Accelerating Agriculture and Agribusiness in South Sudan for Enhanced Economic Development (A3-SEED)

2022 Annual Narrative Report

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IFDC
Developing Agriculture from the Ground Up

A3 SEED

KIT Royal Tropical Institute

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Acronyms

2SCALE	Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship
A3-SEED	Accelerating Agriculture and Agribusiness in South Sudan for Enhanced Economic Development
ABC	Agribusiness Cluster
AFSTA	African Seed Trade Association
AMASCO	Amal Modern Agricultural Seed Company
AMVAT	Agricultural Markets, Value Addition and Trade Development
B2B	Business to Business
CAMP	Comprehensive Agriculture Master Plan
CASE	Competitive Agricultural Systems and Enterprises
CBO	Community-Based Organization
DAI	Development Alternatives Incorporated
DCED	Donor Committee for Enterprise Development
DGIS	Directorate-General for International Cooperation
EGS	Early Generation Seed
EKN	Embassy of the Kingdom of the Netherlands
FAO	Food and Agriculture Organization of the United Nations
FSABSS	Food Security through Agribusiness in South Sudan
FNS-REPRO	Food and Nutrition Security Resilience Program
GAP	Good Agricultural Practice

GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IATI	International Aid Transparency Initiative
ICT4Ag	Information and Communications Technologies for Agriculture
IDMP	Irrigation Development Master Plan
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IPM	Integrated Pest Management
ISFM	Integrated Soil Fertility Management
ISSD	Integrated Seed Sector Development
KIT	Royal Tropical Institute
M&E	Monitoring and Evaluation
MAFS	Ministry of Agriculture and Food Security
MASCO	Magwi Seed Company Limited
MELS	Monitoring, Evaluation, Learning, and Sharing
NGO	Non-Governmental Organization
NPA	Norwegian People's Aid
PHH	Post-Harvest Handling
PSSD	Private Seed Sector Development
QDS	Quality Declared Seed
SSADP2	South Sudan Agribusiness Development Program Phase 2
SSD4SS	Seed Sector Development for South Sudan
SSLRP	South Sudan Livelihood and Resilience Project
STAK	Seed Trade Association of Kenya
STASS	Seed Trade Association of South Sudan
ToR	Terms of Reference
ToT	Training of Trainers
USTA	Uganda Seed Trade Association
USAID	U.S. Agency for International Development
VBA	Village-Based Advisor
VSF	Vétérinaires Sans Frontières

2022 Annual Narrative Report | A3-SEED

Executive Summary

The Accelerating Agriculture and Agribusiness in South Sudan for Enhanced Economic Development (A3-SEED) project, funded by the Embassy of the Kingdom of the Netherlands (EKN), is being implemented by the International Fertilizer Development Center (IFDC) together with KIT Royal Tropical Institute (KIT) from December 2020 to November 2025. The project follows EKN's Seed Sector Development for South Sudan (SSD4SS) project, implemented by AGRA, and targets four hubs of stability (Bor, Rumbek, Torit, and Yambio) as well as the outskirts of Juba.

A3-SEED is working to develop a market-oriented seed sector by establishing a commercially viable and sustainable seed system in South Sudan. This way, the project ensures that farmers enjoy continued access to high-quality seed and agricultural advisory services offered closer to the production areas.

A3-SEED works with seed companies, seed outgrowers, agro-dealers, and village agents in developing a complete seed value chain while creating businesses and jobs. Smallholder farmers remain the ultimate target by enhancing their access to quality seeds. A3-SEED also builds synergies with humanitarian programs in target areas to facilitate efficient seed distribution. A special focus is placed on returnee farmers who fled the country due to insecurity. The project is engaging with owners, employees of micro, small, and medium enterprises (SMEs), women, and youth who are engaged in quality seed production.

In 2022, A3-SEED focused on active field project delivery. Ten seed companies were mobilized and fully engaged through a Co-Investment Grant to facilitate seed production, processing, and marketing. This report covers activities, outputs, achievements, and lessons learned during the second year of project implementation between January and December 2022.

In alignment with the approved 2022 Annual Workplan and Budget, the project engaged in the following:

- Mobilized 10 seed companies, working to increase their seed production capacities.

- Mobilized and supported 32 agro dealers, who will take seeds to the farmers through an established network of village agents.
- Trained 27 extension workers and agronomists through a training of trainers (ToT) on quality seed production.
- Trained 10 seed company marketing officers to enhance their business skills in seed sales, leading to the sales of 108.5 metric tons (mt) through the agro-dealer network.
- Reached 7,303 smallholder farmers with extension services following group trainings and farmer field days organized on the demonstration plots and 5,000 during agricultural trade shows organized in Yei and Torit and World Food Day activities in Rumbek.
- Produced about 4,500 mt of assorted seeds under a contract between seed out growers and seed companies.
- Built the capacity of the Seed Trade Association of South Sudan (STASS) on good governance and collaboration or linkages with seed companies. Membership increased from eight to 15 members. STASS costs covered through direct member contributions increased by 7%.
- Established of two sub offices in Magwi and Yambio in collaboration with STASS, they assist STASS in coordinating seed related activities in the States and Counties.
- Trained 21 seed inspectors and seven lab technicians (both government and private sector employees) on quality control in seed production to ensure quality seeds are produced by the seed companies. Seed tests are now done at the state and county levels.

Several events have enabled A3-SEED to share experiences and learn from others in Africa and the region to fine-tune its prioritization of the most responsive programming interventions and partnerships. Some of these events made it possible for A3-SEED to give priority to interventions based on their ability to build synergies with existing EKN-funded projects (Food and Nutrition Security Resilience Program [FNS-REPRO] and Food Security through Agribusiness in South Sudan [FSABSS]) and explore the possibility for collaboration with public sector actors – local-, county-, and national-level government bodies supporting the seed sector and agricultural development.

Other significant administrative milestones achieved during the first year of implementation include:

- ***Staffing**:* A3-SEED has hired 100% of the staff required and has positioned hub coordinators in Yambio, Bor, Juba, Torit, and Magwi to ensure local presence and close interaction with existing projects and stakeholders at the field level.
- ***Office Space**:* The project moved its office, but it remains within the same property and with the same landlord. The move was necessary because the full complement of staff was not able to fit in the previous space allocated for the office.
- ***Logistics**:* The project obtained three vehicles that were field efficient with all-weather tyres. These vehicles, as well as additional hired cars, were able to facilitate staff travel to all field locations.
- ***Finance/Budget**:* There were no significant changes in over- or underspends in the reporting period.
- ***COVID-19**:* Many restrictions associated with COVID-19 were lifted. This has enabled easy travel and organization of field trainings, meetings, and workshops. However, the period also saw the emergence of conflicts between cattle keepers and crop farmers that have affected parts of Central Equatoria and Eastern Equatoria. Details of this will be discussed in the Risk Matrix annex.

1 Introduction

This report presents activities, outputs, achievements, and lessons learned in the implementation of the A3-SEED project between January 1 and December 31, 2022.

2 Project Background

The A3-SEED project is a five-year (2020-2025) project, funded by EKN. The project aims to reach more than 100,000 farming households in four hubs of stability – Bor, Rumbek, Torit, and Yambio – as well as the outskirts of Juba.

The seed sector in South Sudan is currently highly dependent on humanitarian support. To transition from this, the project utilizes a private sector-led approach, aiming at professionalization of the seed sector in South Sudan into a commercial, sustainable, and adaptive sector. A3-SEED works with existing private sector seed companies that in turn are working with groups of farmers (individual commercial seed producers as well as outgrower farmers) to improve seed production, marketing, and distribution down to the last mile. The project focuses on selected value chains in each project area (see Table 1).

Table 1. Selected Crops by Project Area

Hub/Location	Selected Crops
Bor	Sorghum, millet, cowpea, horticulture
Rumbek	Sorghum, sesame, groundnut, horticulture
Torit	Maize, sorghum sesame, beans, groundnut, horticulture
Yambio	Maize, rice, beans, groundnut, cowpea, horticulture
Juba	Maize, sorghum, rice, sesame, beans, groundnut, cowpea, horticulture

2.1 Project Objective

The objectives of A3-SEED are that approximately 100,000 farmers' profits will double from surplus production; 42,000 hectares will be under integrated soil fertility management (ISFM), eco-efficient, and climate-smart cultivation; 100 agro-dealers will be created; 200 new businesses will be owned or managed by women; and 200 new businesses will be owned or managed by youth.[1] Furthermore, the project aims for local procurement of at least 50% of

[1] The perception of what age is considered "youth" often differs for women and for men; a girl is usually considered mature when she has a child, while a man over 30 can still be considered a youth by his community. For the Food and Nutrition Security framework of the Netherlands, the definition of youth is younger than 35

relief seed, coordinated by STASS. No changes are proposed to the main objectives of the project. While inception phase findings confirm that the results are ambitious, the approaches proposed to achieve them make it feasible within the proposed time frame. However, during the reporting period, there were changes to some of the indicators, as indicated in Annex A.

2.2 Target Group (Beneficiaries)

A3-SEED targets semi-commercial and commercial farmers, as well as *pre-commercial* farmers who are at the cusp of engaging more intensively with markets, i.e., through the pushpull design of A3-SEED interventions, who could purchase inputs, and who already are selling or who have the potential to sell surplus to the market. A3-SEED targets smallholder farmers with potential to make the transition to pre-commercial farming. Priority will be given to farmers who have returned after fleeing the community or the country due to insecurity. For very vulnerable community members, the project adopts a collaborative approach with humanitarian interventions and refer emergency cases for humanitarian support..

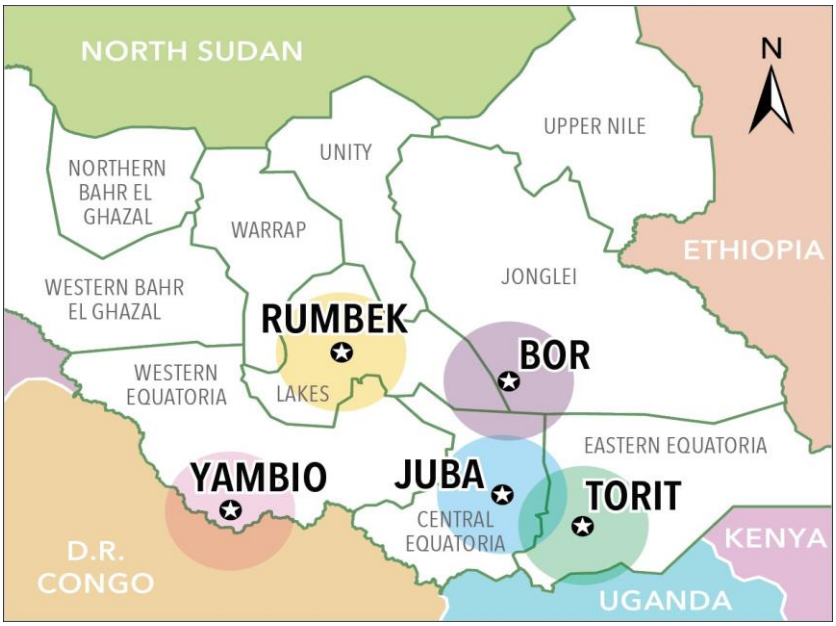


Figure 1. A3-SEED Project Areas in South Sudan

A3-SEED is adopting a unique approach to the humanitarian development-peace nexus. The project incorporates a robust **learning and knowledge agenda**. For smallholder farmers, micro demonstration plots and extension services will encourage farmers to adopt **best agricultural practices**, including **ISFM** and **climate-smart agriculture**. A3-SEED activities and lessons

years, irrespective of gender. This project will take all these factors into account in working with local partners and in the South Sudanese context.

learned aim to inform policy dialogue and practice for improved food system resilience and target local private sector and institutions as active participants in designing and implementing project interventions. The project has also strengthened the **national seed trade association** and promoted **domestic seed procurement**[1] by humanitarian and relief organizations.

