffusion of improved seeds and ensuring constant communication and feedback between producers and end-users. Their deep community ties enable the rapid dissemination of innovations and best agricultural practice, reinforcing local capacities through continuous training and experience, and knowledge exchanges. Crucially, the awareness stimulated by VBAs boosts local demand for certified seeds, strengthening

farmer confidence and supporting sustainable growth in sales.

Despite its strengths, the partnership was hampered by systemic constraints, primarily the VBAs' frequent lack of logistical and financial means, which limited their capacity to ensure consistent and effective field monitoring. Sustainability was also

threatened by the potential weakening of motivation stemming from the absence of stable remuneration or sufficient incentives, making long-term commitment difficult to secure. Moreover, insufficient coordination, unequal geographic coverage, and a general lack of institutional recognition for the VBA role fundamentally compromised the partnership's durability and prospects for long-term integration into national systems. Hopefully, the ongoing VBA registration will remedy the latter.

### 3.3.2.2. Increased acreage under proven technologies

Figure 17 presents results from a telephone survey covering farmers registered in seasons 2023B and 2024A.

It shows that the trend of increasing cultivated acreage varies significantly by gender, age, and season.

For farmers registered in season 2023B, 58% increased their acreage in season 2024A, a figure that slightly fell to 55% in season 2024B. In season 2024B, 73% of men and 41% of youth reported increasing their acreage.

Overall, men consistently showed a higher tendency to increase acreage compared to women across the survey periods. This variation is explained by concerted, effective, and varied multi-channel stakeholder efforts in disseminating different technologies and practices. Indeed, several studies have shown that in Africa, men have better access to resources than women. Access is one of the determining factors behind these disparities, whether to information and resources, or to land, which guarantees access to financing.

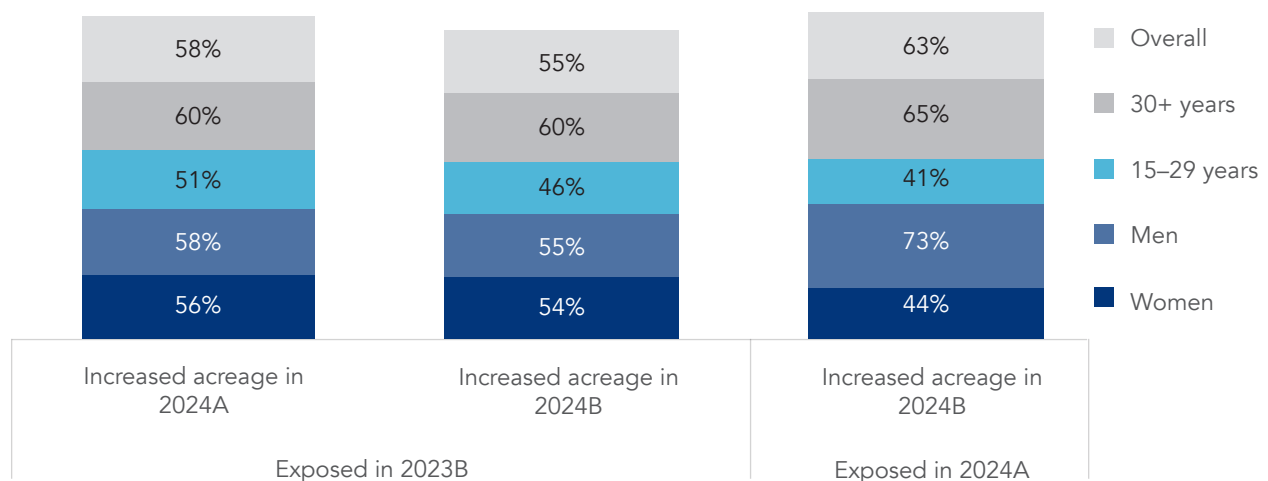


Figure 17: Farmers who increased acreage in DRC.

The 2024 annual survey reported increased rates, as shown in Table 55 in Annexes. More than 2,650 hectares (ha) were cultivated, 67% by women and 36% by youth.

For seed-production purposes, bean and maize crops were established on a larger land area: 1,336 ha and 1,035 ha, respectively, both surpassing the targets of 704 ha and 659 ha, respectively.

In contrast, vegetables were grown on smaller areas than had been projected: 90 ha, versus target of 586 ha. This can be explained by the limited availability of seeds in the local market. Furthermore, no seed multiplier has ever specialized in this area.

This gap represents a business opportunity for any farmer who can seize it, as not a day goes by without a household consuming vegetables.

