

Uganda Country Report 2025

The African Seed Access Index

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TASAI
The African Seed Access Index

In partnership with



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Sustainably Growing
Africa's Food Systems

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LIST OF ACRONYMS

AATF	African Agricultural Technology Foundation	NAADS	National Agricultural Advisory Services
AFSTA	African Seed Trade Association	NaCRRI	National Crops Resources Research Institute
CGIAR	Consultative Group on International Agricultural Research	NARO	National Agricultural Research Organization
CIMMYT	International Maize and Wheat Improvement Center	NaSARRI	National Semi-Arid Resources Research Institute
COMESA	Common Market for Eastern and Southern Africa	NDP	National Development Plan
CR4	Four-firm concentration ratio	NSCS	National Seed Certification Service
DAO	District Agricultural Officer	NVRC	National Variety Release Committee
DAESM	Department of Agricultural Extension and Skills Management	OPV	Open Pollinated Variety
DCIC	Directorate of Crop Inspection and Certification	OWC	Operation Wealth Creation
DPO	District Production Officer	PQIS	Phytosanitary and Quarantine Inspection Service
DUS	Distinctiveness, Uniformity and Stability	PVP	Plant Variety Protection
FAO	Food and Agriculture Organization of the United Nations	PSC	Public Service Commission
HHI	Herfindahl-Hirschman Index	PVOC	Pre-Verification Certificate of Conformity
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics	QDS	Quality Declared Seed
IITA	International Institute of Tropical Agriculture	STTS	Seed Tracking and Traceability System
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries	TASAI	The African Seed Access Index
MaRCCI	Makerere University Regional Centre for Crop Improvement	UNADA	Uganda National Agro-Input Dealers Association
		USTA	Uganda Seed Trade Association
		VCU	Value for Cultivation and Use



INTRODUCTION

The increased use of productivity-enhancing technologies, such as mechanization, irrigation, fertilizer, and improved seed,¹ is urgent and critical to meet the increasing demand for food, feed and nutrition security in sub-Saharan Africa. For field crops, a competitive formal seed sector is key to ensuring the timely availability of high-quality seed of improved, appropriate varieties at affordable prices, especially for smallholder farmers. Improved seed is a vehicle for delivering resilient crop technologies to farmers, including higher yields, disease and pest resistance, climate change adaptation, reduced post-harvest losses, and improved nutrition. To facilitate the delivery of these benefits to the farmers, The African Seed Access Index (TASAI) conducts periodic seed industry assessments at the national level. The findings aim to encourage public policymakers and development agencies to create and maintain enabling environments that will accelerate the development of competitive formal seed systems to better serve smallholder farmers in Africa.

This report summarizes the key findings of the TASAI study conducted in Uganda in 2025 to appraise the structure and economic performance of the country's formal seed sector. The 2025 study marked the sixth such assessment since 2014. TASAI studies focus on the four cereal and legume crops important to a country's food, feed and nutritional security (the “four focus crops”). In Uganda, these crops are maize, bean, sorghum, and millet. Using the most recent data for area planted to cereals and legumes (Agricultural Household Survey of 2021/22), these four crops collectively account for 75% of the total area; by crop, the percentages are 39% for maize, 25% for bean, 7% for sorghum, and 4% for millet.

OVERVIEW OF UGANDA'S FORMAL SEED INDUSTRY

Like most other African countries, Uganda's seed industry consists of two systems: the informal and formal systems. While TASAI recognizes the presence and role of pluralistic seed systems, TASAI Country Reports focus only on the formal seed system due to the inherent difficulties and complexities of measuring – or finding existing data on – the informal system.

The informal system refers to a system where seed is produced, maintained, and distributed through informal networks. These activities “tend to be localized, decentralized and might revolve around local entrepreneurship, farmer-to-farmer exchange, seed banking, community-based seed production, or seed villages” (McGuire and Sperling, 2016). In many cases, farmers keep seed from the harvest and exchange it with neighbors, relatives, and through rural markets. Seed from this system is of variable varietal purity, and physical and sanitary quality.² Most smallholder farmers in Uganda operate in the informal system and use farmer-saved seed.

The formal system is a structured and regulated value chain for the production of improved seed varieties. This process involves many seed-value chain actors and institutions, from research to the multiplication and bulking, processing, marketing and distribution of certified seeds. The different stages of improved seed production are regulated by governments based on approved regulations and standards. The sale of seed from this system is through limited distribution channels such as registered seed producers and agro-dealers. The estimated area planted to certified seed of the focus crops is 54% for maize, 4% for bean, 0.1% for millet, and 8% for sorghum³.

1 TASAI uses “improved seed” as the short form of “quality seed of improved varieties”.

2 See seed system definitions at <https://www.agrilinks.org/post/seed-system-definitions>

3 The estimate is computed using multiple variables including the volume of certified seed, volume of imported seed, (data from TASAI Uganda survey), area planted (data from Agricultural Household Survey of 2021/22 conducted by the Uganda Bureau of Statistics), recommended seeding rate, and estimated replacement rate for OPVs.





In 2018, Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) adopted Quality Declared Seed (QDS) as an intermediate seed class - anchored in the National Seed Policy to bridge the gap in seed quality and availability between the formal seed sector and the informal seed system. The policy defines QDS as seed produced by registered seed producers (individuals or groups of farmers) from basic seed that conforms to the minimum standards for variety purity and germination. The QDS is regulated under the Seed and Plant (Quality Declared Seed) Regulations of 2020. The QDS system provides a less rigorous and stringent alternative to full certification and is restricted to specific crops sold in the geographical areas where the seed is produced. The expectation is that, over time, QDS producers will build their capacity and transition into fully-fledged registered seed merchants⁴ or out-growers for more established seed companies. Similarly, the hope is that increased production of QDS improves access to affordable and quality seed under a decentralized seed system (MAAIF, 2018).

Uganda's formal seed sector is regulated by the Seed and Plant Act, 2007 (CAP 41) and operationalized by the 2017 Regulations, which define industry standards. The law established the National Seed Certification Service (NSCS), a unit of the Department of Crop Inspection and Certification (DCIC), in the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), to manage seed quality assurance and certification.

The National Agricultural Research Organization (NARO) is an agency of MAAIF, mandated by the National Agricultural Research Act of 2005 to cover all aspects of public-funded agricultural research in Uganda. As a public research organization, NARO is a key source of crop varieties. NARO implements its mandate through its constituent sixteen

public agricultural research institutes organized into two categories: the National Agricultural Research Institutes and the Zonal Agricultural Research and Development Institutes located in specific agro-ecological zones. The National Crops Resources Research Institute (NaCRRI) based at Namulonge and the National Semi-Arid Resources Research Institute (NaSARRI) based at Serere are responsible for maize and bean, and sorghum and millet research, respectively.

In addition to NARO, universities actively involved in crop breeding include Makerere University for soya bean and cowpea and Uganda Christian University for indigenous vegetables. Domestic research institutions also collaborate closely with the centers of the Consultative Group on International Agricultural Research (CGIAR) and other International Research Institutions in variety development, testing and release for varieties developed outside the country. In recent years, several private seed companies have demonstrated an interest in developing new crop varieties.

NARO Holdings Ltd., established as the business arm of NARO coordinates with relevant NARO institutes to produce and supply early generation seed of primarily NARO varieties to private seed companies and QDS producers. Certified seed is produced by seed companies who are registered and regulated by NSCS. The National Variety Release Committee (NVRC) oversees variety release and registration. NSCS serves as the secretariat of the NVRC.

The Uganda Seed Trade Association (USTA) is the umbrella platform for the private sector seed industry in the country. Agro-dealers are represented by two associations, Uganda Agro-Input Dealers Association (UNADA) and Crop Life Uganda. The latter mainly focuses on input dealers of crop protection products.

Table 1 lists the main entities in charge of Uganda's formal seed industry.

.....
⁴ The Seed and Plant Act (2006) defines a seed merchant as a person or an organization licensed to engage in the business of seed production, conditioning, and marketing. As the activities significantly overlap, both seed merchants and seed companies are referred to by the umbrella term of 'seed companies' in this report.

Table 1: Role of key players in Uganda's formal seed sector

ROLE	KEY PLAYERS
Research and variety development	National Agricultural Research Organization (NARO), Makerere University, Uganda Christian University, Consultative Group on International Agricultural Research (CGIAR), seed companies
Variety release and regulation	National Seed Certification Service (NSCS), National Variety Release Committee (NVRC)
Seed production and processing	Seed Companies, Private Seed Laboratories, QDS producers
Education, training, and extension	Seed companies, Uganda Seed Trade Association (USTA), Non-Governmental Organizations (NGOs), Department of Agricultural Extension and Skills Management (DAESM), MAAIF, NARO, Universities, NGOs (such as Sasakawa Africa Association)
Distribution and sales	Seed Companies, QDS producers, agro-dealers

METHODS

TASAI studies cover 22 indicators divided into five categories: **Research and Development**, **Industry Competitiveness**, **Seed Policy and Regulations**, **Institutional Support**, and **Service to Smallholder Farmers** (Table 2). Most TASAI studies rely primarily on performance data from the year before the study is conducted, as this is typically the most up-to-date information available. Accordingly, the data reported in this Country Report pertains primarily to 2024; however, whenever 2025 data are available, they are included in the report.

Table 2: TASAI Indicators

	Crop-specific	Impact on seed access ^a
A RESEARCH AND DEVELOPMENT		
A1 Adequacy of active breeders	Yes	+
A2 Number of varieties released	Yes	+
A3 Number of varieties with 'special' features	Yes	+
A4 Availability of basic seed	Yes	+
B INDUSTRY COMPETITIVENESS		
B1 Number of active seed companies/producers	Yes	+
B2 Quantity of seed produced and sold	Yes	+
B3 Number of varieties sold and dropped	Yes	+
B4 Average age of varieties sold	Yes	-
B5 Market concentration	Yes	-
B6 Market share of state-owned seed company	Yes	-
B7 Efficiency of seed import/export processes	Yes	+
C SEED POLICY AND REGULATIONS		
C1 Length and cost of variety release process	Yes	-
C2 Status and implementation of national seed policy framework	No	+/-
C3 Harmonization with regional regulations	No	+
C4 Adequacy of efforts to eradicate counterfeit seed	No	+
C5 Use of government subsidies	No	+/-
D INSTITUTIONAL SUPPORT		
D1 Performance of national seed association	No	+
D2 Adequacy of seed inspection services	No	+
E SERVICE TO SMALLHOLDER FARMERS		
E1 Availability of agricultural extension services for smallholder farmers	No	+
E2 Concentration of agro-dealer network	No	+
E3 Availability of seed in small packages	Yes	+
E4 Seed and grain price at planting time	Yes	-

The data includes both quantitative and qualitative measures; the latter comprise satisfaction ratings by industry stakeholders on a 0-100 scale, with the following brackets: 0-19.99% **extremely poor**, 20-39.99% **poor**, 40-59.99% **fair**, 60-79.99% **good**, and 80-100% **excellent**.



As this is the sixth TASAI country study of Uganda’s seed sector, the report also highlights noteworthy trends in selected indicators over time. In addition, since TASAI has conducted similar studies in 25 other African countries, this report also draws relevant cross-country comparisons.

Using TASAI survey tools, data collection has focused on three key seed industry players: seed companies, plant breeders, and government entities involved in the country’s seed sector. Of these, seed companies are the study’s primary source of information. For several indicators, quantitative data are supplemented with self-reported satisfaction ratings by industry stakeholders on a 0–100 scale, with the following ranges: 0-19.99% **extremely poor**, 20-39.99% **poor**, 40-59.99% **fair**, 60-79.99% **good**, and 80-100% **excellent**.

The National Seed Certification Service (NSCS) registers seed companies in the country.⁵ According to the NSCS, in 2024, 104 seed companies were registered. Of these, 61 were registered to produce, distribute, or import seed for any of the four focus crops: maize, bean, millet, and sorghum (Table 3). The other entities were engaged in the production or import of other crops, including seeds for vegetables and potatoes, and tissue culture for banana, among others. Of the 61 entities only 33 appeared to be active⁶ based on the fact that they submitted planting returns to NSCS or had applied for an import permit for one or more of the four crops.⁷

The study set out to survey the 33 active entities. Of these, 10 were non-responsive. Although it was not possible to verify, some of the 10 companies may have been inactive. Two points support this possibility: one, USTA and NSCS officials estimated the number of active seed companies to be between 25 and 30. Further, NSCS has registered 24 seed companies onto the Seed Tracking and Traceability System (STTS), which is now a requirement for all active seed companies. Two, as of March 2025, across the four focus crops, 27 seed companies had signed licensing agreements with NARO. This figure is a helpful indication of the true number of active companies.