2.3 Project Highlights by Activity

No progress Some progress Substantial progress

Implementation Activity	Status	Progress toward Achievement of Objectives
Result Area 1: Commercial Quality Seed Production		
1.1 Sustainable early generation seed (EGS) supply		• A total of 65 mt of foundation seeds were produced for maize and sorghum through outgrower farmers. • A breeder from Western Equatoria University submitted a technical proposal to purify the local varieties and improve some of the noble characteristics; they will avail these materials to seed companies to multiply them on a sustainable basis
1.2 Strengthen private seed companies		• 27 agronomists and extension workers were trained on quality seed production (good agricultural practices [GAPs] in seed production). of whom **17** were males and only **10** were female • 10 marketing officers (8 male and 2 female)[2] were trained on seed marketing strategies, operational strategies, and financial management strategies.
1.3 Develop local commercial seed production		• 10 seed companies mobilized a total of 2,409 outgrower farmers (2,594 [66%] male and 1,359 [34%] female). These were 16 groups of outgrowers with 1,672 members (989 male and 683 female) and 737 individual outgrowers (453 male and 284 female). • The outgrowers cultivated a total of 2,200 feddans, equivalent to 924 hectares, and produced a total of 4500 mt of quality seeds in 2022. • 177 local commercial seed producers (106 male 106 and 71 female) received on-farm training by the field coordinators on GAPs in seed production.
1.4 Strengthen the Seed Trade Association		• A collaboration between A3-SEED and STASS in 2022 led to membership expansion from 8 members in 2021 to 15[3] members in 2022. The co-investment partnerships encouraged seed companies to become STASS members. • STASS costs covered through direct member contributions increased by 7% in 2022. • 2 local STASS sub offices were established in Yambio and Torit in 2022 to coordinate activities of seed actors in the states. • The capacity of STASS to advocate for local seed procurement was strengthened in 2022; as a result, 10 institutional buyers purchased a total of 161.9 mt of local quality assured seed.

[1] Through this, the project targets to have at least 50% of the seed aid in the country is procured locally.
[2] The trained marketing officers are employees of seed companies already existing before A3SEED, as part of capacity building, they are being trained to be more inclusive
[3] This is because of increased capacity of STASS to advocate and due to other seed companies needing to benefit from services of STASS

Implementation Activity	Status	Progress toward Achievement of Objectives
1.5 Decentralize seed quality assurance		• IFDC, the Ministry of Agriculture and Food Security (MAFS), and STASS collaborated in 2022 to operationalize the seed certification system. • 21 seed inspectors and 7 lab technicians were trained on seed inspection and seed testing, respectively. • A consultant from the University of Juba was engaged in 2022 to develop seed certification protocols for the trained inspectors to use in seed crop inspection in 2023.
1.6 Promote domestic seed procurement by relief and development efforts		• 10 institutional buyers accepted and purchased a total of 161.9 mt of local quality assured seed in 2022.
Result Area 2: Quality Seed Use and Good Agricultural Practice		
2.1 Scaling quality seed use and good agricultural practices (GAPs) through private sector-led extension		• 54 extension workers and 6 hub coordinators were trained in GAPs, integrated soil fertility management (ISFM) and conservation agriculture, integrated pest and disease management, and postharvest handling and management. • The trained extension workers were able to establish 51 crop demonstration plots following the IFDC demonstration protocol guide. • 7,303 smallholder farmers were reached with extension services following group trainings and farmer field days organized on the demonstration plots. • 2 training manuals were developed, including a mini guide on postharvest handling and management for use by extension workers in the project hubs.
2.2 ICT4Ag solutions to support private sector led extension		• 28 audio jingles have been developed and translated into various local dialects of the project locations (Azande, Bari, Dinka, and English) and are currently being broadcast on the radio[1]. • 17 radio talk shows across all hubs were conducted in 2022, reaching over 29,633 listeners who are mostly smallholder farmers. • Over 1,000 flyers were distributed to smallholder farmers to disseminate extension messages during farmer field days.
2.3 Develop evidence-based soil fertility management recommendations		• The soil fertility and farming systems assessment conducted during the reporting period generated a set of ISFM recommendations to help smallholder farmers increase efficiency and profitability in food production. • A manual on ISFM and conservation agriculture was developed for field use by extension workers. • Following development of the field manual, extension workers directly trained 7,303 smallholders on ISFM and conservation agriculture; 29,232 smallholders were indirectly trained.

[1] The listenership of radio jingles and talk shows is proven by the fact that farmers call in during the talk shows and for the jingles, the number of calls to seed companies enquiring about seeds is another way of assessing listenership.

2.4 Develop evidence-based crop protection recommendations		• A manual on integrated pest and disease recommendations was developed and hard copies were distributed to seed company extension workers. • Following capacity building, the extension workers were able to directly train 7,303 smallholders on integrated pest and disease management; 29,232 smallholders were indirectly trained.

Implementation Activity	Status	Progress toward Achievement of Objectives
RA3: Quality Seed, Input and Output Marketing and Distribution		
3.1 Facilitate last-mile distribution through private seed and input dealer network		• The seed companies supported under A3-SEED established last-mile distribution through agro-input dealer networks, comprising 33 agrodealers, 19 sales agents, and 60 village agents at the project hubs. • IFDC, in collaboration with the marketing officers of the seed companies, built the capacity of the agro-dealers, sales agents, and village agents in seed marketing and customer care. • Following the training, 92 mt of quality seeds were sold to smallholder farmers through agro-dealer networks.
3.2 Establish agribusiness clusters through seed producers, input dealers, and traders		• In 2022, 13 agribusiness clusters (ABCs) were established at the project hubs to improve the supply of agro-inputs in rural markets; this increases smallholder farmers' access to quality inputs within their locality. • A total of 13 ABC coaches were identified and trained to build their networks and business relations among the cluster members. • Several ABC meetings were organized by IFDC, in collaboration with 2SCALE, and facilitated by the ABC coaches. Participatory ABC actor mapping exercises were conducted by the entrepreneurs under the guidance of the trained ABC coaches. • An ABC training curriculum was adopted and refined for the ABC coaches in 2022.
3.3 Promote women and youth empowerment in seeds, inputs, and commodity aggregation and marketing		• In 2022, the A3-SEED inclusion strategy was developed to give strategic guidance to project implementers and relevant stakeholders on how to integrate gender across the different result areas. • 17 participants (14 male, 3 female) from seed companies were trained on how to integrate an inclusive approach in their seed production activities. • 1 male and 2 female role models/champions were identified in Torit hub; they encourage youths to participate in various seed value chain functions for income generation and employment.
3.4 Facilitate access to input support mechanisms, including savings clubs, smart vouchers, and seed fairs		• In collaboration with the state government, STASS, and seed companies and input dealers, IFDC organized an agricultural trade show in Yei; 1,000 smallholder farmers (700 male and 300 female) accessed quality agricultural inputs. In Torit, 1,500 smallholder farmers (800 male and 700 female) purchased agro-inputs from agrodealers and seed companies. • The World Food Day celebration in Rumbek attracted over 2,500 smallholder farmers (1,500 male and 1,000 female). Amal Modern Agricultural Seed Company (AMASCO) exhibited the quality seed produced through contract farmers.
Implementation Activity	**Status**	**Progress toward Achievement of Objectives**

RA4: Capacity Building and Learning Agenda		

4.1 Capacity building of local professional cadres		• 120 local field experts were trained, including agronomists, extension staff, agro-dealers, marketing staff, and sales agents.
		• 4 training manuals were developed and shared with extension workers for seed companies and government extension workers in the areas of the project operations. The training materials covers topics such as ISFM, integrated pest management (IPM), postharvest handling (PHH), and weed management.
		• However, some activities under this result area are planned for 2023 and will be accomplished by:
		  Supporting a curriculum to be developed to ensure it is gender and youth sensitive.
		  Developing an inclusion module in the curricula on women's empowerment and youth employment promotion.
		  Designing a ToT module on inclusion.
		  Delivering the ToT inclusion module.

4.2 Share with and learn from existing experience in South Sudan		• 2 knowledge-sharing events were conducted in 2022, bringing together the different project stakeholders, such as the government, seed companies, processors, an NGO, and the donor community.
4.3 Targeted action research		• A deep-dive study was conducted on gender and youth knowledge gap studies in the all 5 project hub locations. • A research paper on seed aid has been jointly written by IFDC and KIT.

3 Detailed Progress, Results, and Outcomes by Objective

3.1 RA 1: Commercial Quality Seed Production

The national demand for seed is over 40,000 mt, with less than 40% of the requirement currently being met. Most seeds are saved by farmers, which are recycled over time from previously harvested grain crops. Thus, food shortages also mean seed shortages, which therefore require strategic intervention. A3-SEED is utilizing a blend of private sector-led approaches and community engagement aimed at creating a resilient seed sector in South Sudan. The project works with seed companies and local governments to identify locally suitable varieties for multiplication. The seed companies, together with agro dealers, have a commercial incentive to develop the seed value chain and transform it into a sustainable and adaptive sector. ***We co-invest with seed companies, improving their seed production and***

marketing capacities. During the reporting period, the project worked with 10 seed companies that have in turn mobilized over 3,900 outgrower farmers who produced over 4,500 mt of assorted seeds. *In 2023, the project will commission a study to assess the capacities of these seed companies to continue seed production without co-investment. The project is also discussing with banks – Cooperative Bank of South Sudan and Equity Bank on possibilities of accessing loans.*

3.1.1 Sustainable early generation seed supply

A recipe for the success of a sustainable seed system includes a reliable supply of early generation seeds. Through collaboration with the Directorate of Research of the Ministry of Agriculture and Food Security (MAFS), the project was able to facilitate access to foundation seed through both local production and cooperation with Polataka Basic Seed Centre, while ensuring access to regional foundation seeds for varieties released in South Sudan. Through this collaboration, seed companies were able to produce a total of 29,610 kilograms (kg) of foundation seed produced by both the public (Department of Research at MAFS) and competent private seed companies (PRO Seed Limited). Polataka Basic Seed Centre was able to produce and sell about 8,000 kg of foundation seeds of maize, groundnuts, and beans to Magwi Seed Company Limited (MASCO) and Afroganics Seed Company. Through a female progressive farmer, PRO Seed Limited was able to put about 8.5ha of land to produce 13,000 kg of foundation seed for the maize variety Longe 5 in season 2022A. These foundation seeds were later processed, packed in varying quantities, and sold to seed companies, such as Afroganics in Torit, Smart Seeds, and Seed Grow, which were engaged in certified seed production in season 2022B. The sales and distribution of the foundation seeds was coordinated through STASS. However, 8,610 kg of foundations seed was produced directly by STASS, as shown in Figure 2.

