Social and Behaviour Change Intervention for Scaling Equitable Access to Rice and Common Beans Quality Seeds to Women and Young Smallholder Farmers in Butaleja District, Eastern Uganda

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I. INTRODUCTION

This report covers the period from November 2023 to February 2024. It is a report on activities implemented by the Centre for Behaviour Change and Communication (CBCC) under the Social and Behaviour Change Interventions for Scaling Equitable Access to Quality Seeds to the Women and Young Smallholder Farmers in Butaleja District, Eastern Uganda. The project is funded by the International Rice Research Institute (IRRI) under the Seed Equal initiative.

This project will contribute to addressing the challenge of equitable access to climate-resilient, market-preferred, and nutritious varieties of beans and rice in Butaleja District, Eastern Uganda. Thus, contributing to Outcome 3: at least 30 women and youth (individuals/collectives) will establish seed production and marketing enterprises; women, youth, and disadvantaged socio-economic groups in 10 sites can access affordable, market-demanded, and producer-preferred high yielding, resilient variety seed and Outcome 1: at least 5 R&D organizations and private seed companies deploy gender intentional strategies to reach women seed users and producer.

Project goal: To implement evidence-based social and behaviour change strategies to enhance access to seed information and promote seed entrepreneurship for unreached, smallholder women and youth farmers in Butaleja District, Eastern Uganda.

Objectives: The project aims to achieve the following:

- To determine barriers and facilitators to equitable seed access and constraining gender and social norms among the unreached smallholder farmers in the selected county.
- Increase the participation of women and youth in the production of bean and rice seeds of improved varieties.
- Increase the participation of youth and women in seed enterprises by strengthening formal and informal seed systems.
- Increase access to information on improved varieties and awareness of beans and rice as an alternative source of nutrition for consumers.

II. KEY ACHIEVEMENTS

This section covers the key activities conducted during this period which include:

- A baseline study to diagnose and understand the barriers and facilitators to equitable seed access and constraining gender and social norms among unreached smallholder farmers,
- Identification and selection of Youth and Women Quality Centres (YWQCs), which are community-led business incubation centres
- Selection of youth and women champions who will be peer influencers, trainers, and seed business entrepreneurs.
- Insight generation on the seed delivery model, as well as the development of a gross margin analysis for the rice value chain, was also developed while considering planting home-saved seed, QDS, and foundation seed.
- Planning for a stakeholder's workshop in Mbale, Uganda, from 20th to 21th March 2024.

Link to Rice Gross Margin Analysis

III. BASELINE SURVEY

The baseline study was conducted from November 6 to November 14, 2023, in the Naweyo and Masimaza sub-counties of the Butaleja District. The district has a limited adoption of improved rice and bean varieties among farmers, particularly women and youth. Also, women and youth in the region face challenges in seed access, including high costs, limited availability, and inadequate knowledge about seed varieties. The intervention, therefore, seeks to reach last-mile farmers in areas where there has not been a lot of work on rice and bean

> At least 30 women and youth (individuals/ collectives) will establish seed production and marketing enterprises; women, youth, and disadvantaged socio-economic groups in 10 sites can access affordable, market-demanded, and producer-preferred high yielding, resilient variety seed

production and marketing. This study aimed at assessing the awareness level of improved seed varieties of beans and rice among smallholder farmers, including women and youth, the use of new seeds of improved rice and bean varieties, determine the prevailing barriers and facilitators to equitable seed access and constraining gender and social norms among the unreached smallholder farmers as well as assessing the participation smallholder farmers in common beans and rice seed enterprises.

Methodology and Sampling: A mixed method approach was used. Quantitative data was collected from common bean and rice farmers and qualitative data was collected from farmer groups, district production and marketing officers, extension workers, agro-input dealers, community leaders and development partners implementing programs within Butaleja district through focus group discussions and key informant interviews. Using a multistage sampling technique, 300 common bean farmers were selected from the Naweyo and Nambale Parishes of Naweyo Subcounty and another 300 rice farmers from the Lubembe and Doho Parishes of Mazimasa Subcounty. In addition, 14 KIIs and 10 FGDs were conducted.