### 3.3.2.3. Increased crop productivity

Thanks to the diverse distribution methods, farmers were able to learn more about

the innovative agronomic practices championed by the project.

From two telephone-based surveys, respondents (farmers) reported a dramatic improvement in their level of knowledge that increased from 10% in 2023 to 80% in 2024. These results proved to be very significant in terms of crop yield (Figure 18).

This is because in the past (before the project), many farmers relied on old practices (mass planting, no spacing between plants or seeds between rows and holes, etc.), but this trend is changing, thanks to various knowledge dissemination events such as training, demonstrations, and awareness campaigns.

In addition, the May 2024 telephone survey revealed that nearly three-quarters of the farmers, (73%), preferred to participate in demonstration events, followed by 60% who preferred training sessions.

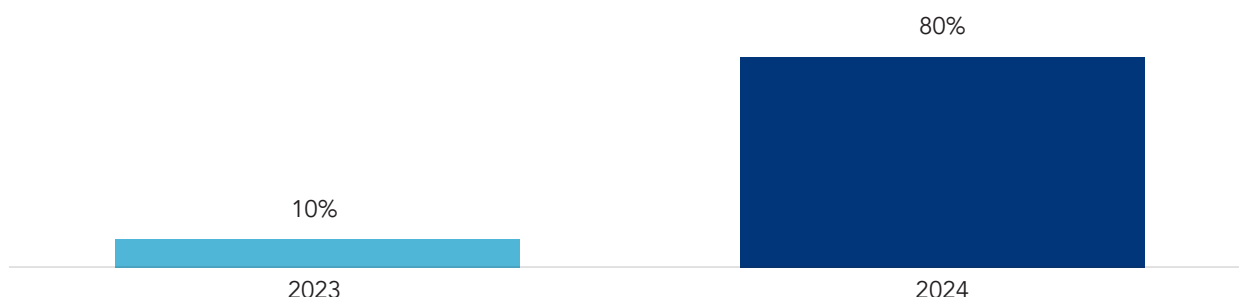


Figure 18 : Comparative knowledge gain by farmers across two years in DRC.

During the 2024A and 2024B seasons, when farmers applied the project's innovations, they reported significant yield increases compared to their previous practices for maize, beans, and OFSP.

Table 23 shows that for all crops, yields significantly surpassed targets, particularly

pronounced for maize, rice, and OFSP, respectively by nearly fourfold, more than threefold and nearly threefold. In fact, farmer-reported OFSP surpassed projections by innovation developers. This demonstrates the soundness and effectiveness of the technologies and practices promoted. (Table 23 and Box 9).

Table 23: Average smallholder crop yield (in mt/ha) on baby demonstration plots reported in the outcome survey in DRC.

| Crop       | 2023   |        | 2024   |        | Average | Expert projection |
|------------|--------|--------|--------|--------|---------|-------------------|
|            | Target | Actual | Target | Actual |         |                   |
| Maize      | –      | –      | 1.32   | 4.9    | 4.9     | 4–8               |
| Beans      | 0.55   | 1.17   | 0.55   | 1.6    | 1.39    | 1–2.5             |
| OFSP       | –      | –      | 5.5    | 14.2   | 14.2    | 9–14              |
| Vegetables | –      | –      | N/A*   | 29     | 29      | 20–30             |
| Rice       | 1.21   | 4.64   | 1.21   | 4      | 4.32    | 4–7               |

\*Because AID-I GLR promoted several vegetables

All capacity-development interventions and scaling events yielded continuous incremental results: not only did knowledge of agronomic practices improve, but

smallholder yields rose for producers who were exposed to the technologies in the 2025A season.

### Box 9: Vegetable success in South Kivu – Accelerated adoption of improved varieties and practices led to high yields

Dr. Fekadu Dinssa, Scientist – Seed Systems Specialist, René Aganze Mulumeoderhwa, Consultant (both World Veg), and Jean Claude Nshimiyimana, Seed Systems Specialist (CIP)

Field training and demonstration plots greatly accelerated the adoption of agricultural technologies, with particularly encouraging results

For example, in Kasheke-Kalehe, the Irene OFSP variety reached a yield of 16.5 mt/ha on GAPs-applied plots, compared to 12 mt/ha with traditional practices.

This remarkable difference reinforced farmers' confidence in the new cultivation techniques and in the OFSP varieties introduced. Not only were they high-

yielding but also tolerant to viral diseases and of superior nutritional value.

Justin Bahati, a farmer from Kasheke (Kalehe territory), affirms: "The variety you brought us is very productive. It encourages us to apply the good agricultural practices we learned. Above all, we plan to abandon local varieties that do not give good production to adopt these new varieties."