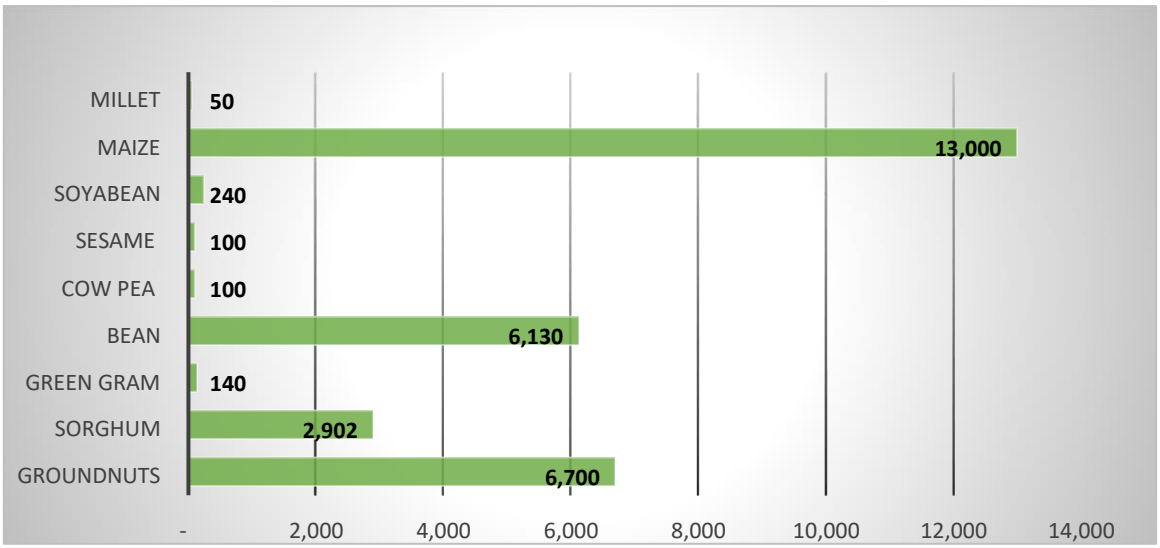


Figure 2. Locally Produced Foundation Seeds Used by Seed Companies by Crop in 2022

Most of the foundation seeds produced locally are maize *(Longe 5)*, sorghum *(Seso3, Wad Ahmed)*, groundnut *(local varieties, Serenut 14R, and Serenut 4)*, sesame *(Sesame2)*, cowpea *(Secow 2WT)*, and green gram *(Narogram2)*. This is because these crops and varieties have readily available breeder seeds through MAFS research.

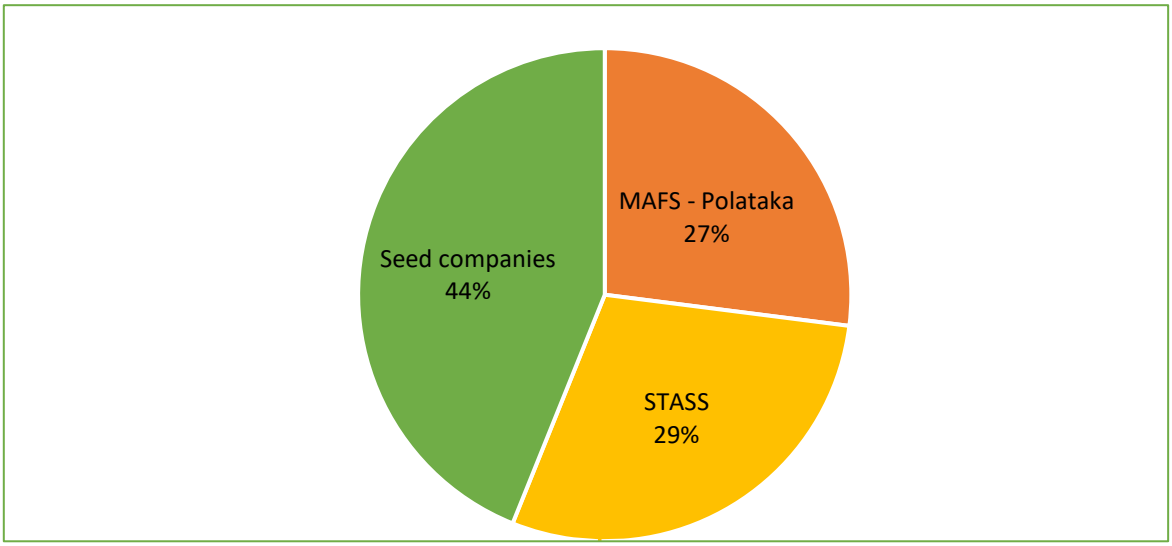


Figure 3. Source of Locally Produced Foundation Seed in 2022

Of the total 65000 kg of foundation seeds used in 2022, a total of 29,610 kg was produced locally. As shown in fig 3 above, the locally produced foundation seeds were produced by seed companies (44%), while (29%) were foundation seeds directly produced STASS; and the Polataka Basic Seed Centre supplied 27% of all the foundation seed accessed (Figure 3). A3-

SEED provided technical backstopping and training during production of these basic seeds. The rest of the foundation seeds used about 35000 kg were accessed from the regional research stations with facilitation of the Ministry of Agriculture and Food Security and STASS. **Access to early generation seed has enabled the seed companies to double their production in both season 2022A and season 2022B**.

3.1.2 Strengthen private seed companies.

Strengthen the Seed Trade Association: STASS membership has increased from only eight in 2021 to 15 in 2022. This increase in membership is a sign of trust and demonstrates the enhanced capacity of the association. STASS is now able to advocate for a seed marketing enabling environment, aspects of seed regulation, certification, and issues of humanitarian seed distribution that distort the market. It is now a member of the African Seed Trade Association (AFSTA) and enjoys support from Seed Trade Association of Kenya (STAK) and Uganda Seed Trade Association (USTA).

Table 2. List of STASS Members as of December 2022

S/No	Company	Production Areas	Email
1	PRO Seed Ltd	Juba, Yambio, Nzara, Maridi, Magwi, Mugali, Nimule, Torit, Wau	proseedsltd@gmail.com
2	Green Horizon Seed Co Ltd	Juba, Magwi, Kajo-Keji	Greenhseed2016@gmail.com
3	Seed Grow Co Ltd	Juba, Magwi, Nimule, Mugali, Yei, Bor, Terekeka, Awerial	Seed.grow@yahoo.com
4	Smart Seeds and Agro Inputs Co Ltd	Juba & Renk	smartseedsco@gmail.com
5	Gumbo Glow Seed Co Ltd	Juba, Magwi	gumbogloseeds@gmail.com
6	MASCO Seed Co Ltd	Magwi	mascoseedscoltd@gmail.com
7	Afroganics Ltd	Torit, Magwi	Info.afroganicsfarms@gmail.com
8	Sudds Enterprises	Renk	Ssuddsenterprisesltd@gmail.com
9	Kerepi Farm Seed Co Ltd	Magwi, Juba	kerepifarmseedcoltd@gmail.com
10	TEFCO Seeds Ltd	Juba, Maridi, Yambio, Renk	tefcoseeds@gmail.com
11	Nile Agro-Tech and Seeds Co Ltd (NATSCO)	Magwi , Torit	info@nileagrotech.com
12	Smart Farmers Ent	Magwi, Juba	Smart.farmer2277@gmail .com
13	Aryan Seeds company	Magwi, Torit	operations@aryanseeds.c om
14	Nile Basin Seeds Co. Ltd	Magwi	nilebasinseedsltd@gmail.com
15	Nova Farms Ltd	Juba	novafarmss@gmail.com

Decentralizing STASS: During the reporting period, STASS made a significant contribution in advocating for improving the environment for seed companies to operate, ensuring that seed companies adhere to quality standards, and lobbying for institutional markets to consider procuring locally in South Sudan. With these efforts, it was realized that a centralized STASS in Juba would not be sufficient to address the needs of farmers at the grassroots level. Decentralizing STASS will enable more effective coordination of activities of the seed actors within the states and counties. Thus, two local STASS chapters were established in Yambio hub of Western Equatoria state and Torit hub of Eastern Equatoria state in August and September 2022, respectively. Each local chapter is composed of various state-level stakeholders in the seed sector, such as cooperatives or farmer groups, seed inspectors, seed companies, agro-dealers, local financial institutions, NGOs, and the state government.

Training seed company field staff on quality seed production: A ToT session was conducted for seed company field staff to equip them with knowledge and skills on quality seed production. They will be able to offer training to outgrowers on producing quality certified seeds for use by smallholder farmers across A3-SEED project hubs. Following this training, the seed company extension workers and agronomists contributed satisfactorily to variety selection, seed production planning and field crop management, seed grower recruitment, training and management, internal seed quality control, seed conditioning, and cost-benefit analysis in seed production. A total of 27 seed company field staff were trained.

The post-training evaluation showed that 82% of the agronomists and extension workers were able to train the contract outgrower farmers on GAPs in production of quality seeds. Through this training model, 3,953 outgrower farmers (2,594 [66%] male and 1,359 [34%] female) were trained in 2022 on GAPs by the extension workers of the seed companies and 1087 hectares was put to use for seed production, resulting in over 4,500 mt of assorted seeds over two seasons of 2022.

3.1.3 Develop local commercial seed production.

Seed company production has doubled from 2,500 mt in 2020 (SSD4SS final report, 2020) to over 4,500 mt[1] in 2022 (STASS, 2022). This increase is attributed to several factors, including increased access to quality foundation seeds, supervision, and improved extension services

[1] This is broken down as follows; total Production (at seed companies + out-growers stores) = 4500MT; total production (procured and stocked by seed companies) = 2,625.4 MT

provided by well-trained extension staff. Seeds were produced by seed companies through contract (out)growers. The outgrowers were organized in farmer groups or cooperatives and even included individual progressive farmers.

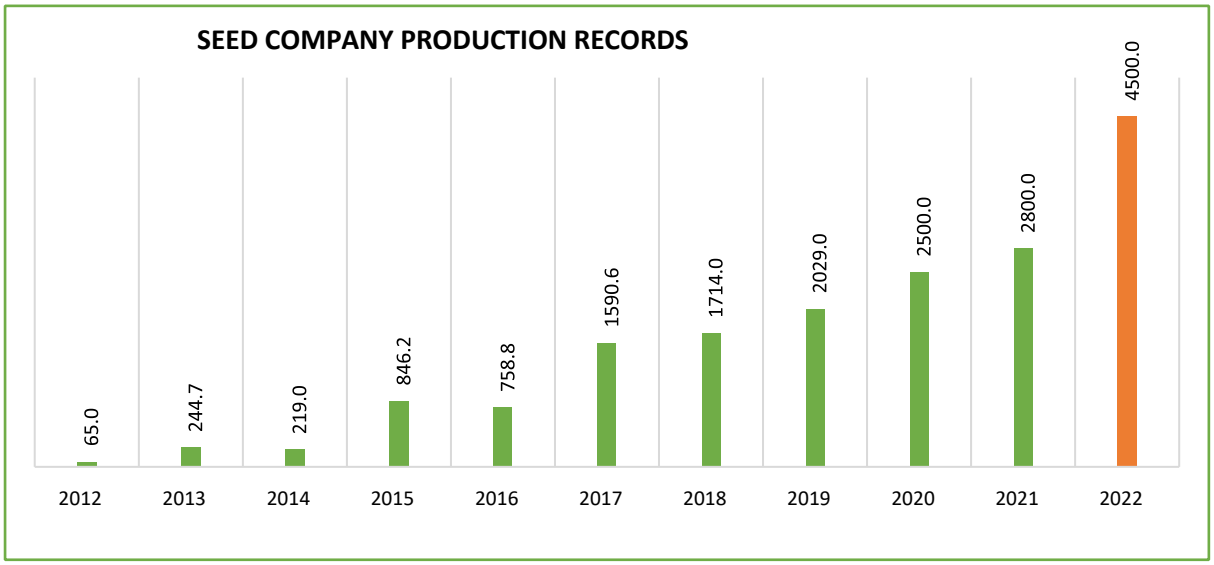


Figure 4. Seed Company Production Records (in metric tons)

Decentralize seed quality assurance: During the reporting period, the seed produced by local seed companies was treated as quality declared seeds (QDS) instead of certified seed. This is because there is still no complete certification protocol in place. To promote domestic seed procurement by development partners and UN agencies, the project has initiated collaboration with MAFS and STASS to operationalize the seed certification system. Inspectors were identified at state and county levels for refresher training by IFDC, with support from MAFS. By the end of 2022, 14 seed inspectors and seven lab technicians were selected from the project areas and were trained in Juba on seed inspection and laboratory processes.