Table 3 provides a breakdown of registered, active, and surveyed seed companies, including one state-owned seed company producing or marketing the target crops. Most surveyed entities produce or import maize and bean seed. The number of companies producing millet seed is low, reflecting a low demand for millet seed. In addition to the seed companies, the survey also interviewed five plant breeders at the National Agricultural Research Organization, the Assistant Commissioner and Head of the National Seed Certification Service in MAAIF, the Assistant Commissioner for Agricultural Extension in MAAIF, and the Executive Secretary of the Uganda Seed Trade Association.

Table 3: Breakdown of registered, targeted, and surveyed seed companies

Crop	Number of registered seed companies	Number of seed companies targeted by survey	Number surveyed by TASAI
 Maize	57	30	18
 Bean	26	17	13
 Millet	2	2	1
 Sorghum	15	9	4
Total	61	33	23

5 Seed companies are legally referred to as “seed merchants” in the Seed and Plant Act of 2006; however, this study will refer to seed companies throughout.

6 The TASAI methodology defines an ‘active’ producer as one engaged in the production and/or sale of seed of one or more of the focus crops during the data collection year.

7 The remaining 28 companies have likely exited the market – temporarily or otherwise – following the closure of the government seed support program called Operation Wealth Creation, which was a major buyer of seed; a few seed companies now operate as agro-dealers (seed distributors or sellers).

RESEARCH AND DEVELOPMENT

NUMBER OF ACTIVE BREEDERS

A functioning seed system needs vibrant public and private breeding programs to develop improved varieties that respond to farmer and consumer needs. The number of active public breeders is indicative of the level of investment in research and development.⁸ In addition to tracking the number of breeders working on the four focus crops, the study also measured the level of satisfaction reported by seed companies/producers with the public breeding programs. The latter reflects the ability of active breeders in public institutions⁹ to produce new varieties in response to industry needs.

8 TASAI studies define an “active breeder” as a breeder who is currently engaged in breeding/maintaining a variety or a breeder who had either developed and released at least one variety or was developing a variety of the crop of interest at the time of the TASAI study.

9 The goal of this indicator is to assess the vibrancy of public breeding programs. Therefore, TASAI does not assess the adequacy of breeders from the CGIAR centers since their mandates cover multiple countries and regions.

Table 4 shows the trend in the number of active public and private breeders for the four target crops between 2019 and 2025. In 2025, there were 15 active public and private breeders for the four crops: 7 for maize, 4 for bean, and 2 each for millet and sorghum. NARO is the main employer of plant breeders and had 12 breeders across the four crops: 5 for maize, 4 for bean, 2 for millet, and 1 for sorghum. NARO collaborates with various international research centers including the African Agricultural Technology Foundation (AATF), International Maize and Wheat Improvement Centre (CIMMYT), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and International Institute of Tropical Agriculture (IITA) on the focus crops. In addition, Makerere University, also a public research institution, had one sorghum breeder. The study recorded 2 private breeders in 2025, both employed by the same seed company. All the other seed companies are still reliant on the public sector as a source of varieties and technical support. Over the years, there has been minimal attrition of breeders across the crops.

Table 4: Trend in number of active breeders (2019-2025)

Crop	Public breeders			Private breeders			Total		
	2019	2021	2025	2019	2021	2025	2019	2021	2025
 Maize	5	5	5	0	0	2	5	5	7
 Bean	2	2	4	1	0	0	3	2	4
 Millet	1	2	2	0	0	0	1	2	2
 Sorghum	2	4	2	0	0	0	2	4	2
Total	10	13	13	1	0	2	11	13	15



VARIETIES RELEASED IN THE LAST THREE YEARS (2023-2025)

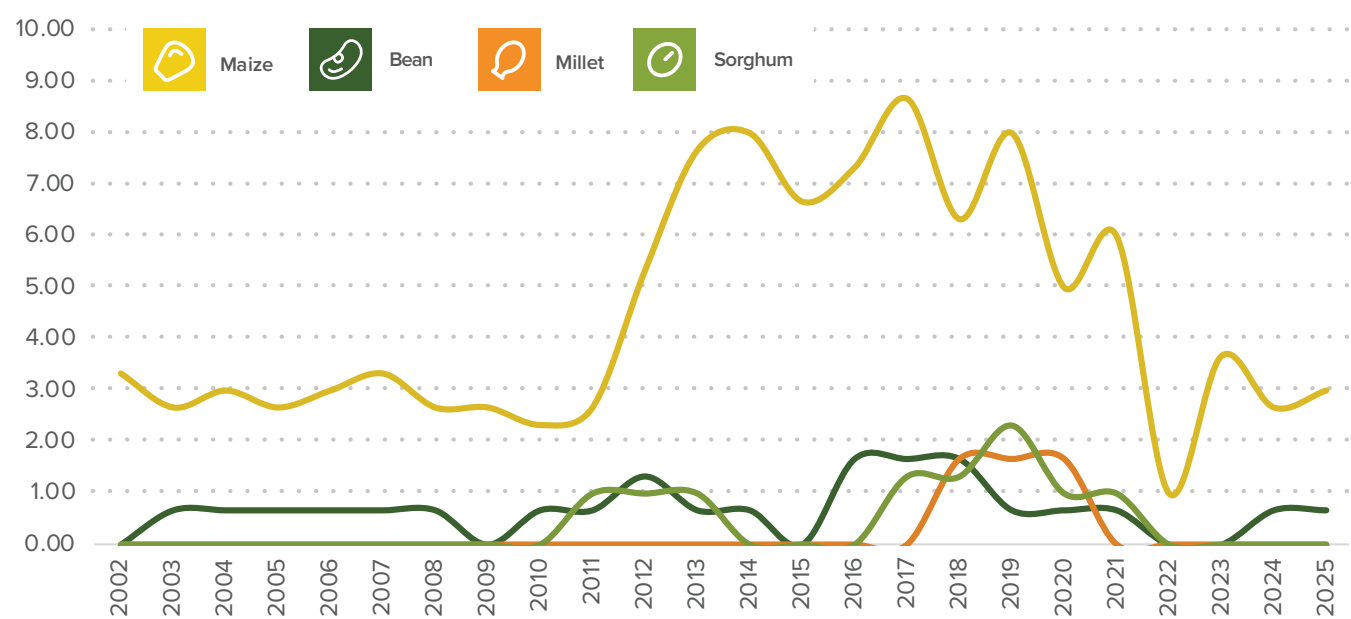
The number of varieties released is a good measure of the functioning of breeding program, variety development and release system. In addition to higher yields, new varieties often carry other adaptive and defensive traits, and consumer and market-preferred traits.

Varieties released in Uganda are gazetted to the National Variety Crop List, which was last updated in March 2025, following the latest meeting of the National Variety Release Committee (NVRC). During the 2023–2025 period, the committee released 11 varieties of the four focus crops: eight maize varieties in 2023, one maize variety in 2025, and two bean varieties in 2024. Of the nine maize varieties, four were registered from the COMESA Variety Catalogue.

Figure 1 shows the number of varieties released by tracking the 3-year moving average each year¹⁰. Between 2000 and 2025, a total of 143 varieties were released for the four focus crops, most of which were maize varieties (111). Variety releases for maize have been consistently higher than for the other crops since 2000 due to the presence of more active breeders and vibrant collaboration with private and international research institutions. Overall, there was a sharp drop in the number of varieties released from 2021 and 2022 due to the COVID-19 disruption, as there were no NVRC meetings held within this period. This situation was further exacerbated by lack of sustained funding for breeding following the closure of budgets from key partners such as the World Bank, USAID and AGRA. The number of variety releases for the other three crops is significantly lower: 17 bean varieties, 5 millet varieties and 10 sorghum varieties.

¹⁰ A 3-year moving average is a statistical method that tracks the average number of releases for the last three years (that is, current year and two prior years); this method allows one to lessen the impact of random spikes in the number of variety releases.

Figure 1: Trend in the number of varieties released (3-year moving average)



VARIETIES WITH SPECIAL FEATURES

Varieties may have special characteristics, for instance, climate-smart, use-related (e.g., fast-cooking or nutrition-enhanced), or industry-demanded features (e.g., suitability for making starch, suitability for livestock feed, high-oil content etc.). While acknowledging the increase in biotic stresses (pests, weeds, and diseases) due to climate change, TASAI studies narrowly define “climate-smart features” as those that respond to extreme weather events, such as droughts, heat

and floods that affect current farming practices. Examples of climate-smart traits include drought and heat tolerance, early or extra-early maturity.

Table 5 presents the number of varieties released that have special features, including climate-smart and nutrition-enhanced characteristics. Of the 11, six – all maize varieties – had at least one special feature. Six were early maturing, two were drought tolerant, one was enriched with Vitamin A, and one had a high milling percentage (NARO, 2023). None of the bean varieties had any of these special features.

Table 5: Number and percentage of varieties released that have special features

Feature	Description of feature	Number of varieties released 2023–2025				
		Maize	Bean	Millet	Sorghum	TOTAL
All varieties released		9	2	0	0	11
All varieties released with special features		6	0	0	0	6
Climate smart features	All climate-smart features	6	0	0	0	6
	Drought tolerant	2	0	0	0	2
	Early / extra-early maturing	6	0	0	0	6
Use-related features	All use related features	1	0	0	0	1
	Fast cooking	0	0	0	0	0
	Nutrition enhanced features	1	0	0	0	1
Industry-demanded features	All industry-demanded features	1	0	0	0	1
	High milling percentage	1	0	0	0	1

SOURCES AND AVAILABILITY OF FOUNDATION (BASIC) SEED

Seed companies use basic (foundation) seed to produce certified seed for sale to farmers. In many African countries, limited access to basic seed from public research institutions tends to constrict the ability of seed companies to scale up production of certified seed. This is largely due to lack of forward planning and effective demand for basic seed requirements. The general process to obtain the desired quantities of basic seed starts with the grower applying to the entity that produces or supplies the particular basic seed, specifying the crop, variety, and quantity needed. The basic seed provider invoices the grower for the basic seed, and upon payment, the seed producer receives the seed.

Process to obtain basic seed from NARO

Before 2016, NARO was Uganda's primary source of basic seed for four key crops. In 2016, NARO established NARO Holdings Ltd (NHL) as its commercial arm, to boost the marketing of all NARO technologies, including basic seed of new plant varieties. This was followed by a streamlined process for variety and early generation seed hand-over to private companies and other seed producers through a licensing and basic seed pre-booking system. Based on demand, specific NARO institutes and breeders are contracted to produce the required seed. Seed companies then access the basic seed through NHL. Under this system, only companies with licensing agreements with NARO can obtain the basic seed. Eligible companies must pre-book their basic seed at least one season (or six months) ahead by filling out a pre-booking form and submitting it to NARO's commercialization office. To confirm the order, a company pays an advance fee equal to half the value of the seed they pre-booked. The commercialization office then gathers all orders and sends them to NHL. Every seed company interested in acquiring NARO varieties must follow this procedure.



Sources of basic seed

Table 6 shows that, in 2024, NARO Holdings Ltd was the most prominent source of basic seed in the country. NARO was the second most frequently used source of basic seed, which indicates that the transition to the new pre-booking system is still ongoing. Other suppliers of basic seed included CGIAR centers and Quali Basic Seed, while two companies maintained their own basic seed.

Table 7 provides information on seed companies' satisfaction with the quality and quantity of basic seed received, and the timeliness of delivery. Data is shown for maize, bean, and sorghum only, as millet had one response only. The scores for the three aspects ranged from 72% to 83%, with overall scores assigned ranging from 80% (sorghum), 79% (bean) and 75% (maize).

