ONE-YEAR STATUS REPORT

RIWAH PROJECT

AUGUST 2026

Testing and innovating low-cost, context specific water harvesting technologies for smallholder farmers in Uganda and Tanzania


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Table of Content

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Cover photo: RIWAH group testing water harvesting techniques. Credit:

1. Summary of Key Findings

The adoption of water harvesting technologies has increased from August 2025 to August 2026

- The average number of implemented WHTs increased from 1.7 to 2.7 per household.
- In August 2026, 26% reported rainwater harvesting as their main water, compared with only 12% in August 2025
- 98% of households now report harvesting and storing water.
- More than half of the farmer groups report that above 10 households have adopted technologies introduced through RIWAH in the groups and the surrounding community.

Water access remains a main challenge

- Only 27% report having access to water for 10-12 months of the year, which remains unchanged since August 2025.
- Unreliable rainfall and drought remain the most frequently reported challenge across districts, but also lack of water storage infrastructure is commonly reported.

Food security indicators have improved

- Households reporting three meals per day increased from 57% to 75%.
- Average HDDS increased from 5.6 to 6.8.

Results vary considerably between districts

- In Chamwino and Wakiso nearly half of household's report rainwater harvesting as their main water source, which only accounts for 4% on Unguja Island.
- Kasese and Kagadi show the strongest growth in average number of WHT's adopted.
- Unguja Island shows the highest dietary diversity score, which is more than twice as high as in Chamwino.

Why does it matter?

The results show that low-cost water harvesting technologies are being actively tested, adopted and shared by farmer households across all participating districts. This is an important early outcome, as widespread adoption is necessary for achieving the projects' long-term goal of strengthening resilience to climate related water shortages.

At the same time, improvements in diet diversity and meal frequency suggest that the participating households may be strengthening their food security. Although these improvements cannot be directly attributed to either the adoption of WHTs or participating in farmer groups, they indicate encouraging progress alongside the project's implementation.

Where are we doing well?

The strongest progress observed is the uptake and spreading of technologies both within farmer groups and among households surrounding communities. This is important because it extends the benefits wider than direct project participants and increases the likelihood of the project sustaining long-term.

Community participation is particularly important given that limited labor remains a common challenge across many farmer groups. The willingness of members and neighboring households to work together to establish and maintain technologies increase the possibility of a continued use of the technologies after the project ends.

The project has also successfully encouraged more local innovation and learning. Many farmer groups report on adapting technologies to local context, introducing new approaches, expanding shared storage facilities and sharing their knowledge among members. Since the farmers are the most knowledgeable about their specific local context, it is important to integrate their knowledge in the continued work in the program.

Where do we need to act?

Despite the positive results, water security remains a significant challenge across all districts. Most households still report having reliable water access for only a few months of the year and farmers continue to identify drought, unreliable rainfall, insufficient storage facilities and financial limitations as key challenges to spreading and maintaining WHT implementation.

Several district-specific challenges also require attention:

- **Chamwino** continues to face very limited water availability around the year despite high adoption of water harvesting technologies, due to unreliable rainwater and droughts.
- **Unguja Island** still experiences challenges related to storage capacity, maintenance costs and limited government engagement.
- **Kasese** faces challenges related to adopting the technologies to difficult terrain, maintenance costs and access to suitable equipment for their local context.
- **Kagadi** has increased adoption of technologies but continues to struggle with the financial costs associated with maintenance and expanding of storage facilities.
- **Wakiso** shows lower levels of community-level adoption and engagement compared to the other districts.

Recommendations

- **Invest in expanding water storage infrastructure** to increase water availability for longer periods.
- **Continue to promote farmer-to-farmer learning in the community** to spread the technologies within both farmer groups and surrounding communities.
- **Strengthen support for maintenance of existing technologies**, including guidance, training and investments to address maintenance costs.
- **Increase engagement with local governments** to strengthen the long-term sustainability of the project beyond the funding.
- **Monitor water availability alongside technology adoption** to document that increased implementation translates into improved household water resilience.

2. Introduction

The 3-year RIWAH-project has the development objective to increase resilience to climate change-related water shortages among smallholder farmer families in climate-vulnerable districts. Through the development of and advocacy for context-specific low-cost water harvesting technologies (WHT) it will contribute to sustainable water management sectors in Uganda and Tanzania. This is achieved through two outcomes; 1) Context specific low-cost WHTs innovated by 2000 smallholder farmer families organized in 100 farmer groups in five districts and 2) Low-cost WHTs for smallholder farmers are integrated in local adaptation plans in 5 districts. The main activities are targeting group-led innovation of low-cost WHT, participatory MEL on resilience efficiency, and facilitation of dialogue between smallholder farmers and relevant duty bearers at district government level to influence development of local adaptation plans to include action plans for water access for smallholder farmers with WHT as a specific solution.

The purpose of this report is to present the results of the RIWAH-project after one year. It focuses on farmer households and farmer groups and their access to water sources, implementation of water harvesting technologies and the challenges and advantages they face. On that basis it will be possible to conclude which issues the farmers are still struggling with and that the project can continue to work on in the following year.

The following sections provide a brief introduction to the background and progress of the RIWAH project. Section 3 presents the overall key findings across the participating districts, while Section 4 to 8 provide a more detailed analysis of the results within each district. The final section discusses the methodological approach, data collection process and limitations with both the data and the measures of the key indicators.

The report is designed to both provide a general assessment of the project progress and as a reference document. Readers may therefore choose to read the report in its entirety or focus on the specific sections and districts most relevant to their interest and purpose.

2.1 Background

Smallholder farmer families' food and income security are vulnerable to and impacted by climate change because their economic activities rely mainly on crop production and livestock keeping. Once the periods of dry season as well as the extended drought periods caused by climate change set in, crop production is affected causing seasonal food insecurity due to crop failure caused by water scarcity. Simple and affordable WHT can increase water-use efficiency and improve access to water for farming in the dry seasons and periods of draught as well as contribute to quality of drinking water and enhance

integrated water management at household-level. Thereby contributing to a solution to the water access challenge for the smallholder farmers, pointing a way forward for good governance in a sustainable water management sector in the two countries.

Majority of smallholder farmers in the target districts neither have the technical capacity on WHT nor can they afford to purchase equipment for water harvesting and irrigation system to grow food in the dry season. Access to water is acknowledged as a right at country level, however local adaptation plans are still in development at district level. The objective of the project is to identify and innovate context specific WHTs, that are affordable for smallholder farmers, and through integration in local adaptation plans contribute to resilience towards water shortages. The project focuses on water access through water harvesting and storage, and the correct solutions of low-cost WHT systems will vary from community to community and district to district. More information about the project purpose, partners, target groups and interventions can be found here https://organicfflg.org/learning-centre/riwah-project/.

2.2 Project Progress

The project began in August 2025, where we also conducted the first survey round (RIWAH Report August 2025). During 2025 and 2026 the work of the project continues to

strengthen and expanding the water harvesting techniques among the farmers in the participating farmer groups.