African eggplants, amaranth, tomatoes, and cabbages were also very popular, with positive results all around. More in the testimonial that follows.

## TESTIMONIAL

### Vegetables powering increased household income – South Kivu farmers speak

*Dr. Fekadu Dinssa, Scientist – Seed Systems Specialist, and René Aganze Mulumeoderhwa, Consultant (both World Veg)*

Training followed by establishment of demonstration plots resulted in impressive adoption of amaranth and African eggplant varieties in DRC. The crops were introduced by AID-I GLR Project partners: World Vegetable Center, Holland GreenTech (HGT), and Rikolto.



Mr Bienfait Amani adopted both improved amaranth (*Amaranthus hypochondriacus*), and African eggplant (*Solanum aethiopicum*).

"I sold the produce from these crops, earning income – especially the amaranth variety called Poli, and the African eggplant variety DB3," he said.

From the knowledge received through the training and experience acquired from demo plots, he selected and continued growing these two varieties on his vegetable farm. "Because of its short growth cycle, I sold amaranth every week for three to four months."

He started in January 2024; cultivating a 1,250-square-meter plot rented at USD 25 for four months. "I earned 1,659,000 francs [USD 603] from selling amaranth and 1,718,750 francs [USD 625] from selling African eggplant cultivated on this plot of land over four months, measured from the date I transplanted the eggplant."

Amaranth is planted continuously across seasons due to its short growth cycle, allowing for uproot harvesting approximately one month after sowing.

Mr Amani bought a second-hand motorcycle for USD 500 to facilitate delivery of his vegetable produce, instead of selling at the farm gate. He also rented a one-hectare plot for USD 280 in Nyangezi location, and had it ploughed at USD 120, enabling him to increase his production to meet growing consumer demand. "For me, the results of the AID-I GLR Project are tangible and impactful, because I am now self-sufficient and I can take care of the school fees of my two brothers."

Until she encountered the AID-I GLR Project Mrs Daria M'shalukoma (pictured below) used to cultivate seeds from 30-year-old varieties. But after participating in training on sustainable vegetable production – an income-generating initiative promoted by the vegetable value chain team of the AID-I GLR Project – she shifted her focus to vegetable cultivation, with particular attention to short-cycle crops such as amaranth.

She now supervises 47 women in a farmers' organization that specializes in six market garden crops: amaranth, African eggplants, tomatoes, onions, cabbages, and carrots. She currently earns a weekly income of approximately USD 80–100 from selling cabbages, tomatoes, and African eggplants.

At 62, and with more than 32 years of experience in agriculture, she reflects: "Ever since we were young, learning from our parents, we never had market garden produce of this quality until the AID-I GLR Project."

Following the training and demonstration plots introduced by the project, all member farmers became actively involved in cultivating at least four key vegetable crops: African eggplants, amaranth, tomatoes, and cabbages. For Season B (February–June) of 2025, the organization's member farmers planned to cultivate over two hectares to supply fresh vegetables to Bukavu town and its surroundings.



## 3.4 Assessment of the theory of change in DRC

A theory of change (ToC) maps the cause–effect pathway from project activities and inputs to specific outputs, intermediate outcomes, and ultimately, the intended impact.

### 3.4.1. Crops

Farmer exposure to initial agricultural technologies like beans, rice, and maize varied in terms of reach, with some project areas not fully covered. Despite these limitations, farmer appreciation was generally high for these crops.

Beans were valued for high yields and nutrition, rice growers showed good progress, and maize was appreciated for its yield and taste.

However, demand presented complexities: for beans, demand was affected by traditional seed conservation, reduced purchasing power, and humanitarian interventions. For the new maize variety (WE5117), demand was low and hesitant. In contrast, exposed rice growers actively demanded seeds, and even farmers in non-target areas requested practices and innovations. For vegetables, the VBA approach ensured inclusive and innovative exposure, and both the quality and quantity of harvests were highly appreciated. Yet, a significant gap existed between demand expressed and met. This gap was due to poor local seed availability, lack of regulation, and insufficient institutional (INERA and SENASEM) involvement in terms of logistics.

Conversely, farmers showed robust appreciation and expressed strong – and often consistent – demand for several staple crops. OFSP achieved widespread exposure with seven varieties disseminated, and delivery of cuttings improved. This led to high appreciation for popular OFSP varieties and their resilience against adversity (e.g., drought). As a result, there was a high demand for large quantities of seeds of different varieties among agricultural multipliers.

However, the OFSP seed system faced challenges. Cuttings were expensive, and trained agro-multipliers could only produce a limited supply. Consequently, mini-greenhouses were set up to address the challenges.