The trained inspectors are now deployed at state and county levels, conducting inspection of seeds as well as laboratory analysis for seeds produced by the state. Some of them are part of the state seed quality control board, a body responsible for ensuring that the quality of seeds distributed by NGOs or sold by seed companies meet certain basic quality standards. This cohort will become the champions to initiate the seed certification process as it is being established at the national level.

3.1.4 Promote domestic seed procurement by relief and development efforts.

Exercising its mandate to advocate for local seed procurement by humanitarian agencies, STASS has created a local seed demand for seeds by NGOs and UN agencies that normally

import seeds from neighboring countries. Most seed companies reported selling at least 6.2% of their seeds to NGOs. This initiative enables the seed companies to increase their incomes and to support the contracted outgrowers in the production of more seeds locally. In season 2022A, several international organizations, including the Seed System Group, Development Alternatives Incorporated (DAI), CARE, and the Food and Agriculture Organization of the United Nations (FAO), and the national organization Farm Stew bought seeds from the local seed companies. This was facilitated by STASS.

3.2 RA 2: Quality Seed Use and Good Agricultural Practice

3.2.1 Scaling quality seed use and GAPs through private sector-led extension

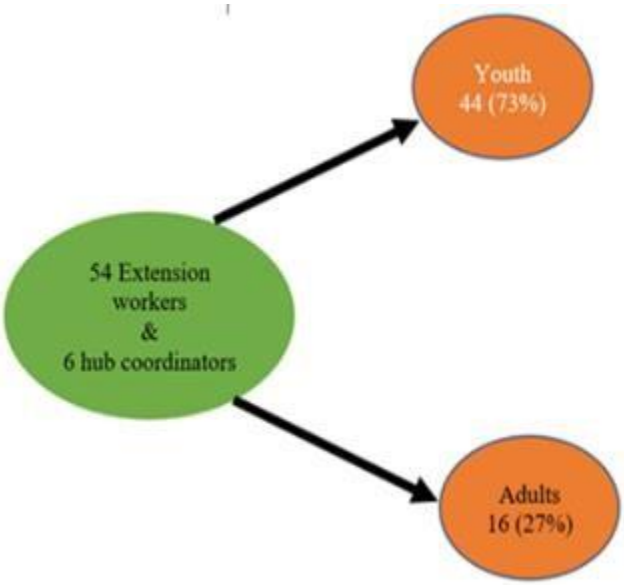
There were two main categories of target beneficiaries for these activities: outgrowers, who were responsible for the production of quality seeds for seed companies, and smallholder farmers, who were the users of the quality seeds produced. The project prioritized a variety of customized extension methods to reach outgrowers with GAPs to maximize seed output that would otherwise be compromised due to poor agronomic practices. Taking into consideration the cost constraints in reaching out to smallholder farmers, the project narrowed implementation to group-based extension approaches, such as field training at demonstration plots and farmer field days, as well as area-wide radio programs organized by the seed companies and IFDC staff in the project hubs.

3.2.2 Training of seed company extension workers

Extension workers from 10 seed companies were trained on the establishment of crop demonstration plots, principles of quality seed production, integrated pest management, and harvesting and post-harvest handling techniques. These trainings were carried out in the respective hubs of Bor, Magwi, Bor, Rumbek, and Yambio and lasted for two days at each location during August 2022. The training was organized to realize the following objectives:

- Introduce participants to practical establishment of agricultural demonstration plots.
- Introduce participants to basics of quality seed production practices.

- Discuss the harvest and post-harvest handling practices of common crops under the A3-SEED project.
- Introduce participants to the concept of integrated pest management for common crops.



Over 54 seed company extension workers and six hub coordinators were trained on GAPs to improve agricultural productivity among contracted seed company outgrowers. The trainings covered topics on establishment of crop demonstration plots, quality seed production, integrated pest, and disease management, and harvesting and post-harvest handling techniques.

Overall, 16 female participants trained – seven in the age group 15-25, seven in the age group 25-35, and two in the age group 36 or older; of the male participants, two were in the age group 15-25, 28 in the age group 26-35, and 14 in the age group 36 or older. Therefore, a total of 44 youths were trained, while 16 were adults aged 36 or older.

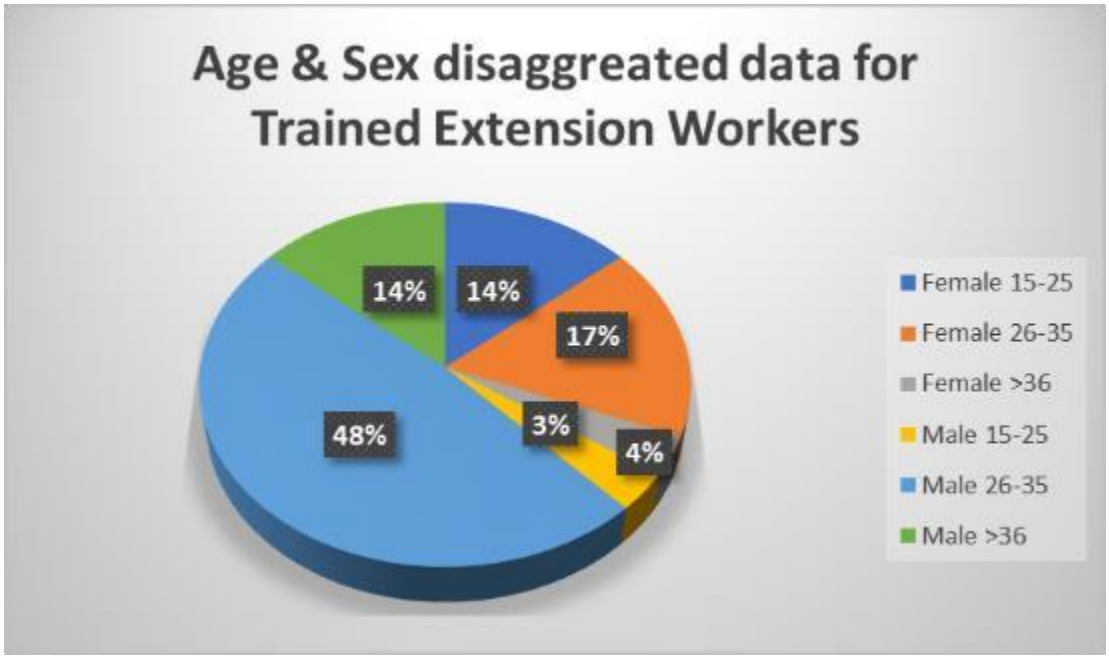


Figure 5. Age and Sex Disaggregated Participant Data

Development and Distribution of Manuals

Training manuals on ISFM and integrated pest management as well as guides on harvesting and post-harvesting handling were finalized and distributed directly to seed company extension workers. The aim of this activity is to ensure that the extension workers can consult the manuals whenever they are conducting trainings to outgrowers. Overall, 60 extension workers and six hub coordinators and 12 managing directors received the manuals.

Crop Demonstration Establishment by Seed Companies

During the seasons 2022A and 2022B, seed companies supported by A3-SEED established 51 crop demonstration plots across the different hubs. The demonstration plots were established to show the effects of using improved crop varieties versus local recycled varieties of the same crops. Improved varieties of known genetic potential were grown alongside local varieties. The performance of both varieties was studied over a period of one season until harvest. The results were analyzed and compared and used to make recommendations for variety adoption.

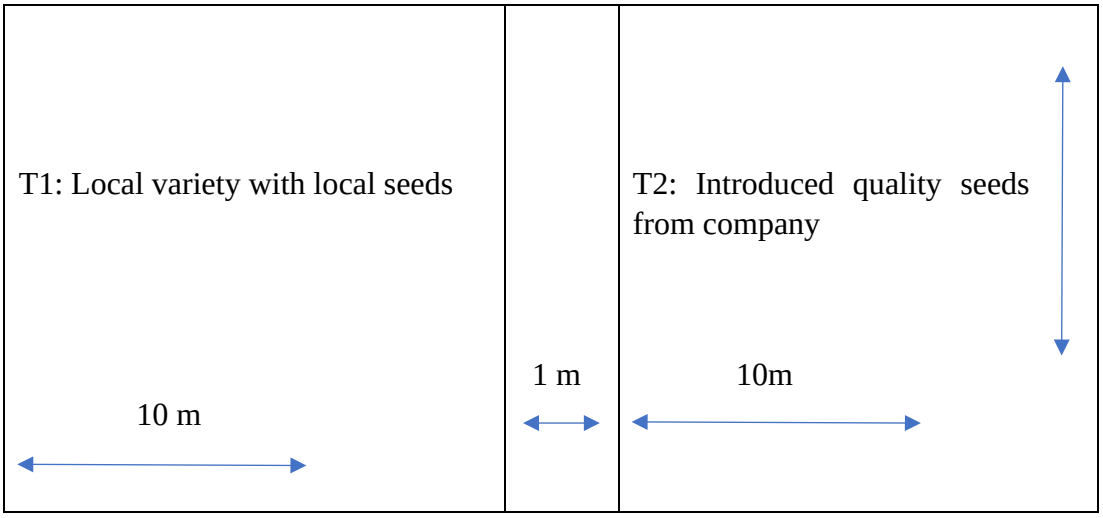


Figure 6. Overview of the Demonstration Field Organization

Two identical plots measuring 10 m x 10 m each, established side by side and separated by 1 m in between, were planted with groundnuts of different varieties, a local variety *(Akir Kita Abongo)* supplied by the host farmer (white seed) and an improved variety (Red Beauty, red seed) supplied by Afroganics Seed Company. All treatments (agronomic practices) were the same except for planting pattern. Farmers were allowed to plant in their traditional way, while the improved variety was planted in rows and columns spaced at 30 cm x 10 cm. Groundnuts were then harvested from the two fields. After drying, each variety was weighed. The local groundnut variety (Akir Kita Abongo) yielded 7.25 kg per 100 m^2 while the improved Red Beauty variety yielded 17.5 kg per 100 m^2.