Table 6: Source of basic seed (2024)

Source of basic seed	Maize		Bean		Millet		Sorghum	
	Number of seed companies n =20	% of total	Number of seed companies n =12	% of total	Number of seed companies n =1	% of total	Number of seed companies n =5	% of total
NARO	6	30%	2	17%	0	0%	0	0%
NARO Holdings	10	50%	10	83%	1	100%	4	80%
Own	2	10%	0	0%	0	0%	0	0%
CGIAR	1	5%	0	0%	0	0%	0	0%
Quali Basic Seed	1	5%	0	0%	0	0%	0	0%
Other	0	0%	0	0%	0	0%	1	20%
Totals	20	100%	12	100%	1	100%	5	100%

Table 7: Seed companies' assessment of the availability of basic seed (2024)

Aspect of availability of basic seed	Maize (n=19)	Bean (n=12)	Sorghum (n=5)
Quality of basic seed received (out of 100%)	82%	83%	83%
Quantity of basic seed received (out of 100%)	72%	80%	83%
Delivery timeliness (out of 100%)	72%	73%	75%
Overall availability of basic seed (out of 100%)	75%	79%	80%

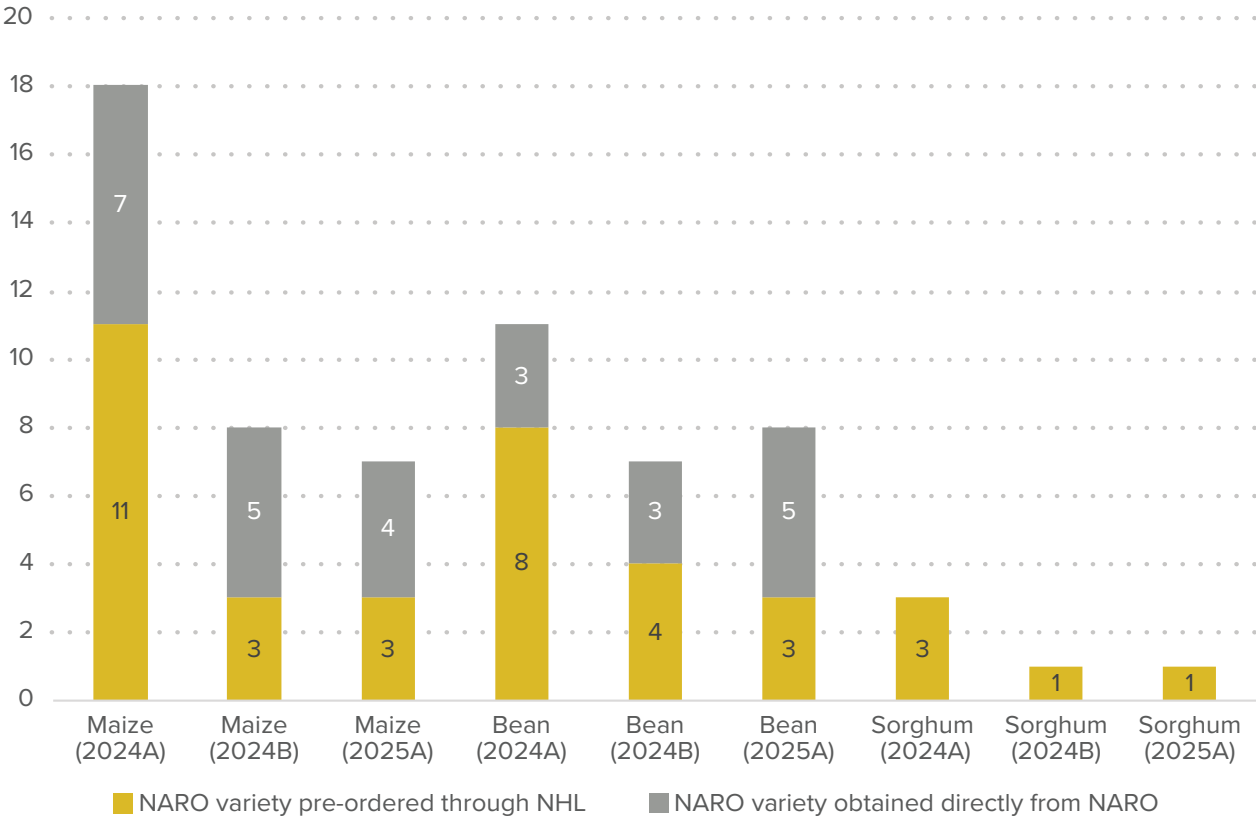
extremely poor
poor
fair
good
excellent

Status of basic seed supply from NHL

Figure 2 compares the number of seed companies that sourced basic seed from NHL with the number that sourced directly from NARO institutes. The data is for three seasons, from 2024A to 2025A, for three crops: maize, bean and sorghum. While most companies sourced basic seed through NHL, a significant portion of seed companies continued to source basic seed for maize and bean directly from the NARO institutes in all three seasons. In contrast, all basic seed for sorghum was sourced from NHL, while no company sourced basic seed for millet during this time period.

The seed companies provided two main reasons as to why they still source basic seed from institutes. The first reason is that NHL did not stock the specific varieties that they were looking for. On its part, NHL indicated that the varieties requested by seed companies were not in circulation. NHL estimated that it would take one or two seasons for the breeder to bulk up breeder seed, which in turn would allow NHL to produce basic seed of that variety. This issue was notable for hybrid maize. NHL stated it could address supply shortages by sourcing parental lines from providers like Quali Basic Seed. The second reason, reported by several companies, was that they felt that the NHL process was costly due to the requisite licensing agreement with NARO, which was considered too expensive for start-ups.

Figure 2: Number of seed companies sourcing basic seed from NHL and NARO



Varieties pre-ordered from NHL

Table 8 shows three variables pertaining to the varieties pre-ordered from NHL over three seasons, 2024A to 2025A. These are: number of varieties pre-ordered, the volume of basic seed pre-ordered, which is an indication of the market share of the variety, and the proportion of pre-booked seed by variety. The latter is only for the top three varieties, by volume pre-ordered.

Longe 5¹¹, Myezi Mitatu (MM3) and Longe 5D were the most demanded maize varieties by seed companies, accounting for 61% of the volume pre-ordered. However, it is important to note that NHL was unable to produce basic seed for several hybrid maize varieties due to inadequate supply of breeder seed for specific NARO varieties. As such, seed companies maintained their own breeding lines over these three seasons.

Most of the pre-ordered basic seed was for bean seed, and the most in-demand varieties, by volume, were the NAROBAN series 2, 1 and 3, respectively, accounting for 83% of basic seed produced for bean. None of the seed companies pre-ordered basic seed for millet over the three seasons, signaling very low demand for the crop. However, one surveyed seed company produced millet seed for two varieties, none of which was sourced from NHL, implying that this company maintained its own basic seed. NHL produced 1,190 kg of sorghum basic seed, of which the most popular variety was Seso 3.

11 NARO has noted that Longe 5 is no longer being maintained, and has been replaced by Longe 5D



Table 8: Pre-basic seed pre-ordered from NHL

Crop	Number of varieties pre-booked over 3 seasons (2024A-2025A)	Volume of basic seed pre-booked (in Kg)	Proportion of pre-booked seed by variety	
			Name of popular variety	Percentage of overall pre-booked seed
 Maize	13	6,471	Longe 5	26%
			Myezi Mitatu (MM3)	18%
			Longe 5D	17%
 Bean¹²	8	8,362	NAROBAN 2	35%
			NAROBAN 1	31%
			NAROBAN 3	17%
 Millet¹³	0	NA	NA	NA
 Sorghum	4	1,190	Seso 3	69%
			NAROSorg1	14%
			NAROSorg2	8%
			NARO Sorg4	4%

¹² The pre-ordered basic seed for bean included requests from QDS producer groups

¹³ Although NARO Holdings stocks basic seed for two millet varieties, no seed companies pre-ordered millet basic seed over the three seasons

Seed company satisfaction with basic seed from NHL

Table 9 shows the seed companies' level of satisfaction with the costs, the payment arrangements, and overall availability of basic seed from NHL. Overall, seed companies are satisfied with the cost of basic seed for all four crops, with ratings ranging from 68% (maize) to 80% (sorghum). They are similarly satisfied with the payment arrangements for pre-ordering basic seed.

Overall, seed companies are satisfied with the availability of basic seed for three of the crops: maize, bean and sorghum.¹⁴ Despite these positive overall scores, six of the ten seed companies were not satisfied with the quality of basic seed received, citing cases of poorly packaged seed, untreated seed and seed not being well graded.

¹⁴ Millet is excluded from the table, as the number of responses is very low (n=1)

Table 9: Satisfaction with basic seed from NHL

Satisfaction with NHL	Maize (n=10)	Bean (n=10)	Sorghum (n=4)
Seed company satisfaction with cost of basic seed in the NHL pre-ordering arrangement (out of 100%)	68%	73%	75%
Seed company satisfaction with the payment arrangements when pre-ordering through NHL (out of 100%)	76%	74%	75%
Overall satisfaction with availability of basic seed from NHL	70%	74%	80%

extremely poor poor fair good excellent

INDUSTRY COMPETITIVENESS

NUMBER OF ACTIVE SEED COMPANIES

Competition breeds excellence: the presence of more active seed producers increases competition and creates incentives for those entities to innovate and improve. A vibrant seed sector depends on a robust private sector in which seed businesses invest in developing, producing, promoting, processing, and marketing certified seed of improved varieties to farmers.

Table 10 shows the trend in the number of active seed companies between 2019 and 2024. According to NSCS, there were 33 active seed companies in 2024 — defined as companies that had either submitted planting returns or applied for an import permit for at least one of the four focus crops. Most companies produce maize as this is the most profitable crop, followed by bean and sorghum. In contrast, only a handful of companies produce millet seed.

The total number of active companies has increased from 24 in 2019 to 33 in 2024. The sharpest increase over this period was in the number of maize seed companies, from 24 in 2021 to 30 in 2024, partly attributable to a rise in maize seed importers from 5 to 11 over the same three years. In contrast, the number of active bean seed companies fell from 24 in 2021 to 17 in 2024. This is partly due to the closure of the government seed subsidy support program which was a key off taker of bean and sorghum seed. The number of millet companies has been consistently low since 2019, as the crop is not very profitable and largely marginalized due to limited investment in research, production and value-addition. The number of sorghum seed companies has reduced from 13 in 2021 to 9 in 2024 due to two reasons. One, the government is no longer buying sorghum seed under the subsidy program (although there are government purchases through the Office of the Prime Minister). Two, NGOs in South Sudan are no longer importing sorghum seed from Uganda due to improvements in local seed production in the country, seed quality concerns, and investment in sorghum research capacity in collaboration with ICRISAT.

Table 10: Number of registered and active seed companies

Crop	2019	2021	2024
 Maize	23	24	30
 Bean	17	24	17
 Millet	5	4	2
 Sorghum	14	13	9
Total	24	30	33

Gender in the management of seed businesses

TASAI tracks the number of women in management and ownership positions in seed companies. This indicator tracks the number of women working in management in seed companies that have clearly defined management structures and positions. They include the following positions or their equivalents: managing director/chief executive officer, distribution manager, operations manager, finance and administration manager, research and development manager, country lead, and sales and marketing manager.

Women's representation in ownership and top management remains limited: only three companies were owned by a woman, and only four had a woman as their top manager. At lower management levels, however, women are well-represented: 62% of management positions are held by women, and 70% of companies have at least one woman in a management role. The number of women in management ranged from 0 to 7 per company.

Table 11: Gender in management in seed businesses

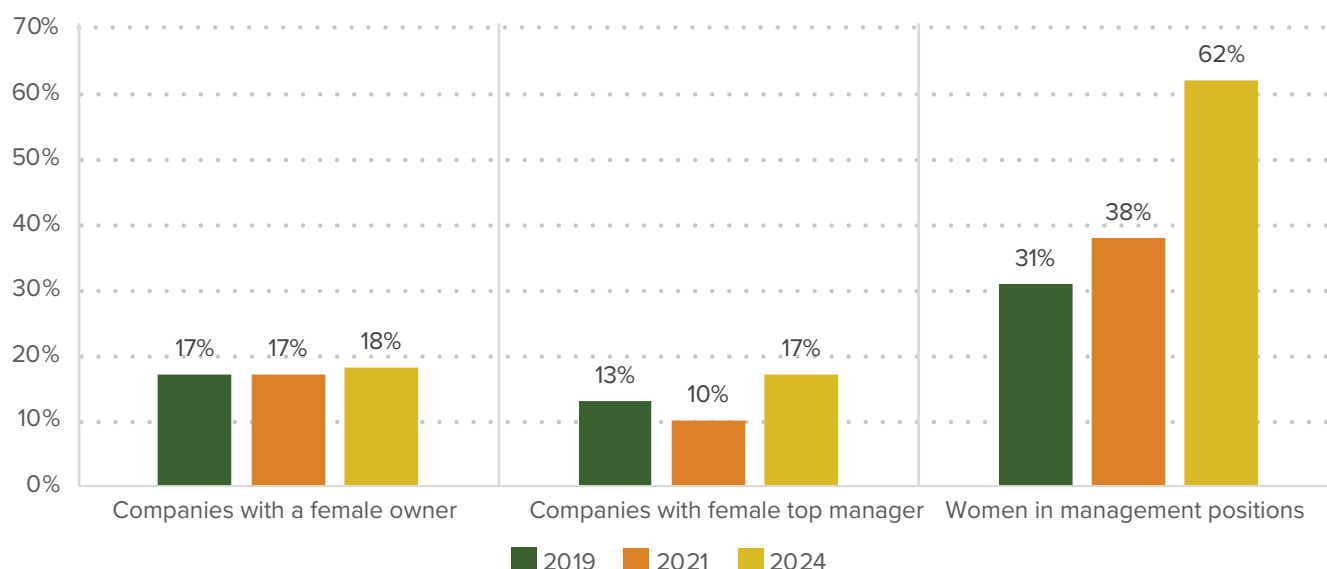
Gender indicator	Number	Percentage
Companies with a female owner (n=17¹⁵)	3	18%
Companies with female top manager (n=23)	4	17%
Women in management positions (n=143)	88	62%

¹⁵ This indicator only pertains to companies for which ownership can be attributed to a single person. It excludes government-owned companies, multinationals and some family-owned businesses.