Bananas and cassava also saw high appreciation for well-developed varieties and related GAPs training. This created strong demand for more practical training and support for multiplication. The seed systems responded by supporting agricultural cooperatives for banana sucker production, and agri-multipliers for additional cassava multiplication fields.

### 3.4.2. Livestock

Artificial insemination (AI) achieved excellent exposure and was greatly appreciated, resulting in high demand for paid AI requests. The system responded by linking local inseminators with neighboring Burundi's National Artificial Insemination Center (CNIA). Immunization saw high breeder receptivity and no reported vaccine side effects.

But there were difficulties meeting demand due to the complex storage requirements of the bovine theileriosis vaccine, which required hard-to-obtain liquid nitrogen. This made it challenging for local private veterinarians to fulfill protocol requirements from foreign suppliers.

Licking blocks got strong exposure and appreciation, with continuous local production and marketing supporting steady demand.

Finally, *Brachiaria mulato* was continuously disseminated and was highly appreciated for its intercropping potential. This led to high demand for individual planting, supported by organized and strengthened seed systems involving beneficiaries of multiplication fields.

More details on the project's ToC assessment are in Table 50 in Annexes.

## TESTIMONIAL

# How artificial insemination and agro-pastoral innovations boosted dairy productivity and empowered communities in South Kivu, DRC

Before AID-I GLR intervened, livestock-keeping for Mrs. Stephanie Munyerenkana in Katana, a village in DRC's Kabare District, South Kivu Province, was quite uninspiring. Her cows produced less than two liters of milk per day, far too low to cover her costs. Like many livestock-keepers in South Kivu, she was contemplating dropping cattle-rearing altogether.

Her challenges were not unique. Many farmers in the region relied on traditional cattle breeds, known for low milk productivity and poor health. This combination made livestock farming unrewarding and costly. Despite the challenges, the potential for dairy farming in the region remained significant due to a favorable climate and strong demand for dairy products.

AID-I GLR saw this potential and identified low milk production primarily due to dependence on traditional breeds, minimal technology adoption, and limited extension services. And so, in 2023, AID-I GLR emphasized artificial insemination (AI) as a tool to improve the genetics of local breeds, boosting milk production and overall herd quality. Additionally, *Vétérinaires-sans-Frontières* (VSF) under AID-I GLR introduced fodder cultivation with *Brachiaria mulato*, nutrient-rich feed formulations (Block Lush), fodder preservation methods, and cattle vaccinations against diseases like theileriosis and *Peste des Petits Ruminants* (PPR).

These innovations had a significant impact on milk and meat production, breed quality, and disease resistance in the project regions. VSF also organized a network of private veterinarians and para-veterinarians within communities, training nine inseminators to promote AI and diagnose pregnancies with ELISA methods. The project introduced semen from three breeds – Friesian, Jersey, and Sahiwal – to enhance genetic diversity. In 2023, 1,594 cows were inseminated with

Sahiwal and Jersey breeds, and demand surged as communities witnessed improved calf quality. In 2024, Friesian semen was introduced, leading to 292 additional inseminations.

The outcomes of these AI technologies had a transformative effect on breeders' socioeconomic status, as evidenced by testimonials like that of Mrs. Stephanie Munyerenkana, who remarked, "Thanks to these innovations, we now easily get 12 to 15 liters per milking day, unlike before, when we barely obtained 2 liters. We no longer use local bulls, reducing disease spread among animals and people."

Additionally, AID-I GLR has built bridges by enhancing the capacity of public veterinary agents, who collaborate with private veterinarians and para-veterinarians to accelerate this innovation.

Efforts were also made to include more women in livestock breeding – a traditionally male-dominated field. Ms. Safi Ngomora, a veterinarian from Kabare District, highlighted the economic impact: "Thanks to the technical training provided by VSF under the AID-I GLR Project, I was able to serve over 180 breeders in Kabare and other areas in South Kivu. In 2023 alone, I met requests from 153 breeders, with service fees ranging from USD 80 to USD 100. My monthly income has increased from USD 300 to around USD 1,500, and I am now called to provide services in Kalehe and Walungu Districts."

So, not only did the project improve the overall quality of herds, it also revolutionized – within the areas it operated – traditional gender roles in livestock ownership. Previously, women rarely owned livestock. But through sustained efforts and community outreach intervention in project target areas, more women are now engaged in breeding, animal health management, and AI services.