Crop: Maize Variety: Longe 5 (Improved) Attributes: Large/long cobs Double cobbing Early maturing Demand for fresh white maize for roasting or boiling in the local market is high (a cob goes for 300-500 SSP)	Crop: Maize Variety: Local variety Attributes: Small/short cobs Single cobbing Drought tolerant Late maturing Low demand (a cob goes for only 200 SSP)

Figure 7. Physical and Physiological Assessment of Two Maize Varieties at a Demonstration Plot

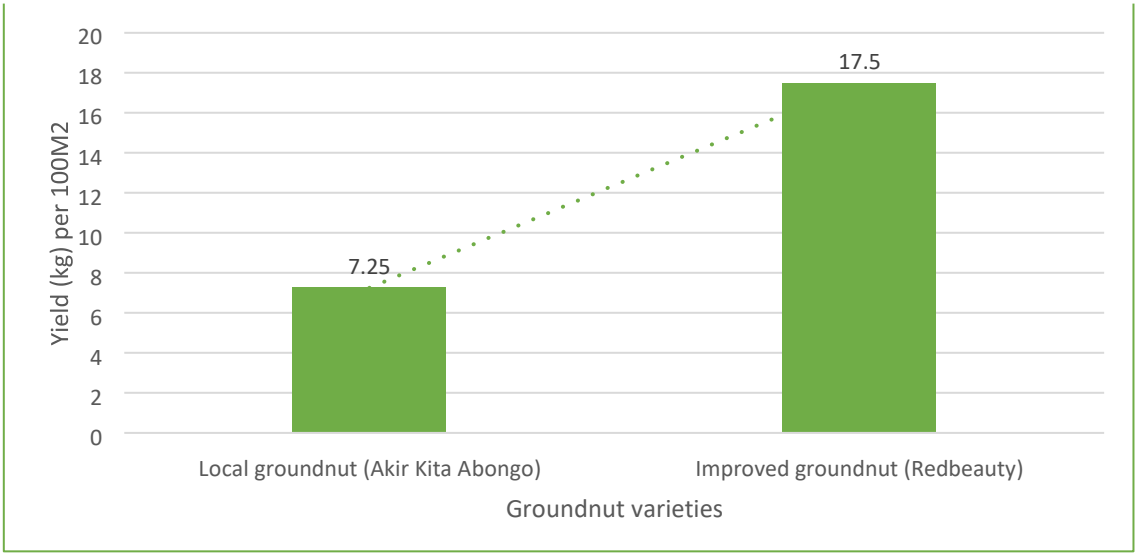


Figure 8. Yield Comparison of Local and Improved Groundnut Varieties in Ibalany Boma, Torit

The second objective for the demonstration plots was to illustrate the effects of GAPs. In this case, two plots of same size were planted with same variety. One was taken care of regularly using GAPs, while the other was left unattended on a regular basis. The results of such demonstration plots are meant to provide recommendations on the importance of using specific GAPs. Activities conducted at the demonstration plots for this purpose included group training of farmers and farmer field day events. During the crop growing season, a series of farmer field

days were carried out at three distinct stages at the demonstration plots: land preparation and planting (to compare planting methods: row planting and traditional planting methods); flowering/cob formation (to compare vegetative growth differences); and harvesting (to compare yield differences).

These demonstration plots were established by seed company extension workers using IFDC's demonstration protocol guide. The seed company extension workers were guided on the establishment of the demonstration plots.

During the reporting period, over 7,307 farmers (45% female and 55% male and youths) were reached with extension services in the various hubs.

- The main crops demonstrated included:
- Maize (Longe 5, 7H)
- Beans (NAROBEAN 1, NAROBEAN 2 & NAROBEAN17)
- Groundnuts (Red beauty, Igola 1, Serenut 8)
- Cowpea (SECOW 2)
- Sorghum (SESO3, NAROSORG 2)
- Soybean (NARO 2)
- Green grams (NAROGRAM1 & NAROGRAM2)

3.2.3 ICT4Ag solutions to support private sector-led extension.

These technologies are aimed at increasing the penetration of agricultural messages to the wider audience of the farming community. Farmers reached directly through demonstration plots can further explain the concepts to their fellow farmers who do not attend the group trainings.

During the 2022 implementation period, the following activities were achieved:

- ***28 audio jingles*** were developed and translated into various local dialects of the project locations *(Azande, Bari, Dinka, and English)* and were broadcast on the radio stations. These jingles contain a mix of information, ranging from good agricultural practices, land preparation, identification of planting time, availability of quality seed, disease

identification etc. The approach also provides a strategy for seed companies to sell directly to farmers.

- ***17 radio talk shows*** were aired across all hubs, reaching over 29,633 people; these talk shows are customized to discuss specific topical issues facing farming communities and to create awareness on the availability of quality seeds.
- ***1,000 flyers*** containing illustrated messages were developed and distributed to facilitate extension workers during farmer field days.

Extension through demonstration plots, village-based advisors (VBAs), and small packs

Seed companies have embraced a strategy of marketing their improved varieties through distribution of free small packs to farmers. These small packs (50 g packs of seeds) have helped farmers see the difference between their own traditional varieties and improved varieties for themselves. This is creating a demand from the farmers for quality seeds and increasing direct sales to farmers.

Table 3. Distribution of Small Packs (50 g) in 2022 as a Marketing Strategy for Seed Companies

Crop	Variety	Quantity Supplied (kg)
Maize	Nat 1	150
	Longe 5	460
	Longe 5H	110
Sorghum	Narosot2	150
	Seso3	460
Cowpea	Secow 2WT	420
Total		**1,750**

As result of this enhanced outreach, the communities in the project areas have been observed to apply GAPs and have increasingly been buying seeds from the seed companies. This is more visible in Torit, Yambio, Magwi, and in Juba. Direct sales are a bit slow in Bor and Rumbek. More practical observation on improvements in farming practices on the farm will be recorded in the first and second seasons of 2023.

3.2.4 Develop evidence-based soil fertility management recommendations.

The output from the soil fertility and farming systems assessment carried out across Eastern, Central, and Western Equatorial states in 2021 generated a set of ISFM recommendations. One manual on ISFM and conservation agriculture was developed for field use by the extension workers. ISFM seeks management of all inputs following sound agronomic practices. In this regard, three entry points were noted and discussed with seed companies, outgrowers, and farmers during the reporting period.

The first entry point of ISFM focuses on the agronomy of crops and inorganic fertilizers. This involves selection of varieties, spacing, and planting date. Interventions on fertilizer use target the formulation, placement, rate, and timing of inorganic nutrient inputs. For this entry point, efforts were concentrated on the agronomy of crops since some state Ministries of Agriculture are hesitant to use inorganic fertilizers. However, the result of the soil assessment is slowly becoming an eye-opener for some of these government departments. The data is being used to discuss a possible policy and mindset shift to embrace the targeted use of fertilizer.

The second entry point of ISFM discussed by the farming communities' targets interventions on organic resource management, including the return of crop residues, manure, compost, and other types of organic wastes, as well as rotation or intercropping with legumes and use of plant growth-promoting micro-organisms. Trainings were conducted on these topics, and over 80% of the farmers, including outgrowers, were seen applying these methods to enhance their soil fertility.

The third and final entry point of ISFM deals with soil acidity, micronutrient deficiency, erosion, soil compaction, and pests and diseases. The main emphasis of this was the prevention and management of soil erosion, compaction, and pests and diseases.

Through ToTs offered to the seed companies by the A3-SEED technical team, the project was able to reach 7,303 farmers who were directly trained on ISFM, and 29,232 farmers benefited indirectly through radio messages, interacting with farmers who have been trained directly, and observation of demonstration plots.

3.2.5 Develop evidence-based crop protection recommendations.

Pests and diseases continue to cause major yield loss for all farmers, both commercial and smallholder, in the various communities. Limited control measures are at the disposal of farmers. Even if good seed is used, pests can cause a significant reduction in yield levels. For those farmers with some access to chemical pesticides, they lack appropriate knowledge on what pesticide is the correct type for the identified pest. To address this, the project developed a manual on integrated pest and disease recommendations. Hard copies of these manuals were distributed to seed company extension workers. This was followed by customized ToTs for extension workers. The project strategy is to focus efforts on preventive, cultural, and mechanical pest control measures while maintaining that chemical pest control be considered the last option, as most farmers are not trained on safe pesticide application and lack protective gear. Particularly for outgrowers, the project is establishing a private spray service provider model that will be provided at every agro-dealer shop.

The trained extension workers were able to conduct trainings in various locations, for a total of 7,303 farmers directly trained on integrated pest and disease management and 29,232 farmers indirectly trained.

3.3 RA 3: Quality Seed, Input and Output Marketing, and Distribution

Figure 9 shows a comparison of seeds sold in 2020 and 2022. In 2020, seeds were predominantly sold to NGOs or UN agencies. While this is still the case in 2022, other options have increased in prominence, e.g., direct sales of seeds to farmers as well as sales through agro dealers have increased significantly in 2022 (almost 6.2%).

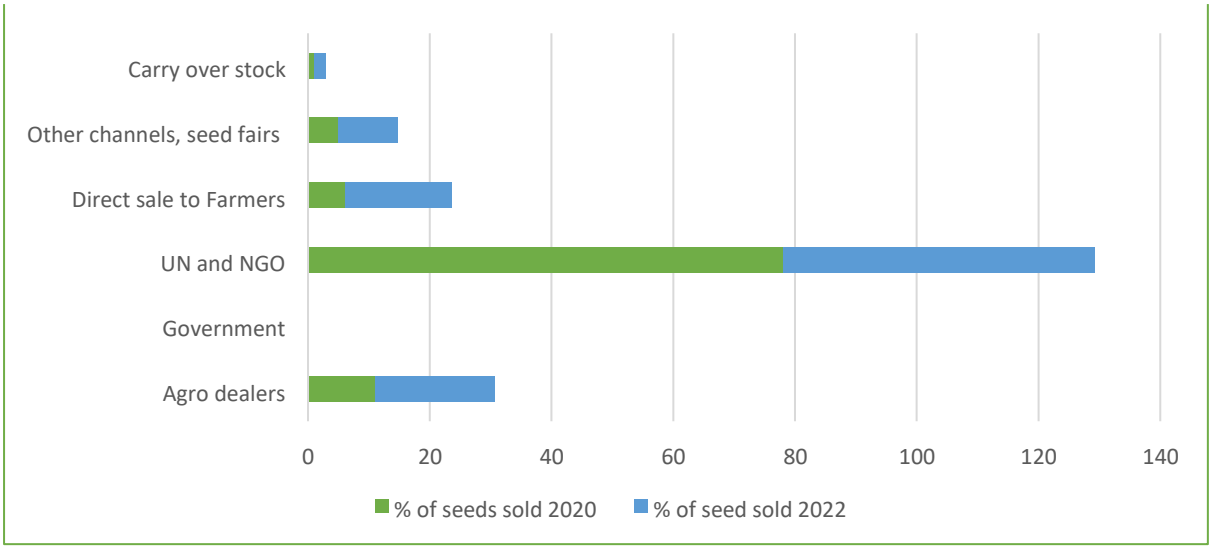


Figure 9. Comparison of Various Channels of Seed Sales in 2020 and 2022 Table 4. **Seeds Procured by NGOs and UN Agencies through December 2022**

Name	Maize Longe 5 (kg)	Cowpea (kg)	Sorghum (kg)	G/nuts (kg)	Sesame (kg)	Green Gram (kg)
Malteser	920	840	920	0	0	0
DAI	8,000	6,000	4,500	10,000	1,500	0
CARE	10,500	0	15,640	56,000	7,000	0
FAO	14,250	0	5,900	0	450	0
UNHCR	2,500	0	0	1,500	0	0
FARMSTEW	750	250	0	0	0	250
ACF	0	750	2,559	3,830	1,050	0
SLDA	0	0	500	400	0	0
SPEDP	0	0	0	5,000	0	0
NRC	0	0	0	100	0	0
Total (kg)	***36,920***	***7,840***	***30,019***	***76,830***	***10,000***	***250***

3.3.1 Facilitate last-mile distribution through the private seed and input dealers.

With A3-SEED facilitation, seed-producing companies have established a network of seed sales points to facilitate last-mile distribution of quality seeds to farmers. In order to improve distribution of their seeds to smallholder farmers, some of the seed companies, such as

Afroganics, Seed Grow, and Gumbo Glow, have has established their own agro-dealer shops, while others have created linkages with existing agro-dealers shops in their locality.