Figure 3 shows the trend in the indicators on gender in seed business in three studies conducted between 2019 and 2024. The percentage of women owners and managers has been consistently low over the years: the number of

seed companies with either a woman manager or owner has moved between two and four. However, the percentage of women in the management of these businesses has increased steadily from 31% in 2019 to 62% in 2024.

Figure 3: Trend in gender indicators (2019 to 2024)



PRODUCTION AND SALE OF CERTIFIED SEED

To measure the overall size of a country's seed sector, TASAI tracks the volumes of seed produced and sold for the four focus crops. The data is from two sources: the National Seed Certification Service (NSCS) and TASAI survey data. The data is presented as aggregate quantities in metric tons (MT) of certified seed produced in 2024. Government data is from the National Seed Certification Service, while TASAI data is based on responses from the seed companies during the survey.

Table 12 compares the seed production and sales data from the government, and TASAI. On aggregate, the seed companies surveyed reported producing 15,713 MT of maize in 2024. Bean is the second most important crop (5,071 MT), followed by sorghum (553 MT). Only a small volume of millet

seed (5 MT) was produced in 2024.

TASAI survey data on certified seed production is substantially higher than the government figures for all four crops. For maize — the most important of the four crops by volume — seed companies reported production is more than twice the government figure. The disparity is greatest for bean seed, where seed companies' reported production volumes are more than seven times the government figure. These disparities suggest that significant amounts of seed were produced and sold without being fully inspected and certified by government — a concern supported by seed companies' own responses: up to 40% reported that their seed fields were not fully inspected (that is, not inspected the requisite number of times) by NSCS. NSCS confirmed that they only inspect and certify seed for companies that submit planting returns and apply for inspection. Non-compliant seed companies are not pursued.

Table 12: Seed production and sale (2024)

Crop	Government data from NSCS (in MT) (2024)	TASAI survey data (in MT)	
		Seed production (2024)	Seed Sales (2024)
 Maize	7,239	15,713	15,756
 Bean	658	5,071	4,647
 Millet	3.8	5	7
 Sorghum	274	553	669

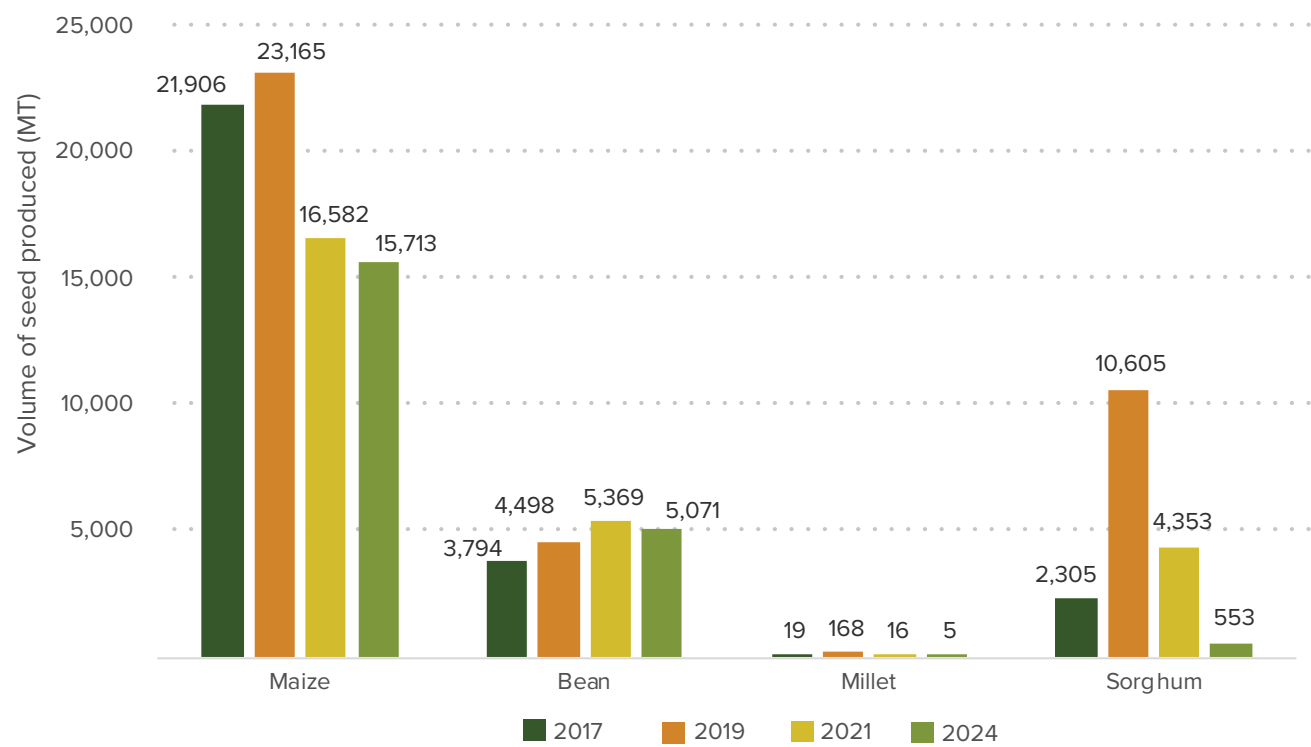


Figure 4 shows the trend in the volume of certified seed produced between 2017 and 2024. The data is from TASAI country reports over the years. The trends vary by crop. For all crops, there has been a decline in seed production between 2021 and 2024. For maize and sorghum seed, the decline has been steady since 2019. Three factors account for this decline: One, the gradual drawdown of the government support program, Operation Wealth Creation, which was a major seed buyer, accounting for 26% of maize seed sales, 42% of bean seed sales and 15% of sorghum seed sales in 2021 (Figure 7). As a result of this drawdown, several seed companies ceased their operations. Second, a rise in maize seed imports, which have gained prominence among farmers. Third, and specific to sorghum, the downward trend

in seed production since 2019 can be attributed to the export market in South Sudan. Prior to 2023, seed companies were producing significant portions of seed for export to South Sudan.

Bean seed production increased steadily between 2017 and 2021, and then slightly reduced in 2024. The slight reduction is attributed to the drawdown of OWC which was a key buyer of bean seed. The trend in sorghum seed production fluctuated over the five years. The trend can be attributed to an additional factor of the export market in South Sudan. Prior to 2023, seed companies were producing significant portions of seed for export to South Sudan.

Figure 4: Trend in volume of certified seed produced (in MT)



NUMBER OF COMMONLY SOLD VARIETIES IN 2024

An increase in the number of varieties sold in a country often results in an increased choice of varieties available to farmers. The 2024 TASAI survey asked seed companies to name their three best-selling varieties. Across the four focus crops, respondents listed a total of 38 varieties: 22 maize varieties (19 hybrids and 3 OPVs), 8 bean varieties, 2 millet varieties, and 6 sorghum varieties (3 hybrids and 3 OPVs). Table 13 lists these commonly sold varieties, the number of companies selling them, and the reasons companies gave for why the varieties were popular. Out of 38 varieties, 22 were publicly developed (by NARO), while the remaining 16 — 12 maize and 4 sorghum — were private varieties owned by seed companies.

Eight maize varieties featured among the top three lists provided by companies, with high yields being the most important reason for their popularity. Several also boast resistance to various pests and diseases. The reasons for the popularity of bean varieties were mostly related to taste and ease of cooking. Three of the four most-popular sorghum varieties were preferred because they were good for brewing. The other common reason was the good taste, especially among consumers in eastern and northeastern Uganda and South Sudan where sorghum is widely consumed. The two popular millet varieties were recognized for their good taste, disease resistance, and drought resistance.

Table 13: Name and number of commonly sold varieties (2024)

Crop	Some of the commonly sold varieties in 2024	Number of companies listing this variety as one of their top 3	Reason for selling variety
 Maize	Longe 5	7	Very affordable
	Longe 5D	7	Affordable and early maturing
	UH 5355	5	High yielding and drought tolerant
	Longe 10H ¹⁶	4	High yield, early maturity, drought tolerant
	UH 5051	3	Good yield, drought tolerant, and withstands low nitrogen levels in the soil, and therefore does not require much fertilizer
	DK 777	2	High yielding; tolerant to drought conditions; tolerant to maize lethal necrosis virus; double cobbing.
	DKC 90-89	2	High yielding; very good taste, especially for roasting; and tolerant to drought conditions.
	UH 5354 (Bazooka)	1	High yield, intermediate-late, drought tolerant
 Bean	NAROBAN 2	7	Highly nutritious with iron; short maturity period; cooks very quickly and is tasty. The variety has been promoted among farmers.
	NAROBAN 1	4	Good cooking qualities; high yielding.
	NABE 17	5	Tasty; early maturity
	NABE 19	5	Good yield, good taste, and is preferred by some institutions such as schools and refugee camps
	NABE 16	6	Good yield and good for cooking
 Millet	Seremi 1 ¹⁷	1	Nutritious
	Seremi 2	1	Medium maturity; drought tolerant; tolerant to diseases.
 Sorghum	Seso 3	5	Dual-purpose for breweries and food; drought tolerant with a compact head that minimizes bird damage; good taste; high yielding; in high demand in South Sudan and eastern Uganda; has a short height; short maturity period.
	NARoSorg2	1	Early maturity; large head
	SC Sila	1	High yielding and good for brewing
	Adv 23012	1	Highly demanded by brewing industry

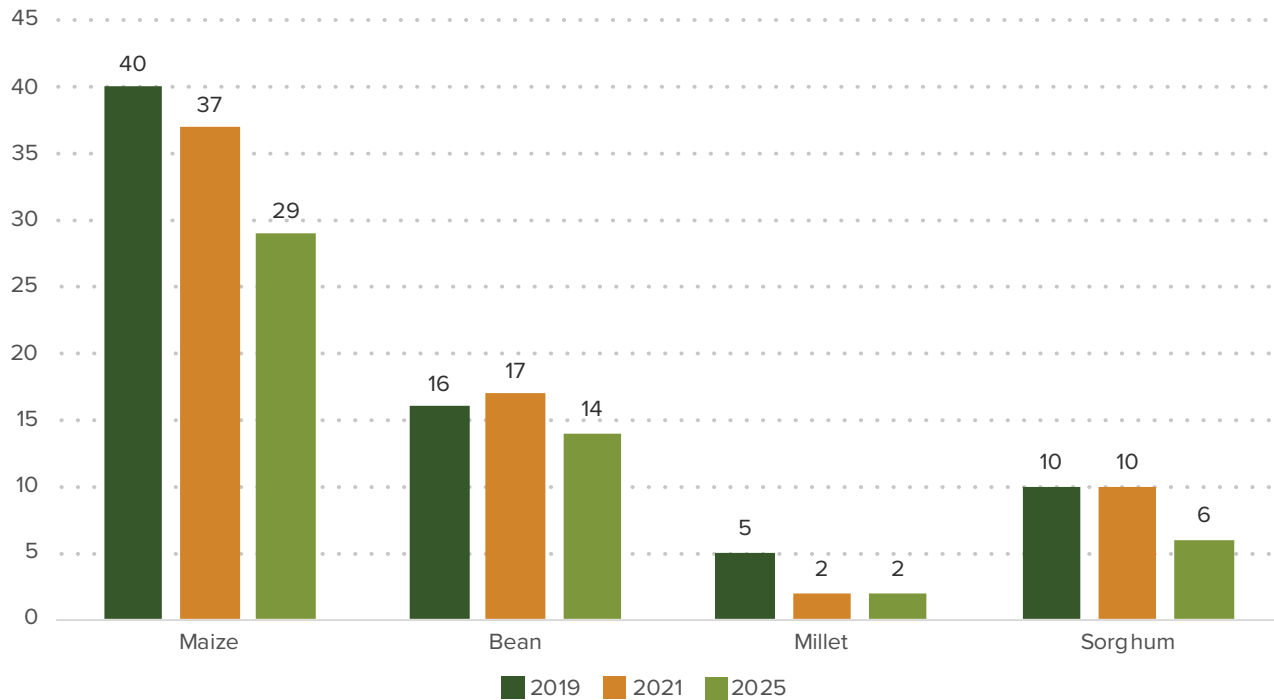
¹⁶ By March 2025, NARO had licensed Longe 10H to only one seed company. However, 4 companies sold the variety in 2024.

¹⁷ Seremi 1 was sold in 2024, despite not being licensed by NARO

NUMBER OF VARIETIES SOLD

Maize remains the dominant crop sold among the four priority crops from 2019, although declining steadily from 40 to 29 in 2025. The number of bean varieties sold remains relatively stable, with a slight increase between 2019 and 2021, followed by a modest decline in 2025. Millet varieties sold shows a marked reduction from 5 in 2019 to 2 in 2021 and remains unchanged in 2025, indicating sustained low sales while sorghum remained stable between 2019 and 2021 but declined significantly by 2025 as shown in Figure 5 below.

