2025 IMPLEMENTATION ANNUAL REPORT

EMPOWER FARMERS SOUTH SUDAN PROGRAM

"Cultivating Quality, Yielding Trust".

(PILOT PHASE)

Reporting Period: February–December 2025

Program: Empower Farmers South Sudan (EFSS)

Approach: Foundations for Farming (Conservation Agriculture)

Organization: EmpowerKids-South Sudan

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Table of Content

Cover Page i

Table of Contents ii

1. Executive Summary 1

2. Program Background 3

3. Program Objectives (2025) 4

4. Geographic Coverage 5

5. Annual Program Implementation Results 6

6. Monitoring & Evaluation (M&E) 12

7. Financial Report (Summary for the Year 2025) 15

8. Key Achievements of 2025 18

9. Challenges Encountered and Areas for Improvement 19

10. Lessons Learned 22

11. Priority Program Areas in 2026 24

12. Partnerships & Stakeholder Engagement 26

13. Conclusion 27

14. Our Team – The People Behind EFSS 28

Closing Message from the Executive Director 29

Annexes 30

Annex I: Program Implementation Summary Matrix (2025) *30*

Annex II: Results Framework Summary Table (M&E) *31*

Annex III: Crop Yield Results – Juba Demonstration Farm (2025) *32*

Annex IV: Maize Yield Comparison Analysis (EFSS vs Local Farmer) *33*

Annex V: Challenges & Adaptive Actions Matrix (2025) *36*

Annex VI: Lessons-to-Actions Matrix (EFSS Pilot Phase – 2025) *37*

Annex VII: Photo Credits & Usage *38*

1. Executive Summary

The 2025 Empower Farmers South Sudan (EFSS) pilot marked the first full-scale application of the Conservation Agriculture – Foundations for Farming (CA-FfF) model in South Sudan. Through disciplined implementation of precision farming standards, minimum soil disturbance, permanent soil cover, precise spacing, crop rotation, and timely operations, the program successfully established a functioning conservation agriculture system at the Juba Demonstration Farm and the Biliny Community Training Area.

During the year, EFSS trained 54 smallholder farmers, with strong participation of women, and built the technical capacity of 4 EFSS Champions, 5 program interns, and 10 casual workers. Champions received advanced practical training in Rwanda under the mentorship of B2R Farms and the Foundations for Farming network, strengthening technical fidelity and ensuring high implementation standards. The pilot integrated compost-based soil fertility management, environmentally friendly Integrated Pest Management (IPM), and disciplined field supervision, resulting in visible improvements in soil structure, crop vigor, and farmer compliance with conservation agriculture practices.

Despite operating in a challenging environment characterized by irregular rainfall, pest infestations, and limited access to inputs, the program recorded measurable production outcomes. Experimental yield assessments from the Juba Demonstration Farm produced 472.44 kg of maize from 0.132 ha and 632.97 kg of vegetables and groundnuts from 0.0213 ha, validating the technical viability of the CA-FfF model under South Sudan's conditions.

Beyond production, the pilot strengthened youth engagement, community-driven extension, and learning systems, including the integration of the SolarSPELL Agriculture Library for offline knowledge access. The 2025 implementation year therefore established a strong foundation for scale-up in 2026, positioning EFSS as a credible, evidence-driven program capable of advancing food security, climate resilience, and sustainable livelihoods for smallholder farmers across South Sudan.

Mr. Amos and Mr. Hassan during the maize harvests at Juba Demonstration Farm

2. Program Background

South Sudan continues to experience severe and persistent food insecurity driven by the combined effects of climate change, economic instability, limited access to quality agricultural inputs, and weak agricultural extension services. Recurrent flooding and drought cycles, fragile market systems, and years of conflict have further undermined the productivity of smallholder farmers. As a result, small-scale farmers, who form the backbone of national food production, remain highly vulnerable to climate shocks, low yields, and household food shortages.

The Empower Farmers South Sudan (EFSS) Program addresses these challenges by promoting conservation agriculture, delivering hands-on demonstration training, strengthening community-led food systems, and engaging youth in agriculture as a viable livelihood pathway.

EmpowerKids-South Sudan implements the Empower Farmers South Sudan (EFSS) Program and applies the internationally proven Foundations for Farming (FfF) conservation agriculture model, guided by the operational high management principles of On Time, At Standard, Without Wastage, & With Joy. All program activities are structured in accordance with the EFSS Conservation Agriculture – Foundations for Farming (CA-FfF) Implementation Manual, which sets clear standards for land preparation, compost production, planting precision, crop management, monitoring, and reporting.

Strategic Partnership & Capacity Building Foundation.

A major milestone in the institutional development of the EFSS Program was the strategic partnership established with B2R Farms in Rwanda. Through this partnership, four (4) EFSS Champions underwent an intensive four-month residential practical training program from October 2024 to January 2025.

This training was fully grounded in the Foundations for Farming (FfF) methodology and focused on:

- Precision land preparation with minimum soil disturbance.
- Basin and row planting with exact spacing.
- Permanent soil cover using crop residues.
- Compost-based soil fertility management.
- Timely planting, weeding, and disciplined field operations.
- Crop rotation and sustainable yield improvement.

The training combined classroom instruction with full field-based practical application, enabling the Champions to master the discipline, timing, and precision that distinguish the Foundations for Farming model. Upon successful completion, the trained Champions returned to South Sudan as the national technical backbone of the EFSS Program.

Pfumvudza Plot B at Juba Demonstration Farm after mulching

Pfumvudza Plot B at Juba Demonstration Farm after Maize maturity

Application of Training through the Juba Demonstration Farm

Following the Champions' return, the EFSS Program strategically established the Juba Demonstration Farm as the national pilot site for the localized application of the Foundations for Farming model in South Sudan. The demonstration farm was intentionally created to serve as:

- A training and learning hub for farmers, youth, interns, and casual workers.
- A live testing ground for adapting the Foundations for Farming model to South Sudan's soil and climate conditions.
- A center of excellence for conservation agriculture.
- A replication model for future EFSS expansion into other counties and states.

All EFSS farming activities at the Juba Demonstration Farm strictly followed the five core Foundations for Farming methods, namely:

- Minimum soil disturbance to preserve soil structure and microbial life (no ploughing).
- Permanent soil cover (mulch) to protect moisture and prevent erosion (no burning).
- High Management - timely operations and disciplined management to maximize productivity.
- Correct crop rotation for nutrient balance and pest control.

The establishment of the Juba Demonstration Farm therefore represents a critical transition from training to practical national implementation, positioning EFSS as one of the few initiatives in South Sudan implementing precision-based conservation agriculture at demonstration scale.

3. Program Objectives

1. To improve household food security for smallholder farmers through the adoption of Foundations for Farming–based conservation agriculture practices.

2. To increase crop yields by a minimum of 30% among trained farmers by the end of the 2025 production cycle through the use of precision planting, compost-based soil fertility management, and timely field operations.

3. To build the technical capacity of at least 54 smallholder farmers, including a minimum of 80% women, by December 2025 through hands-on field training, seasonal demonstrations, and structured follow-up support.

4. To establish and fully operationalize one functional national demonstration farm in Juba by March 2025, serving as a training hub, localized testing site, and national replication model for conservation agriculture in South Sudan.

5. To promote climate-smart and cost-effective farming practices by ensuring that at least 85% of trained farmers adopt composting, minimum tillage, permanent soil cover, and precise spacing techniques by the end of the 2025 farming season.

6. To strengthen youth and women participation in sustainable agriculture by ensuring that women constitute at least 60% of all direct farmer beneficiaries and youth represent at least 25% of total participants by December 2025.

7. To build a skilled technical support workforce by training five (5) program interns and ten (10) casual workers by Dec. 2025 in the practical application of the Foundations for Farming principles, including precision land preparation and planting, compost production, timely weeding and crop management, as well as demonstration farm operations and farmer extension support.

8. To experimentally assess crop yield performance under the Foundations for Farming model by establishing controlled yield trials at the Juba Demonstration Farm for at least five (5) crops, maize, okra, tomatoes, onions, and leafy vegetables, during the 2025 farming season, and documenting comparative results on plant vigor, survival rate, and total harvest output by December 2025.