## 3.5 Challenges, lessons learned, and recommendations

### Challenges

The armed conflict in eastern DRC had severe impact on the project, despite its strategic goal of boosting food security in vulnerable zones. During the consolidation phase, the rebellion in Kivu led to the massive displacement of beneficiaries. Direct consequences included the loss of agricultural harvests in the fields and the destruction of breeding stock (*géniteurs*), forcing youth-led businesses to cease operations. Crucially, the conflict disrupted the institutional process for the government's official approval of the local VBA network. Operational and mobility restrictions also prevented consortium actors from conducting necessary follow-up activities in rebel-controlled areas.

The project was designed to introduce tested agricultural solutions and agro-ecological practices adapted to communities already fragile due to climate change, food crises, and the aftermath of the COVID-19 pandemic. The war exacerbated the vulnerability of target communities by disrupting established project processes.

Despite physical access constraints, the project's local resilience networks continued to function. Coordination was maintained through VBA networks, community relays, and private veterinarians who have continued operating locally within their respective villages. The project's sustainability is also demonstrated by the continued operation of the Soko Letu digital network monitoring sales.

However, certain structural and operational challenges limited the scope of the results. For example, while farmer demand was generated after exposure, availability and accessibility gaps were not addressed. Consequently, the project was unable to meet the fresh demands for seed supply expressed by producers after its conclusion. Additionally, several VBAs lacked the necessary material for the optimal execution of their tasks (such as registration forms, boots, registers, and raincoats), and the specific capacity reinforcement required to ensure the continuity of activities.

Finally, the lack of financial resources and time hampered the sustainable institutionalization of this approach, ultimately compromising its **long-term viability**.

### Lessons learned

- Integration of the small-pack approach in the marketing strategies of seed companies. This approach enabled the project to reach a large number of beneficiaries at minimal cost, thereby maximizing the utilization of limited resources, and facilitating the dissemination of innovations across its intervention areas.
- The complexity of coordinating the multi-functional consortium successfully transformed into an opportunity for complementarity and synergy, leveraging each partner's long-term specialization, local anchoring, and knowledge of producer organizations. Future consortia must prioritize a clearer definition of roles and responsibilities, enhance organizational adaptability, and ensure active farmer and herder participation for optimal results.
- Effective partnership design demands robust capacity building and leadership training for core staff around a shared vision and specialized objectives towards realizing that common vision.
- The success of the partnerships is measured by the high acceptance of innovations, strong producer feedback, and significant demand for input packs, leading to requests for model replication across other provinces.
- Training of trainers (ToT), field days, and demonstration through training proved to be the most effective methods for capacity reinforcement and technology adoption because they foster proximity, build trust, and emphasize stakeholder learning-by-doing and inclusion, especially when these practical approaches are coupled with joint public-authority visits. Use of

local languages is essential for effective knowledge transfer.

- Technical gains alone are insufficient if resource constraints persist. And so, while the acquisition of technical knowledge was successful, resource constraints, especially financial and material limitations, prevented beneficiaries from reaching the maximum application level.
- The VBA approach promoted by the project serves as an inspiring model for MINAGRI and could help revamp the structuring of the provincial extension system.
- Combining different channels of delivery of advisory information and capacity-development events resulted in increased knowledge among farmers.
- The preservation of the vaccine against bovine theileriosis is complex. It requires the availability of liquid nitrogen, which must be produced in partnership with the National Artificial Insemination Center to assure a continuous and uninterrupted supply.
- The appreciation of artificial insemination technologies by the communities shows potential to improve the breed of livestock, which could increase local milk production.
- Since Haut-Katanga has a different climate from South Kivu, lowland

soybean and bean production was possible for at least two off-season cycles.

- It would be worthwhile to provide partners with capacity-building training in using digital tools for file operations and data capture.

### Recommendations

Moving forward, future actions in the highly volatile zones above must focus on reinforcing durable strategies and incorporating adaptation measures, particularly addressing the destructive effects of climate change.

The key perspective involves reconciling the achievements of AID-I GLR with the principles of the triple nexus, integrating humanitarian, development, and peace efforts. This unified approach is essential to prepare beneficiary households for enhanced resilience, adaptation, and eventual agro-socioeconomic reinsertion. Furthermore, the project's successful theory of change is actively being incorporated into new proposals submitted to donors by implementing partners such as Rikolto and VSF.

Finally, to sustain the impact of these interventions, future support must transition from technical assistance to strengthening the organizational and institutional management of producer organizations and cooperatives.



