

# ISSD Uganda



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## Promoting quality seed uptake in Uganda

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### Background

The ISSD project baseline conducted in 2014 indicated that 11% of farmers obtained seed from the formal seed systems, with most of this being seed of maize and exotic vegetables. The project identified four major underlying causes of marginal quality seed use, including i) lack of awareness on availability of quality seed; ii) real or perceived lack of quality seed available at convenient locations; iii) lack of knowledge

on the economic benefits of investing in quality seed; and iv) lack of cash to purchase quality seed.

Alongside its efforts to increase the availability of quality seed in farming communities through the Quality Declared Seed (QDS) system, the ISSD Plus project also set out to stimulate increased uptake of both certified seed and QDS within rural farming communities. This brief gives an account of the project's efforts in this regard.

### Interventions to stimulate quality seed use

The quality seed use challenge was addressed by ensuring that i) smallholder farmers can access quality seed at convenient locations; ii) farmers are made aware of the economic benefits of using quality seed; and iii) effective demand for quality seed is raised. Figure 1 provides an overview of project interventions to increase quality seed use.

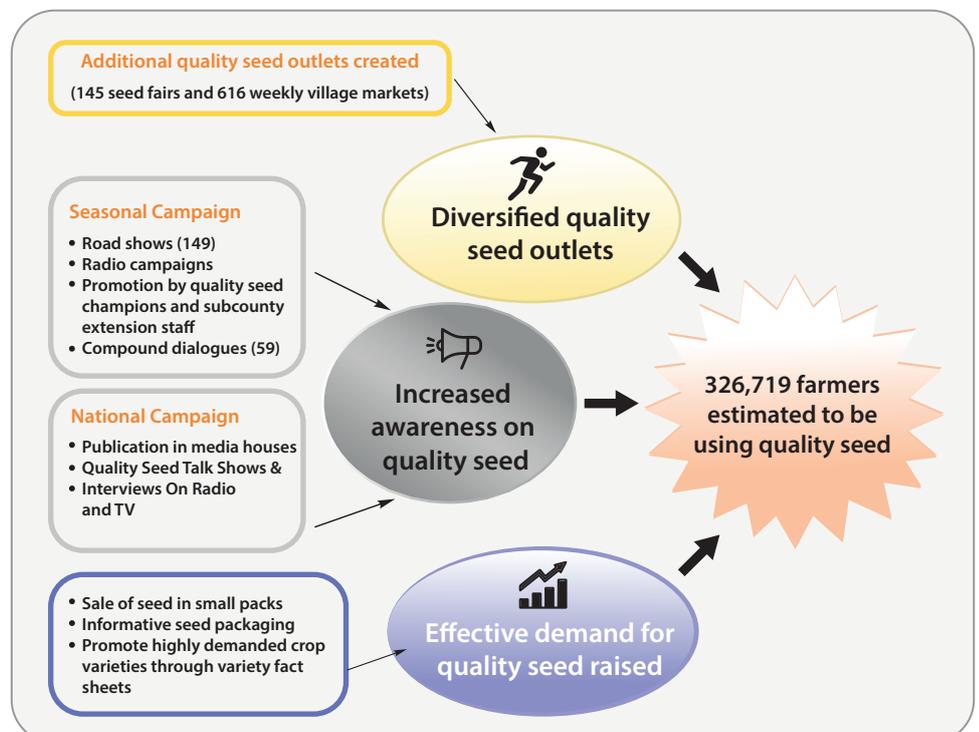


Figure 1: Overview of interventions to increase quality seed use

## Seasonal seed fairs

The project facilitated local seed business (LSB) groups and seed companies to market quality seed during these seed fairs. These events were always held during established market days within farmer communities. The seed fairs were scheduled at the start of the rainy season, when most farmers make the decision to purchase seed for planting.



Figure 2: Farmer at a seed fair at Layibi Market, Layibi Division, Gulu District

### Focus on creating awareness

- a- What quality seed is and what it is not
- b- Benefits of using quality seed (i.e. yield advantage that translates to more food and income)
- c- Identifying quality seed on the market (blue and green label)
- d- Available varieties and their attributes
- e- Where to get quality seed
- f- Good agronomic practices

During the seed fairs, sub-county agricultural officers and ISSD staff also trained communities on the economic benefits of using quality seed and how to access it. The project also distributed various translated learning materials including 'variety fact sheets' that provided publicity for the improved crop varieties to farmers. This gave farmers information on the numerous variety options to choose from for each crop of interest. By the final year of the project, some LSBs were self-driven enough to organise these seed fairs with minimal project support.