The network is enhanced by the existence of sales agents and village agents. The village agent model has gained momentum as a concept for promoting commercial seed sales by seedproducing companies to smallholder farmers. This has significantly improved the reliability of access to quality seeds. Farmers normally tend to sell all their produce during harvest, forcing them to travel long distances to obtain quality seed at planting time. The established agro-dealer shops and marketing outlets have reduced the distances traveled by farmers looking for seeds in the markets in the project areas. The shop stocks various crop seeds and other agro inputs, including vegetable seeds, watering cans, and crop seeds, such as maize, sorghum, and groundnut. Vegetable seeds are highly sought after during the dry season, when farmers desire to produce vegetables for the market and to enhance their own nutrition. Seed companies have used various methods to motivate their field agents. PRO Seed Ltd, for instance, has provided its village agents with bicycles to aid their mobility.

Table 5. Summary of Distribution of Agro-Input Dealers, Sales Agents, and Village-Based Agents by Seed Company

Seed Company	Agro-Dealers	Sales Agents	Village Agents	Grain Vendor
Sun City	2	3	3	0
AMASCO	2	3	2	0
PRO Seed Ltd	2	0	30	0
Afroganics Ltd	4	4	3	16
Green Horizon	4	2	0	0
Seed Grow	3	0	0	0
MASCO	4	0	0	0
Gumbo Glow	4	0	4	0
Smart Seeds	3	0	10	0
AACS	0	3	4	0
Seed Producer Cooperatives	0	4	0	0
2SCALE	3	0	4	0
Total	**33**	**19**	**60**	**16**

Training of agro-input dealers: Following a training needs assessment conducted by IFDC, in collaboration with the marketing officers of the seed-producing companies, trainings were organized for agro-dealers and village agents. The trainings were aimed at strengthening the seed distribution model by equipping the agro dealers with business and networking skills. A

total of 33 agro dealers attended the trainings. The main topics for the trainings included: (1) introduction to working as village agent, sales agent, or agro-dealer and basic technical knowledge about quality seeds, (2) basic business skills for village agents or sales agents, and (3) marketing and customer care.

These trainings have enabled agro-dealers and village agents to increase their knowledge and understanding about seed marketing and their roles as salespersons in promoting and marketing of quality seeds in their communities. Through this established channel, over 3.5% of the assorted locally produced seeds were sold directly to farmers by December 2022. Farmers were able to get information and knowledge on how to use some of the new varieties sold by the agro-dealer shops.

Figure 10. Branded Seeds in Agro-Dealer Shops in Rumbek and Terekaka

3.3.2 Establish agribusiness clusters (ABCs)

In a particular hub, Agrobusiness Clusters consists of seed producers, input dealers and traders. The creation of ABCs is an approach that is designed to help smallholder farmers transition from subsistence farming to semi-commercial farming and to improve the supply of agroinputs in rural markets. This increases smallholder farmers' access to quality inputs within their locality. The A3-SEED project adopted the Competitive Agricultural Systems and Enterprises (CASE) approach used by 2SCALE for the development of inclusive agribusiness relationships through ABCs.

A total of 13 ABCs were established, nine in collaboration with 2SCALE in Nzara, Yambio, Obbo, and Yei and four through A3-SEED partnerships in Juba, Bor, Torit, and Rumbek. Each cluster has one trained ABC coach; 13 ABCs coaches have been trained on the CASE approach.

This ABC network in various locations has benefited over 200 entrepreneurs, farmers, agrodealers, sales agents, transporters, and village agents through business-business linkages.

IFDC will continue to support ABC coaches to implement the action plans in terms engaging the actors to initiate business relationships, facilitate relationship building among ABC actors in the engagement opportunities, and capacitate ABC coaches based on the priority areas identified in the needs assessment, including skills training on facilitation, networking, communication/negotiation and presentation, trust building, exchange visits to other ABCs, and relationship and partnership development.

Four new ABCs were formed while nine existing ones were reactivated, for a total of 13 ABCs. This achievement is the result of a synergy between the A3-SEED project and IFDC's 2SCALE project. 2SCALE had established nine ABCs in the hubs of A3-SEED project implementation. Seed stakeholders under the project joined those existing ABCs.

The following is a statement from one of the participants:

> ***"My name is Kevin, and I am an agro dealer in Torit. I used to deal in motorcycle spare parts, which I imported from Uganda. Eventually, I ventured into selling agricultural outputs, such as maize, groundnuts, and beans, where I met AACS, a cooperative supported by IFDC. I became a partner to AACS and started selling groundnuts. Currently, my challenge is a lack of access to an outside market. I appreciate IFDC for the ABC idea that can help link us to the outside market and coordinate and network among ourselves."***

The ABCs also act as a platform for creating demand for seeds by sharing quality and availability of seeds.

3.3.3 Promote women and youth empowerment.

Figure 11. Women Manually Processing Maize Seeds for a Seed Company

Through the ABC clusters, women and youth were empowered to take part in seeds, inputs, and commodity aggregation and marketing. To create awareness of the opportunities that exist for youth and young women in the seed value chain, six trainings were organized on youth- and gender-inclusion awareness. The objective of the training was to create awareness about the existing opportunities for gender and youth inclusion and to ensure that seed companies integrate an inclusive approach in their activities.

A total of 87 women and youth were mobilized within project areas for these trainings. Participants included seed company extension workers, ABC coaches, personnel from the county agriculture department, and project hub coordinators. Other participants included seed-producing cooperatives, agro-dealers, and outgrower farmers.

The gender and youth inclusion training were provided by in-house expertise from IFDC and the KIT inclusion team. The training used mixed methodology including presentations, role play, group discussions, and videos on selected themes related to the subject matter. The group discussions provided an opportunity for women participants to interact with male counterparts in a way that promoted understanding of women and youth challenges, leading their male counterparts to gain an understanding of appropriate inclusion strategies and gender and youth inclusion issues that would likely emerge during project implementation.

Figure 12. Youth Seed Sales Agents with Bicycles Provided by a Seed Company

As a result of this awareness, youth and young women now play a significant role in agricultural seed marketing. They have been employed in agro-dealer shops and as village agents and they also participate in aggregation of seeds and crop produce. Youths provide transportation services; women are seen cleaning, processing, and packaging seeds in the various locations.

3.3.4 Facilitate access to input support mechanisms.

Input support mechanism including savings clubs, smart vouchers, and seed fairs play a significant role in facilitating access to input support for small holder farmers. By the end of December 2022, 2,409 outgrower farmers (2,594 [66%] male and 1,359 [34%] female) – 16 groups with a total of 1,672 members (989 male and 683 female) and 737 individual outgrowers (453 male and 284 female) – benefitted through input credit access through contractual agreements with 10 seed companies. The services seed companies offered their contracted farmers were bundled to include access to foundation seed, extension, and financing for land opening and weeding. Through this model, seed outgrowers were given highyielding varieties of maize, groundnut, and sorghum on credit, and later, the seed companies bought back the produce at pre-agreed terms. As a result, contracted outgrowers produced over **4,500 mt of QDS on 924 hectares** in 2022. This increased production of seed has provided opportunities for seed sectors actors and has the potential to generated on-farm and off-farm employment.

To stimulate quality seed use by farmers in the upcoming 2023A planting season, the project facilitated interventions to create awareness of the economic benefits of investing in quality seed and their availability within the project location. This was done through a talk show on local radio stations, exhibitions during agricultural shows, and national events. A total of **five talk shows on quality seed** were aired over four radio stations across the three hubs. During the talk shows, radio stations provided the staff of seed companies, the Agriculture Department,

agro-dealers, STASS, and IFDC a platform to enlighten listeners about quality seed use. Talking points included what quality seed is, benefits of using quality seed, identification of quality seed on the market, available varieties, and their attributes, and where to obtain quality seed. Listeners were also given the opportunity to ask questions on the subject, and they received contact information to discuss the matter further with the seed producers and agrodealers. An **estimated 29,000** people were reached with quality seed messages, which has empowered them to make informed decisions on what kind of seed to use in the upcoming planting season[1].

The project participated in a total of **four exhibitions** during learning events, agricultural shows, and nationally celebrated events in three hubs, where five seed companies (PRO Seed, Green Horizon, AMASCO, Seed Grow, Afroganics) showcased their QDS products to the public. These activities were organized by the A3-SEED project in collaboration with partners (e.g., agricultural shows and World Food Day celebration organized by MAFS, FAO, and the World Food Programme). Seed companies got an opportunity to increase their visibility and professionalism among farmers and private and public sector players at the local and national levels. Overall, such an innovative and stimulating approach to seed marketing is still new to local seed companies (apart from Afroganics). These events are estimated to have reached approximately **10,000 people** who received quality seed use messages and received samples of quality seed products.

3.4 RA 4: Capacity Building and Learning Agenda and Monitoring Evaluation, Learning, and Sharing (MELS)

3.4.1 Learning and Sharing Events

Farmer Learning Event in Yambio

[1] This was observed in an early level of impact assessment conducted at the beginning of Feb 2023.

During the reporting period, the A3-SEED project held a learning event in Yambio, Western Equatoria state, South Sudan. The event was aimed at creating awareness at state county, payam, and boma levels. Farmers were randomly selected from the various communities, with the potential to procure seeds. A central topic throughout the learning event was enhancing and strengthening effective last-mile distribution of quality seed. The event was conceived to sensitize all participants to the objectives and initiatives of the A3-SEED project and to advance mutual and collective learning about key challenges and opportunities for the development of the seed sector in Western Equatoria.

More specifically, the event was first and foremost conceived to build trust connections for a critical mass of smallholding but progressive farmers with the private seed sector (companies, out growers, and agro dealers) and with grain processing and marketing cooperatives. By doing so, the event ultimately aimed at fostering the establishment of business-to-business (B2B) linkages for the development of inclusive (or pro-poor) and comprehensive (or input-output) value chains, primarily for maize and possibly also for rice, sorghum, beans, and horticulture.