4. Geographic Coverage

The Gate of Juba Demonstration Farm

5. Annual Program Implementation Results

5.1. Demonstration Farms Performance

A. Juba Demonstration Farm

The Juba Demonstration Farm served as the primary training, production, experimentation, and learning hub for the Empower Farmers South Sudan (EFSS) Program throughout 2025. The farm functioned as both a practical classroom and a pilot testing site for the localized application of the Foundations for Farming principles under South Sudan's agro-climatic conditions. All field operations were implemented with strict adherence to the precision standards of conservation agriculture, emphasizing discipline, timing, and accuracy.

Key activities implemented included:

- Land preparation using minimum soil disturbance to protect soil structure and preserve moisture
- Compost production utilizing Compost A & B to restore soil fertility and reduce dependence on chemical inputs
- Direct precision planting with correct spacing and depth to optimize plant population and yields
- Continuous hands-on training of interns and casual workers, strengthening the local technical workforce
- Routine crop monitoring, timely weeding, and disciplined field management to ensure plant health and productivity

Crops cultivated at the Juba Demonstration Farm included:

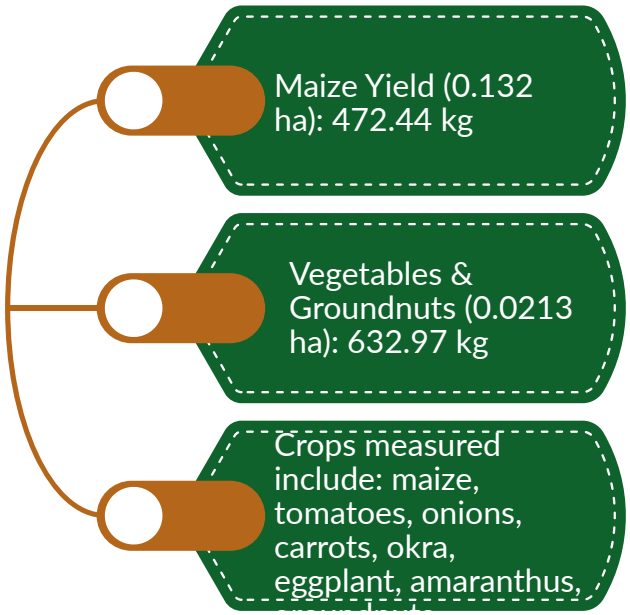
- Maize
- Okra
- Carrot
- Tomatoes
- Onions
- Groundnuts
- Leafy vegetables

Key Outcomes:

- Strong and consistent crop performance despite irregular rainfall and climate variability
- High-quality compost significantly improved soil structure, moisture retention, and soil fertility
- A clean, orderly, and well-managed farm environment reflecting the discipline of the Foundations for Farming model
- Increased farmer learning visits, field days, and strong peer-to-peer knowledge exchange, positioning the Juba Demonstration Farm as a center of excellence for conservation agriculture

5.1.1. Experimental Crop Yield Results – Juba Demonstration Farm

This subsection presents the quantified results of the 2025 pilot crop yield trials conducted at the Juba Demonstration Farm, measuring the performance of maize, vegetables, and groundnuts cultivated under the Foundations for Farming conservation agriculture model across defined plot sizes.



B. Biliny Community Training Area

The Biliny Community Training Area served as the primary site for farmer outreach and extension training, enabling the EFSS Program to translate demonstration-farm learning directly into community-level adoption. This site played a critical role in expanding access to training for farmers who could not regularly travel to Juba, ensuring inclusiveness and local ownership.

At Biliny:

- Farmers received practical, field-based training on conservation agriculture and the Foundations for Farming principles
- Youth and women farmers were actively and intentionally engaged in all training sessions
- Farmer mobilization and coordination were conducted through local leadership structures, enhancing trust and sustainability

Key Outcomes:

- Improved farmer adoption of straight planting lines, correct basin preparation, and precise spacing
- Positive farmer feedback on crops survival, plant vigor, and improved field organization
- Strengthened farmer-to-farmer extension learning, enabling trained farmers to begin supporting peers within their own communitie.

5.2. Training & Capacity Building

Training and capacity building formed the core implementation strategy of the Empower Farmers South Sudan (EFSS) Program in 2025. All training activities were delivered using the official and structured training manuals developed under the Foundations for Farming methodology, ensuring technical accuracy, consistency, and global best-practice alignment. The approach emphasized learning by doing, discipline in field operations, and mastery of precision-based conservation agriculture techniques.

Through this structured training framework, EFSS successfully built the technical capacity of farmers, program interns, and casual workers, creating a multi-layered support system for sustainable program implementation and farmer extension.

Training Beneficiaries

Category	Number Trained
Smallholder Farmers (Biliny Area)	39
Women representation	80%
Program Interns	5
Casual Workers	10
Total Trained	**54**

Training Approach and Delivery

Training was delivered through a combination of:

- Field-based demonstrations at the Juba Demonstration Farm
- Community-level practical sessions at the Biliny Training Area
- Seasonal refresher sessions linked to the agricultural calendar
- Daily hands-on participation of interns and casual workers in farm operations

All sessions strictly followed the step-by-step training sequence provided in the Foundations for Farming manuals, which emphasize:

- Precision and discipline in land preparation
- Correct timing of planting and weeding
- Soil fertility restoration through composting
- Permanent soil cover and moisture conservation
- Crop protection and post-harvest handling

Training Outcomes and Impact

As a result of this structured and manual-based training approach:

- The Champions strengthened their role as national trainers and custodians of the Foundations for Farming methodology within South Sudan
- Farmers demonstrated clear improvements in field layout, planting accuracy, weed control, and crop management discipline
- Interns developed strong technical and leadership capacity to support future trainings and extension activities
- Casual workers acquired repeatable practical skills, enabling higher-quality farm operations and improved efficiency

Program Interns and staff receive training of trainers in FfF methods in Juba, South Sudan.

Digital Learning Support – SolarSPELL Agriculture Library

To strengthen access to continuous learning and reinforce field-based training, the EFSS Program integrated the SolarSPELL Agriculture Library as a complementary digital learning resource. The offline digital library provided curated agricultural content on climate-smart farming, soil management, pest and disease control, nutrition, and sustainable livelihoods, which aligned with the Foundations for Farming training manuals. SolarSPELL proved particularly valuable for Champions, interns, and smallholder farmers operating in low-connectivity environments, enabling self-directed learning, refresher study, and knowledge reinforcement beyond demonstration sessions. Its integration enhanced training quality, supported innovation, and strengthened the overall capacity-building framework of the EFSS Program.

The availability of the SolarSPELL Agriculture Library significantly enhanced the performance of champions and interns by improving technical understanding, reinforcing good farming practices, and supporting consistent application of training lessons during daily farm operations.

SolarSPELL Founders, Dr. Laura Hosman and Mr. Bruce Baikie, pose for a picture with Champions, Program Interns and staff of Empower Farmers South Sudan Program after training in Juba.

5.3 Community Outreach & Farmer Mobilization

Community outreach and farmer mobilization formed a critical pillar of the Empower Farmers South Sudan (EFSS) Program's implementation strategy in 2025, ensuring that training opportunities, conservation agriculture knowledge, and demonstration results were effectively transferred from the Juba Demonstration Farm to farming communities. The outreach approach emphasized participatory engagement, local leadership involvement, and peer-driven learning to promote strong ownership and long-term sustainability.

Farmer mobilization activities were conducted through:

- Structured community meetings held in collaboration with local leaders and farmer representatives
- Targeted mobilization of women and youth farmers, ensuring inclusive participation
- Identification of lead farmers and farmer mobilizers to support peer learning and follow-up at community level
- Use of demonstration plots as live community classrooms, translating theory into visible practice

The Biliny Community Training Area served as the primary outreach platform where farmers who could not regularly access the Juba Demonstration Farm were trained directly within their communities. This decentralized model significantly expanded EFSS reach while reducing barriers related to transport and time constraints.