Figure 5: Trend in the number of varieties sold (2019-2025)



AGE OF VARIETIES SOLD

In vibrant seed systems, farmers regularly replace old varieties with new ones. In many African countries, old varieties persist, even though newer varieties often outperform older varieties as they are bred for traits that respond to demands by farmers, consumers, and industry. A lower average age of varieties signals higher rates of variety turnover. TASAI tracks the age of the commonly sold varieties. Table 14 shows the age of the popular varieties produced and marketed in Uganda. The popular varieties are those which the seed companies have listed as their top three varieties. The data on varietal age was obtained from the National Crop Variety List.

Overall, the companies listed 19 popular varieties across the four crops. Of these, 15 are NARO varieties, whose ages range from 7 to 25 years, as shown in Table 14. The remaining four are privately owned varieties (two maize and two sorghum), whose original release dates are shown in parentheses in the table. Save for two bean varieties (NAROBAN 1 and NAROBAN 2), and one sorghum variety (NAROSorg2), all the popular NARO varieties are more than 10 years old. The older popular varieties are Longe 5 (maize), released in 2000 and the Seremi 1 and Seremi 2 millet varieties, released in 1999.

Three of the four private varieties were introduced to Uganda through the COMESA variety release system, having previously been released in other COMESA member states. Although they were released in Uganda relatively recently (2019 and 2021), they are not new varieties: DK 90-89 (maize) was first released in 2012, while SC Sila (sorghum) was first released in 2006.



Table 14: Age of varieties sold (2024)

Crop	Name of variety	Year of release ¹⁸	Age of variety in 2024
Maize	Longe 5	2000	24
	Longe 5D	2012	12
	UH 5355	2013	11
	Longe 10H	2009	15
	UH 5354 (Bazooka)	2013	11
	UH 5051	2012	12
	DK 777 (COMESA)	2016 (2021)	8
	DKC 90-89 (COMESA)	2012 (2021)	12
	NAROBAN 2	2016	8
	NABE 16	2010	14
Bean	NAROBAN 1	2016	8
	NABE 17	2012	12
	NABE 19	2012	12
Millet	Seremi 1	1999	25
	Seremi 2	1999	25
	Seso 3	2011	13
Sorghum	NAROSorg2	2017	7
	SC Sila ¹⁹ (COMESA)	2006 (2019)	18
	Adv 23012 ²⁰	2016	8

¹⁸ Data on the year of release is sourced from the National Crop Variety List. However, DK 777 was first released in Kenya in 2016, and then introduced to other African countries including Zambia, Malawi, and Nigeria, and eventually released in Uganda in 2021. The original year of release is shown in the table. DKC89-90 was originally released in 2012 in Kenya but released in Uganda in 2021. Both varieties were released through the COMESA variety release system.

¹⁹ SC Sila was originally released in Kenya in 2006, but released in Uganda in 2019 through the COMESA variety release system

²⁰ Adv 23012 was released in Kenya in 2016 but was yet to be released in Uganda by 2025.

MARKET SHARE OF TOP SEED PRODUCERS

Competition among seed producers benefits farmers via lower prices, wider choices, increased innovation, and better customer service. To assess the level of industry market concentration, TASAI uses seed sales data for each crop, as reported by seed producers, to calculate the market share of the four largest firms, also known as the four-firm concentration ratio (CR4), as well as the Herfindahl-Hirschman Index (HHI).²¹

Table 15 and Figure 6 show market concentration levels across the four crops in 2024, as well as trends from 2013-2024. The 2024 data reveal substantial differences in competitiveness across crops. The maize seed market is highly competitive, with an HHI of 1,338 (low concentration) and a CR4 of approximately 60%. This competitive landscape reflects the large number of companies active in maize seed marketing, with no single dominant player. This has been the case over the years, with HHI scores ranging from 910

to 1,425 between 2015 and 2024, indicating that the maize seed market has remained competitively structured over time.

In contrast, the bean seed market was highly concentrated in 2024, with an HHI score of 4,671 (extremely high concentration) and with the top four bean seed companies accounting for 90% of the market. This is a dramatic shift from previous years, between 2015 and 2021, when the market maintained competitive conditions with low HHI scores (ranging from 1,092 to 1,471). Over this period, the top four seed companies accounted for between 53% and 71% of the bean seed market. This dramatic shift is partly attributed to a decline in the number of companies selling bean seed, from 24 in 2021 to 17 in 2024. Two of the top bean seed companies in 2021 reduced their production in 2024, while another top company stopped producing bean seed altogether.

The millet seed market shows extremely high concentration in 2024, with an HHI score of 5,834, reflecting the very low number of active seed companies producing and commercializing millet seed. This trend has been consistent since 2014, with HHI scores ranging from 3,473 to 6,401. Lastly, the sorghum seed market exhibits moderate to high concentrations with an HHI of 2,661 in 2024. The sorghum seed market has fluctuated between low and high concentration levels, with HHI scores ranging from 1,703 to 3,059 over the years.

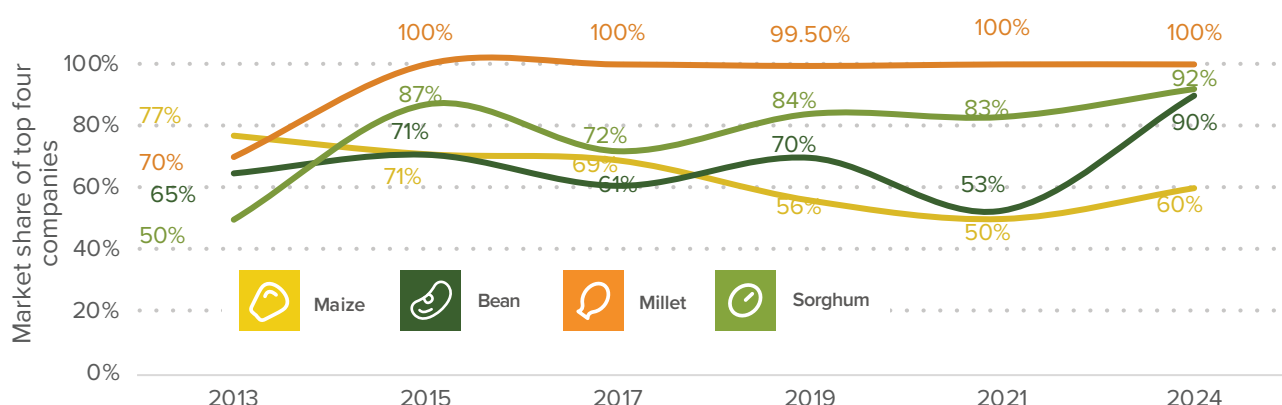
²¹ The HHI is a measure of market concentration and is calculated by squaring the market share of each firm competing in a market, and then adding up the results. It ranges from close to zero for perfect competition to 10,000 for monopoly. The scale for HHI scores, ranges from extremely low to extremely high levels of market concentration: less than 1,000 is extremely low, 1,000-1,999 is low, 2,000-2,999 is moderate, 3,000-3,999 is high, and greater than 4,000 is extremely high, i.e., monopoly or near monopoly.

Table 15: Trend in market share (HHI scores)

Crop	HHI (2015)	HHI (2017)	HHI (2019)	HHI (2021)	HHI (2024)
 Maize	1,317	1,425	1,248	910	1,338
 Bean	1,269	1,214	1,471	1,092	4,671
 Millet	6,401	5,139	3,473	5,354	5,834
 Sorghum	2,483	1,703	2,290	3,059	2,661

extremely poor
poor
fair
good
excellent

Figure 6: Trend in market share of top four seed companies (CR4) (2013-2024)



MARKET SHARE OF GOVERNMENT PARASTATAL

In some countries, public entities are still active players in the marketing and sale of certified seed. Public seed companies can play a critical role in meeting farmer demand for varieties that private seed companies deem less profitable. In addition to seed production, public companies may support other national objectives, such as university training and research. However, state-owned companies may benefit from preferential treatment, less stringent enforcement of regulations, and indirect production subsidies. Collectively, these privileges can result in unfair competition against purely private seed companies.

In 2024, Uganda Prisons Ltd. was the only government-owned entity and involved in the production and sale of certified seed in Uganda. Registered as a seed company, Uganda Prisons Ltd. produces and sells maize seed only. Part of the seed produced is used by the government prison farms, while the rest is sold commercially. As shown in Table 16, in 2024, Uganda Prisons Ltd produced 700 MT of seed and sold 500 MT. Production volumes since 2019 have ranged from 665 MT to 900 MT; seed sales have ranged from 360 MT to 500 MT. With its current and historical levels of production, the company does not command a significant market share in the maize seed market, ranging between 2% and 3% over the years.

Table 16: Market share of state seed company in Uganda

Uganda Prisons Ltd	Volume of maize seed produced (Mt)		
	2019	2021	2024
Volume of seed produced (MT)	900	665	700
Volume of seed sold (MT)	360	499	500
Market share (%)	2%	3%	3%

Among the countries surveyed by TASAI since 2021, several have government-owned entities that produce and market certified seed. The profile of these entities varies widely and includes parastatal companies, government projects, government universities or national agricultural research institutes that have established their own seed companies.

Table 17 shows the market share of these entities. Public seed companies command a significant market share in Ethiopia and Kenya, accounting for 41% and 61% of national maize seed production respectively. In the other countries shown, including Uganda, the public share is small — between 3% and 6%.

Table 17: Production share of state seed companies in countries studied by TASAI between 2021 and 2025

Country	Number of state seed companies for focus crops	Maize seed production (mt)	Maize seed production share (%)
Cameroon	6	107	6%
Ethiopia	4	11,405	41%
Kenya	6	27,781	61%
Tanzania	2	735	4%
Uganda	1	500	3%

SEED SALES TO DIFFERENT CATEGORIES OF BUYERS

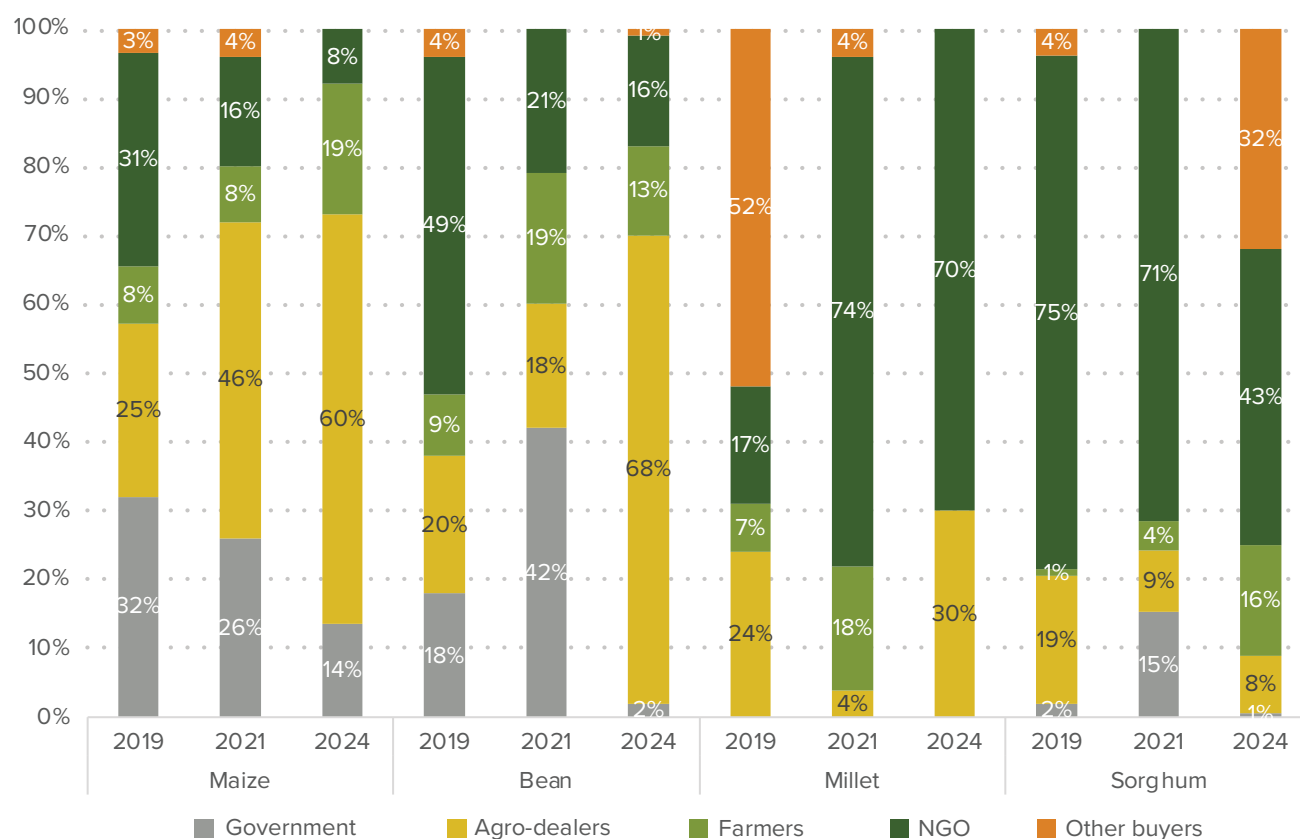
The TASAI study tracked sales to five categories of certified seed buyers in 2024: government, agro-dealers, farmers (through direct sales), NGOs, and other buyers. Figure 7 provides an overview of the main market channels for certified seed sales across the four crops studied, presenting data from 2024, 2021, and 2019.