Maize yield:  
**4.9 mt/ha**  
against a target of  
**1.3 mt/ha**





5

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# CHAPTER ANNEXES

## 5.3. Chapter 3 (DRC)

Table 50: Assessing the theory of change in DRC using 3F2R framework.

| Value chain | Farmer exposure to innovations and practices (* to ****)                                                                                                                                                | Farmers' appreciation of innovations and practices, after trials (* to ****)                                                                                                                                                                                                                                                                                                                                                                     | Farmers demand for innovations and practices (* to ****)                                                                                                                                         | Seed system preparation and response to requests (* to ****)                                                                                                                                                                                                                                                                                                          |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Beans       | +++<br>Some areas were not reached by project activities.                                                                                                                                               | +++<br>High adoption rate, due to high yield (>60% increase) and satisfactory nutritional aspects.                                                                                                                                                                                                                                                                                                                                               | ++<br>The habit of farmer-saved seeds and traditional practices continued, purchasing power was low, and humanitarian interventions distorted demand.                                            | ++<br>The nascent seed system was launched. Capacity-building conducted will help prepare response to the considerable unmet demand.                                                                                                                                                                                                                                  |
| Rice        | ++<br>Many areas of the project were not reached by this innovation.                                                                                                                                    | ++<br>Rice growers made good progress, but some areas were not reached.                                                                                                                                                                                                                                                                                                                                                                          | +++<br>Exposed rice growers demanded seeds, while farmers in non-target areas requested practices and innovations.                                                                               | +<br>A fragile and still-information seed system.                                                                                                                                                                                                                                                                                                                     |
| Maize       | +++<br>Some areas were not reached by project activities. Poor roads inhibited access to different populated rural areas (e.g., the territory of Mwenga, to which the project was extended).            | +++<br>High yield, good taste.                                                                                                                                                                                                                                                                                                                                                                                                                   | +<br>The variety is still new, and therefore corresponding demand was understandably low and hesitant.                                                                                           | +<br>The system is still in its initial phase.                                                                                                                                                                                                                                                                                                                        |
| Vegetables  | +++<br>The VBA approach was both inclusive and innovative.                                                                                                                                              | +++<br>Both the quality and quantity of harvests in farming and household environments were monitored.                                                                                                                                                                                                                                                                                                                                           | ++<br><ul style="list-style-type: none"> <li>Marked gap regarding the demand ('expressed' vs 'met'), due to poor seed availability locally.</li> <li>Community wait-and-see attitude.</li> </ul> | +<br><ul style="list-style-type: none"> <li>Lack of regulation and seed policy.</li> <li>INERA and SENASEM were not involved enough in terms of logistics.</li> <li>Strong centralization of seed production.</li> </ul>                                                                                                                                              |
| OFSP        | ++++<br><ul style="list-style-type: none"> <li>Seven varieties disseminated.</li> <li>Better delivery of cuttings.</li> <li>Target number of farmers not reached.</li> <li>Exposure to GAPs.</li> </ul> | ++++<br><ul style="list-style-type: none"> <li>Popular varieties.</li> <li>The location of some demos was suboptimal because some areas, such as Idjwi, Mwenga, and Walungu benefited from the establishment of mother demo plots, but there was no distribution of demonstrated varieties due to seed-stock shortage from targeted seed multipliers.</li> <li>Farmers appreciated the value chain because it responds to dry season.</li> </ul> | ++++<br><ul style="list-style-type: none"> <li>After exposure, farmers expressed the need to diversify OFSP varieties.</li> <li>Farmers demanded larger quantities of cuttings.</li> </ul>       | +++<br><ul style="list-style-type: none"> <li>Affordability of cuttings remains a constraint to some farmers.</li> <li>Only seven out of the 20 agro-multipliers trained can supply the required quantities of cuttings.</li> <li>Setting up – in collaboration with agro-multipliers – mini-greenhouses to preserve and sustain supply of promoted lines.</li> </ul> |