By linking surveyed farmers to project-supported companies and cooperatives, the event contributed to both impact creation and awareness-raising of the A3-SEED project. The farmers participating in this event are expected to act as agents of change by conveying the learnings from the event to their villages, thereby improving the outreach of the project. As a result of this event, the project is now expected to have a greater chance of generating observable and measurable impacts that alleviate rural poverty, unemployment, food insecurity, and vulnerability across the Western Equatoria state.

The event attracted about 120 participants over three days, including:

- State Minister of Agriculture and his staff.
- Key representatives of IFDC, KIT, STASS, GIZ, World Vision, and Cordaid.
- Key representatives of two seed-producing companies (Green Horizon and PRO Seed) operating in both Yambio and Nazara counties, as well as their local seed outgrowers and dealers.
- Leaders of two grain processing and marketing cooperatives based in Yambio and Nzara counties, respectively.
- Agro-input dealers.
- 82 smallholder farmers from both Yambio and Nzara counties.

Overall, the farmers who participated expressed their general willingness to buy seeds from the two project-supported companies (a few farmers had already bought some of the seeds exhibited during the event) and sell their maize grains to the two IFDC-supported cooperatives (under the 2SCALE project). Of the 82 farmers that attended the event, 33 (40%) were women and 49 (60%) were men; 27 (33%) of the farmers were between the age of 19 and 35, thus qualifying as youth, including 12 (15%) young women and 15 (18%) young men.

In general, farmers were very positive about the learning event. They expressed appreciation for their involvement and showed great interest in the uptake and use of quality seed. Furthermore, the possibility to share current constraints in farming with the project team was highly appreciated by the farmers. At the same time, this provided the project team with valuable insights on possibilities and risks for project success. On the last day, farmers were invited to share their main takeaways from the event.

> "There are seed companies here in Yambio that sell the seeds. What we have been planting is not seed; it is grain. I am now excited to learn that there are seed companies, and we can get the seed and plant it."
>
> *– Male farmer from Yambio*

> "I learned that there is a new variety, a good one. If we plant that, we can get more harvest than we have been having so far."
>
> *– Male farmer from Yambio*

> "When I go back to my field and my farming group, I will tell them about what I learned and shared the [phone] contact [of the seed company] that I got today."
>
> *– Female farmer from Nzara*

Although the focus of the learning event concerned last-mile delivery of quality seed, farmers were also particularly interested in the information on good agricultural practices that was shared in the sessions with seed companies.

> "I learned from Green Horizon [seed company] how best to dry maize. I always get tired from drying maize because I must keep moving it in and out of the house. From the picture they showed, I saw another way to do it.

– Male farmer

> "We now know much better on how to plant. Before we were planting five seeds per hole. Now we know that is too much.
>
> *– Female farmer*

Two more events of this kind will take place in 2023 and 2024 in Juba and in Eastern Equatorial state (Torit or Magwi), respectively.

Stakeholder Collaboration and Learning

ISSD Africa Conference: The strides made by A3-SEED to develop the seed system in South Sudan would not go far without learning from other projects that faced similar challenges. As such, the A3-SEED project participated in ISSD Africa conference, held in Kigali, Rwanda, on October 17-19, 2022, drawing valuable lessons based on practices from other countries and documented lessons learned from various projects. Collective efforts from all stakeholders are needed to develop the seed system in South Sudan, with A3-SEED work contributing to only a fraction of the work in the South Sudan seed sector – building a resilient private seed sector; other components of the seed system need to be strengthened as well, such as inspection/government regulations, financing, quality assurance, and research.

FNS-REPRO Learning Event: As part of a learning event for the FNS-REPRO project, participants from Sudan, Somalia, Ethiopia, and South Sudan converged in the Netherlands to discuss important lessons learned from its three years of implementation. The meeting was co-organized by FAO and Wageningen University. It attracted various stakeholders, including representatives from the Directorate-General for International Cooperation (DGIS) and Netherlands-based NGOs – Care, World Vision, ZOA, and Save the Children. The A3-SEED team comprised a delegation of two IFDC staff, one representative of STASS, and one seed company representative and was later joined by our partner KIT. Other attendees from South Sudan included the MAFS Undersecretary, three from the University of Juba, and one other seed company representative under FNS-REPRO. ***In the meetings, the A3-SEED team discussed the important contribution of the private sector to seed system development. Quality seed is critical to success in agricultural development. An efficient seed delivery system should ensure that farmers have access to high-quality seed at the right time and***

place and at an affordable price. A blend of public and private sector approaches has the potential to efficiently deliver quality seeds to smallholder farmers.

Seed Certification Multi-Stakeholder Meeting: This event was held on March 7, 2022, with representatives from IFDC, KIT, STASS, seed companies, the seed quality control board, FAO, government (public breeding and research director), and Cordaid. Discussions were held on actions to be taken for seeds from South Sudan to be officially certified, rather than being quality declared. ***The outcome of this stakeholder meeting was the recommendation for IFDC to conduct refresher training for all seed inspectors as well as seed lab technicians as a beginning to the seed certification process. As a result, 21 seed inspectors and seven laboratory technicians were trained. The second recommendation was for the government and STASS to initiate a dialogue to discuss the possibility of a ministerial order to guide the certification process. This remains an ongoing activity.***

Multi-Stakeholder Conference: This conference served as a platform to discuss A3-SEED's progress in its work with the private sector and lessons learned in the field by seed companies. It was also an opportunity for the government and the University of Juba to discuss aspects of seed regulations, early generation seed production, and the significance of research. KIT presented the Seed Aid Study, which highlights the challenges a seed aid system that relies on imports can pose to the nascent seed private sector in the country. This meeting was attended by representatives of other NGOs, UN agencies, the government, University of Juba, IFDC, KIT, STASS, and 10 seed companies. ***The meeting resolved that it is importance of considering a semi-autonomous research body that is focused on aspects of research and quality improvement. It was agreed that, to some extent, seed aid is still needed in the country but should be targeted to specific areas. Where possible, seed aid should rely on locally produced seeds. Seed companies were urged to market themselves more extensively, increase production, and expand to areas where there is currently no available seed.***

Development of a Joint Research paper

The learning event, together with the general information shared by stakeholders in the seed sector, sparked an interest in supplementing this anecdotal evidence with scientific evidence on the impact of seed aid on farmers in the project regions. Using project baseline data, a research paper was developed. This research paper focuses on the targeting and effectiveness of seeds distributed through aid programs. The following is the abstract of this research paper:

Seed aid—or free distribution of seeds to farmers—is a popular intervention to simultaneously reduce food insecurity and dependency on food aid in rural areas. However, seed aid distribution also has the potential to disrupt the development of local seed markets. In this study we analyze the targeting and impact of seed aid across the green belt or equatorial states of South Sudan. Using primary survey data on 1,990 farm-households, we find that seed aid is widely rather than selectively distributed. Almost a third of farm households receive seed aid despite the general availability of locally recycled seed varieties. Seed aid distribution does not seem to favour particularly poor, vulnerable, and food-insecure households, but those that are better connected to community-based networks and organizations. Using a double robust methodology based on Inverse Probability Weighted Regression Adjustment (IPWRA), we also find that the adoption of seed aid by farm households does not result in increased agricultural production. And because seed aid is largely sourced from outside South Sudan, it is also creating a disincentive for the development of local seed producers, traders, and markets. Still, seed aid distribution is expected to be more effective and less disruptive above the green belt and especially in parts of the country characterized by lower agricultural potential, persisting conflicts and frequent natural disasters, where farmers would otherwise have insecure access to seeds.

The paper has been submitted to a scientific publication, and we are currently awaiting acceptance. Besides promoting the paper under the wider scientific community, the paper will be used for evidence-based advocacy regarding the impact of seed aid programs in South Sudan.

3.4.2 Monitoring and Evaluation

Indicator Changes

Learning from the baseline results and additional findings and recommendations presented in the EKN monitoring report on projects supported by the Netherlands government, the A3-SEED team initiated a discussion with EKN to review the project indicators that appeared more ambiguous in the context of a seed sector project. The focus was to redesign and formulate relatively measurable indicators that suit A3-SEED and drop other indicators that cannot easily be measured. EKN responded positively to the suggestion of refining the project indicators to make them clearer and easier to measure. However, indicators under Result Area 4 remained unchanged because all are precisely clear, as their output/outcome can be attributable to the work of the project. The full results matrix highlighting the changes is attached in Annex A.

Adopting the DCED Standards

A3-SEED, as a market systems development project, has adopted the DCED standard for results measurement, with technical support from IFDC MELS regional experts. While the

DCED standard may be a new approach for results measurement of projects in South Sudan, other market systems development projects in the regions have shown that the framework is the best approach for monitoring and evaluating private sector projects due to the fluidity of events associated with market systems that favors adaptive programing. This provides A3SEED with the flexibility to learn and adapt to contextual changes in programming.

In the course of implementation, the project has also designed a progress-monitoring system (based on International Aid Transparency Initiative [IATI] guidelines) to gather additional data from seed companies and agro-dealers on a quarterly basis, visualized through a digital dashboard. Seed companies have been trained on how to populate the template accordingly. In 2022, all the data for selected IATI indicators were uploaded into the IATI portal as one of the prerequisites to promoting transparency in the project implementation.

Early Impact Assessment of A3-SEED Project

The A3-SEED project conducted an early impact assessment to determine the project's contribution to the progress of the seed companies in creating impact in the farming communities. The assessment target sample included the seed companies, agro dealers, out growers, and farmers who have used the seeds. The findings show a sequential increase in the production of quality seeds among the seed companies. The four seed companies noted having a supply contract with humanitarian agencies for seeds. In 2022, the few seeds given out as promotional seed packs triggered demand for locally produced quality seeds, according to an agro dealer visited during the assessment in Torit. Outgrowers have also attributed an income increase to their partnership with the companies supported by A3-SEED, as the companies provide a ready market for the seeds produced based on the contractual agreement. (Details can be found in the Early Assessment Report.)

Joint Donor Missions

Three donor missions to Yambio, Juba, and Terekeka were conducted in 2022. These missions were monitory and support missions to help assess project progress, appreciate the challenges faced, and provide recommendations for improvement. The Yambio mission was particularly critical because it came at the time when A3-SEED was still organizing itself and preparing to engage with the seed companies and farmers. The lessons learned in this mission were used to improve project planning for the year. In consultation with the project contact person – the Policy Officer Food Security, the project agreed on a regular (quarterly) schedule for project updates. These meetings have provided a golden opportunity for discussing progress,

opportunities, and challenges and receiving hands-on feedback for improvement and appreciation for what was going right. This initiative was empowering for the entire project.

4 Relationship with Other Stakeholders and Partners

4.1 Leveraging Government Capacity

The A3-SEED project has strong linkages and collaboration with the government at national, state, and county levels. These levels of government have varying depths of involvement, as articulated in Table 6.

Table 6. Government Relationship with the Project by Level

Level of Government	Activities to Coordinate with Government	Relationship
National Ministry of Agriculture and Food Security	Extension, marketing, inspection, and quality control and policy issues	• A3-SEED collaborated with MAFS to conduct training on seed inspection and laboratory technician training. • The projects have liaised with Polataka Basic Seed Centre to enable seed companies, such as MASCO and Afroganics, to access about 8 mt of foundation seed. • MAFS is working with STASS to develop a basic seed certification protocol at national level.
Level of Government	**Activities to Coordinate with Government**	**Relationship**
State Ministry of Agriculture	Supervision and technical guidance through the relevant technical departments	• A3-SEED has signed a Memorandum of Understanding (MoU) with the state Ministry of Agriculture. • The project benefits from the established seed laboratories at state level (Torit and Yambio) for seed companies to test their seeds. • State-level government performs regular visits to seed company sites for inspection. • The Seed Quality Control board at state level helps ensure that seeds produced by seed companies and those that are imported meet certain quality standards.
County-level government	Support from the villagelevel extension system, capacity support to field agents, and quality control through field inspectors	• At the county level, seed inspectors are deployed to inspect seed company fields. • The project collaborates on extension message development and dissemination. • The county agriculture director is always available for consultations and field visits.