Looking at 2024 data, agro-dealers have become the dominant distribution channel for maize, accounting for 60% of seed sales, followed by direct sales to farmers (19%), government purchases (14%), and NGOs (8%). For bean, agro-dealers are even more dominant at 68%, with NGOs at 16%, direct farmer sales at 13%, government purchases at just 2%, and other buyers at 1%. Millet presents a dramatically

different pattern, with NGOs accounting for 70% of seed sales and agro-dealers making up the remaining 30%, while other buyer categories are essentially absent. Sorghum shows the most diverse buyer mix, with NGOs leading at 42%, other buyers at 32%, farmers at 16%, agro-dealers at 9%, and government at 1%. The other buyers of sorghum seed are the two main brewery companies in the country. The percentage of sorghum seed sold to NGOs reduced in 2024, due to the reduction of sorghum exports to NGOs in South Sudan.

The trends from 2019 to 2024 reveal two fundamental shifts in seed distribution channels. First, government purchases have fallen sharply due to the closure of the Operation Wealth Creation (OWC/NAADS) subsidy program, dropping from between 2% and 42% in 2019 and 2021 to between 1% and 14% in 2024 across the four crops. Second, agro-dealer networks have grown dramatically as the primary distribution channel, substantially increasing their share for maize and bean. Meanwhile, NGOs have remained a significant buyer of both millet and sorghum seed throughout this period.

Figure 7: Seed sales by category of buyers (2019-2024)



SEED IMPORT AND EXPORT PROCESS

Efficient seed import and export processes extend the seed market beyond national borders. While seed companies benefit from an expanded market, farmers can access a wider range of varieties from across the region. The length of the import process in days is measured as the sum of the number of days used to obtain import documentation (import permit, phytosanitary certificates, and an International Orange Certificate, if applicable) and the number of days to clear seed at the border. It excludes transportation time. In Uganda, importers are expected to apply for an import permit from the NSCS.

Seed importation

In 2024, according to NSCS, there were 11 seed companies that imported seed of at least one of the four crops. The imports were for maize and sorghum seed. The companies imported 11,236.4 MT of maize seed, which was from Kenya and Zambia. Three seed companies imported 155 MT of sorghum seed from Kenya and the USA. Table 18 shows the volume of seed imports, the duration of the importation process, and seed company satisfaction with the process, by crop.

According to seed companies, the import process takes an average of 17 days: 9.3 days to process the import permit and other documentation, and 7.8 days to clear the seed at the border point of entry. The average rating of the seed importation process by seed companies was “fair” at 55%. The satisfaction is higher for sorghum (67%) than for maize (51%). The reasons for their dissatisfaction with the seed import process were: (i) delays at customs due to frequent network outages and staff shortages, causing long queues of trucks; (ii) seed samples are collected at the border rather than being sent in advance; (iii) occasional bans on maize seed exports by the Kenyan government when it suspects that domestic supply requirements have not been met (this explains why satisfaction with maize seed imports is lower than for sorghum); and (iv) the requirement that shipments carry a Pre-Verification Certificate of Conformity (PVOC).

Table 18: Seed import volumes and import process (2024)

Crop	Days to obtain import permit	Days to clear seed at border point of entry	Total number of days	Volume of seed	Satisfaction
 Maize	9.8	9.1	18.9	11,236.4	51%
 Sorghum	7.7	3.7	11.3	155	67%
Overall	9.3	7.8	17.0		55%

extremely poorpoorfairgoodexcellent

Seed exportation

Table 19 shows the number of seed exporting companies, for the four crops, duration of the export process and seed company satisfaction with the export process. The table also compares data on volume of seed exports from NSCS with data reported by the surveyed seed companies. The surveyed companies reported higher volumes of seed exports than what was recorded by NSCS, implying that some of the exports are unrecorded.

Six seed companies reported exporting seed in 2024 in the regional market. All six exported maize seed (3,425 MT in total), two exported bean seed (240 MT in total), and three exported sorghum seed (238 MT in total). The exports were all to neighboring countries: South Sudan, Burundi and Kenya. The duration of the seed exportation process is shorter than that of imports. On average, it takes 4.1 days to clear seed at the border point of exit. The shorter duration explains why companies are slightly more satisfied with the seed export process, giving it an average rating of 63%. The companies did not report any complaints about the seed export process.

Table 19: Seed exports (2024)

Crop	No. of companies	Days to clear seed at border point of exit	Volume of seed exports (Mt)		Export destination(s)	Satisfaction (out of 100%)
			TASAI data	NSCS data		
 Maize	6	4.7	3,425	945	Burundi, Kenya, South Sudan	70%
 Bean	2	3.0	240	0	South Sudan	55%
 Millet	0	NA	NA	0	NA	NA
 Sorghum	3	3.3	238	520.7	South Sudan	53%
Overall	6	4.1	3,903			63%

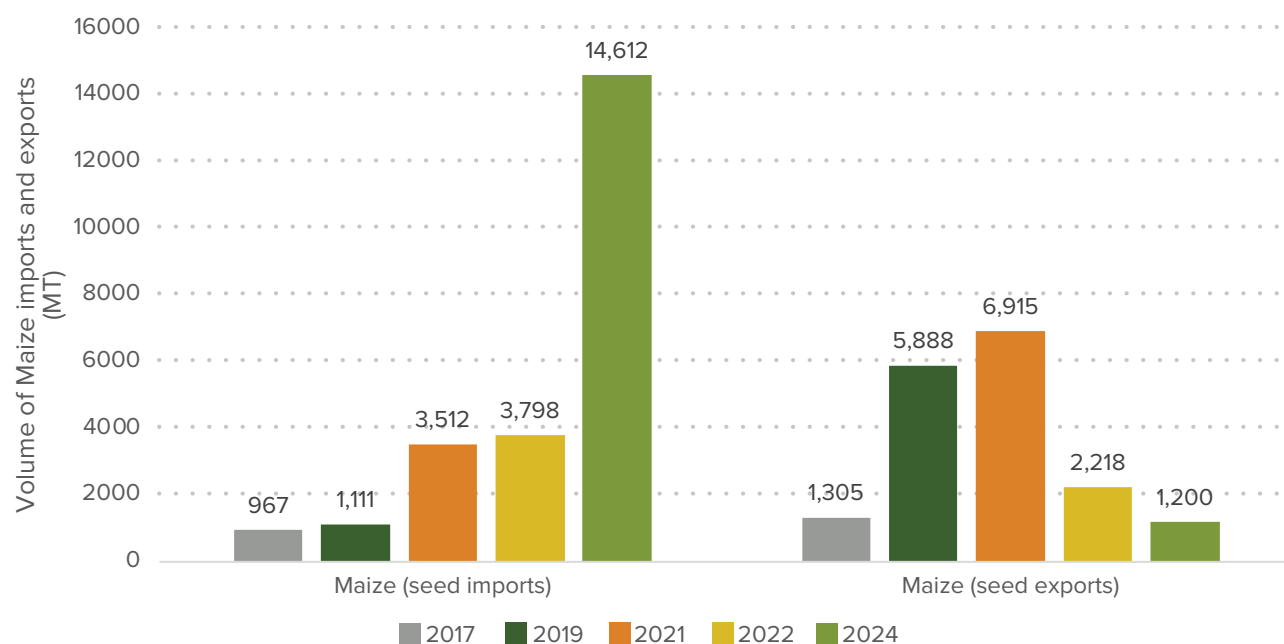
extremely poor
poor
fair
good
excellent

Trend in maize seed imports and exports

Figure 8 shows the trend in volume of imports and exports of certified maize seed from 2017 to 2024. The standout finding is the significant increase in the volume of imported maize seed between 2021 and 2024, a trend acknowledged by both NSCS and USTA. According to USTA, demand for imported maize hybrid varieties is strong, even though imported hybrids (UGX 11,250 per kg) are on average about 60% more expensive than local hybrids (UGX 7,071 per kg) (Table 26). The higher price can be explained by extensive promotional activities through field demonstrations and branding followed by timely delivery of quality seed. Most of the imported seed is produced in southern Africa, where

the production season is from October to February/March. This is in time for the main season in Uganda which starts in March (Season A) and July to August (Season B). Some companies suggest that farmers are increasingly distrustful of locally produced varieties because of the high prevalence of counterfeit seed. In contrast, the volume of maize exports has declined steadily from 2019 to 2024. Companies are no longer exporting significant volumes to South Sudan — previously the main export market — for three reasons: increased local seed production in South Sudan, growing awareness among South Sudanese buyers of quality concerns, and reduced NGO funding for seed aid.

Figure 8: Trend in maize seed imports and exports





SEED POLICY AND REGULATIONS

LENGTH OF THE VARIETY RELEASE PROCESS

Plant variety release is the process during which new varieties undergo tests for performance and adaptation, Value for Cultivation and Use (VCU), and Distinctness, Uniformity and Stability (DUS). Varieties that perform satisfactorily are approved for release by the mandated authority. A vibrant seed sector requires a functional variety release system that is well understood and consistently followed by all relevant actors. Lengthy or costly variety release processes can limit the number of varieties released, with adverse effects on farmer choice.

The variety release process in Uganda

The first step towards variety release is the application, which interested breeders submit to NSCS using Form SR 1 (from the Seed and Plant Regulations of 2017), requesting permission to conduct National Performance Trials (NPTs) and have the variety evaluated for release. The submission includes a variety sample and payment of UGX 800,000 (USD 219) for the NPT test and UGX 350,000 (USD 96) for the DUS test, as stipulated in the Fourth Schedule of the Seed and Plant Regulations.

NSCS is responsible for variety testing. However, Article 9 (13) of the Seed and Plant Act permits NSCS to delegate this function to other competent entities. Under this arrangement, NARO conducts NPTs over two seasons with a minimum of five sites in different agroecological zones representing the target production environments on behalf and under supervision of the NSCS while MAAIF retains the function of DUS testing. Following testing, the breeder prepares a technical report in collaboration with NSCS and submits it to the NVRC together with Form SR 2. The committee reviews the submission and either approves the variety for release or recommends further testing. Approved varieties receive a certificate of release and are added to the National Crop Variety List, which is updated annually — most recently in March 2025.

Expedited processes for registration of regional varieties

Uganda is a member of the Common Market for Eastern and Southern Africa (COMESA) and has harmonized the national variety release system with the COMESA Seed Trade Regulations of 2014. For varieties already on the COMESA catalogue, the NVRC reviews both NPT and DUS test results from two other COMESA member states, and no additional testing is required in Uganda. For varieties released in only one other COMESA country, the variety owner must conduct one season of DUS tests. According to seed companies and breeders, the COMESA pathway is more efficient, less time-consuming, and less costly than the full national process.

Committee meetings and costs

The NVRC meets twice a year when candidate varieties are available for review. The costs of the meeting are covered under the Ministry's budget. However, in cases of delays in the release of funds for these meetings, the variety owners are responsible for the costs of the meetings, which are held at either NSCS or NARO offices. The only additional cost is committee member allowances of approximately USD 30 per person. The complete variety release process is detailed in Part II of the Seed and Plant Regulations (2017), Articles 4 through 9.

Length of the variety release process

The variety release process for national varieties averages 36 months according to company responses and 18 months according to breeder responses (Table 20). For COMESA varieties, the process takes approximately 6 months. The length is calculated from the date of submission to the variety release committee to the date of approval and does not include the time spent by breeders developing the variety prior to submission.

Stakeholder opinions

According to seed companies and breeders, the variety release process is generally followed as prescribed, and NSCS provides relevant information to applicants. During the 2023–2025 period, only two seed companies besides NARO released varieties. Overall satisfaction with the process averages 67% among companies and 65% among breeders (Table 20). Companies noted that the process is more efficient for maize than for sorghum. One company suggested that NSCS should take full control of the process and subcontract capable parties for testing, arguing that testing fees at NARO stations are too high. The seed companies generally find the process acceptable, particularly when using the COMESA pathway. However, the NARO breeders remarked that the process needs to be improved by (i) setting a calendar for variety release, (ii) gazetted official sites for DUS and NPT tests, and (iii) setting up an Appeals Tribunal to which breeders who are not satisfied with the decision of the NVRC can appeal²².

Table 20: Length and satisfaction rating of the variety release process

Indicators	Company response (n=2)	Breeder response (n=2)
Length of variety release process for national varieties (in months)	36	18
Length of variety release process for COMESA varieties (in months)	6	NA
Satisfaction with variety release process (out of 100%)	67%	65%

extremely poor

poor

fair

good

excellent

²² Article 16 of the Seeds and Plant Act (CAP 41) establishes an Appeals tribunal to address to respond to decisions made under the law. However, the tribunal has not yet been established.