The data collection process has resulted in three surveys conducted in August 2025, November 2025 and latest in August 2026, which makes the basis for this one-year status report. In Section 9 it is possible to read more detailed about the methods of data collection. All three surveys have resulted in two datasets: one at the FFLG- and one at household-level. The surveys are conducted among 400 household farmers from 100 different FFLG's from five different districts in Uganda (Wakiso, Kasese, Kagadi), Tanzania (Chamwino) and Zanzibar (Unguja Island). The households are small scale farmers consisting of mostly between 4 and 9 members and who have both livestock and crops. The most kept livestock are chicken, ducks, goats and pigs and most households grow divers crops for domestic use, but 70% also grow cash crops. Table 2.1 shows the distribution of survey respondents across districts and survey round.

Table 2.1: *Overview of Participants in Surveys across Districts*

		Aug 2025	*Nov 2025*	*Aug 2026*
Total	Households	414	397	408
	Farmer groups	104	101	100
Chamwino	Households	80	80	80
	Farmer groups	20	20	20
Kagadi	Households	87	82	84
	Farmer groups	24	21	21
Kasese	Households	83	76	86
	Farmer groups	20	20	19
Unguja Island	Households	80	80	79
	Farmer groups	20	20	20
Wakiso	Households	84	79	79
	Farmer groups	20	20	20

Note: HH- and FFLG dataset August 2025, November 2025 and August 2026

3. Key Findings Across the Participating Districts

The following section presents the general results across all districts on main water sources, implementation of WHTs, food security and the most common challenges among the households and farmer groups.

Table 3.1: *Development from August 2025 to August 2026 on Key Indicators*

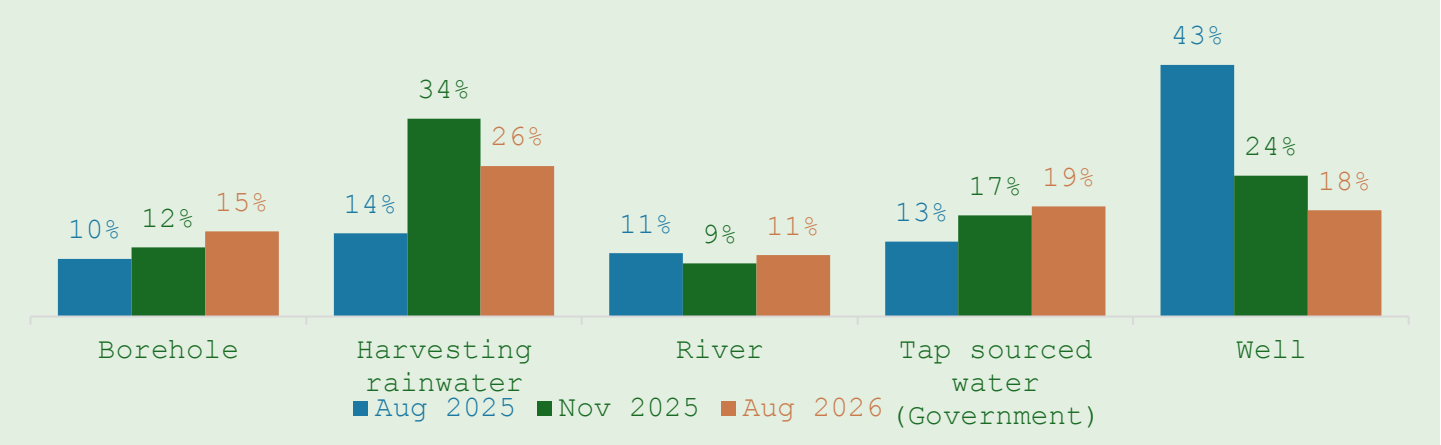
	Aug 2025	Aug 2026
Rainwater harvesting as main water source for livestock and crops	12%	26% ↑
Water availability in 10-12 months	27%	27%
Average number of WHT implemented per HH	1.7	2.7 ↑
Share of FFLGs and communities with above 10 HH have adopted the practices*	FFLG: 21% Community: 33%	FFLG: 53% ↑ Community: 58% ↑
3 meals per day	57%	75% ↑
Average HDDS score per HH	5.6	6.8 ↑

*Note: HH-dataset August 2025 (N=414) and August 2026 (N=408), *FFLG-dataset August 2025 (N=104) and August 2026 (N=100)*

3.1 Water Access and Progress in Testing and Implementing WHT

Across the participating districts, the use of rainwater harvesting has increased substantially. In August 2026, **26% reported rainwater harvesting as their main water,** compared with only 12% in August 2025. **Furthermore 95% of households reported harvesting and storing rainwater**, while **98% have implemented at least one WHT in their household by August 2026**.

Figure 3.1: *Main Current Water Source for Livestock and Crops in the Households*



Note: HH-dataset August 2025 (N=414), November 2025 (N=397) and August 2026 (N=408)

This development is also reflected in the average number of adopted practices per household, which **increased from 1.7 to 2.7** over the same period. On average, households have therefore implemented one additional technology since the baseline survey in August 2025. Encouragingly, the technologies are also spreading among the households, and more than half of the FFLGs now report that over ten households have adopted the practices in the farmer groups, but also in the surrounding communities.

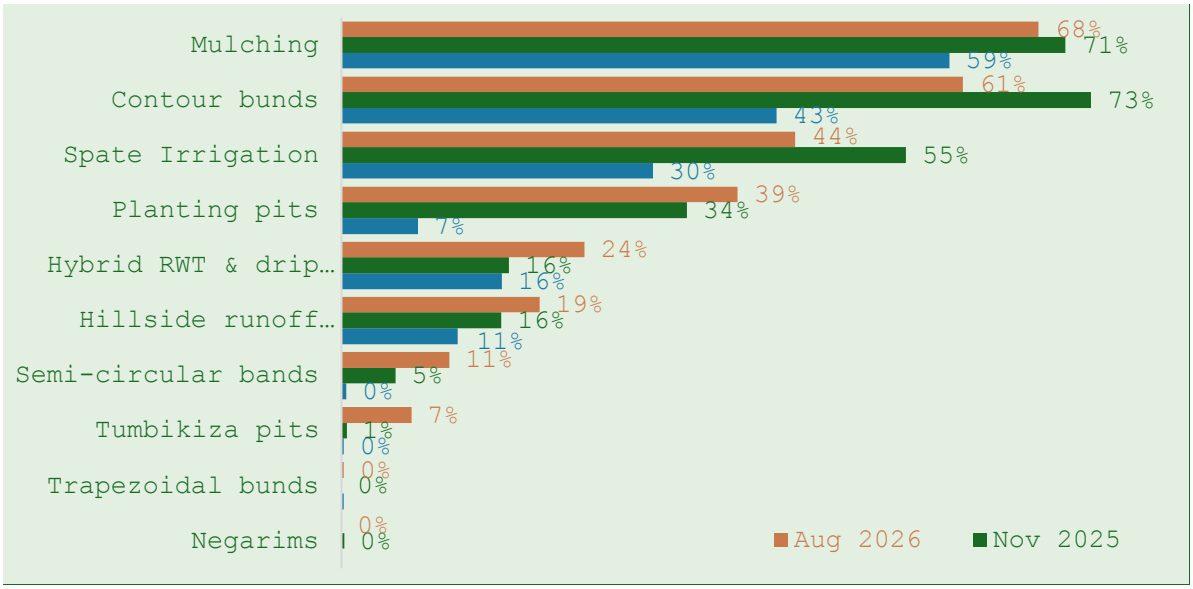
Table 3.1: *Development of Adoption of WHTs from August 2025 to 2026*

	Aug 2025	Aug 2026
Average number of adopted WHT per household	1.7	2.7 ↑
FFLGs where above 10 HH have adopted the practices in the group*	21%	53% ↑
FFLGs where above 10 HH have adopted the practices in the community*	33%	58% ↑

*Note: HH-dataset August 2025 (N=414) and August 2026 (N=408), *FFLG-dataset August 2025 (N=104) and August 2026 (N=100)*

Mulching, **contour bunds** and **spate irrigation** remain the most practiced technologies across the districts. Since August 2025, there has furthermore been an increase in the use of **planting pits**, and adoption of **hybrid RWT systems**, **semi-circular bands** and **tumbikiza pits** has also grown since November 2025. In contrast, trapezoidal bunds and negarisms continue to have little or no adoption.