Outreach and Mobilization Outcomes

As a result of these outreach efforts:

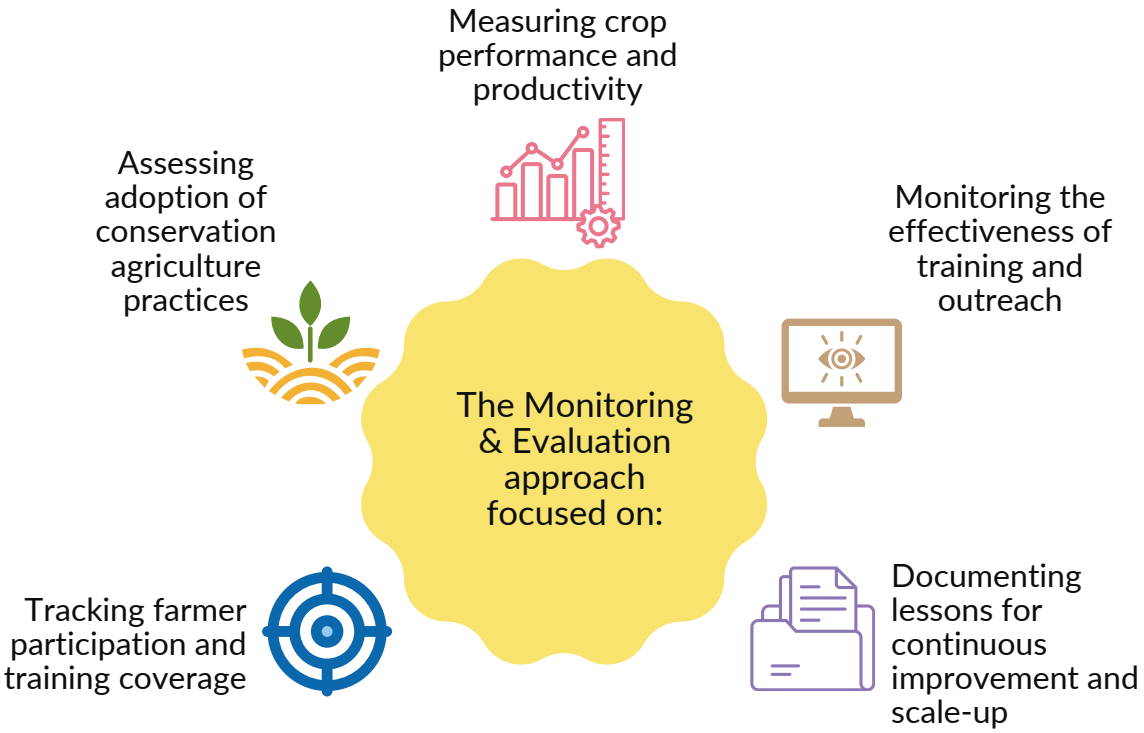
- Farmer groups were formed and strengthened in the target communities, improving collective learning and cooperation.
- We actively engaged local leadership structures, which increased trust, legitimacy, and community ownership of the program.
- Farmer mobilizers were identified and oriented to support continuous knowledge sharing and sustainability.
- Women and youth participation increased, reinforcing agriculture as a viable livelihood pathway for these priority groups.
- Demonstration plots were successfully used as practical training and learning platforms, accelerating the adoption of the Foundations for Farming, a conservation agriculture techniques.

Through this structured outreach and mobilization framework, EFSS successfully created a strong community extension network that enhanced farmer access to information, improved adoption rates of the Foundations for Farming principles, and laid the groundwork for scaling up sustainable agriculture practices across additional communities in future phases.

Program Interns and Champions pose for a picture with smallholder farmers trained at Biliny Area.

6. Monitoring & Evaluation (M&E)

Monitoring and Evaluation (M&E) formed an integral part of the Empower Farmers South Sudan (EFSS) Program implementation in 2025, providing a systematic framework for tracking progress, measuring results, strengthening accountability, and supporting evidence-based learning. The M&E system was designed to ensure that program activities remained aligned with the objectives, the Foundations for Farming implementation standards, and the broader objectives of sustainable agriculture and food security.



6.1 M&E Tools and Data Collection Methods

To ensure accuracy, consistency, and reliability of data, EFSS utilized a combination of quantitative and qualitative monitoring tools, including:

- Training attendance registers to capture participation of farmers, interns, casual workers, and Champions.
- Field inspection and compliance checklists to assess land preparation, planting accuracy, compost application, weeding discipline, and overall adherence to Foundations for Farming standards.
- Crop performance and yield measurement records at the Juba Demonstration Farm for experimental validation of results.
- Farmer feedback sessions and focus group discussions to assess knowledge transfer, challenges, and community satisfaction.
- Routine supervision and progress reporting by Champions and program technical staff.

These tools enabled EFSS to triangulate data from multiple sources, strengthening the credibility and reliability of reported results.

6.2 Performance Monitoring and Results Tracking

Continuous monitoring was conducted throughout the farming seasons to ensure timely corrective action and performance optimization. Key performance areas tracked included:

- Farmer attendance and participation, which consistently remained above 80%, demonstrating strong community engagement.
- Adoption of conservation agriculture practices, including precision planting, compost use, permanent soil cover, and timely weeding.
- Crop survivability and plant vigor, particularly under irregular rainfall conditions.
- Performance of interns and casual workers, focusing on skill acquisition, discipline, and technical consistency.

Results from routine monitoring confirmed a progressive improvement in farmer field practices, crop management discipline, and overall farm organization, particularly at the Juba Demonstration Farm and Biliny Training Area.

6.3 Learning, Accountability, and Adaptive Management

Beyond tracking results, the M&E system also served as a learning and management tool. Findings from field monitoring and farmer feedback were routinely reviewed during:

- Staff weekly, technical & leadership monthly review meetings.
- Monthly reflection sessions with Champions and interns.
- Community feedback forums.

These platforms enabled EFSS to:

1. Identify implementation gaps and training needs.
2. Adjust training schedules to better match the agricultural calendar
3. Strengthen farmer follow-up and supervision.
4. Improve outreach strategies in hard-to-reach areas.

6.4 Evidence-Based Results and Reporting

Data generated through the M&E system directly informed:

- The 2025 Crop Yield Report from the Juba Demonstration Farm
- The measurement of progress against the Program Objectives
- The documentation of training outcomes and adoption rates
- The preparation of internal progress reports and the Annual Report

This evidence-based reporting framework positions Empower Farmers South Sudan Program to:

- Demonstrate measurable impact
- Strengthen donor confidence
- Provide a technical foundation for program scale-up and replication

The Process Flow Inforgraphic:

Program Interns, Casual Workers & Champions shell maize at Juba Demonstration Farm.

7. Financial Report (Summary for the Year 2025)

The financial management of the Empower Farmers South Sudan (EFSS) Program in 2025 was conducted in accordance with the financial policies and accountability standards of EmpowerKids-South Sudan. The program maintained a strong commitment to transparency, cost-effectiveness, and responsible stewardship of donor and organizational resources throughout the pilot implementation year.