Summary Findings

On average, rice farmers own 2.4 acres and commit 1.0 acres for rice production, while common bean farmers access 2.5 acres and commit 1.3 acres to common beans. Male farmers have more access to land than female farmers. Culturally, men own most of the land, and the oxen used in land preparation, thus hiring more land. This grants them more control over harvested beans; a cropped mostly associated with women.

Sixteen (16) improved rice varieties that can be grown in Butaleja district were identified; eight (8) have been released, two (2) are in the advanced variety testing stages, and 6 have never been released but have been grown for many years. Wita 9, K85, K5, k98, and Supa original are the commonly improved rice seeds planted by farmers. Farmers are more aware of the unreleased improved varieties (83.8%) than released improved varieties (76.9%).

Comparing awareness of released and unreleased rice varieties across genders, the study established that male farmers are more aware (81.8%) of released varieties than female farmers (72.4%). In comparison, female farmers are more aware of unreleased improved rice varieties (85.6%) than male farmers (81.6%). Overall, 34.8% of rice farmers recycle improved seeds from the previous season, and 63.8% replace the recycled seeds after two cropping seasons on average. Own-saved seeds and local cereals markets are the main sources of rice seed. To a small extent, farmers are accessing rice seeds from government and NGO projects, e.g., the Southwest Cooperation and Korea-Africa Food & Agriculture Cooperation Initiative (KAFACI) project under the KOPIA projects are supplying WDR-73, KAF-172-67 and KAF-304-287 foundation seed to local rice multipliers for free, and the Pride project under JICA is promoting NARO Rice 1. Rice farmers are achieving productivity levels between 1.9Mt/Ha and 2.9Mt/Ha depending on the variety planted and the cropping season, representing a yield gap of 3.1Mt/Ha to 2.1Mt/Ha compared to the national potential yield of 5Mt/Ha.

About 14 improved bean varieties are available to farmers in the Butaleja region; the most common varieties are the Nabe 15, Nabe 18, K132 (CAL96), and NAADS. Most farmers are aware of improved bean varieties; 89.8% are aware of at least one improved bean variety. Although male farmers are more aware of improved

bean varieties than female farmers, more female farmers are planting improved bean varieties than male farmers. Overall, 61% - 67% of farmers had grown at least one improved bean variety between the October 2022 and June 2023 cropping seasons. Like rice and own-saved seeds and local markets are the main source of bean seeds. With limited use of certified bean seeds, farmers attain a yield level of 111 kg/Ha to 244 kg/Ha compared to a potential yield of about 1,976 kg/Ha to 2,965 kg/Ha, depending on the variety. This represents a yield gap of about 2.7/ha on bean production. Farmers are attaining the highest yield from the Nabe 15 variety (244Kgs/Ha) and the lowest yield level from NARO Bean2 (124Kgs/Ha).

Uniformity in germination, seed size and shape, affordability, demand in the local market, availability of the seeds in the market, yield level, aroma, resilience to adverse climate conditions, and maturity period are the main factors that facilitate the adoption of rice seeds among farmers. Because of limited working capital, female farmers use mixed seeds, which are often low-yielding, or exchange seeds with desired attributes amongst themselves. Access to improved rice seed is hindered by several factors, including a limited number of seed multipliers to meet the existing seed demand and the high cost of the foundation seed. On average, farmers achieve productivity levels between 1.9Mt/Ha and 2.9Mt/Ha depending on the variety planted and the cropping season, as presented in Table 16. This represents a yield gap of 3.1Mt/Ha to 2.1Mt/Ha compared to the national potential yield of 5Mt/ha. It was noted that the seed multiplication business is not attractive enough to the youthful farmers who prioritize enterprises with daily cash flow or mechanized activities. Youths prefer quick income-generating ventures like bodabodas (motorcycle taxis) and are impatient to engage in seed multiplication as the gains take long, and are not guaranteed. For common beans, the availability of the seed in the market, affordability of the seeds, and physiological and sensory attributes are the most critical drivers of adopting improved bean seeds. Common bean is perceived as a crop grown mainly by women, and men don't help women access the appropriate bean seeds. Common bean seed multiplication is constrained by limited access to foundation seed from NARO, the high cost of the foundation seed, frequent droughts and flooding, and limited demand for clean, improved seeds among farmers.