Figure 3.2: *Most Adopted Water Harvesting Technologies in the Households*



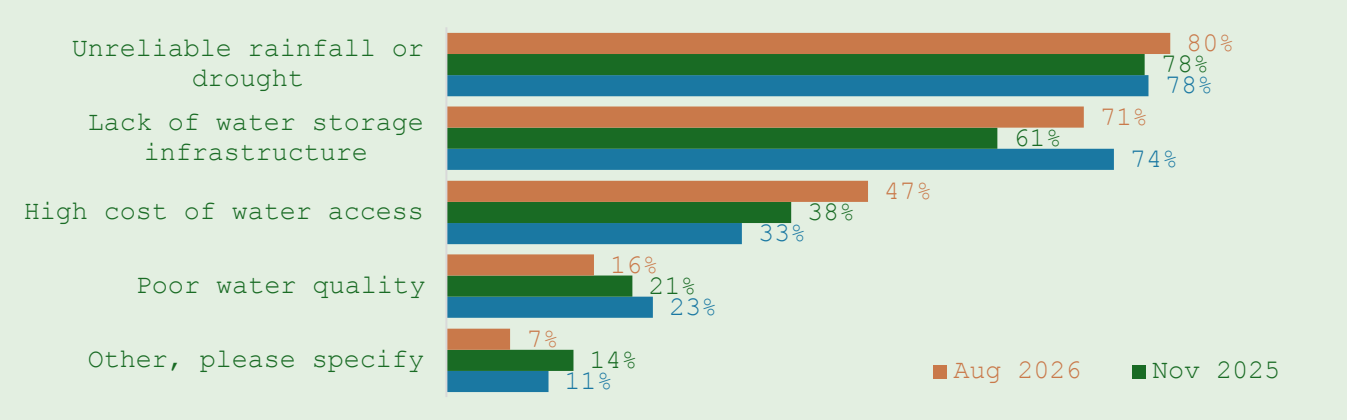
Note: HH-dataset August 2025 (N=414), November 2025 (N=397) and August 2026 (N=408)

Despite these positive developments, access to water throughout the year remains a major challenge. Only **25% of households** report having access to water for 10-12 months of the year, while approximately **60% still only have reliably access for 1-3 months**. This has changed little since August 2025.

Unreliable rainfall or **drought** remain the most frequently reported challenges, reported by around 80% of households. At the same time, 71% also identify **lack of water storage infrastructure** as a constraint in using WHTs. Unlike rainfall variations, this represents a

challenge that may be addressed through continued investment, training and expansion of the water harvesting solutions.

Figure 3.3: *Households Challenges in Accessing Water for Livestock and Crops*

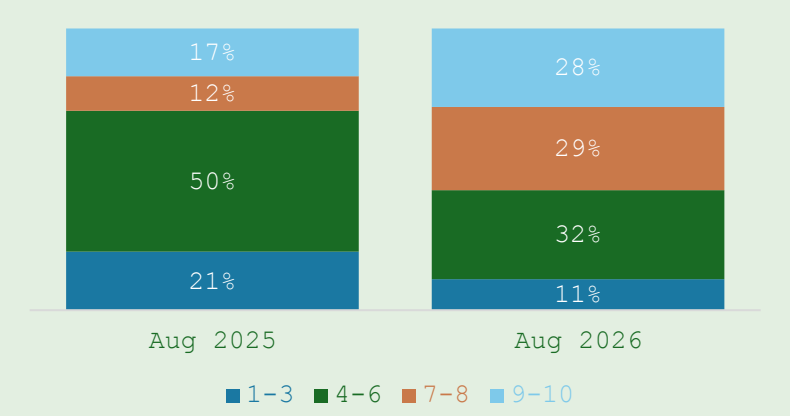


Note: HH-dataset August 2025 (N=414), November 2025 (N=397) and August 2026 (N=408)

3.2 Food Security

Along with the increased adoption of water harvesting technologies, the food security indicators also show improvements between August 2025 and 2026. The share of household reporting **three meals per day increased from 57% to 75%,** while **the average Household Diet Diversity Score increased from 5.6 to 6.8**. This indicates that households are consuming a wider range of food varieties than at the baseline of the project.

Figure 3.4: *Distribution of HDDS in August 2025 and*



Note: HH-dataset August 2025 (N=414), November 2025 (N=397) and August 2026 (N=408)

The shift in distribution of HDDS is particularly positive. The proportion of households with a low dietary diversity score of 1 to 3 **decreased from 21% to 11%**, while **more than half of households now have a score above 6**. This suggests that improvements in dietary diversity are observed across all participating households and not limited to households who already had relatively diverse diets at the baseline.

Nevertheless, food shortages remain a challenge for many households. Only **25% report never experiencing food shortages** during the year, a level that has remained

unchanged since 2025. Furthermore, **July to September is reported by 25%** as the period when food shortages are most common across households from the participating districts.

These findings highlight the importance of looking at food security over a full annual period and comparing the same seasons across the years to distinguish actual developments from seasonal differences. At the same time, the observed improvements in meals per day and dietary diversity cannot be attributed directly to the RIWAH project. Multiple factors may influence household food security, and further efforts to improve year-round water availability, strengthen water harvesting infrastructure and support the maintenance of the technologies are necessary to sustain these improvements and expand the benefits.

3.3 District overview

The following five sections present a more detailed results for each participating. Table 3.2 provides an overview of the key indicators in August 2026 across all districts, allowing a comparison of their status and progress.