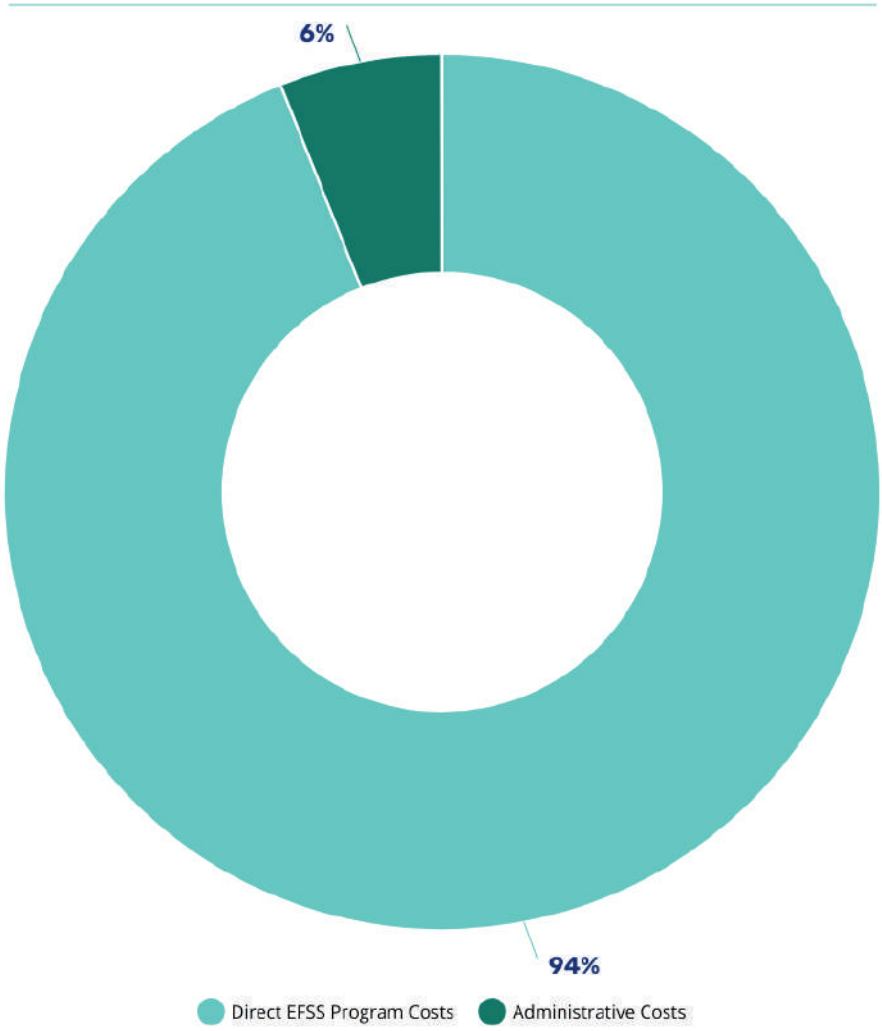
Financial resources were primarily allocated to support:

- Establishment and operation of the Juba Demonstration Farm
- Farmer training and community outreach activities
- Capacity building of interns, and casual workers
- Transport, logistics, and essential administrative functions
- Stipends and wages for Interns, Champions, Support Staff and Casual Workers

The overall financial framework prioritized direct program delivery, ensuring that the majority of funds were invested in activities that directly benefited farmers and strengthened community-level food production systems.

7.1 EFSS Program Cost Distribution (USD)

Of the total EFSS program expenditure, 6% was allocated to administrative and support costs, while 94% was spent on direct program implementation activities.



Budget execution remained largely within approved limits, with minor variances attributed to:

- Fluctuations in transportation costs
- Price increases in some budget categories, such as Program Supplies.
- Adjustments to training schedules due to climatic conditions
- Reductions of planned budget for marketing and Outreach

All variances were documented, reviewed, and approved through internal management processes.

7.2 Key Cost Centers and Expenditure Priorities

a) Program Supplies and Demonstration Operations

Expenditure under this category supported the purchase of:

- Seeds and planting materials
- Composting, manure, mulching materials, and tools
- Irrigation and basic farm equipment
- Field supplies for planting, weeding, and harvesting
- Infrastructural development at Juba Demonstration.
- Food and water.

These inputs directly contributed to the experimental crop yield trials and piloting for the implementation of the Foundations for Farming model activities at the Juba Demonstration Farm.

b) Training and Farmer Outreach

This cost center covered:

- Training materials and manuals
- Community training sessions at Biliny
- Farmer mobilization meetings
- Refreshments and logistical support for trainees

c) Staff, Champions, Interns, and Casual Workers

Funds under this category supported:

- Field allowances for Champions
- Intern stipends and salaries for staff and Chapions.
- Wages for ten (10) casual workers engaged in daily farm operations

This investment ensured the availability of a skilled technical workforce to sustain training and demonstration activities.

d) Transport and Operations

This included:

- Transport for field supervision
- Outreach travel to Biliny
- Input transportation
- Farm logistics and operational coordination

e) Administration and Program Support

This covered essential program support costs including:

- Communication
- Documentation and reporting
- Office operations directly linked to EFSS implementation.

7.3 Financial Management and Internal Controls

EFSS applied a strong financial control system to ensure accountability and minimize financial risk. The following measures were consistently observed:

- Dual signatories on program bank account
- Full documentation of all expenses (receipts, vouchers, approvals)
- Segregation of financial duties between authorization, processing, and reporting
- Regular internal financial reviews by program management
- Strict budget compliance monitoring

No major financial irregularities were reported during the 2025 implementation period.

7.4 Financial Accountability and Donor Transparency

Financial reporting for the EFSS Program was integrated into the broader financial reporting system of EmpowerKids-South Sudan. Donors and partners received:

- Periodic financial updates
- Program expenditure summaries
- Budget performance reviews

The final audited financial statement for 2025 will be annexed to this Annual Report once completed.

7.5 Cost-Effectiveness and Value for Money

The EFSS Program demonstrated high value for money during its pilot phase by:

- Using locally available inputs such as compost and manual tools
- Maximizing the use of demonstration-based learning to train multiple farmers simultaneously
- Building local technical capacity through interns and casual workers
- Reducing long-term dependency on expensive chemical inputs

These cost-efficiency measures strengthen the financial sustainability and scalability of the program for future expansion.

7.6 Financial Risk & Mitigation

During the 2025 pilot implementation, the EFSS Program operated within a context characterized by economic volatility, fluctuating transport, and price instability of agricultural inputs. These external factors presented potential risks to budget predictability and cost control. In addition, the program faced foreign exchange fluctuations and unforeseen logistical adjustments linked to climatic conditions and access constraints.

To mitigate these risks, EFSS implemented the following measures:

- Conservative budget forecasting and periodic budget reviews to absorb minor cost variations
- Prioritization of locally available inputs (e.g., compost over chemical fertilizers) to reduce market dependency
- Strict expenditure controls and pre-approval procedures for all non-routine costs
- Phased implementation of activities, allowing financial commitments to align with actual resource availability
- Continuous donor communication on any material budget adjustments

These mitigation measures successfully safeguarded program continuity, ensured financial discipline, and reduced exposure to major financial shocks during the 2025 implementation cycle.

8. Key Achievements of 2025

The 2025 implementation year marked a significant milestone for the Empower Farmers South Sudan (EFSS) Program, demonstrating that precision-based conservation agriculture can be successfully piloted and adapted within South Sudan's challenging agro-climatic context. The following key achievements highlight the program's progress, impact, and readiness for scale-up:

1. The program established a fully operational precision-based demonstration farm in Juba that served as a national pilot site for applying the Foundations for Farming principles. The farm served as a training hub, experimentation site, and learning center for farmers, interns, and casual workers, while also providing measurable crop yield evidence under local conditions.
2. The Biliny community outreach training site was operationalized, enabling decentralized farmer training and significantly expanding the program's reach. This site facilitated hands-on, community-level learning and strengthened farmer participation among those unable to regularly access the Juba Demonstration Farm.
3. Successful implementation of both dry-season and wet-season farming cycles, demonstrating the adaptability and resilience of conservation agriculture practices under varying climatic conditions, including irregular rainfall patterns.
4. Training of 54 farmers with strong female participation, with women constituting approximately 80% of trainees, thereby reinforcing gender inclusion and empowering women as key drivers of household food security and agricultural productivity.
5. Youth are meaningfully engaged in practical agriculture, which provides them with hands-on exposure to modern, climate-smart farming techniques, positioning agriculture as a viable livelihood and skills development pathway for young people.
6. Improved household food availability among participating farmers, supported by increased crop production, diversified vegetable harvesting, and improved crop survival rates resulting from precision planting and soil fertility management.
7. Adoption of low-cost, climate-smart farming practices, including compost-based soil fertility management, minimum soil disturbance, precise spacing, and disciplined field operations. These practices reduced reliance on expensive external inputs while enhancing sustainability and environmental stewardship.
8. Integration of the SolarSPELL Agriculture Library to support offline agricultural learning for smallholder farmers, interns, and Champions (trainers).