Driver to adoption	Female	Male	Youth	Non-Youth	overall
Availability of the seeds in the market	90.3%	83%	86.8%	88.4%	87.6%
Affordability of the seed	84.5%	85%	83.6%	86.0%	84.8%
Good and uniform germination rate,	82.0%	84%	85.5%	79.9%	82.7%
Good taste, smell, and colour	82.0%	82%	85.5%	78.7%	82.0%
Take shorter to mature	81.1%	83%	84.9%	78.7%	81.7%
Good size and shape	79.6%	85%	84.3%	78.7%	81.4%
Good quality of the bean	81.1%	79%	81.1%	79.9%	80.5%
High yields	81.6%	75%	81.1%	77.4%	79.3%
Access credit facilities to buy seeds	77.7%	79%	80.5%	75.6%	78.0%
Preferred by the local market	78.6%	77%	78.6%	77.4%	78.0%
Proximity of the seed market	78.6%	74%	79.9%	73.8%	76.8%
Resilient to adverse climatic conditions	76.2%	74%	78.6%	72.6%	75.5%
Land size available	77.2%	67%	79.9%	67.1%	73.4%
Lesser post-harvest losses	70.4%	77%	71.1%	74.4%	72.8%
Resistant to crop pests and diseases	68.0%	68%	69.8%	65.9%	67.8%
Having information about new seeds	64.1%	66%	66.0%	63.4%	64.7%
Adequate knowledge about the improved seed	63.6%	67%	67.3%	62.2%	64.7%
Less labour intensive	62.6%	68%	69.2%	59.8%	64.4%
Cultural norms about the use of improved seeds	43.7%	32%	44.7%	34.1%	39.3%

Table 1: Drivers of adoption of improved bean seeds

IV. RECOMMENDATIONS

Based on the study findings, the following recommendations are proposed for scaling equitable access to improved rice and common bean seeds:

Behaviour change and communication for changes knowledge, attitudes, practices on quality seeds among the women and youth and other smallholder farmers.

- Developing a social and behaviour change campaign, messages, and materials (audio and print) tailored to address specific needs of the smallholder farmers.
- Use mass media and Interpersonal channels such as radio, farmer groups, and community leaders to disseminate information.
- Mobilize farmers by partnering with existing community organizations and agricultural extension services to identify and engage farmers, particularly women, in forming producer groups and facilitate group meetings to discuss seed-related challenges and opportunities.
- Conduct community engagement and social mobilization of institutions, farmer cooperatives to raise awareness and for wider participation and ownership.
- Establish Demonstration Plots by collaborating with research institutions and seed companies to establish demonstration plots highlighting high-yielding varieties suited to local conditions. And organize field visits for farmers and producer groups to observe and learn about improved seeds firsthand.

Capacity building for seed producers and seed entrepreneurs

- Train seed producers on improved seed production techniques and quality control measures.
- Facilitate the establishment of farmer-led seed enterprises for local seed production and distribution.
- Organize training for farmers on improved agronomic practices, post-harvest handling, and marketing strategies.

Forge strategic partnerships and linkages with relevant stakeholders for market access and reduced costs

- Implement an out-grower model with a seed-loan system to make improved seeds more affordable for farmers.
- Partner with existing farmer groups or agricultural cooperatives for bulk seed procurement and distribution.
- Advocate for government policies that support seed subsidies and tax breaks for seed producers and distributors.
- Establish youth and women quality centres to enhance access to quality and quantity seeds and affordability.