4.1.1 National-level efforts

***Seed Testing Laboratory**:* In 2022, A3-SEED made use of the national seed laboratory located at MAFS for training laboratory technicians. The laboratory is managed and operated by the Department of Research at MAFS. With support from the project, STASS and MAFS have facilitated training of seed inspectors and laboratory inspectors who are now working at basic laboratories established by the FNS-REPRO project. These laboratories play a pivotal role in last-mile quality assurance by testing the quality of seeds. This is expected to lead to certification of seeds produced by the seed companies, which can then compete with imports in the market.

***Seed Quality and Regulation Strategy**:* The policy issues uncovered during inception are still unresolved. However, the project has made a little progress with MAFS regarding developing guiding principles for seed certification and regulations. Such guidelines will then be passed by the Minister in the form of a Ministerial Order. During the reporting period, the Draft Seed Policy was being developed by two different institutions, FAO, and the European Union, through the Japan International Cooperative Agency (JICA). This is a poorly coordinated activity that will need attention in 2023. It is recommended that this activity is entrusted to one agency that will receive support from all others that are interested in developing this policy. IFDC will be happy to lead this process.

***National Polices and Frameworks**:* Various seed policies and frameworks currently exist in the country. In 2011, MAFS released their Agriculture Sector Policy Framework for 2012-2017, which outlined an ambitious agenda for policy and program development. This included collaboration with the Ministry of Environment and Forestry on a climate change strategy and green agriculture policy. These policies are at varying stages of execution, though most are in the early stage. The Comprehensive Agriculture Master Plan (CAMP) and Irrigation Development Master Plan (IDMP) now inform most developments in the agriculture sector and are used by MAFS to guide development partners. A3-SEED has benefited from these documents by making relevant reference to them to inform its project implementation.

4.2 Management Systems and Approaches

4.2.1 Adaptive management, COVID-19, and other crises

The project was designed with an adaptive management approach in mind. This was especially so because of the era of COVID-19. While this is the standard IFDC approach under businessas-usual conditions, maintaining adaptive and flexible programming regarding current

or future shocks and crises, such as the impacts of COVID-19 and potential insecurity, is of utmost importance. Thankfully, no significant occurrences have required us to discuss major changes to the project design approach. However, changes to some of the project indicators were proposed. The indicators were reviewed, and the changes were approved.

4.2.2 Consortium project management

KIT and IFDC have continued to work well together during the reporting period. Through virtual means and in-person meetings in South Sudan, the KIT team was able to provide technical and MELS support. In collaboration with KIT, the project has published one paper regarding Seed Aid in South Sudan. IFDC and KIT have an effective partnership that spans multiple projects, including Private Seed Sector Development (PSSD) in Burundi and the Integrated Seed Sector Development in the Sahel (ISSD/Sahel) project.

4.3 Coordination with Other Dutch and Non-Dutch-Funded Projects in South Sudan

The project has continued to maintain close field-level coordination with other projects, such as:

- Agricultural Markets, Value Addition and Trade Development Project (AMVAT), funded by the African Development Bank and implemented by FAO. The project works in the same areas of Torit, Magwi, and Bor.
- South Sudan Livelihood and Resilience Project (SSLRP), funded by the International Fund for Agricultural Development (IFAD) and implemented by Vétérinaires Sans Frontières (VSF) Germany. This project focuses on community empowerment and infrastructure, thereby contributing to creating an enabling environment for markets in the areas where both projects are implemented, Magwi and Bor.
- Toward Sustainable Clusters in Agribusiness through Learning in Entrepreneurship (2SCALE), a multi-year project funded by the Netherlands Ministry of Foreign Affairs and implemented by IFDC in nine countries, including South Sudan. A3-SEED will collaborate with 2SCALE particularly at the market end of the value chain.

Apart from the coordination with the above-mentioned projects, the project has maintained close collaboration with the following stakeholders:

- Donors – EKN, European Union, USAID, World Bank, African Development Bank
- Ministry of Agriculture and Food Security

- NGOs/UN – FAO, World Food Programme, Norwegian People's Aid (NPA), Agency for Technical Cooperation and Development, World Vision International
- Seed Trade Association (STASS)
- Private sector – seed companies
- Private sector – agro-dealers/distributors
- Farmers – individuals and groups
- Ministry of Gender, Child, and Social Welfare

4.3.1 Seed relief/aid

During the reporting period, FAO has remained the main supplier of relief seed in South Sudan, accounting for over 80%. Uganda remains a dominant supplier of relief seeds into South Sudan. The project, through STASS, is engaging FAO to procure at least 35% of their supplies locally. However, there has been a marked increase in local procurement of seeds, even by other organizations. The seed companies have reported that 60% of their seeds are procured by other relief organizations while 40% go to direct farmer sales. Nonetheless, the larger A3-SEED objective is to establish a network of local agro-dealers that will use business relationships to move seeds from seed companies to the farmers.

4.4 Management of the Co-Investment Fund

The co-investment contracts for 10 seed companies have been managed successfully and reported according to plan. All seed companies have demonstrated varying level of successes. In general, given the results gained in the number of outgrowers engaged, area cultivated, and the amount of quality seeds produced in the two seasons of 2022, the project has achieved its intended target in this cooperation. The development of a network of seed distribution to the last mile is ongoing and will remain a bigger part of our focus in the first quarter of 2023.

Table 7. Competitively Selected Seed Companies for Co-Investment

	Seed Company	Location
1	Magwi Seed Company Limited Seed (MASCO)	Magwi
2	Grow Seed Company Limited	Juba, Magwi, and Terekeka
3	Gumbo Glow Seeds Limited	Juba
4	Green Horizon Seed Company	Juba and Yambio
5	Smart Seeds Limited	Juba and Kajokeji
6	Afroganic Limited	Torit and Magwi

7	Sun City Seed Company	Bor
8	AMASCO Limited	Rumbek
9	Alliance Agriculture Cooperatives Society (AACS)	Torit
10	PRO Enterprises Limited	Magwi and Yambio

4.5 Conflict Sensitivity

During the reporting period, A3-SEED took all precautions and applied all approaches to ensure conflict sensitivity. The project involved all stakeholders at state and county levels in the monitoring and inspection of project activities. Development of a Memorandum of Understanding (MoU) at the state level has enabled the government to be aware of project activities and advise on issues pertaining to conflicts. Various communities being targeted by seed companies were made aware of the benefits they could anticipate through the project. The communities were also involved in production and sales of seeds through contracts with seed companies. These contracts were discussed and agreed upon before the outgrowers were involved in the production process. The farmer groups and ABCs being formed by the project through the seed companies were supported by the local authorities to establish peace committees and procedures to prevent and resolve disputes. The project continues to refer to the Political and Economic Conflict Analysis report, which identified risks and mitigation measures for these risks in the various hubs of stability. The security assessment report also helped understand the security risks involved in the implementation of the project and how the project staff have prepared for such risks. A complete and updated Risk Analysis Matrix is attached as Annex E.

4.6 Exit Strategy and Sustainability

With consideration for the clear sustainability and exit strategy elaborated in the A3-SEED project proposal, the following as exit strategies have been highlighted during this reporting period.

Building the capacity of seed companies: Sustainability is built into the core framework of the design, with an arrangement that ensures A3-SEED is implemented through private sector partners – seed companies. The arrangement is critical for the exit strategy and eventual transfer of services to the private sector, which will ensure a sustainable commercial relationship with outgrower, smallholder farmers, and extension service providers. This is further complemented by the capacity building of the seed companies and seed outgrowers as well as the local

government, with the aim of developing a pipeline of experts that can support agricultural development activities at different levels.

Working with various levels of government: A3-SEED is designed to embed its activities to ensure the government plays a crucial role in seed sector regulations. During the reporting period, the project continued to involve the government at various levels, including national, state, county, payam, and boma, in offering various services. The extension agents and village agro dealers are being developed in capacity jointly with the government at state and county levels. This is to ensure that their activities are integrated into units of the local government extension system, with the capacity to manage other upcoming development partner projects in the country. The local level boma, payam, and county agents present the best entry points to deliver services that are responsive to the agricultural and economic needs of the community and maintain a good outreach to women and men who are experiencing poverty.

4.7 Challenges and Lessons learnt.

During implementation of the project, several challenges were encountered. Some of the challenges are highlighted below.

- **Limited access to locally produced Early Generation Seeds** – the proposed intervention for this is strategic investment with research institutions such Polataka basic Seed Centre to increase production of: Some seed companies (in areas such as Rumbek and Bor) are now being supported to use local varieties.
- **Continued Relief Market:** There is still ongoing free distribution of seeds in various areas in the country. Blanket distribution of imported seeds distorts the seed market.
- **Difficult Road Access to storage and market facilities –** The roads to and from some of the production areas are in a dare state. This increases the cost of production and handling of seeds locally. Construction of community access roads using labour intensive technologies could contribute to alleviating this challenge. A3SEED will seek active collaboration with IFAD Funded SSLRP to help communities to priorities access roads to production areas.
- **Underdeveloped Seed Inspection** and other quality control measures – Inspected and Certified seeds carry quality tags and competes favourably in the market.
- **Pests and diseases:** in collaboration with government and private sector, agro dealers are being empowered to offer pest control education to seed buyers.

- **Limited access to Finance** – low capitalization of seed companies – through flexible loans and co-investment to establish processing and packaging lines for quality seeds. The project is discussing with local banks – Cooperative bank of South Sudan and Equity Bank to consider extending loans to seed companies. The same effort is being made to reach out to UNDP who are considering a guaranteed scheme with STANBIC Bank.

Despite these challenges, the project learnt the following lessons:

- With strategic investment in private sector, it is possible to produce quality seeds locally in various parts of South Sudan. This was evidenced by the fact that over 4000MT of seeds have been produced by seed companies in the past 12months alone.
- Increasing availability of locally produced seeds has created interest in small holder farmers going semi-commercial agriculture. In Magwi, area, it was evident that grain producers were already selling to milling companies from Juba.
- With customized capacity building - companies contracted by A3SEEDs have developed a marketing strategy that is farmer oriented and more sustainable. They have increased their direct sales to farmers from less than 10% in 2020 to 40% now. The relief seed still enjoys the 60% market. However, if this is bought locally, it has the positive effect of capitalizing the seed companies.
- There are several businesses along the seed value chain – seed companies, outgrower, Agro dealer networks village agents that are being strengthened through this project are really businesses employing at least 2-5 persons.
- Government at national, and state level are fully engaged. Despite lack of resources, they give technical guidance on early generation seeds, extension, inspection, and seed testing.
- Farmers can buy quality seeds; Farmers interacted with want quality seeds that germinate and give them high yields. They seem not to appreciate free seeds associating them poor quality.

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