Table 3.2: *Overview of Key Indicators in August 2026 Across Participating Districts*

	Chamwino	*Unguja Island*	*Kasese*	*Kagadi*	*Wakiso*
Rainwater harvesting as main water source for livestock and crops	45%	4%	12%	19%	51%
Access to water 10-12 months	0%	30%	50%	31%	24%
Average number of WHT implemented	2.2	2.9	2.6	3.2	2.8
Challenges with unreliable rainfall or drought	99%	91%	57%	88%	72%
3 meals per day	86%	58%	48%	83%	99%
Average HDDS per HH	4.1	8.9	7.8	6.5	6.7

Note: HH-dataset August 2026, Chamwino (N=80), Unguja Island (N=79), Kasese (N=86), Kagadi (N=84) and Wakiso (N=79)

4. Chamwino

Key points

1. In August 2026 **86% of household** report having 3 meals per day compared to 10% in August 2025
2. **Planting pits** and **contour bunds** remain the most implemented WHT's, while there has been a remarkable decrease in **mulching** and **spate irrigation**
3. The main challenge in accessing water is still **unreliable rainfall and drought**, but several also mentions **lack of infrastructure and financial resources** as limitations

Despite continued challenges with unreliable rainfall and drought several positive developments can be observed in Chamwino since the beginning of the RIWAH-project. **Rainwater harvesting remains the most common main water source**, reported by 55% of households in August 2026, compared with only 10% in August 2025. However, almost all households still report that the water sources only provide them with water for 1-3 months per year.

Table 4.1: *Development on Key Indicators in Chamwino from August 2025 to August 2026*
Note: HH-dataset Chamwino, August 2025 (N=80), November 2025 (N=80) and August 2026 (N=80),

	Aug 2025	*Nov 2025*	*Aug 2026*
Rainwater harvesting as main water source for livestock and crops	10%	100%	55% ↑
Water availability in 1-3 months	99%	95%	98% →
Average WHT implemented	1.2	3.8	2.2 ↑
Above 10 HH in FFLG / Community adopted the practices*	FFLG: 0% Community: 0%	FFLG: 45% Community: 45%	FFLG: 45%↑ Community: 50% ↑
Average HDDS score	3.5	4.3	4.1 ↑
3 meals per day	10%	71%	86% ↑

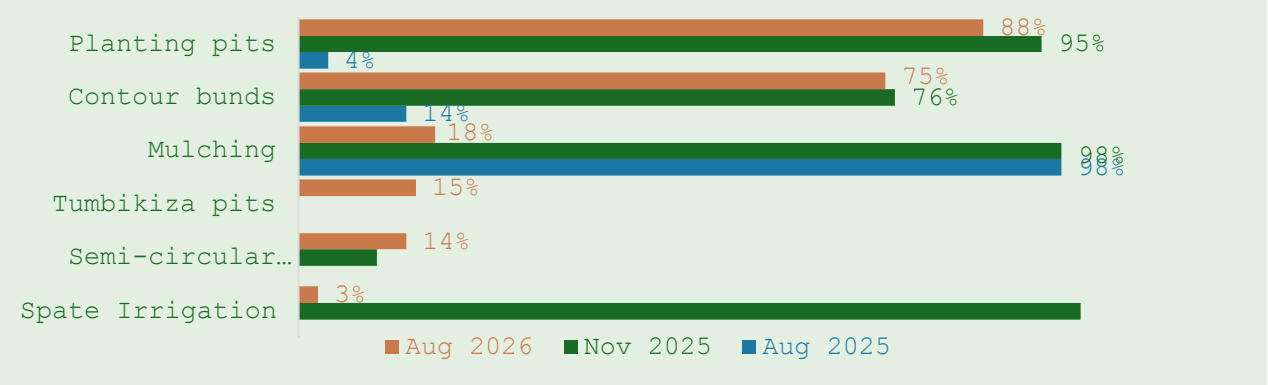
**FFLG-dataset Chamwino, August 2025 (N=20), November 2025 (N=20) and August 2026 (N=20)*

Among the 20% of households that do not harvest and store water, the most common barriers reported are **lack of storage facilities and limited financial resources**. These challenges are also reflected in the average number of implemented WHT's, which **declined from 3.8 in November 2025 to 2.2 in August 2026**. However, adoption within both FFLGs and the communities remains stable, indicating that the technologies continue to be used and shared.

Workshops, trainings and rotational visits remain the most important sources of information about WHTs. Encouragingly, **government involvement has increased**, where eight of the twenty interviewed farmer groups mention the government as a source of

information, compared with none in 2025. In addition, several groups report learning through exchange with other farmers.

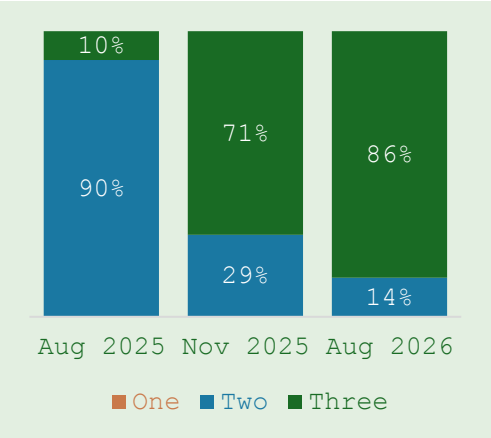
Figure 4.1: *Most Adopted Water Harvesting Technologies in Households in Chamwino*



Note: HH-dataset Chamwino, August 2025 (N=80), November 2025 (N=80) and August 2026 (N=80)

Food security indicators show a positive development. The share of households reporting **eating three meals per day increased from 10% in August 2025 to 86% in August 2026**. While Chamwino continues to have the lowest average HDDS among the participating districts, the distribution of scores suggests a gradual improvement in dietary diversity. More households consumed five or more food groups in the last 24 hours, and **19% report never experiencing food shortages** during the year compared with none in 2025. Nevertheless, food shortages remain common during the period from October to March, and a combination of drought, limited storage infrastructure and financial constraints continues to challenge water access and food security in the district.

Figure 4.2: *Meals per Day*



Note: HH-dataset Chamwino, August 2025 (N=80), November 2025 (N=80) and August 2026 (N=80)

Top challenges	*Top Benefits*	*Adjustments made in FFLGs*
1. Unreliable rainfall and drought 2. Lack of water storage infrastructure 3. Lack of financial resources to establish and maintain the WHT's	1. Improved income 2. Improved production and farm performance 3. Increased food availability	57% of FFLGs made adjustments: 1. Establish ridges as a way to harvest water 2. Integrate tradition and local knowledge and techniques in WHTs

5. Unguja Island

Key points

1. Only **4% reports harvesting rainwater** as their main water source, but all households **harvest and store water** and have implemented **at least two technologies**.
2. The most implemented technologies are **mulching** and **hybrid RWT & drip system**, however we see a diverse implementation and an increase in e.g. **semi-circular bands**
3. The main challenges remain **unreliable rainfall, lack of water storage infrastructure** and **costs** associated with maintaining the exiting WHTs.