Advocacy for policy interventions that strengthen commitment to improved quality seed access and utilization.

- Design and advocate for policies that incentivize off-takers to adopt quality standards and strengthen enforcement mechanisms.
- Collaborate with government agencies to improve the seed regulatory framework and ensure quality control throughout the seed value chain.
- Lobby for increased public investment in research and development of improved varieties and seed system infrastructure.

> “Access to improved rice seed is hindered by several factors, including a limited number of seed multipliers to meet the existing seed demand and the high cost of the foundation seed.



Figure 1: Research assistant conducting a KII with a community leader at Nambale Parish

V. INSIGHTS ON THE SEED DELIVERY MODEL

A meeting was organized with NARO breeders and certified seed multiplier (Namunasa Stream Rice Farmers Cooperative for more insights into the seed system in Uganda and to develop a Quality Seed Delivery Model. A gross margin analysis for the rice and bean value chain was also developed while considering planting home-saved seed, QDS, and foundation seed. This will be shared in the next update.

Gaps in the Quality Seed Delivery Model:

- Non-licensed seed multipliers in Butaleja get foundation seed, and NARO breeders stated that they only offer foundation seed to qualified and licensed multipliers. These groups recycle QDS and sell it to farmers, thus leading to low returns.
- It is emerging that it is sometimes difficult to determine where the foundation seed was purchased from, thus leading to stalling of the seed multiplication process. National Seed Certification Service under the Ministry of Agriculture regulates seed multipliers so if any multiplier does not show a receipt of foundation seed purchase from NARO breeders, then you cannot be allowed to produce QDS.
- Sometimes, there is lack of, or inadequate supervision of the seed multiplication process, which can compromise seed quality.
- Foundation seed is delivered, and varieties are mixed up, but this is not frequent.
- Some groups sell home-saved seed to farmers claiming to have sold QDS, thus leading to low returns.

VI. YOUTH AND WOMEN QUALITY CENTRES

One of the project's objectives is to increase youth and women's participation in seed enterprises through strengthening the formal and informal seed systems. To achieve this, at least 30 women and youth will be recruited and engaged for awareness purposes and supported to establish seed production and marketing enterprises. During this reporting period, the following has been achieved:

1. Identification and selection of Youth and Women Quality Centres (YWQCs)

YWQCs will be the main source of improved seeds to farmers. Through improved seed demand consolidation