COST OF VARIETY RELEASE PROCESS

In well-functioning seed systems, the costs of releasing a variety should not be so high as to disincentivize releases altogether. The fourth Schedule in the Seed and Plant Regulations prescribes three different fees related to variety testing. These are the NPT test at UGX 800,000 (USD 219)²³, the DUS test at UGX 350,000 (USD 96) and the fee for registering the variety on the catalogue, at UGX 100,000 (USD 27). It is difficult to ascertain the total cost of variety release and registration as breeders usually require more than one NPT test. In addition, variety owners are also expected to pay allowances of USD 30 to each member of the NVRC when the committee meets to evaluate the variety. NARO conducts the NPT tests as a delegated role, on behalf of NSCS. NARO charges the private breeders USD250 per variety per site per season.

Two seed companies released varieties during the three-year period, but only one provided information on the cost. This company incurred a total cost of USD 339 and raised only one concern: the high cost of breeder seed, sourced from one of the CGIAR centers. The second company, while acknowledging that the variety release process for maize was fairly well organized, provided two recommendations: one, NSCS should assume full control over the variety release process and sub-contract capable entities from the public or private sector to conduct testing, and NARO stations should improve capacity for testing to shorten the data processing time and charge lower testing fees.

STATUS AND IMPLEMENTATION OF NATIONAL SEED POLICY FRAMEWORK

Well-functioning formal seed sectors depend on effective coordinating institutions operating within clearly defined, regularly updated legal frameworks. Seed regulations provide the structural foundation for the formal seed sector. The TASAI study assesses stakeholder perspectives on various aspects of seed regulations, including whether they are supportive of the growth of the seed sector, the role stakeholders play in their design and implementation, stakeholders' awareness of the laws and regulations, the presence of an enforcement agency, the costs of regulation, and the effectiveness of punitive measures.

Table 21 lists the key seed policy instruments governing the seed industry in Uganda and provides details on their status and a brief overview of their status of implementation. The table also provides information on the status of seed sector harmonization with the COMESA Seed Trade Harmonization Regulations of 2014.

²³ Exchange rate during the study was: 1USD = UGX 3,650

Table 21: Key seed policy instruments in Uganda

Instrument	Description	Implementation Status
National instruments		
National Seed Policy (2018)	Governs the promotion, regulation, and quality assurance of seed variety release, multiplication, conditioning, marketing, and importation.	Being implemented.
Seed and Plant Act (CAP 41)	Primary legal instrument governing the seed sector. Establishes three entities: (i) National Seed Board (advises Minister on seed sector matters), (ii) National Variety Release Committee (manages the National Crop Variety List and approves variety releases), and (iii) National Seed Certification Service (designs and enforces seed certification standards and procedures).	Being implemented as the principal Act for the seed sector. However, the law is under review by the Uganda Law Reform Commission. The review has highlighted gaps, errors, implementation inadequacies, and inconsistencies with other legal instruments. In addition to addressing these gaps, the law will be aligned with COMESA Seed Trade Regulations (2014) and the National Seed Policy (2018).
Seed and Plant Regulations (2017)	Implementing regulations for the Seed and Plant Act.	Being implemented.
National Seed Strategy (2018/19-2022/23)	Guides development of a competitive seed system to increase agricultural productivity. Four components: (i) strengthening research and development, (ii) building capacity of seed value chain actors, (iii) strengthening seed quality control, and (iv) enhancing knowledge and information management.	Expired in 2023. MAAIF has constituted a technical team to revise the Seed Strategy. The work is ongoing, and is expected to be finalized in the third quarter of 2026
Plant Variety Protection Act (2014)	Promotes development and protection of new plant varieties by granting breeders' rights.	Not yet implemented; implementing regulations have not been passed.
Seed and Plant (Quality Declared Seed) Regulations 2020	Establishes the Quality Declared Seed system, including registration requirements for QDS producers, production standards, and guidelines for sampling, testing, labeling, and sale.	Being implemented, though compliance levels are low. NSCS reports that only four QDS producers were registered in 2024, despite many producers being active. Not all QDS production is inspected and certified.
Plant Protection and Health Act, 2015, Cap.39:	Relates to protection of plants against destructive diseases, pests and weeds, to prevent the introduction and spread of harmful organisms that may adversely affect agriculture	Being implemented to regulate export and import of seed, plants and plant products so as to protect and enhance international reputation of agricultural products
The National Agricultural Research Act, 2005	Provides for the development of an agricultural research system for Uganda for the purpose of improving agricultural research services delivery, financing, and management.	Being implemented for functioning and governance of NARO



Regional regulatory instruments		
Instrument	Description	Implementation Status
COMESA Seed Trade Harmonization Regulations (2014)	Addresses variety release, seed certification, and phytosanitary measures. Uganda's 2017 Seed and Plant Regulations have not been amended to conform but allow importation of varieties on a common regional catalogue. The 2018 Seed Policy highlights the importance of harmonization of regional seed agreements to boost trade.	Fully implemented. Varieties on the COMESA Catalogue are accepted for release and commercialization after seed companies submit applications with DUS test results from two COMESA member states; NVRC reviews before approval. First varieties added to National Crop Variety List in 2019; 20 varieties added to date. Uganda is piloting COMESA seed labels, which were launched in May 2025.

EFFORTS TO ERADICATE COUNTERFEIT SEED

Counterfeit seed threatens the seed sector in two important ways: first, it erodes farmers' confidence in certified seed when they unknowingly plant inferior-quality planting material labelled as certified; and second, it undermines efforts to increase the adoption of improved varieties. TASAI tracks the number of counterfeit seed cases reported by seed companies and the government in the data collection year. In addition, seed companies report their satisfaction with government efforts to eliminate counterfeit seed. The reported figures are likely underestimates, as selling counterfeit seed is illegal and, as with most illegal activities, difficult to observe and track.

The National Seed Certification Service (NSCS) oversees seed quality control in Uganda. The Seed and Plant Act guides efforts to combat the production and sale of counterfeit seed. Two legal instruments prescribe penalties for offences related to counterfeit seed. The Seed and Plant Act (CAP 41) provides for a fine of UGX 1,920,000 (USD 526) and/or a maximum prison term of two years for offences under the Act. The second instrument is the Trademarks Act of 2010, which regulates the use of trademarks and addresses infringement in Section IV.

Despite these regulatory measures, counterfeit seed remains a major problem in Uganda's seed sector. NSCS conducts surveillance only when resources allow, but inspectors respond to alerts as they arise. In some cases, NSCS works with District Agricultural Officers (DAOs). Once a case is reported, the relevant DAO is notified and follows up, with police involvement if necessary. In the remaining cases, offenders are fined, the counterfeit seed is confiscated and taken to a MAAIF station for subsequent incineration. In addition, MAAIF has an Agriculture Police unit comprising of 25 officers. Though the officers are available for deployment, the unit is underfunded and lacks facilitation (in terms of a vehicle, fuel, and allowances). In 2024, NSCS only received one reported case of counterfeit seed. This case was taken to court.

Seed companies are not satisfied with government efforts to address counterfeit seed, giving it a rating of 50% (Table 22). The industry believes that the prevalence of counterfeit seed is one reason why farmer demand for imported varieties has increased, reflecting low confidence in the quality assurance activities for locally produced varieties.

Table 22: Industry satisfaction with the government's effort to address counterfeit seed

Indicators	2024
Number of cases of counterfeit seed (seed producers)	141
Number of cases of counterfeit seed (government)	1
Seed industry satisfaction with government effort to address counterfeit seed (out of 100%)	50%

extremely poor

poor

fair

good

excellent



Government's new seed traceability system to combat counterfeit seeds

NSCS is piloting a digital platform - Seed Tracking and Traceability System (STTS) to comprehensively track seed activities along the seed value chain and support government efforts in seed information and seed quality management. The system covers multiple aspects related to traceability, including the registration of seed actors (breeders, companies, QDS producers, and agro-dealers) and planting returns, the application for seed inspection and deployment of seed inspectors, submission of seed inspection reports, and a marketplace where sales transactions are recorded. With support from AGRA, NSCS and USTA have been piloting the STTS by training different categories of seed actors. By the end of 2025, 31 seed companies and 43 agro-dealers had been trained in the use of the STTS, along with 30 breeders. By May 2026, 24 seed companies had registered onto the system, some of which had posted their planting returns. The next step was for NSCS to assign inspectors to the different companies.

Seed company measures to address counterfeit seed

In addition to government efforts, seed companies are conducting multiple activities to address counterfeit seed. These include: (i) conducting market surveillance, sometimes in collaboration with the police and NSCS; (ii) using branded packaging materials that carry QR codes and tamper-proof labels; (iii) conducting farmer sensitization and awareness campaigns through field demonstrations and radio programs, and selling directly to farmers; (iv) selling seed only through registered agro-dealers and working with and training these agro-dealers; (v) strengthening internal company controls by limiting access to packaging materials, implementing their own seed traceability systems, and using small packages that are difficult to replicate; and (vi) conducting post-season surveillance activities such as tracking and retrieving unsold stock (especially for flagship varieties) and retrieving empty packaging materials from agro-dealers.

USE OF GOVERNMENT SUBSIDIES

Seed subsidies are intended as a short or medium-term measure to encourage farmers to adopt improved crop varieties. The design and execution of subsidy programs, in terms of the scale, targeting, distribution arrangements, and payment systems, may contribute to the development of the seed market in positive ways or they may be disruptive to market forces.

Uganda had no government seed subsidy programme in 2024. However, under the Fourth National Development Plan (NDP IV), the government's overarching development framework, the government intends to establish a national seed company, which would be a company dedicated to produce, multiply, and distribute certified seed.

INSTITUTIONAL SUPPORT

QUALITY OF THE NATIONAL SEED TRADE ASSOCIATION

Well-functioning national seed trade associations play a key role in representing industry interests and engaging with government. Their membership typically includes seed companies, seed growers, seed cooperatives, seed associations, individual seed producers, and, at times, agro-dealers.

Overview of the Uganda Seed Trade Association (USTA)

The Uganda Seed Trade Association (USTA) is the apex body representing the private sector in Uganda's seed industry. In 2025, USTA had 44 members: seed companies (ordinary members) and agro-dealers, other associations, and individual seed experts (associate members). USTA is governed by a General Assembly that convenes annually in April and appoints the Board to a three-year term; four Board meetings are held each year. USTA is an active member of the African Seed Trade Association (AFSTA) and serves on the AFSTA Board. Day-to-day affairs are managed by an Executive Secretary supported by two permanent officers.

According to the Executive Secretary, the association's key activities and achievements over the past year include: involvement in the review of the Seed and Plant Act; the design, training, and piloting of the Seed Tracking and Traceability System (STTS); engagements with the Ministry of Finance, Planning and Economic Development on seed-related matters; and advocacy for seed to be recognized in the Fourth National Development Plan (NDP IV).

Trend in USTA membership and overall member satisfaction over the years

Figure 9 shows the trend in the number of seed company members (ordinary members) and non-members between 2015 and 2024. The number of seed company members has increased more than threefold, from 12 in 2015 to 39 in 2024 — partly reflecting USTA's demonstrated value to its members over the years. The chart also shows that overall member satisfaction has reached 70% — the highest recorded since 2015, continuing a broadly upward trend. Members attributed the high score to the following aspects of USTA's performance: (i) it keeps members informed on important seed-sector developments; (ii) it regularly consults members before taking a position on key issues; (iii) it develops and implements relevant projects for the sector, such as the AGRA-supported STTS pilot; and (iv) it has a clear, well-balanced, and democratic governance structure.