Table 5.1: *Development on Key Indicators on Unguja Island from August 2025 to August 2026*

	Aug 2025	Nov 2025	Aug 2026
Rainwater harvesting as main water source for livestock and crops	8%	9%	4% ↓
Water availability in 10-12 months	23%	30%	30% ↑
Average WHT implemented	2.5	2.8	2.9 ↑
Above 10 HH in FFLG / Community adopted the practices*	FFLG: 35% Community: 80%	FFLG: 55% Community: 55%	FFLG: 40% ↑ Community: 70% ↓
Average HDDS score	7.8	8.7	8.9 ↑
3 meals per day	46%	65%	58% ↑

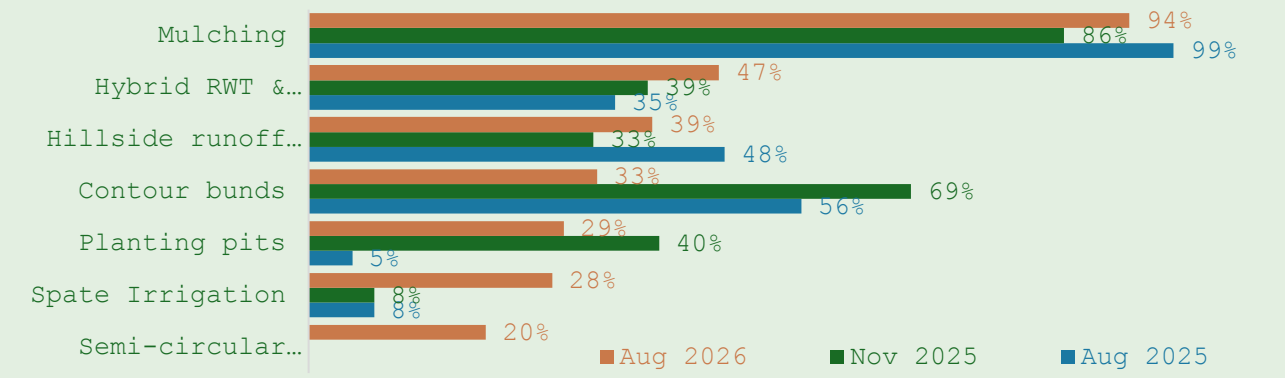
*Note: HH-dataset Unguja Island, August 2025 (N=80), November 2025 (N=80) and August 2026 (N=79), *FFLG-dataset Unguja Island, August 2025 (N=20), November 2025 (N=20) and August 2026 (N=20)*

Unguja Island continues to demonstrate relatively strong results in both implementation of water harvesting technologies and food security. Although **only 4% of households identify rainwater harvesting** as their main water source, all surveyed households report harvesting and storing water and **the average number of implemented WHTs has increased slightly from 2.5 to 2.9 per household**. The most common main water source is tapping sources from the government and wells. While 44% only are provided with water from the sources for 1-3 months per year, the share has decreased from 55% in August 2025 and 30% now report of being provided with water for 10-12 months per year.

Across the district many different WHTs are implemented. **Mulching** continues to be the most applied technology, **while the use of hybrid RWT and drip systems and semi-circular bunds has increased**. Adoption beyond the farmer groups is also relatively strong with 70% of groups reporting that above 10 households in their community have adopted the technologies. Information is primarily obtained through trainings, workshops

and rotational visits, while government involvement remains limited and is only reported by four groups.

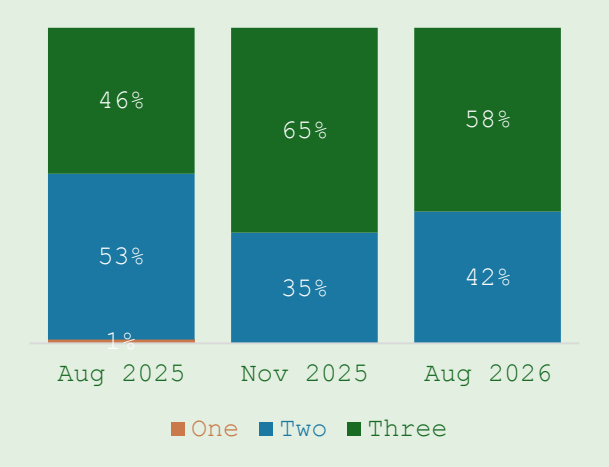
Figure 5.1*: Most Adopted Water Harvesting Technologies in Households on Unguja Island*



Note: HH-dataset Unguja Island, August 2025 (N=80), November 2025 (N=80) and August 2026 (N=79)

Unguja Island continues to record the highest average HDDS among the participating districts, increasing from **7.8 in August 2025 to 8.9 in August 2026**, indicating that households consume a broad range of food types. However, the share reporting three meals per day has declined slightly since November 2025 but is still higher than August 2025. Furthermore, **only 3% state that they never experience food shortages**. The main challenges remain unreliable rainfall, lack of water storage infrastructure and costs associated with maintaining the exiting WHTs.

Figure 5.2: *Meals per Day*



Note: HH-dataset Unguja Island, August 2025 (N=80), November 2025 (N=80) and August 2026

Top challenges	Top Benefits	Adjustments made in FFLGs
1. Unreliable rainfall 2. Lack of water storage infrastructure, e.g. small storage tanks that can't hold water for long periods 3. High cost of the maintenance of the WHT (repairs and cleaning) 4. Lack of support from the government	1. Sharing knowledge of water harvesting technology among members 2. Increased food security 3. Lower cost of water and decrease in production cost 4. Lower soil erosion 5. Increase in employment opportunities	75% of FFLGs made adjustments: 1. Adapting to local conditions, e.g. using durable materials from the area like big trees 2. Rotate farming area 3. Introduction and promotion of new techniques

Key points

1. **12% of households** report rainwater harvesting as their main water source and the average number of WHTs implemented **increased from 1 in August 2025 to 3 in August 2026**.
2. The average HDDS of households in Kasese increased from **5.4 in August 2025 to 7.8 in August 2026**, but the share of households having three meals per day declined **from 65% to 48%.**
3. One of the main challenges for implementing and maintaining WHTs is **inadequate equipment** for the terrain in Kasese with rocks and hills

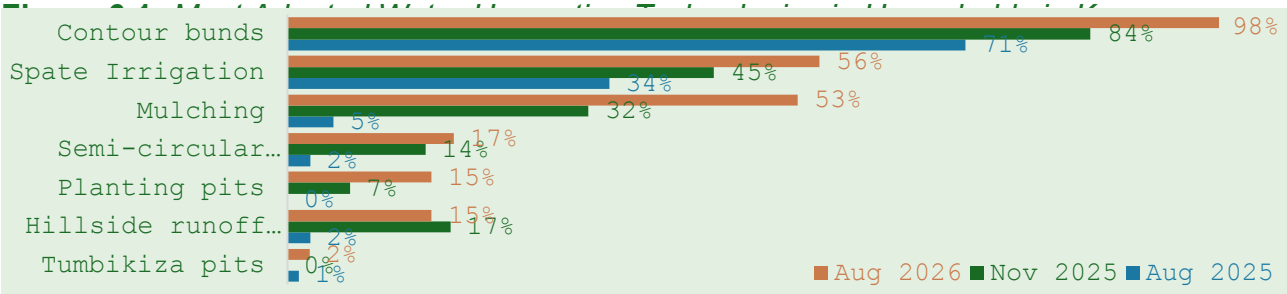
6. Kasese

Table 6.1: *Development on Key Indicators in Kasese from August 2025 to August 2026*

	Aug 2025	*Nov 2025*	*Aug 2026*
Rainwater harvesting as main water source for livestock and crops	0%	3%	12% ↑
Water availability in 10-12 months	51%	42%	50%
Average WHT implemented	1.2	2.3	3.2 ↑
Above 10 HH in FFLG / Community adopted the practices*	FFLG: 50% Community: 45%	FFLG: 90% Community: 65%	FFLG: 95% ↑ Community: 58% ↑
Average HDDS score	5.4	7.5	7.8 ↑
3 meals per day	65%	74%	48% ↓