|                         |                                                                                                                                                                                                                                      |                                                                                                                                                                                                           |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bananas                 | +++<br><ul style="list-style-type: none"> <li>Three varieties disseminated.</li> <li>15 macro-propagators installed.</li> <li>Target number of farmers not reached.</li> <li>Number of demos insufficient to meet demand.</li> </ul> | ++++<br><ul style="list-style-type: none"> <li>Well-appreciated and well-developed varieties.</li> <li>The installation period was moderately appreciated.</li> <li>GAPs training appreciated.</li> </ul> | ++++<br>Farmers expressed the need for more practical training in field propagation techniques and pest control.                                                  | +++<br><ul style="list-style-type: none"> <li>The agricultural cooperatives receiving support from the project to produce marketable suckers requested increased awareness-raising among households to encourage them to buy these suckers directly from the cooperatives.</li> <li>Three other agricultural cooperatives benefiting from macro-propagation are seeking support to set up commercial macro-propagators, to turn this activity into a sustainable business undertaking.</li> </ul> |
| Cassava                 | +++<br><ul style="list-style-type: none"> <li>Two varieties promoted and demonstrated.</li> <li>12 demos established.</li> <li>Number of demos insufficient to meet demand.</li> </ul>                                               | ++++<br><ul style="list-style-type: none"> <li>Well-appreciated and well-developed varieties.</li> <li>The field establishment period was not appreciated.</li> <li>GAPs training appreciated.</li> </ul> | +++<br>Farmers who received healthy cassava cuttings requested more training in disease and GAPs identification to better protect their crops and improve yields. | +++<br>Support for agri-multipliers to ensure sustainable availability of cassava seed in the project area, through the creation of additional multiplication fields.                                                                                                                                                                                                                                                                                                                             |
| Artificial insemination | ++++<br>Gestation diagnosis target well exceeded by 60% more.                                                                                                                                                                        | ++++<br>Greatly appreciated.                                                                                                                                                                              | ++++<br>Paid AI requests.                                                                                                                                         | +++<br>Linking up local inseminators with Burundi's National Artificial Insemination Center (CNIA)                                                                                                                                                                                                                                                                                                                                                                                                |
| Immunization            | ++++<br>Breeders were receptive to the technology, although they deemed it 'imported'.                                                                                                                                               | ++++<br>No vaccine side effects reported for vaccinated cattle.                                                                                                                                           | ++++<br>Demand exists, but storing bovine theileriosis vaccine is complex and requires hard-to-obtain liquid nitrogen.                                            | +<br>Local private veterinarians are connected to foreign suppliers, but fulfilling protocol requirements was not easy.                                                                                                                                                                                                                                                                                                                                                                           |
| Licking blocks (LBs)    | ++++<br>Farmers recognized the importance of LBs.                                                                                                                                                                                    | ++++<br>LBs were used in cattle feeding practice.                                                                                                                                                         | ++++<br>Continuous local production and marketing.                                                                                                                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Brachiaria mulato       | +++<br>Dissemination was in progress.                                                                                                                                                                                                | ++++<br>Private fields were being established to accommodate intercropping with food crops.                                                                                                               | ++++<br>Several seed requests for individual planting.                                                                                                            | +<br>Organized/strengthened seed systems (beneficiaries of multiplication fields)                                                                                                                                                                                                                                                                                                                                                                                                                 |

Table 51: Number and type of individuals reached by AID-GLR: target vs achievement in DRC.

|        |       | Target  | Actual  | Achievement (%) |
|--------|-------|---------|---------|-----------------|
|        |       | 299,353 | 261,643 | 87%             |
| Gender | Men   | 172,808 | 120,123 | 70%             |
|        | Women | 126,545 | 141,520 | 112%            |
| Age    | 15-29 | 61,108  | 59,728  | 98%             |
|        | 30+   | 238,245 | 201,915 | 85%             |

Table 52: Number of individuals involved in agriculture who applied improved management practices or technologies with AID-I GLR assistance in DRC.

|           |                            | Target  | Actual  | Achievement (%) |
|-----------|----------------------------|---------|---------|-----------------|
|           |                            | 220,500 | 128,758 | 58%             |
| Gender    | Men                        | 154,350 | 50,882  | 33%             |
|           | Women                      | 66,150  | 77,876  | 118%            |
| Age       | 15-29                      | 44,100  | 35,061  | 80%             |
|           | 30+                        | 176,400 | 93,697  | 53%             |
| Commodity | Maize                      | 44,303  | 29,184  | 66%             |
|           | OFSP                       | 40,674  | 2,405   | 6%              |
|           | Rice                       | 42,075  | 18,215  | 43%             |
|           | Beans                      | 44,354  | 77,171  | 174%            |
|           | Gardening crops/vegetables | 39,471  | 1,782   | 5%              |

Table 53: Number of hectares under improved management practices or technologies, by type of manager and commodity in DRC.