Over the four-year period, the project conducted a total of 145 seed fairs in the six project zones (East, North, Southwest (Ankole),

West Nile, Southwestern Highlands (Kigezi) and Western Highlands (Rwenzori). These events are estimated to have reached approximately 64,000 people who received the quality seed use messages and/or bought quality seed.

## Weekly village markets

The project also supported LSB groups to utilise weekly village market seed outlets to sell quality seed and train farmers on its economic benefits on a weekly basis. Weekly village markets are considerably less costly and easier to organise than seed fairs because transport and location set-up costs are negligible.



Figure 3: A weekly village market organised by the Lalyeng Farmers Group in Gulu District (March 2021)

LSBs organised more than 616 weekly village market seed outlets over the project period and they have continued utilising this avenue to reach out to their surrounding communities with the marketing skills gained from group trainings.

## Creating awareness of the economic benefits of using quality seed

This was achieved through national and regional campaigns on quality seed use while utilising a number of strategies aimed at mindset change.

## 1. Road shows

Alongside each seed fair, a road show was organised to attract more farmers to the seed markets. A road show is an entertaining and educational way to reach a large group of people. Thanks to the entertainment factor, the road shows attracted an impressive crowd, which the project team took advantage of when disseminating their quality seed-use message. Since the seed fairs were held in the same location each time, interested farmers could visit the seed stalls to get more details and to buy quality seed from the seed companies, agro-dealers and LSB farmers. The project conducted a total of 149 road show events in the project areas of operation.



Figure 4: A road show in Rwenzori zone

## 2. Field days on demonstrations and exhibitions

As part of their QDS product promotion strategy, LSBs seasonally set up demonstration sites on which they had plots planted with QDS alongside those planted with farmer-saved seed. The groups located these demos strategically for easy observation and admiration by farmers in the communities. At appropriate crop growth stages, the LSBs held field days and invited farmers to compare the QDS seed and the farmer-saved seed. During these events, farmers had the chance to make inquiries and learn more about good agronomic practices when using QDS. Through these activities, LSBs exposed communities to varieties released by NARO, some of which had positive climate SMART and nutritional attributes (e.g. NAROBAN 1, NAROBAN 2 and NABE 16 bean varieties, as identified by farmers in the Rwenzori zone). On average, each field day reached approximately 100 farmers within the community.



Figure 5: Field day at Agik Dak rice growers in the Amolatar District

The LSBs also showcased QDS during nationally celebrated events, exhibitions and expos that were regularly organised by other development organisations (the World Food Day organised zonally by NARO, the Nile National Agricultural Show organised by the Uganda National Farmers' Federation and the Harvest Money Expo organised by New Vision Company LTD). These events gave LSBs the opportunity to expose farmers, private and public sector players to the QDS product.

## Organoleptic taste events

During the seed fair events, some LSB farmers also promoted their improved varieties through organoleptic events. Because most smallholder farmers produce for both sale and household consumption, their choice of the variety to plant is also determined by the flavour and cooking attributes, which requires a specific strategy of awareness creation to increase the adoption of a variety. Women take particular interest in such attributes compared to men, whose main interest is production for the market.



**Figure 6: Organoleptic taste activity to select preferred bean varieties in West Nile**

In this regard, the project conducted ‘Organoleptic events’ which involved cooking different varieties of a specific crop being promoted and allowing participants to taste them and provide feedback on specific attributes of personal interest to them. This feedback helped the LSBs determine which varieties they needed to concentrate on for particular communities. In the process, participants also gained insight into the other benefits of adopting specific varieties and how to access them.

### 3. Door-to-door quality seed use promotion

This involved engaging of sub-county agricultural officers (AOs) and community champions to raise awareness through door-to-door promotion. The AOs were targeted because their work schedules involved close daily interaction with many households, which offered an opportunity for them to share information about quality seed use. Community champions on the other hand were LSB leaders or local council leaders who also interacted regularly with farmers in their communities. A total of 149 AOs and 50 community champions were trained to promote quality seed use.

### 4. Compound dialogues

With the onset of the COVID-19 pandemic in 2020, the project modified its awareness creation strategies by introducing ‘compound dialogues’ to share information about quality seed use. These dialogues involved fewer farmers (20), making them more impactful for mindset change than mass events like road shows.