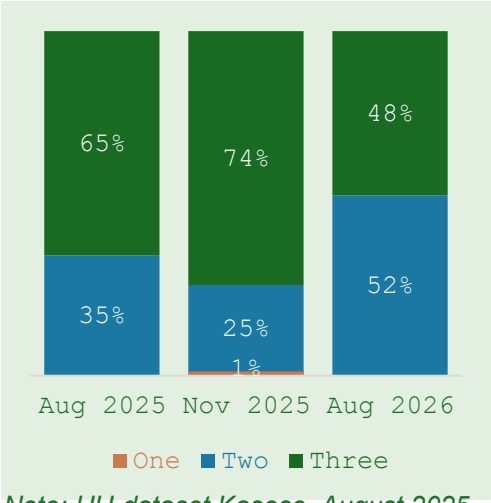
*Note: HH-dataset Kasese, August 2025 (N=83), November 2025 (N=76) and August 2026 (N=86), *FFLG-dataset Unguja Island, August 2025 (N=20), November 2025 (N=20) and August 2026 (N=19)*

Kasese has experienced substantial progress in the adoption of WHTs since the beginning of the project. The average number of implemented **technologies increased from 1.2 in August 2025 to 3.2 in August 2026**, and almost all farmer groups report that above ten households have adopted the technologies. Furthermore, no households report having implemented zero technologies in 2026. **Contour bunds**, **spate irrigation** and **mulching** remain the most implemented practices.



Note: HH-dataset Kasese, August 2025 (N=83), November 2025 (N=76) and August 2026 (N=86)

Figure 6.2: *Meals per Day*



Note: HH-dataset Kasese, August 2025 (N=83), November 2025 (N=76) and August

Water access is also strong relative to the other districts, where **half of households report being provided with water from the sources for 10-12 months per years**. Water from the river and government tap water remain the dominant sources. At the same time, **41% still report having available water for only 1-3 months per year**, demonstrating that water insecurity continues to be a challenge for a large share of households.

Food security indicators are generally positive. Kasese has the **highest average HDDS among the Uganda districts at 7.8** and households report consuming a variety of food groups including fish and seafood, fruits, cereals and pulses in the last 24 hours of the interview. However, the share reporting three meals per day declined compared with both August and November 2025, indicating that the households are eating less but more diverse meals. Furthermore, **only 7% never experience food shortages**, which is a decrease from 20% in 2025, and the most reported period of shortage are from July to September.

All farmer groups have received information through workshops and training, and 75% trough rotational visits. Only three out of the nineteen groups report information from the government and further four groups report of having monthly awareness meetings held by the facilitators. In general, both households and farmer groups continue to report challenges **with inadequate storage infrastructure**, **difficult terrain** and **unreliable rainfall** as constraints to becoming more water resilient.

Top challenges	*Top Benefits*	*Adjustments made in FFLGs*

1. Lack of water storage infrastructure 2. Inadequate farm tools and equipment for the specific terrain with rocks and hills 3. Unreliable rainfall 4. During heavy rain, trenches need to be desilted every week, making it hard for the groups to maintain the technology on time	1. Community involvement in the establishment of WHT 2. Increased crop and livestock productivity for both group and non-group members	58% of the farmer groups have made adjustments in the WHT: 1. More communal work and routine rotation visits by group members for working together 2. Establishing and increasing the storage facilities 3. The already trained members help other members to adopt the systems

7. Kagadi

Key points

1. 19% report rainwater harvesting as their main water source and the **average number of WHTs implemented increased** from 1 in August 2025 to 3 in August 2026.
2. The average HDDS in the households increased from **4.6 in August 2025 to 6.5 in August 2026** and **83%** now report of eating three meals per day.
3. The main challenges remain **unreliable rainfall**, **drought** and **lack of financial resources** to establish and maintain the WHTs

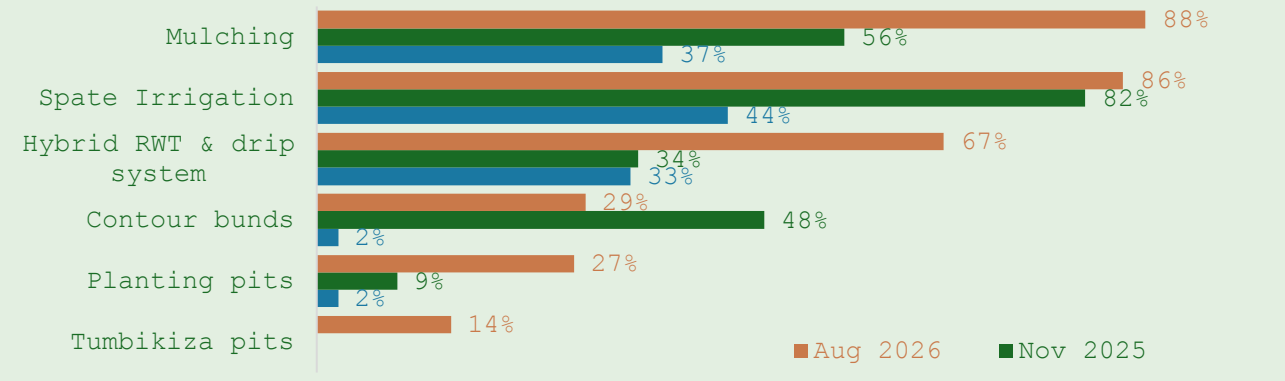
Table 7.1: *Development on Key Indicators in Kagadi from August 2025 to August 2026*

	Aug 2025	Nov 2025	Aug 2026
Rainwater harvesting as main water source for livestock and crops	7%	10%	19% ↑
Water availability in 10-12 months	44%	24%	31% ↓
Average WHT implemented	1.2	2.3	3.2 ↑
Above 10 HH in FFLG / Community adopted the practices*	FFLG: 13% Community: 21%	FFLG: 38% Community: 38%	FFLG: 62% ↑ Community: 76% ↑
Average HDDS score	4.6	6.8	6.5 ↑
3 meals per day	68%	89%	83% ↑

*Note: HH-dataset Kagadi, August 2025 (N=87), November 2025 (N=82) and August 2026 (N=84), *FFLG-dataset Unguja Island, August 2025 (N=24), November 2025 (N=21) and August 2026 (N=21)*

Kagadi is among the districts showing the largest adoption of water harvesting technologies and increases in indicators of food security. **19% report rainwater harvesting as their main water source** and the average implemented **WHTs increased from 1.2 in August 2025 to 3.2 in August 2026**.