Collectively, these achievements confirm the technical feasibility, community acceptance, and cost-effectiveness of the EFSS pilot approach, laying a strong foundation for program expansion and replication in subsequent implementation phases.

9. Challenges Encountered and Areas for Improvement

The piloting of the Empower Farmers South Sudan (EFSS) Program in 2025 generated valuable technical lessons alongside a range of agronomic, climatic, and biological challenges. As a pilot initiative, EFSS intentionally documented these challenges to inform adaptive management, technical refinement, and improved planning for subsequent implementation phases. Based on field observations, monitoring data, and crop performance analysis, the following challenges and corresponding areas for improvement have been identified.

9.1 Seed Quality, Germination, and Crop Establishment

Poor and uneven germination was observed in some plots due to poor seed viability, inadequate moisture at planting, and delayed rainfall, leading to suboptimal plant populations and reduced yield potential.

Areas for Improvement:

- Purchase seeds from trusted and reliable suppliers, including certified local suppliers
- Acquire adequate quantities of seeds to allow timely replanting where necessary
- Prioritize high-yielding, locally adapted varieties
- Plant pest-, disease-, drought-, and striga-resistant varieties
- Improve seed storage and handling prior to planting
- Ensure planting at the onset of rains and avoid delayed planting

9.2 Rainfall Variability, Water Stress, and Climate Shocks

The program experienced late, irregular, and inadequate rainfall, compounded by changing weather patterns and occasional strong winds. These factors affected planting schedules, crop growth, and final yields.

Areas for Improvement:

- Promote early planting immediately at the onset of rains
- Strengthen irrigation systems for dry spells and dry-season production
- Improve water harvesting and moisture conservation practices
- Integrate early planning to align field operations with seasonal forecasts
- Select drought-tolerant crop varieties
- Enhance wind-resilient field layout and crop support practices

9.3 Pest Pressure and Integrated Pest Management (IPM)

Significant pest infestations were observed, including fall armyworm, stalk borer, cotton bollworm, whiteflies, Tuta absoluta, soldier beetles, termites, birds, and monkeys, affecting multiple crops.

Areas for Improvement:

- Strengthen the application of Integrated Pest Management (IPM) techniques
- Promote environmentally friendly IPM approaches, including biological and mechanical control
- Enhance early pest scouting and strict monitoring of gardens
- Plant pest- and disease-resistant crop varieties
- Improve field hygiene and regular mechanical control
- Increase farmer training on early detection and rapid response

9.4 Soil Fertility Constraints and Nutrient Management

Poor soil conditions contributed to yellowing of leaves, stunted growth, browning of stems, and uneven crop performance, indicating nutrient deficiencies and soil stress.

Areas for Improvement:

- Conduct soil testing before planting to guide nutrient management
- Apply appropriate and balanced nutrients based on soil test results
- Continue use of organic compost to improve soil structure and fertility
- Maintain proper crop rotation plans to restore soil health
- Avoid excessive vegetative growth through improved nutrient and water balance

9.5 Weed Infestation, Including Striga Weed

Weed pressure, particularly striga infestation, affected crop establishment and productivity through competition for nutrients, moisture, and sunlight.

Areas for Improvement:

- Plant striga-resistant crop varieties
- Strengthen regular mechanical weed control
- Emphasize early and disciplined weeding
- Maintain correct spacing and crop rotation to suppress weed pressure

9.6 Crop Diseases and Physiological Disorders

Disease outbreaks and physiological disorders were recorded, including fusarium wilt, rosette virus, blossom end rot, fruit and tuber rotting, premature flower drop, and dieback/desiccation.

Areas for Improvement:

- Plant disease-resistant varieties
- Maintain proper crop rotation plans
- Improve drainage and moisture regulation
- Promote timely harvesting to reduce disease exposure
- Strengthen farmer awareness on disease symptoms and early action

9.7 Crop Management, Harvesting, and Post-Harvest Practices

Operational challenges were noted in crop management and harvesting, including late harvesting, inadequate staking, rotting of tubers, cracking of carrots, and excessive vegetative growth.

Areas for Improvement:

- Promote early staking of crops, especially intercropped systems
- Introduce regular pruning of tomatoes
- Encourage earthing up of groundnuts
- Ensure timely and continuous harvesting
- Acquire appropriate tools and equipment (e.g., pruners, harvesting baskets, crates, trays)
- Improve post-harvest handling to reduce losses

9.8 Planning, Inputs, and Equipment Availability

Delays in accessing inputs and equipment affected timely implementation of some field activities.

Areas for Improvement:

- Strengthen early planning and timely supply of farm inputs and equipment
- Procure and distribute essential tools before the planting season
- Improve logistical coordination to avoid delays
- Align procurement with the agricultural calendar

Summary of Adaptive Learning

The challenges encountered during the 2025 EFSS pilot phase underscore the importance of early planning, quality inputs, climate-responsive practices, and disciplined implementation. The recommended areas of improvement outlined above will be systematically integrated into future training, seasonal work plans, and implementation guidelines, thereby strengthening the program's technical robustness, resilience, and scalability.

Interns pose for a photo behind the compost they built.

Technical staff from the Ministry of General Education & Instruction visits Juba Demonstration Farm.

10. Lessons Learned

The piloting of the Empower Farmers South Sudan (EFSS) Program in 2025 generated a set of practical and strategic lessons that are critical for strengthening future implementation, improving efficiency, and enhancing resilience. These lessons were drawn from field experience, monitoring data, farmer feedback, and adaptive responses to climatic, logistical, and biological challenges encountered during the pilot phase.

10.1 Timely Input Delivery Is Critical for Program Effectiveness

The pilot underscored that timely procurement and delivery of farm inputs and equipment are essential to maintaining alignment with the agricultural calendar. Delays in input availability disrupted planting schedules and limited the effectiveness of some interventions. Early planning and advance procurement are therefore critical to ensure uninterrupted implementation and optimal crop performance.

10.2 Flexibility and Early Coordination Improve Outreach to Remote Farmers

Flexible planning and early coordination with community leaders significantly improved outreach to farmers in remote locations. Adjusting training schedules, decentralizing activities, and leveraging local structures enabled the program to reach farmers who would otherwise have been excluded. This experience highlights the importance of adaptive scheduling and decentralized outreach models in fragile and low-access environments.

10.3 Strong Local Coordination Enhances Safety and Information Flow

Close collaboration with local leaders and community structures proved essential for ensuring safety, timely information sharing, and smooth field operations. Strong local coordination facilitated early warnings, supported activity scheduling, and strengthened trust between the program and farming communities, particularly in areas with mobility or security concerns.

10.4 Demonstration-Based Learning Drives Adoption Even at Small Scale

The pilot confirmed that small, well-managed demonstration plots and well-watered gardens are highly effective in showcasing improved farming techniques, even when farmer turnout is limited. Visible results, such as healthy crops, improved spacing, and soil management, served as powerful behavior-change tools, reinforcing the value of quality demonstrations over scale alone.

10.5 Adaptive Planning Ensures Continuity During Adverse Conditions

Adaptive planning was essential in maintaining program continuity amid irregular rainfall, delayed rains, and changing weather conditions. Adjusting planting dates, modifying training timelines, and sequencing activities based on real-time conditions enabled the program to remain operational despite environmental disruptions. This reinforces the importance of flexible, learning-oriented implementation frameworks in climate-vulnerable contexts.

10.6 Integrated Pest and Soil Fertility Management Improves Plant Health

The combined application of Integrated Pest Management (IPM) and Integrated Soil Fertility Management (ISFM) techniques significantly reduced pest damage and improved overall plant health. Organic and low-cost methods, including the use of wood ash, pepper, tobacco, and butter, proved effective in managing pest pressure while remaining environmentally friendly and accessible to smallholder farmers.

10.7 Sack Farming Expands Options in Space- and Flood-Prone Areas

The introduction of sack farming demonstrated strong potential as an alternative production method in space-limited and flood-prone environments. This approach enabled continued vegetable production where conventional field cultivation was constrained, highlighting its value as a complementary technique for urban, peri-urban, and high-risk areas.