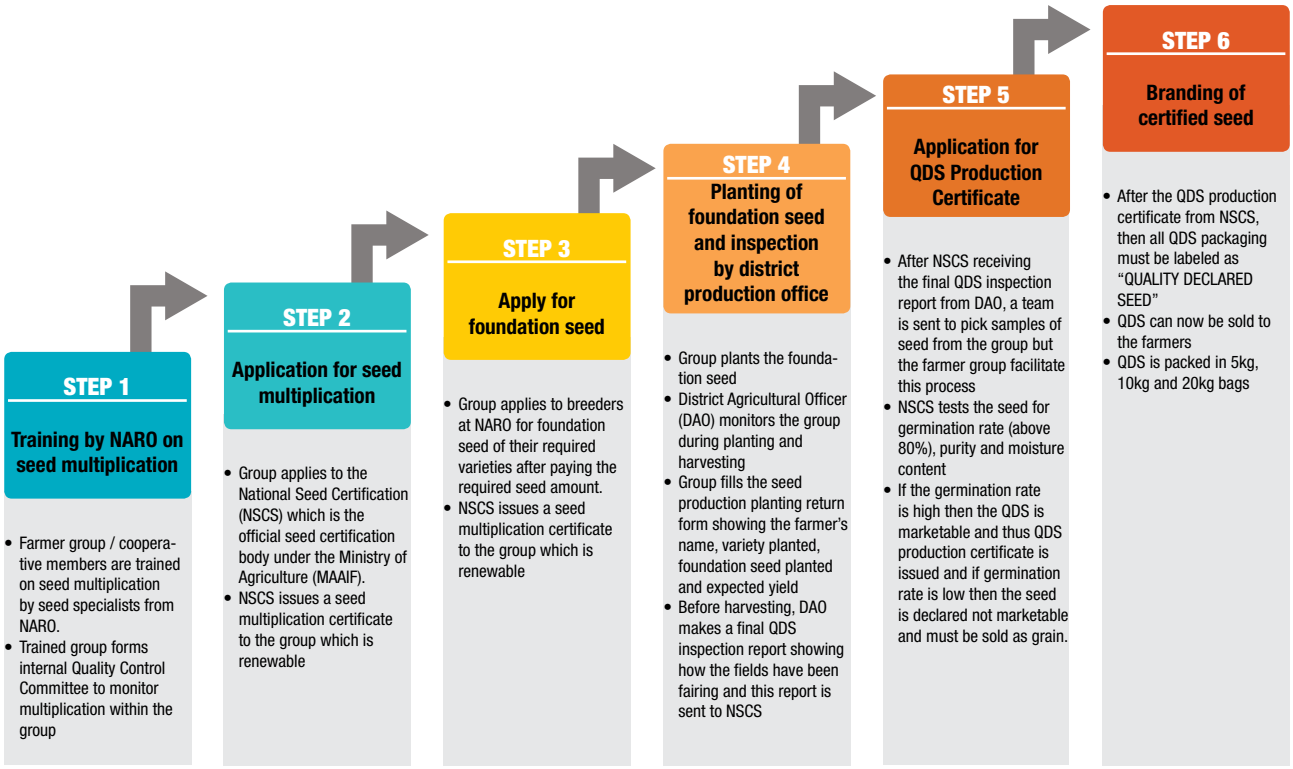


Figure 2: Seed delivery model

at the centres, there will be reduced transaction cost both for the seed producers/suppliers and farmers. The centres will also be spaces for information and knowledge sharingFour YWQCs have been identified: one in Naweyo (bean-growing region) and three in Mazimasa (rice-growing area). The structures were availed by the leaderships of various cooperatives and farmer associations, namely Namunasa Stream Rice Farmers Cooperative, Wapala Rice Farmers Association, Bunyole East Rice Growers Cooperative, and Doho Rice Farmers' Cooperative. These centres aim to improve access to seeds, input technologies, extension support and demonstrations. There are currently no bean farmers cooperatives in the region.

The YWQCs will address the challenges of limited access to quality seeds, insufficient knowledge of business opportunities and linkages, limited information and extension services, and affordability.



Figure 3: Namunsa stream rice farmers coop identified as one YWQC

2. Selection of youth and women champions

All the targeted 30 champions (16 females and 14 males) have been identified across the project area and will soon be activated and linked to Youth and Women Quality Centres (YWQCs). To qualify as a youth champion, one must be 18-36 years, a farmer engaged in the enterprises the project is promoting, posses basic GAP skills, and reside within the villages where the project is being implemented. The champions will be trained and serve as peer influencers and trainers of their groups. They will support increasing access to information on improved varieties and awareness of beans and rice as an alternative source of nutrition for consumers. They will also be trained as seed enterprises to strengthen the informal seed systems.



Figure 4: Group meeting in Lubembe Parish and Mazimasa

> YWQCs will be the main source of improved seeds to farmers. Through improved seed demand consolidation at the centres, there will be reduced transaction cost both for the seed producers/suppliers and farmers. The centres will also be spaces for information and knowledge sharingFour YWQCs have been identified: one in Naweyo (bean-growing region) and three in Mazimasa (rice-growing area).