Figure 7.1: *Most Adopted Water Harvesting Technologies in Households in Kagadi*



Note: HH-dataset Kagadi, August 2025 (N=87), November 2025 (N=82) and August 2026 (N=84)

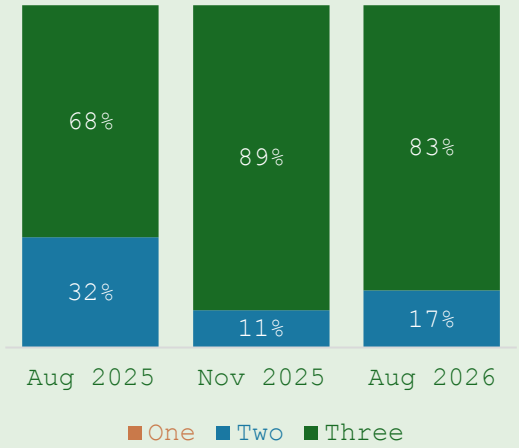
The adoption of technologies has also increased both within the farmer groups and in the surrounding communities. The most widely implemented practices are **mulching**, **spate irrigation** and **hybrid RWT and drip system**.

Despite this progress access to water throughout all the year still remains a challenge. Wells continue to be the most dominate water source, and **more than half of households report that their water sources only provide water for 1-3 months per year**. An increase from 36% in August 2025. Challenges like drought, insufficient storage facilities and financial costs of establishing and maintaining the technologies continue to prevent secure access to water all year round. Positively**, engagement from the government has increased** and more than half of the group's report receiving information from government actors besides the training and rotational visits.

Food security remains relatively strong. More than **four out of five households report eating three meals per day**, and **43% state that they never experience food shortages**. However, 44% still report of food shortages between April and June. The most consumed foods are cereals, root and tubers and vegetables. Although the average HDDS has declined slightly since November 2025, it remains substantially higher than August 2025, where it has increased from 4.6 to 6.5.

Overall, the district demonstrates strong progress in implementation, while the long-term water security still remains a challenge.

Figure 7.2: *Meals per Day*



Note: HH-dataset Kagadi, August 2025 (N=87), November 2025 (N=82) and August 2026

Top challenges	*Top Benefits*	*Adjustments made in FFLGs*
1. Unreliable rainfall and drought 2. Lack of financial resources to establish and maintain the WHTs 3. Lack of knowledge and support 4. Lack of water storage infrastructure and tools	1. Reduced labour (among children and of fetching water) 2. Reduced inadequate water supply among the people 3. Increased production and food security in the community	67% of the farmer groups have made adjustments in the WHT: 1. Introduced new methods of collecting water 2. Buying more storage facilities like plastic- or underground tanks 3. Increasing skills and training to make innovation

8. Wakiso

Key points

1. **51% of households** report rainwater harvesting as their main water source
2. **24% of households** are provided with water for 10-12 months per year
3. **Unreliable rainfall**, **drought** and **lack of labour and finances** for maintaining for technologies are the main challenges.

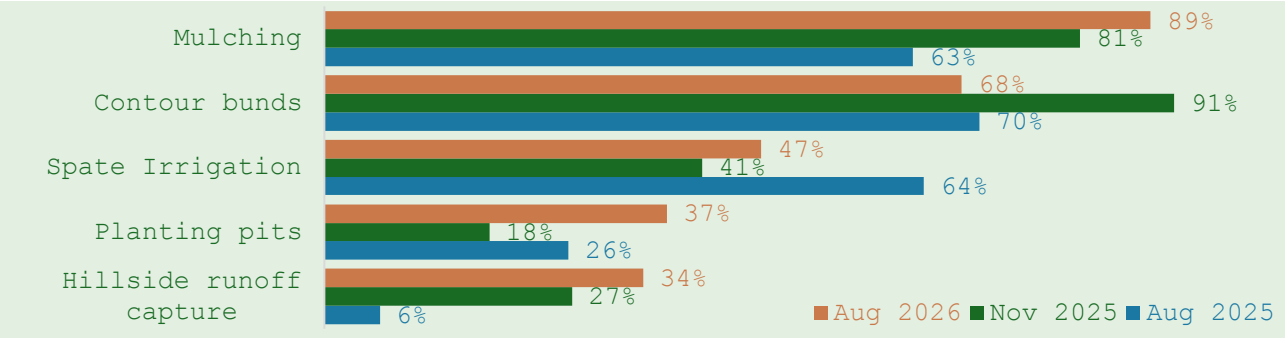
Table 8.1: *Development on Key Indicators in Wakiso from August 2025 to August 2026*

	Aug 2025	Nov 2025	Aug 2026
Rainwater harvesting as main water source for livestock and crops	46%	48%	51% ↑
Water availability in 10-12 months	17%	23%	24% ↑
Average WHT implemented	2.3	2.6	2.8 ↑
Above 10 HH in FFLG / Community adopted the practices	FFLG: 10% Community: 20%	FFLG: 5% Community: 15%	FFLG: 25% ↑ Community: 35% ↑
Average HDDS score	6.8	6.9	6.7 ↓
3 meals per day	92%	89%	99% ↑

*Note: HH-dataset Wakiso, August 2025 (N=84), November 2025 (N=79) and August 2026 (N=79), *FFLG-dataset Unguja Island, August 2025 (N=20), November 2025 (N=20) and August 2026 (N=20)*

Wakiso demonstrate positive developments since the beginning of the RIWAH-project. **Rainwater harvesting remains the most common primary water source** and has increased slightly since the baseline survey. The average number of implemented WHTs also continues to rise, and in August 2026 each household have in average implemented 2.8 technologies. **Mulching**, **contour bunds** and **spate irrigation** are among the most implemented technologies. Adoption beyond the farmer groups remains more limited than in the other districts, although both FFLG- and community adoption increased between November 2025 and August 2026.

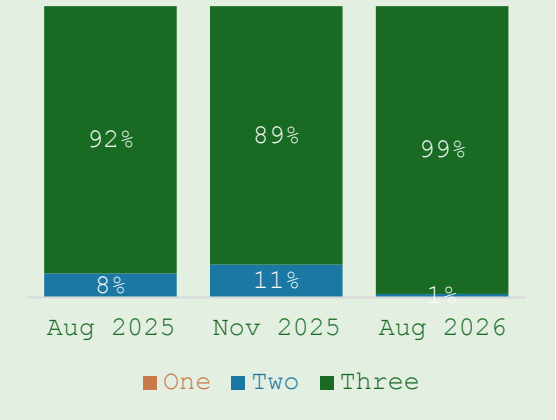
Figure 8.1: Most Adopted Water Harvesting Technologies in Households in Wakiso



Note: HH-dataset Wakiso, August 2025 (N=84), November 2025 (N=79) and August 2026 (N=79)

24% of households report being provided with water for 10-12 months per year, **but 53% of households are still only provided by the water sources for 1-3 months per year,** even though it represents a decrease from 68% in August 2025. **Unreliable rainfall**, **limited storage capacity** and **the cost of implementation** continue to be frequently reported barriers. Government involvement also remains relatively low, with only one FFLG reporting receiving information from government actors.

Figure 8.2: *Meals per Day*



Note: HH-dataset Wakiso, August 2025 (N=84), November 2025 (N=79) and August

Food security indicators are also generally positive. **Almost all households report eating three meals per day**, and the district continues to maintain a relatively high average HDDS. However, food shortages appear to affect more households than previously. Where 77% of households reported of never experiencing food shortages in August 2025, this only accounts for 54% of households in August 2026. Instead, 38% reported of food shortages between July and September, up from only 10% in august 2025.