Summary Insight

Overall, the EFSS pilot demonstrated that successful agricultural programming requires a balance of technical rigor, operational flexibility, strong local coordination, and practical innovation. Lessons from the pilot phase will be systematically integrated into future training manuals, seasonal work plans, and implementation strategies to strengthen resilience, efficiency, and scalability of the program.

Sampling Sack farming

11. Priority Program Areas - 2026

Building on the results, lessons learned, and adaptive insights from the 2025 pilot phase, the Empower Farmers South Sudan (EFSS) Program during the 2026–2027 implementation period will concentrate on the following five priority program areas, each of which directly supports the scaling, quality assurance, and sustainability of conservation agriculture in South Sudan.

11.1 Smallholder Farmer Training

EFSS will deliver community-based, hands-on training to more than 500 smallholder farmers annually, ensuring that participants establish and manage Pfumvudza plots according to the CA-FfF Implementation Manual. Trainings will focus on land preparation, composting, planting accuracy, thinning, mulching, water conservation, pest management, and record keeping. Each training cycle will be supported by structured bi-weekly supervision visits to ensure adherence and sustained adoption.

11.2 Juba Demonstration Farm

The Juba Demonstration Farm will serve as the national learning hub and quality assurance site for EFSS. It will host Training-of-Trainers sessions, practical demonstrations, field days, and quality audits. The site will also function as a laboratory for testing and refining implementation standards before they are scaled to communities, schools, and church sites.

11.3 School Agriculture Clubs

EFSS will partner with four selected schools to integrate conservation agriculture into learning environments. Each school will establish a demonstration garden and agriculture club where students receive hands-on training, develop leadership skills, and participate in food production activities that reinforce nutrition education and environmental stewardship.

11.4 Church-Based Farming Communities

EFSS will work with Four church communities to establish farmer groups that act as training hubs within trusted local institutions. Churches will host seasonal trainings, demonstration plots, and farmer reflection meetings, strengthening community ownership, inclusion, and continuity of learning.

11.5 Youth Training-of-Trainers (ToT) Program

EFSS will implement a structured Youth ToT Program under which certified Champions deliver cost-recovery Training-of-Trainers services to NGOs, schools, churches, and community groups. This approach strengthens sustainability by professionalizing youth trainers, generating program income, and expanding the reach of the Foundations for Farming model across South Sudan.

The Executive Director poses for a photo with Champions and Interns at Juba Demonstration Farm.

Ms. Nyanpiu Malual, Program Intern displays harvested tomatoes at Juba Demonstration Farm.

12. Partnerships & Stakeholder Engagement

Partnerships and stakeholder engagement were central to the successful piloting and implementation of the Empower Farmers South Sudan (EFSS) Program in 2025. The program adopted a collaborative and inclusive engagement approach, recognizing that sustainable agricultural transformation requires coordinated action among communities, public institutions, and learning partners. Through strategic stakeholder engagement, EFSS strengthened local ownership, enhanced program relevance, and improved implementation effectiveness.

12.1 Engagement with Local Community Leaders

Local community leaders played a critical role in the planning and implementation of EFSS activities. Chiefs, elders, and community representatives supported:

- Farmer mobilization and participant identification
- Scheduling and coordination of training activities
- Conflict-sensitive engagement and community acceptance
- Information flow related to security, weather, and local conditions

Their involvement enhanced trust, improved farmer retention, and ensured that program activities were aligned with community priorities and social dynamics.

12.2 Collaboration with County Agriculture Offices

EFSS worked in coordination with County Agriculture Offices to align program activities with government agricultural priorities and extension services. This collaboration supported:

- Technical guidance and validation of conservation agriculture practices
- Information sharing on local cropping systems and seasonal calendars
- Strengthening linkages between community-level initiatives and public extension structures

Engagement with county authorities contributed to policy alignment, institutional legitimacy, and opportunities for future integration into broader agricultural development frameworks.

12.3 Strategic Technical & Youth Development Partnerships

Throughout the 2025 pilot implementation year, EFSS maintained close technical engagement with B2R Farms and the Foundations for Farming network, seeking continuous guidance on conservation agriculture principles, precision planting standards, compost management, and adaptive responses to field challenges. This relationship extended beyond formal training, with EFSS regularly consulting these partners for technical advice to strengthen implementation quality and ensure fidelity to the Foundations for Farming model. In parallel, the integration of the SolarSPELL Agriculture Library enhanced youth and intern learning by providing offline access to curated agricultural resources, reinforcing field practice with digital knowledge support. These partnerships collectively strengthened the technical backbone of the EFSS Program while deepening youth engagement and professional development.

13. Conclusion

The 2025 implementation year of the Empower Farmers South Sudan (EFSS) Program confirmed that smallholder farmers in South Sudan can significantly improve agricultural productivity, soil health, and climate resilience when equipped with practical skills and guided by the disciplined principles of the Foundations for Farming model. Through a carefully structured pilot approach, EFSS demonstrated that conservation agriculture techniques—when applied with precision, consistency, and local adaptation—can yield measurable results even in fragile and resource-constrained environments.

The establishment of the Juba Demonstration Farm, coupled with decentralized community outreach in Biliny, provided effective platforms for training, experimentation, and behavior change. Farmers, youth, interns, and casual workers not only acquired technical skills but also developed a deeper understanding of disciplined farm management, soil stewardship, and climate-responsive planning. The successful piloting of compost-based soil fertility management, integrated pest control methods, and adaptive planning approaches further strengthened program outcomes.

Beyond technical achievements, the program laid a strong institutional and human-capacity foundation for long-term impact. High participation of women, meaningful engagement of youth, and strong collaboration with community leaders and public institutions reinforced inclusivity, ownership, and sustainability. The integration of monitoring, learning, and adaptive management ensured that challenges encountered during the pilot phase were translated into actionable improvements for future implementation.

In conclusion, the 2025 EFSS pilot phase has positioned the program as a credible, evidence-based, and scalable model for advancing food security, youth empowerment, and sustainable community livelihoods in South Sudan. The lessons learned, partnerships established, and results achieved provide a solid platform for expansion in 2026 and beyond, as EFSS moves toward deeper reach, stronger resilience, and lasting impact.

Dug basins/plant stations during land preparations at Juba Demonstration Farm

14. Our Team – The People Behind EFSS

The success of the Empower Farmers South Sudan (EFSS) Program is rooted in the dedication, professionalism, and shared vision of a diverse team of leaders, technical experts, and field staff. This section recognizes the individuals whose collective efforts transformed the 2025 pilot phase into a functional and impactful program. Mr. Edward Eisele and Mr. Bruce Baikie are acknowledged for their advisory oversight, providing strategic guidance and mentorship that strengthened program direction, accountability, and long-term sustainability. Alongside them, our Champions, Interns, Security Guards, Cooks, and Casual Workers worked tirelessly on the ground, ensuring that daily operations, training activities, and community outreach were delivered with discipline, commitment, and excellence.

Leadership & Management

Mr. Hakim Monykuer Awuok
Executive Director, EmpowerKids-South Sudan.

Technical & Training Team

Mr. Obede Lomoro
EFSS Prog. Champion

Awel Martin
EFSS Prog. Champion

Margret Lino
EFSS Prog. Champion

Garang James
EFSS Prog. Champion

Hassan Joseph
EFSS Prog. Intern

Amos Juma
EFSS Prog. Intern

Nyanpiu Malual
EFSS Prog. Intern

Nancy Kiko
EFSS Prog. Intern

Khaan Awan
EFSS Prog. Intern

Operations & Support Staff: 2 Cooks, 3 Security Guards, 1 Logistics Officer, and 5 Casual Workers.

Closing Message from the Executive Director

On behalf of EmpowerKids-South Sudan and the Empower Farmers South Sudan (EFSS) team, I extend my sincere appreciation to all those whose dedication and commitment made the successful completion of the 2025 pilot phase possible.