3. Activation of farmer groups

Three farmer groups with a membership of 28, 18 and 32 (totalling 78) were activated (engaging and empowering farmers to participate actively in agricultural activities, initiatives, or programs) during this reporting period jointly with the District Production Officer, Butaleja. Some of the issues addressed in the meeting were governance structures (mode of operation), seed and agro-input access, and financial literacy within Lubembe Parish in Mazimasa Sub-County. There are no commercial banks in Butaleja, and farmers mostly rely on SACCOs.

The Cooperative leaders were also engaged, including the Japan International Cooperation Agency (JICA) and their associate Organisation, Courie Mate, which offers fertilizer to farmers on credit. Discussions were held with the Managing Director of CourieMate, Mr. Hiroshi Matsumoto, on how to provide and stock the YWQCs with the fertilizer since they offer a credit payment period of 6 months and are willing to partner with CBCC to equip the YWQCs.

VII. STAKEHOLDERS WORKSHOP

A 2-day stakeholders' workshop was held in Mbale, Uganda, from 20th to 21st March 2023.

The workshop objectives were to;

- Disseminate the baseline findings and discuss key barriers and desired behaviour, solutions, and Implications on the strategy.
- Use the Human-Centered Design process, develop empathy maps for the target audience, and agree on behaviour prioritization.
- Co-design a strategy for equitable access to climate-resilient, market-preferred, and nutritious varieties of beans and rice in Butaleja
- Co-Create key messages for promoting equitable access to climate-resilient, market-preferred, and nutritious varieties of beans and rice

The workshop participants comprised people from the National level, District, Sub-District, Parishes, and partners in various nodes of the rice and bean value chains. The table below gives details of the participants;

National	Ministry of Agriculture, Animal Industry and Fisheries
District	1. District Production and Marketing Officer 2. District Agricultural Officer 3. County Agricultural Officer-Mazimasa S/C 4. County Agricultural Officer-Naweyo 5. District Chairperson 6. District Secretary for Gender
Partners	1. IRRI 2. CBCC 3. NARO (breeders) 4. Kilimo Trust 5. South South Corporation 6. Seed Multipliers 7. Aggregators 8. Off takers 9. Processors 10. Agro-input suppliers 11. Nutrition education 12. Farmer group networks (Youth and Women) 13. Microfinance institutions
	1. Youth Champions / Farmers:

Table 2: Workshop participants

II. ANNEXES

Annex 1: Deliverables Schedule

Details of Activities	Output	Due Date
1.1 Diagnosis and understanding the behaviour, situation, and context through research. **1.2** Dissemination of findings to different stakeholders	Survey Report	10 December 2023
2.1 Design of behaviour change strategy and interventions. **2.2** Develop behaviour change messages, materials, and tools **2.3** Produce, print, and disseminate messages using multimedia channels	Print materials – Posters and booklets, Radio messages in local language developed and disseminated, reaching 100,000 farmers	22 March 2024
3.1 Mapping and identification of appropriate locations and centres **3.2** Operationalize the centres through the capacity strengthening of various actors. **3.3** Identify and activate youth and women champions.	4 youth and women centres established	30 March 2024
4.1 Mapping and identification of critical beans' stakeholders **4.2** Conduct a stakeholder workshop involving key players as well as representatives of the unreached smallholder farmers. **4.3** Develop a mechanism/platform for information sharing to facilitate linkages and increase access to improved seeds	A platform for information sharing established	15 June 2024
5.1 Train the identified community champions (youth and women) on basic skills of the beans value chain **5.2** Organize community sensitization workshops in the identified quality centres, collaborating with identified community champions. **5.3** Provide about 15 modules to be used and shared with women, youth, and farmers, which will build their capacity on radio and through devices such as Talking Books	Women and youth seed entrepreneurs adopting better seed production and business practices	20 August 2024
6.1 An evaluation at the end will be done to establish the effectiveness of the interventions and document lessons learnt and best practices. **6.2** Documentation of the various processes will be done	Progress assessment report Documentation report	01 November 2024
Submission of Financial Report		**30 November 2024**

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