A total of 115 dialogues were conducted in partnership with the Nutrition and Income Generation Initiative (NIGI) project for 2,320 farmers, of which 43% were women. Subcounty AOs and LSB farmers spearheaded these compound dialogues.



**Figure 7: A compound dialogue conducted in Kashasha, Rubanda District (2020)**

### 5. Mass media awareness campaign through print media, radio and television

Mass media campaigns were widely used to expose high proportions of large populations to quality seed messages through the routine use of existing media channels, including television, radio and newspapers. Through mass quality seed use promotion on 11 local radio stations in the six zones, the project reached out to a unique audience (percentage of individuals exposed to an advert expressed as an absolute number) of 11,170,254 people (advertising review by Reelforge Uganda LTD). This was conducted through talk shows, radio ads and presenter mentions played during the planting period.

During the talk shows, radio stations gave LSB farmers, district agricultural officers (DAOs) and subcounty AOs a platform to enlighten listeners about quality seed use. Listeners were also given the opportunity to ask questions on the subject and they received contact information to discuss the matter further with the seed producers. Talk shows were also organised on selected local and national television stations in Uganda to promote quality seed use to additional viewer segments that play critical decision-making roles in the agricultural sector. Various LSB and quality seed use success stories were also disseminated through local and national newspapers to promote the importance of quality seed use.



Figure 8: An ad promoting quality seed use in the New Vision newspaper (2019)

Through these promotional initiatives in the four-year period, the project empowered farming communities with knowledge to make informed decisions on what kind of seed to plant.

### Raising effective demand for quality seed

Attention was not only given to raising interest among farmers but also encouraging them to spend money buying the various quality seed products. This was done through the strategies outlined below;

#### Selling seeds in small packs

During the seed fairs, the LSBs were given packaging material to enable them sell QDS in a wide range of package sizes, most of which being the 1 and 2 kg packs. The small packs were largely used to encourage non-adopters and cash-constrained individuals to buy and try QDS, which raises effective demand for quality seed. Those that had sufficient funds or already had confidence in the QDS product and who wanted to plant big could also make their purchase in larger seed pack sizes for greater convenience.



#### Supporting market demand-driven research to increase the availability of preferred varieties

Through an innovation grant, the project engaged NARO under its groundnut breeding programme to identify, clean and maintain the Red Beauty groundnut variety. This is one of the old groundnut varieties that NARO no longer maintained because of its susceptibility to the groundnut rosette disease. Red Beauty had since been replaced by the more disease-resistant Serenut varieties. Despite these production-related challenges, local consumers showed a high preference for this variety because of its taste attributes. Companies involved in groundnut value addition, such as RECO Industries LTD, which manufactures therapeutic foods, specifically preferred this variety because of its low aflatoxin infestation levels compared to other varieties. The response to this market demand was to support the positive selection of EGS for true Red Beauty.

In total, 0.4 MT of starter material was realised in this effort and is being further multiplied by the National Semi Arid Resources Research Institute (NaSARRI). Plans for ex situ storage are also underway to guarantee access to this variety over time.



**Figure 9: Typical Red Beauty pods have on average 3-5 seeds per pod**

### Impact brought about by ISSD Plus quality seed use promotion interventions

#### Increased utilisation of quality seed by farming communities

An assessment was conducted in September 2020 to check the extent of adoption of QDS by farmers within the project zones of operation (Access to Seed Study). This study also explored farmers' satisfaction with the QDS product based on the four elements of quality seed adoption (availability, user access, product quality, and product affordability). The assessment provided insights into the accomplishments reached and revealed that a significant 35% of the farmers in the project areas had adopted QDS by 2020.

#### More food and critical nutrients were made available to communities because of increased quality seed use

Based on the QDS volumes bought by farmers over the four years (2017-2020), the project estimated that 326,719 farmers planted 205,416 acres of land with quality seed, resulting in an additional agricultural production of 143,663 MT of food. The project further estimated that this additional agricultural production led to an additional UGX 178 bn earned within the sector. Since part of the QDS that farmers bought included nutrient-rich varieties such as high-iron beans and vitamin A-rich sweet potatoes, the project estimates that farmers produced 11,014 MT and 5,498 MT of nutrient-rich beans and sweet potatoes respectively. This is a significant contribution to better nutrition, especially for the sick, children and pregnant women.

#### Quality Declared Seed provided more variety options for open pollinated varieties (OPVs) and self-pollinated crops, contributing to variety dissemination

Results from the adoption study showed that the majority of farmers (64.5%) believed that LSBs gave them more variety options to choose from for OPV crops, thereby indicating greater dissemination of NARO varieties bred for various productivity and nutritional attributes.