I would like to specifically recognize our Champions, Interns, Security Guards, Cooks, and Casual Workers, whose discipline, resilience, and tireless effort ensured the smooth daily operation of the Juba Demonstration Farm and community outreach activities. Their hard work formed the backbone of the EFSS pilot implementation.

I also express deep gratitude to the B2R Farms team in Rwanda and the Foundations for Farming team in Zimbabwe for their constant commitment to providing technical advice and professional guidance throughout the piloting period. Their mentorship strengthened our technical rigor, ensured fidelity to the Foundations for Farming model, and elevated the quality of our field operations in South Sudan.

Above all, I extend profound thanks to Mr. Edward Eisele for his unwavering and generous financial support to the EFSS Program through the Global Education Initiative Fund managed by the Arizona Community Foundation (ACF). His belief in this vision has been instrumental in transforming an idea into a tangible, community-impacting program.

As we look ahead to the next phase of expansion, we remain deeply committed to building on these partnerships, strengthening local capacity, and scaling sustainable agriculture solutions across South Sudan.

Together, let us continue cultivating quality and yielding trust.

Hakim Monykuer Awuok
Executive Director
EmpowerKids-South Sudan

Annexes

Annex I: Program Implementation Summary Matrix (2025)

Program Component	Key Activities Implemented	Caverage/Output
Demonstration Farming	Establishment and management of Juba Demonstration Farm	1 national pilot site
Smallholder Farmer Training.	Hands-on conservation agriculture training.	54 farmers (80% women)
Community Outreach	Field-based training and mobilization	Biliny Community Training Area
Youth Engagement	Internships and casual labor engagement	5 interns, 5 casual workers
Crop Production	Dry and wet season farming cycles.	Multiple crops (Maize, tomatoes, onions, carrots, okra, eggplant, amaranthus, groundnuts)
Monitoring & Learning	Field monitoring, yield trials, reporting	Continuous

Annex II: Results Framework Summary Table (M&E)

Result Level	Objective / Result Statement	Key Performance Indicators (KPIs)	Target (2025)	Achieved (2025)	Means of Verification (MoV)	Data Source / Collection Method
Impact	Improved household food security among vulnerable farming families	% of households reporting improved food availability	70% of trained households	-	Annual farmer survey, focus group reports	Farmer interviews, community feedback sessions
Outcome 1	Increased crop yields under conservation agriculture.	% increase in crop yields compared to baseline	30% yield increase	Piloted through yield trials	Crop yield measurement records	Juba Demonstration Farm yield records
Outcome 2	Increased adoption of Foundations for Farming practices	% of farmers applying precision planting, composting, and timely weeding	85% adoption	-	Field inspection checklists	Champion field supervision reports
Output 1	Smallholder Farmers trained in conservation agriculture	Number of farmers trained (sex-disaggregated)	500 (80% women)	54 farmers (80% women)	Training attendance registers	Training registers, session reports
Output 2	Demonstration farm established and operational	Number of functional demo farms	1 (Juba)	1 fully operational	Farm establishment report	Site inspection, farm activity logs
Output 3	Community outreach and farmer mobilization conducted	Number of outreach sites and farmer groups formed	≥ 2 community sites	Biliny + Juba	Outreach reports	Community meeting minutes
Output 4	Interns and casual workers trained for technical support	Number of interns and casual workers trained	5 interns, 5 casual workers	5 interns, 5 casual workers	Training completion records	Training reports, supervision logs
Output 5	Experimental crop yield trials conducted	Number of crops tested under yield trials	≥ 5 crops	8 crops tested	Crop Yield Report	2025 EFSS Crop Yields Report
Activity Level	Conduct hands-on field training using FfF manuals	Number of practical training sessions conducted	20 sessions	20 sessions	Training schedules, session photos	Training activity logs
Activity Level	Conduct crop yield measurements	Number of measured plots	4 plots	8 plots measured	Measurement forms	Yield records and field notebooks

Annex III: Crop Yield Results – Juba Demonstration Farm (2025)

Measured Crop Yields

a. Maize

Plot/Type	Size (m^2)	Yield Weight	Remark
Pfumvudza Plot A & 2 Well-watered Gardens ***(Longe 5 & Bazooka)***	696m^2	288.46 kg	The yield weights is combination of produce in Pfumvudza A and two well-watered gardens.
Pfumvudza Plot B (***Local***)	624m^2	183.98 kg	This yield results were the produced in Pfumvudza plot B with local seeds..
Total	**1,320m^2**	**472.44 kg**	

b. Vegetables and Groundnuts

Crop Type	Size (m^2)	Yield Weight	Remark
Groundnuts (***Local***)	72m^2	12.14 kg	The yield weights is combination of produce in two well-watered gardens.
Tomatoes (***Ansal F1***)	59.4m^2	502.86 kg	Tomatoes were intercropped with onion.
Onion (***Red Creole C-5***)	25.4m^2	46.83 kg	This onion was planted alone. And directly consumed in the farm.
Okra (***Local***)	9.9m^2	17.86 kg	Directly consumed in the farm
Carrots (Nante)	9.9m^2	38.8 kg	Some were directly consumed in the farm, while portion of these were distributed to interns, workers and staff.
Amarantus (White Elma)	36m^2	5.18 kg	Directly consumed in the farm
Eggplant	Sack garden	9.3 kg	
Total	**212.6 m2**	**632.97 kg**	

c. Cover Crops

Crop Type	Size (m^2)	Yield Weight
Sunn hemph (***Rwanda***)	377m^2	26.66 kg
Jack beans (***South sudan***)	1,392m^2	Not yet
Velvet (***Rwanda***)	857m^2	Not yet

Annex IV: Maize Yields Comparison Analysis - EFSS Yields Vs Local Farmer Yields (Wold Bank Project Case Reference)

Background:

Empower Farmers South Sudan (EFSS), a main program of EmpowerKids-South Sudan, shows how well conservation agriculture works through Foundations for Farming as a reliable way to boost food production, improve soil health, and strengthen farmers' ability to cope in South Sudan.

This comparative analysis draws on yield data from the EFSS Demonstration Farm (Juba) and on publicly available information from the World Bank Group's May 7, 2025 article, which featured Ms. Natalina Atim, a smallholder farmer from Eastern Equatoria State. In the article, Ms. Atim reported harvesting 2.2 tons of maize from three acres (≈ 1.21 ha) through livelihood support interventions under a World Bank–funded project.

EFSS's demonstration plot data, derived from a 0.132 ha maize two Pfumvudza plots that produced 472.44 kg, offers a strong evidence base for comparing productivity achieved through improved farming techniques versus traditional smallholder practices.

1. Overview of Yield Data:

Parameter	Local Farmer (Natalina Atim, Eastern Equatoria)	EFSS Maize Demonstration Plots (Juba)
Total Yield (Kg)	2,200 kg	472.44 kg
Cultivated Area (ha)	1.21 ha	0.132 ha
Yield per Hectare (Kg/ha)	1,818 kg/ha	3,578 kg/ha

2. Comparative Yield Performance:

Indicator	Local Farmer	EFSS Plots	Difference/Ratio
Yield per Hectare (kg/ha)	1,818	3,578	+1,760 kg/ha (+97%
Yield Efficiency Ratio	1.0 (Baseline)	1.97	EFSS is nearly 2x more productive
National Average (FAO 2022)	~1,000 kg/ha	-	EFSS yield is 3.6x national average

3. Key Findings and Interpretation:

1. The EFSS demonstration achieved 3.58 t/ha, almost double the yield of the local farmer in Eastern Equatoria (1.82 t/ha) and 3.6 times higher than South Sudan's national average (~1 t/ha).

2. The increased EFSS yield underscores the effectiveness of conservation agriculture and, more so, the impact of the Foundations for Farming approach, emphasizing minimal soil disturbance, permanent soil cover, proper planting spacing, compost application, and moisture retention.

3. EFSS demonstration farms is an evidence-based learning and replication model, as learning hubs, equipping youth and smallholders to replicate the same model on their farms. This aligns with South Sudan's drive for climate-smart agriculture and food self-sufficiency.