|                                                |                                         | Target | Actual | Achievement (%) |
|------------------------------------------------|-----------------------------------------|--------|--------|-----------------|
|                                                |                                         | 3,619  | 2,659  | 73%             |
| <b>Type of hectare, manager and innovation</b> |                                         |        |        |                 |
| Cropland                                       |                                         | 3,569  | 2,659  | 75%             |
| Gender                                         | Men                                     | 2,498  | 1,943  | 78%             |
|                                                | Women                                   | 1,071  | 717    | 67%             |
| Age                                            | 15-29                                   | 714    | 259    | 36%             |
|                                                | 30+                                     | 2,855  | 2,400  | 84%             |
| Management practice or technology type         | Crop genetics                           | 3,569  | 2,665  | 75%             |
|                                                | Cultural practices                      | 3,569  | 2,644  | 74%             |
|                                                | Pest and disease management             | 531    | 706    | 133%            |
|                                                | Soil-related fertility and conservation | 2,311  | 1,105  | 48%             |
|                                                | Irrigation                              | 534    | 738    | 138%            |
|                                                | Climate adaptation                      | N/A    | 1,059  | N/A             |
| Commodity                                      | Maize                                   | 704    | 1,336  | 190%            |
|                                                | OFSP                                    | 43     | 34     | 79%             |
|                                                | Rice                                    | 406    | 224    | 55%             |
|                                                | Beans                                   | 659    | 1,035  | 157%            |
|                                                | Gardening crops/vegetables              | 586    | 90     | 15%             |

Table 54: EGS and certified seed produced in DRC

| EGS          | 2023       | 2024         | 2025         | Total         |
|--------------|------------|--------------|--------------|---------------|
| Maize        | 0          | 1.3          | 1.8          | 3.1           |
| Beans        | 0.5        | 5.4          | 0            | 5.9           |
| Rice         | 0.3        | 3.51         | 0            | 3.81          |
| OFSP         | 0          | 11.4         | 0            | 11.4          |
| <b>Total</b> | <b>0.8</b> | <b>21.61</b> | <b>1.8</b>   | <b>24.21</b>  |
|              |            |              |              |               |
| Certified    | 2023       | 2024         | 2025         | Total         |
| Beans        | 7.7        | 30           | 13.6         | 51.3          |
| Maize        | 0          | 59           | 14.62        | 73.62         |
| <b>Total</b> | <b>7.7</b> | <b>89</b>    | <b>28.22</b> | <b>124.92</b> |

Table 55: Area under improved practices or technologies in DRC.

|                                        |                                         | Target       | Actual       | % achieved | 2023       |           | 2024         |              |
|----------------------------------------|-----------------------------------------|--------------|--------------|------------|------------|-----------|--------------|--------------|
|                                        |                                         |              |              |            | Target     | Actual    | Target       | Actual       |
| <b>Crop land</b>                       |                                         | <b>3,569</b> | <b>2,659</b> | <b>75%</b> | <b>305</b> | <b>82</b> | <b>3,264</b> | <b>2,577</b> |
| Gender                                 | Men                                     | 2,498        | 1,943        | 78%        | 214        | 45        | 2,284        | 1,898        |
|                                        | Women                                   | 1,071        | 717          | 67%        | 92         | 37        | 979          | 680          |
| Age                                    | 15-29                                   | 714          | 259          | 36%        | 61         | 17        | 653          | 242          |
|                                        | 30+                                     | 2,855        | 2,400        | 84%        | 244        | 65        | 2,611        | 2,335        |
| Management practice or technology type | Crop genetics                           | 3,569        | 2,665        | 75%        | 305        | 88        | 3,264        | 2,577.36     |
|                                        | Cultural practices                      | 3,569        | 2,644        | 74%        | 305        | 85        | 3,264        | 2,558.92     |
|                                        | Pest and disease management             | 531          | 706          | 133%       | 6          | 3         | 525          | 703.09       |
|                                        | Soil-related fertility and conservation | 2,311        | 1,105        | 48%        | 136        | 78        | 2,176        | 1,026.8      |
|                                        | Irrigation                              | 534          | 738          | 138%       | 9          | -         | 525          | 737.66       |
|                                        | Climate adaptation                      | -            | 1,059        |            | -          | -         |              | 1,058.76     |
| Commodity                              | Maize                                   | 704          | 1,336        | 190%       | 60         | -         | 643          | 1,336.27     |
|                                        | OFSP                                    | 43           | 34           | 79%        | 43         | -         | -            | 34           |
|                                        | Rice                                    | 406          | 224          | 55%        | 63         | 72        | 343          | 152          |
|                                        | Beans                                   | 659          | 1,035        | 157%       | 52         | 10        | 606          | 1,025        |
|                                        | Vegetables                              | 586          | 90           | 15%        | 0.24       |           | 585          | 90           |

## Addresses

### IITA DRC

Email: [iita-kinshasa@cgiar.org](mailto:iita-kinshasa@cgiar.org)

International Institute of Tropical Agriculture

4163 Av. Haut Congo, C/Gombe, Kinshasa

[www.iita.org](http://www.iita.org)

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