**Figure 10: An assortment of the most farmer-preferred bean seed varieties**

#### More quality seed was made available to farmers through the LSB methodology but the volumes are still largely inadequate

In line with the increasing number of LSBs, the supply of QDS generally increased between 2017 and 2020. To determine the extent to which this QDS was being utilised by farmers, the project also analysed its market share within the project zones. The results in Table 1 show the quantity of seed planted by the sampled farmers in 2019 and the market share of the QDS for the respective crops. Overall, the market share of QDS by 2019 was still low (10%) and home-saved seed and grain from the market accounted for a larger share of the total seed planted.

Table 1: QDS market share by 2019

Crop	Season A 2019			Season B 2019		
	Quantity of seed planted (kg)	Quantity of QDS for this seed (kg)	QDS Market share (%)	Quantity planted (kg)	Quantity of QDS for this seed (kg)	Market share (%)
All crops*	156,377	15,744	10	115,434	7,424	9
Beans	19,718	1,279	6.4	13,975	597	6.8
Potatoes	120,066	12,660	10.5	91,981	5,890	6.4
Rice	5,974	560	9.3	5,197	495	9.5
Soybeans	5,210	587	11.2	888	86	9.7
Sesame	683	57	8.4	1,968	157	7.9
Groundnuts	4,726	601	12.7	1,425	199	13.9
Cassava (bags)	2,569	408	15.8	385	19	4.9

\*Note: 'All crops' excludes cassava, which is not measured in kg

Note: Most LSBs are able to sell all of their QDS during planting

Source: Access to seed household survey report

It is important to note that most farmers replant the harvest of quality seed at least twice before buying fresh seed. Breeders indicate that this is permitted for self-pollinated crops, since seed remains genetically viable for three planting seasons before fresh quality seed will be needed – especially given minimal disease prevalence and good weather conditions. Farmers with any relation to those using QDS unknowingly use QDS when adopters share their harvests from QDS after they have been replanted twice. Considering that there is a potential multiplier effect in farmers using QDS, it is safe to assume that the QDS market share is larger than the 10% reported by farmers.

### Fewer farmers use the informal seed sources when they started using QDS

Farmers in communities with LSB operations benefitted from easy access to this quality seed source during the planting season. Although informal seed sources still take a lead for OPV crops in farming communities, the project noted changes in the proportion of farmers utilising QDS seed sources as of 2020 (figure 10.). A comparison of the seed source status for OPV crops in 2016 and 2020 indicated that there was a 10% increase in farmers that access seed from LSBs and a drop in those that access seed from informal seed sources (food markets, home saved seed, friends, relatives) but also from NGOs and governments. These changes can be attributed to the presence of LSBs within the communities and the diversification of markets for quality seed through the already mentioned field days, exhibitions, seed fairs and weekly village markets.

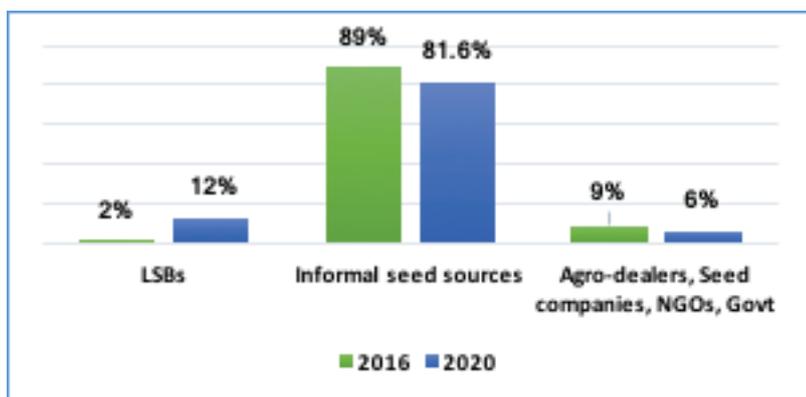


Figure 11: Changes in OPV seed sources (source: Access to seed surveys)

For the various QDS crops grown, only 34.9% of the farmers reported having ready access to QDS. As expected, QDS was found to be more readily accessible to farmers in locations with project interventions (42.9%) than locations without interventions (24.9%). This difference in accessibility is attributed to LSB operations as affirmed by the QDS accessibility index, which is significantly higher for farmers in locations with LSBs than those in locations without LSBs by 14.5 to 14.8%. The 250 LSB groups in active seed production are operating in 63 districts in Uganda, which implies an average of four groups per district. Considering that more than 80% of Uganda's population depends on farming, the current number of seed producing farmer groups is still low.