4. Both EFSS and the World Bank's supported interventions share a common vision of empowering farmers, particularly women like Ms. Natalina Atim, to increase productivity, restore soil health, and improve livelihoods.

4. Strategic Implications for Donor Support:

Area of Impact	Description
Empirical Evidence	The comparison validates donor-supported investments in conservation agriculture as an effective and measurable pathway to food security.
Scalability	The EFSS Pfumvudza Plot model can be expanded to thousands of smallholder farmers, doubling yields using local resources and minimal external inputs.
Gender Empowerment	As shown by Ms. Atim's testimony and EFSS's work, empowering women in agriculture leads to greater household resilience and community development.
Sustainability	Soil restoration and reduced input dependency contribute to long-term ecological and economic sustainability.

5. Summary Table

Metric	Local Farmer (Atim)	EFSS Plot	% Increase
Yield (kg/ha)	1,818	3,578	+96.9%
Yield (t/ha)	1.82	3.58	+1.76 t/ha
Vs National Average	-	3.6x Higher	-

6. Conclusion:

The comparative analysis, anchored on the World Bank Group's (May 7, 2025) report featuring Ms. Natalina Atim's maize success story, demonstrates that Empower Farmers South Sudan's conservation agriculture model produces superior yield outcomes.

EFSS's performance (3.58 t/ha) nearly doubles local yields and triples national averages, providing compelling evidence that the Foundations for Farming approach is transforming productivity in South Sudan.

With continued donor investment, EFSS can scale these results across multiple states, enhance training for smallholder farmers, and significantly advance national goals on food security, climate resilience, and rural empowerment.

Source:

- With continued donor investment, EFSS can scale these results across multiple states, enhance training for smallholder farmers, and significantly advance national goals on food security, climate resilience, and rural empowerment.
- Empower Farmers South Sudan Program's 2025 Maize Yields from Juba Demonsration Farm.

Annex V: Challenges & Adaptive Actions Matrix - 2025

Challenge Category	Observed Challenges (Pilot Phase)	Impact on Crops / Activities	Adaptive Actions Implemented (2025)	Planned Improvements & Preventive Actions (Next Phase)
Seed Quality & Germination	Poor seed viability; failed or uneven germination; delayed emergence; re-germination of groundnuts	Reduced plant population and yield potential	Replanting where possible; adjustment of planting depth; moisture conservation through mulching	Purchase seeds from trusted and reliable suppliers; acquire adequate quantities of seed; plant high-yielding, locally adapted varieties; plant pest-, disease-, drought-, and striga-resistant varieties; improve seed storage and handling
Rainfall Variability & Water Stress	Late, delayed, irregular, and inadequate rainfall; changing weather patterns; strong winds	Delayed planting; moisture stress; yield reduction	Timely planting where possible; minimum soil disturbance; mulching	Early planting at onset of rains; strengthen irrigation systems; water harvesting; early seasonal planning; selection of drought-tolerant varieties; wind-resilient field layout
Soil Fertility Constraints	Poor soil; yellowing of leaves; stunted growth; excessive vegetative growth	Low crop vigor and productivity	Application of Compost A & B; mulch cover	Conduct soil testing before planting; apply appropriate nutrients based on soil results; maintain continuous organic matter application; improve nutrient balance.
Pest Infestation	Fall armyworm; stalk borer; cotton bollworm; whiteflies; Tuta absoluta; soldier beetles; termites; birds; monkeys	Crop damage and yield loss	Field scouting; manual pest control; farmer awareness	Strengthen Integrated Pest Management (IPM); apply environmentally friendly IPM techniques; strict garden monitoring; plant pest- and disease-resistant varieties; improve field hygiene
Weed Pressure (Including Striga)	Heavy weed infestation; striga weed	Competition for nutrients and moisture	Timely weeding; correct spacing	Plant striga-resistant varieties; strengthen regular mechanical weed control; maintain disciplined early weeding; proper crop rotation
Crop Diseases	Fusarium wilt; rosette virus; leaf yellowing; browning of stems; dieback/desiccation	Crop stress and reduced yields	Removal of infected plants; spacing adjustment	Plant disease-resistant varieties; maintain proper crop rotation plans; improve drainage; strengthen early disease detection
Physiological Disorders	Blossom end rot; fruit and tuber rotting; premature flower drop; carrot cracking; excessive vegetative growth	Reduced marketable yield	Improved spacing; moisture regulation	Improve balanced water and nutrient management; timely harvesting; improved drainage; refined intercropping layouts
Cropping System & Light Exposure	Limited sunlight due to intercropping	Reduced photosynthesis and productivity	Adjustment of spacing	Early staking of intercropped crops; refined intercropping design; pruning of crops such as tomatoes
Crop Management & Harvesting Practices	Late harvesting; lack of staking; rotting of tubers; cracking of carrots	Post-harvest losses	Farmer coaching	Early staking; regular pruning of tomatoes; earthing up of groundnuts; early and continuous harvesting; acquisition of tools (pruners, crates, baskets, trays)
Inputs & Equipment Availability	Delayed supply of inputs and tools	Delayed implementation	Prioritization of essential activities	Early planning and timely supply of farm inputs and equipment; procurement aligned with agricultural calendar; acquire sufficient equipment
Overall Pilot Constraints	Combined climate, pest, soil, and input challenges	Learning-intensive pilot year	Adaptive management applied	Integrate all lessons into training manuals, seasonal work plans, and risk mitigation strategies for scale-up

Annex VI: Lessons-to-Actions Matrix (EFSS Pilot Phase – 2025)

Lesson Learned (Pilot Experience)	Evidence from 2025 Implementation	Action Taken During Pilot	Planned Actions for Next Phase (2026+)
Timely input delivery is crucial to avoid disruption of the farming calendar	Delays in seed and equipment availability affected planting schedules and crop establishment	Prioritized critical activities and adjusted planting timelines	Implement early procurement planning, bulk purchasing, and pre-season input stocking aligned with the agricultural calendar
Flexibility and early coordination improve outreach to remote farmers	Remote farmers were better reached when training schedules and locations were adjusted	Decentralized trainings to Biliny and adjusted outreach plans	Institutionalize flexible scheduling, early coordination with communities, and decentralized outreach sites
Strong local coordination enhances safety and information flow	Engagement with local leaders improved security awareness and activity planning	Regular consultation with community leadership	Strengthen local coordination mechanisms, including advance security assessments and information-sharing channels
Small, well-managed demonstration plots are effective behavior-change tools	High learning impact observed even with low farmer turnout at small demo plots and gardens	Focused on quality demonstration rather than scale	Maintain high-quality, visible demonstration plots, including well-watered gardens, as core learning tools
Adaptive planning ensures continuity during adverse weather	Irregular and late rains disrupted original schedules	Adjusted planting dates and activity sequencing	Embed adaptive planning frameworks and seasonal contingency planning into workplans
IPM and ISFM significantly reduce pest damage and improve plant health	Reduced pest pressure and improved crop vigor where IPM and compost were applied	Applied compost, wood ash, pepper, tobacco, and butter	Scale up Integrated Pest Management (IPM) and Integrated Soil Fertility Management (ISFM) using environmentally friendly methods
Local and low-cost IPM methods are effective and accessible	Traditional materials successfully controlled pests in multiple crops	Farmer coaching on organic IPM methods	Formalize and document local IPM practices in training manuals and farmer guides
Sack farming is effective in space-limited and flood-prone environments	Successful vegetable production observed in sacks where field plots were constrained	Introduced sack farming on a pilot basis	Expand sack farming as a complementary production method for urban, peri-urban, and flood-prone areas
Early coordination of inputs and equipment improves implementation efficiency	Delayed access to tools (e.g., pruners, harvesting baskets) affected crop management	Borrowed or improvised tools	Procure and distribute essential tools and equipment in advance, including pruners, crates, trays, and irrigation materials

Annex VIII: Photo Credits & Usage

All photographs included in this report were taken during EFSS program activities in 2025 and are the property of EmpowerKids-South Sudan / EFSS, used with consent for reporting and learning purposes.

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