While many FFLGs highlight improved access to water, increased food production and reduced time spent collecting water as key benefits, several groups report that **limited space**, **maintenance requirements** and **climate uncertainty** continue to constrain wider adoption of water harvesting technologies.

Top challenges	*Top Benefits*	*Adjustments made in FFLGs*
1. Unreliable rainfall and drought 2. Limited labour and technical persons, e.g. a low level of rotational visits 3. High initial costs 4. Limited space due to reducing pieces of land 5. Low adoption in the community and poor community ownership and responsibility 6. Maintenance and cleaning require a lot of labour and knowledge	1. Easier access to cheap water for domestic use and production 2. Increase in food security 3. Reduction the time used on long distances to get water 4. Members have copied and replicated the technology in the community	50% of the farmer groups have made adjustments in the WHT: 1. Installations of affordable storage facilities 2. Providing training on new technologies 3. Using locally available and affordable materials 4. Regular inspection and maintenance of the WHT's

7. Limited storages to last through the dry season	5. Reduced food theft

9. Methodology

9.1 Data Collection

Data collection in connection with monitoring and evaluation in the project consists of a mix of qualitative and quantitative data collected among target groups and stakeholders related to the program's outcomes.

The monitoring, evaluation and learning (MEL) task-group has developed a participatory MEL system, translated into required languages for quantitative data collection, an interview guide for qualitative data collection and guidelines for desk top research. To secure reliability and validity in the data collection, the M&E officer from Caritas Kampala has conducted training among ESFROMA partners and master facilitators in the use of MEL system. In the uncertain, dynamic circumstances that characterize social change, the paths to achieve the objective and outcome are to a certain extent unpredictable, and predefined objectives and theories of change can be modified over time to respond to the changes in the context. In this project, applied cocreation is an intended action and the MEL system systematically collects the innovations, intended and unintended outcomes of the interventions among FFLGs, collaboration with CSO and local government agencies.

Despite these considerations, it remains important to acknowledge the potential methodological risks, particularly concerning the credibility of responses and the possibility of social desirability bias. This bias arises when respondents provide answers, they believe the interviewer wants to hear or that aligns with socially acceptable norms. In many cultural contexts, issues related to honour, dignity and status can strongly influence self-reporting. For example, respondents may overstate the number of meals or food varieties consumed to avoid appearing poor or experiencing the social stigma associated with hunger. Likewise, FFLGs may be inclined to overstate the positive effects of WHTs in hopes of securing continued project investments in the area. It may also be reflected as a form of demand effect, where respondents answer in ways they think align with the expectations of the interviewer. To minimize these risks, the project provides thorough training for interviewers and master facilitators and ensures that data collectors are culturally aligned with the respondents. Additionally, efforts are made to include both women and men in the data-gathering process, since a balance in gender participation can lead to more nuanced and trustworthy insights.

Across the three survey gatherings the respondents largely originate from the same farmer groups. However, matching individual household respondents across the three survey rounds is challenging due to variations in spelling, inconsistencies in recorded names and small differences in noted locations. Nevertheless, in most FFLGs, a substantial number of

the same households appear in all surveys, although some respondents are new and others only appear in appears in some of them.

These variations do not pose a methodological concern for the purpose of this report. Because the analysis aims to describe developments from the first year of the project rather than establishing causal relationships between water harvesting technologies and food security, all respondents are included, regardless of whether they participated in one or both rounds. Excluding households that do not appear in both datasets would unnecessarily reduce the sample and is not required for the descriptive focus of this report. The methodological considerations and limitations related to causality will be further discussed in the following section.

9.2 Accountability and Transparency through Reports

This report aims to strengthen accountability and transparency by providing an overview of the project's progress in terms of performance and emerging impacts, both overall and at district level. The continued collection of monitoring data allows us to track developments over time and supports ongoing evaluations of the implementation process by identifying the challenges and advantages experienced by the involved target groups. The intention is to provide solid insights that inform program adjustments and foster learning to support implementation as the project evolves.

It is important to emphasize that this report does not attempt to establish a causal relationship between the implementation of water harvesting technologies and improvements in water resilience or food security. Although such causal insights are relevant and central in evaluating the contribution and impact of the RIWAH-project, several methodological constraints limit the validity of causal claims at this stage.

In order to link the results in food security specifically to the RIWAH-project and implementation of water harvesting technologies, we would need to exclude all other possible explanations. Ideal we would include a comparable control group, to examine the differences between farmers who harvest rainwater and those who don't. This would increase the likelihood that the observed developments in food security and water resilience can be attributed to the implementation of WHTs. This will however be both costly and have ethical implications in presenting the technologies to only some farmers.

Given these constraints, an attempt to estimate a causal effect would have low credibility, as the analysis cannot reliably separate the project-effect from other factors. For this reason, this report deliberately has a descriptive approach, focusing on illustrating observed developments, particularly in the implementation of the introduced WHTs, which

is an important early outcome on the way toward the long-term goals of the project. The report also includes subjective perceptions reported by farmers, as these provide valuable insights in the challenges during the early stages of implementation. This will provide the relevant partners with important information on which adjustments would be beneficial in the continuous work of the project.

9.3 Household Dietary Diversity Score

Food security is measured using Household Dietary Diversity Score (HDDS). The score is calculated by summing the amount of different food groups each household has eaten in the last 24 hours. The measure is collected on household-level and includes food prepared and consumed in the home, or food purchased or gathered outside and consumed in the home. In the survey the following formulation have been used towards the households: “I will now ask you a question on the food you have been eating in your family the last following 24 hours. It should only be the food eaten at home (not at school, work or lunch in the field). As a general rule, foods consumed outside the home /were not prepared in the home should not be included (HDDS).” The period of 24 hours is chosen by FAO (Food and Agricultural Organization) because it is less subject to recall errors, less cumbersome for the respondent and conforms to the time period used in many similar studies). This survey includes ten different food varieties: cereals, root and tubers, vegetables, fruits, meat including poultry, offal and eggs, fish and seafood, pulses and legumes, milk, oil and fats and sugar and honey. The HDDS therefore ranges from 0 to 10. It is important to notice that in the ESFROMA-program the HDDS range from 1-9 and therefore cannot be compared directly.

There are several limits to the measure, which it is important to consider when interpreting the results. First, the dietary diversity score does not indicate the quantity of food consumed and doesn’t account for differences in diet across seasons. Some food may be available in large quantities and at low cost for short periods. Second, there may be urban and rural differentials in dietary diversity. Variety is often much greater in urban and peri-urban centres where food markets are adequately supplied and easily accessible. Third, the measure does not include food consumed outside the household, such as lunches in the fields or meals at work or school.

As these limitations apply equally to all three surveys, it remains meaningful to interpret changes over time. Nevertheless, it is important to consider how the score is interpreted. There are no official cut-off values that define adequate or inadequate dietary diversity. When analysing HDDS, it is necessary to pay attention to possible ceiling effects, where higher scores may no longer reflect meaningful improvements. For example, an increase

from 9 to 10 is not necessarily as substantial as an increase from 4 to 5. This will be easier to assess once data over a longer period are available.

A more detailed discussion on use of the mean dietary diversity score can be found in the FANTA publication: Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide, VERSION 2, 2006, (http://www.fantaproject.org/focus/household.shtml).