### Willingness to pay for quality seed increased in the areas of project operation

The project also investigated affordability, which is a major factor that influences the adoption of quality seed. The study indicated that 54.3% of farmers considered QDS to be too expensive for them to afford. As a result, most of them opted for home-saved seed or cheaper grain (used as seed) from local markets. The project also looked at what farmers were willing to pay for QDS and the minimum prices seed producers were willing to supply the QDS for specific crops. There is an overall affordability gap for QDS ranging from 900 to 1,600 UGX per kilogram for seeded crops and 10,000 UGX for cassava planting stems. However, for all crops apart from soybeans and groundnuts, the project noted that farmers in locations with project activities had a relatively higher average willingness to pay for QDS compared to those in locations without project activities (Table 2). This difference was attributed to efforts towards awareness creation in the beneficiary locations.

**Table 2: Average prices seed producers and farmers are willing to transact for QDS**

Crop	Minimum supply price (UGX)	Average price farmers are willing to pay/kg/bag (cassava) (UGX)			Affordability gap (for pooled sample) (UGX)	t- value
		Pooled sample	Beneficiaries	Control		
Beans	4,000	2,410 (736)	2,584 (797)	2,244 (632)	1,600	-46.3***
Potato	2,500	1,512 (434)	1,524 (507)	1,504 (385)	1,000	10.39***
Rice	2,500	1,659 (475)	1,916 (353)	1,328 (408)	900	9.99***
Soybean	3,500	2,367 (894)	2,288 (550)	2,456 (1,176)	1,200	8.89***
Sesame	4,500	3,952 (3,350)	4,362 (3,760)	3,658 (3,025)	1,000	1.60**
Ground nuts	4,000	3,121 (747)	2,961 (733)	3,245 (743)	1,000	10.37***
Cassava	24,000	14,522 (5,372)	16,892 (4,614)	12,776 (5,244)	10,000	20.26***

*Note: willingness to pay for the pooled sample was rounded off to calculate the affordability gap (the difference between minimum supply price and willingness to pay for pooled sample)*

### Sustainability of the quality seed uptake interventions

The project considers LSBs to be one of the most important sustainability strategies for quality seed promotion because these activities are in line with the QDS marketing strategies aimed at increasing seasonal seed sales volumes within an LSB. The project therefore endeavoured to empower LSBs such that they have the ability to continue organising affordable strategies like weekly village markets, field days, organoleptic taste events, compound dialogues and door-to-door quality seed promotion. For events that would attract the attention of the masses, such as radio campaigns and seed fairs, LSBs were encouraged to partner with local district governments and local development organisations in order to successfully implement them.

## Lessons learned

### The learning process that triggers uptake of quality seed is still incomplete for most farmers

Other than the lack of money to buy seed at planting time, which many farmers point out as the major cause of their inability to buy quality seed, the project also discovered that the relative price of QDS (in relation to grain price) also determines affordability (Access to seed study, 2020). Farmers argue that they cannot buy seed at a higher price, yet they sell the produce harvested (grain) at a lower price. This is an indication that many farmers have not properly understood that by using quality seed vis-à-vis home-saved seed, they stand to benefit from higher yields per unit area, although the unit product price is lower than that of seed. This clearly indicates that despite the various quality seed promotion interventions conducted by the project, the learning process on the benefits of using quality seed is usually incomplete as it is more protracted than assumed. This calls for continued rigorous and innovative quality seed promotion strategies that will focus on educating farmers on the ultimate benefits of using quality seed over a longer period.

### The absence of structured commodity markets influences a farmer's decision to use quality seed

During interactions with farmers at the various promotion events carried out over the four-year period, the project also discovered that some farmers choose not to use quality seed because the market doesn't distinguish prices for products from quality seed and products from home-saved seed. The farmers indicated that these market conditions demoralise them and push them towards a cheaper seed option that will yield an acceptable harvest. Looking at most OPV crops, it is true that most product markets in Uganda are not structured by variety in terms of value chain linkage to final off-takers. The situation, however, improved over the past few years for crops like soybeans whose value chains have grown because vegetable oil companies demand that farmers produce varieties with specific oil content levels. For other crops, this calls for a more market system-oriented approach by both governments and development partners to structure product markets which will also stimulate quality seed use.

## Colophon

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