Figure 9: Trend in number of USTA members and member satisfaction

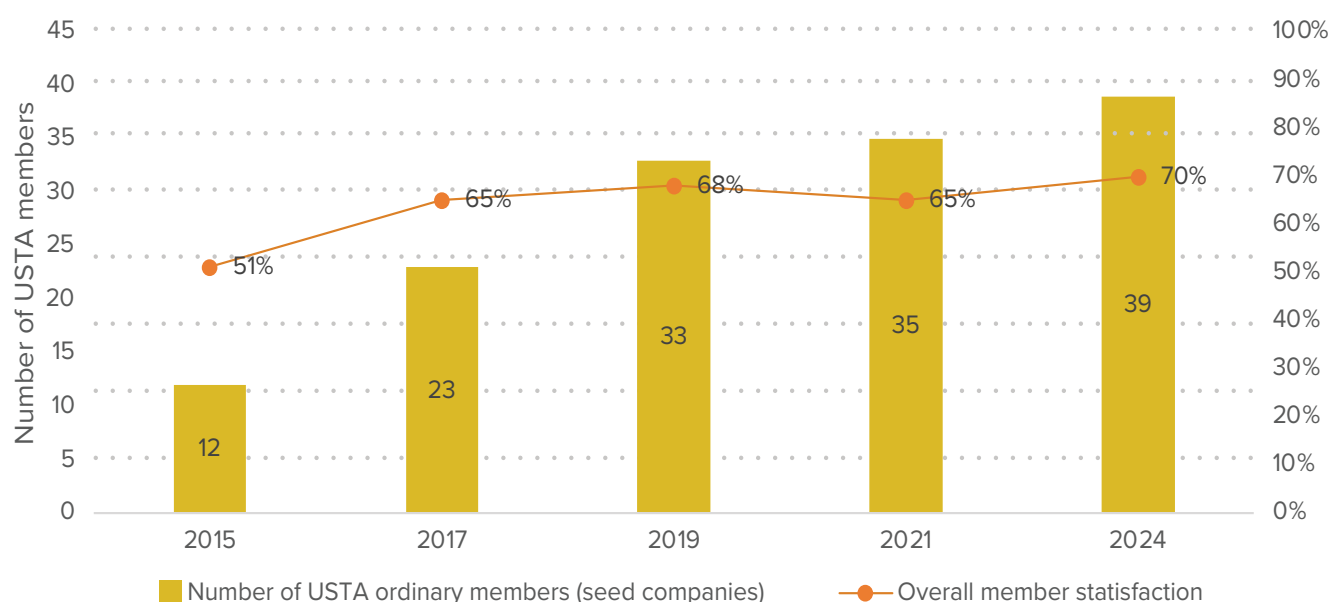
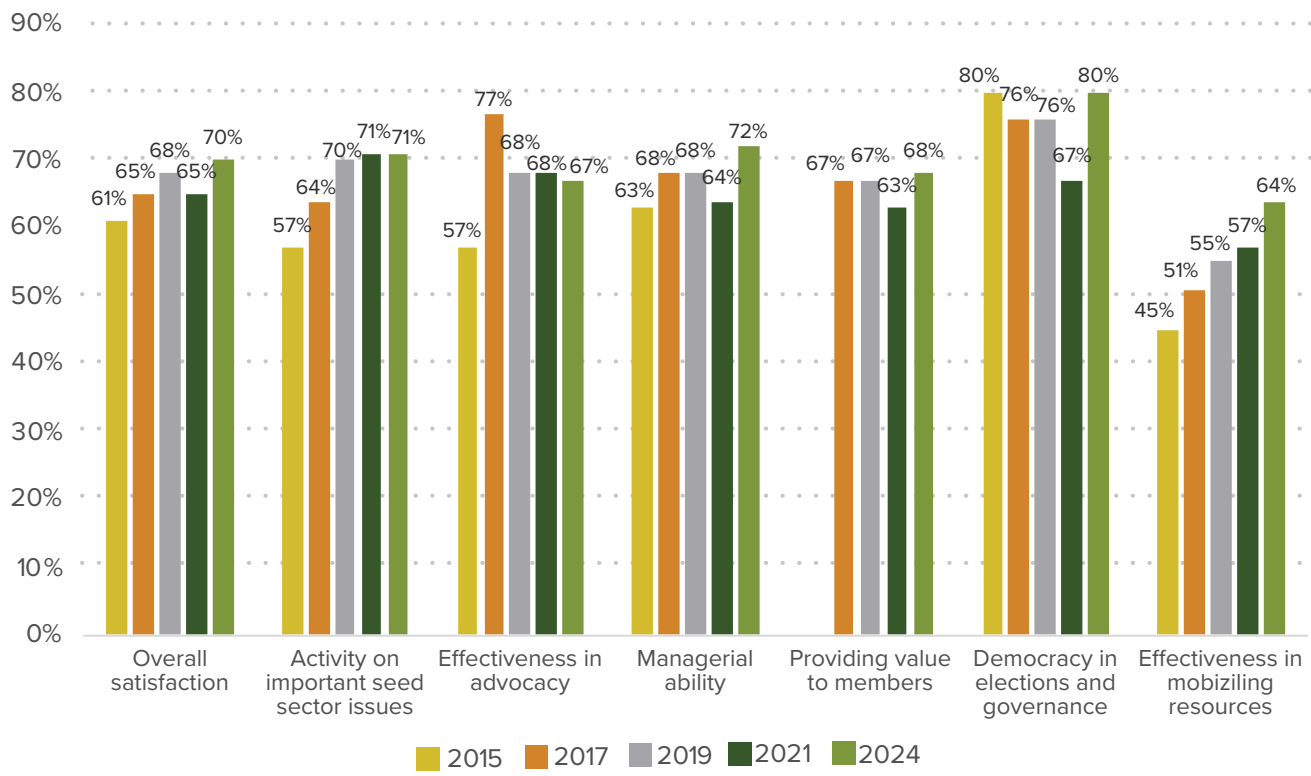




Figure 10 presents USTA's evaluation results across six metrics in the five TASAI studies conducted since 2015. Overall, a notable improvement occurred between 2015 and 2017, since when ratings have generally hovered between 60% and 80% depending on the metric, with the exception of the ability to mobilize resources. "Democracy in elections

and governance" has consistently scored highest, while "Effectiveness in mobilizing resources" has scored the lowest — though it has improved, rising from 45% in 2015 to 64% in 2024. These findings suggest that USTA is a reasonably well-functioning organization with room for improvement.

Figure 10: Trend in member's opinion of Uganda Seed Trade Association (2015-2024)



Challenges and reasons for non-membership

Eight of the 23 seed companies surveyed in 2024 were not USTA members. The main reasons for non-membership include: (i) Cost of membership: four companies reported that the registration and annual subscription fee of UGX 2,000,000 (USD 548) is prohibitive, particularly for start-ups or businesses with low turnover, and proposed that fees be scaled to company size rather than set at a flat rate. (ii) Limited perceived value: two companies reported that they do not see sufficient value in membership — notably, one of these mainly focuses on agrochemicals and irrigation equipment, for which USTA's seed-sector mandate is less directly relevant. (iii) Lack of outreach: one company reported that it had not received any contact from USTA.

Members also noted several challenges: (i) USTA's secretariat is understaffed, limiting its capacity to deliver additional services; (ii) two companies were dissatisfied with USTA's handling of the NARO variety licensing arrangements, believing their views were not adequately represented; and (iii) despite its efforts, USTA remains constrained by inadequate financial resources. The seed labels are supposed to generate funds, but this has not yet been done effectively.²⁴

²⁴ USTA works with NSCS to issue seed labels to seed companies, under an arrangement by which USTA is to receive a percentage of the revenue from label sales. However, because no formal Memorandum of Understanding exists between the government and USTA, the Attorney General's office has suspended the transfer of funds until a legal arrangement is put in place.

ADEQUACY OF SEED INSPECTORS

Seed inspection services ensure that certified commercial seed meets the regulatory quality standards. Providing adequate inspection services requires sufficient numbers of well-resourced inspectors. TASAI studies track the number of inspectors and other information pertinent to their effectiveness, such as the availability of resources and the use of (new) digital tools.

Overview of seed inspection services

As stipulated in Article 8(2)(j) of the Seed and Plant Act (CAP 41), seed inspection and certification are the responsibility of the National Seed Certification Service (NSCS). In 2024, the Public Service Commission (PSC)²⁵ prescribed 18 Agricultural Inspectors under the Division of Seed Inspection and Certification (NSCS). Of these, one should be the Principal Agricultural Inspector while the other 17 should be Senior Agricultural Inspectors. However, in 2026, NSCS had 12 seed inspectors: three Senior Agricultural Inspectors and nine Agricultural Inspectors. Among the Senior Inspectors, one oversaw variety testing and registration, the second was in charge of seed inspection and sampling and the third oversaw seed lab testing and certification. The 12 inspectors are fewer than the 18 prescribed to the division by the Public Service Commission in 2024. As such, NSCS has a significant human resource gap. PSC is in the process of recruitment for the remaining positions of Principal Agricultural Inspector and Senior Agriculture Inspectors.

In addition to the 12 core inspectors, NSCS occasionally draws on three seed analysts from within its own division and eight agricultural inspectors from the Plant Health and

25 Public Service Commission is the body under the Ministry of Public Service which oversees recruitment, management and regulation of human resource structure for public service in the country.

Quarantine Inspection Services and Agrochemicals Control divisions — all of whom have been trained in seed inspection. In addition, NSCS has trained 153 para-inspectors — district production officers and agricultural extension officers — to conduct field inspection of QDS and certified seed fields. Their use will be piloted in the 2025B and 2026A seasons, with an initial focus on reporting planting returns. There are no authorized private seed inspectors in Uganda.

Table 23: Number and rating of the adequacy of public inspectors

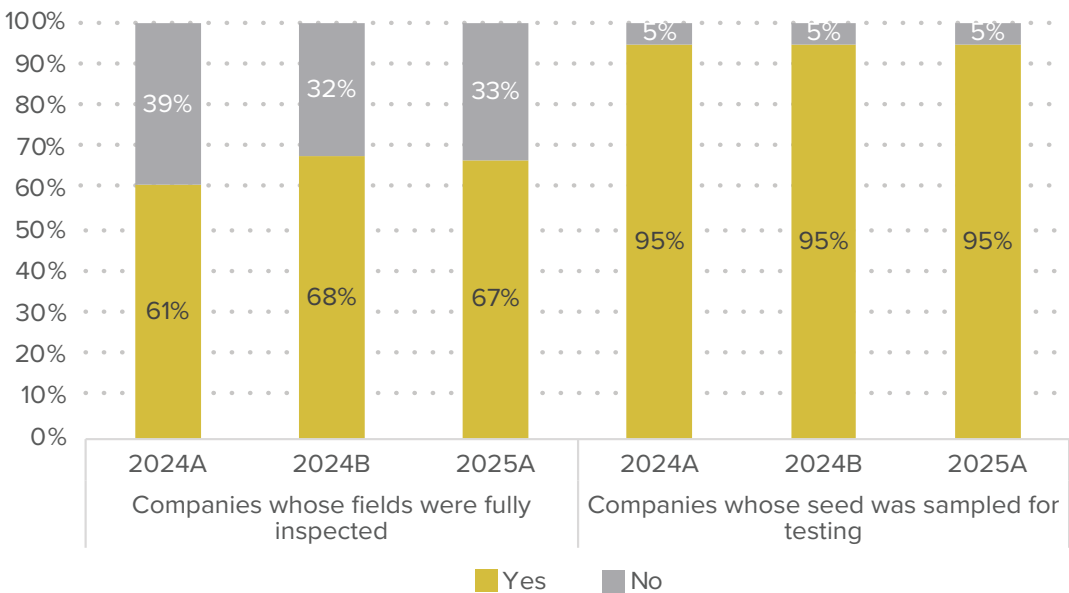
Indicators	2025
Number of public seed inspectors	12
Number of para-inspectors	153
Number of private seed inspectors	0
Seed industry satisfaction with seed inspectors (out of 100%)	70%

Cases of uninspected seed

Article 37 of the Seed and Plant Regulations of 2010 requires that all seed is inspected and tested prior to being sold to farmers. However, this is not always the case. Figure 11 shows the percentage of surveyed seed companies that reported either incomplete field inspections (that is, fewer inspections than the number required by law) or absence of seed sampling by NSCS, across three seasons: 2024A to 2025A. Between 32% and 39% of seed companies surveyed²⁶ reported selling seed that had not been fully inspected — a significant proportion given that inspection is mandatory. By contrast, only one company (5%) reported that its seed was not sampled.

26 This translates to 6 or 7 seed companies

Figure 11: Company seed inspection and seed sampling



SERVICE TO SMALLHOLDER FARMERS

ADEQUACY OF EXTENSION SERVICES

Well-functioning agricultural extension services are critical to the successful adoption of improved seeds by smallholder farmers. TASAI tracks the average number of agricultural households served per extension officer. A lower ratio indicates better farmer access to expert information and advice on improved seeds and other agricultural technologies. This indicator tracks extension officers by sector (public and private) and gender and is not crop-specific.

Agricultural extension services in Uganda are coordinated by the Department of Agricultural Extension and Skills Management (DAESM) in collaboration with the Department of Agricultural Investment and Enterprise Development. Extension services are decentralized, with extension officers stationed at district and sub-county levels. The district production officer (DPO) ideally supervises four subsectors under the production department: crop, livestock, fisheries and entomology (for beekeeping). These officers report to the DPO, who then forwards outstanding issues to DAESM. Technical issues are handled by the respective departments in MAAIF, while administrative issues are handled by the District Local Governments and the Ministry of Local Government.

The Ministry of Public Service has approved 9,635 agricultural extension officer positions at all levels. Of these, only 4,310 have been filled — a vacancy rate of approximately 55%. According to DAESM, 580 of the 1,487 sub-counties (39%) have no extension officer at all. The main challenge facing the extension service is the shortage of skilled personnel at the district level. The last series of refresher training sessions were conducted between 2015 and 2020. The second challenge is the inadequacy of facilities and tools. Currently, only 2,265 (53%) of the extension staff have motorcycles. As a result, most officers do not have the means of transport to reach the remote rural areas.

Table 24 shows that in addition to the 4,310 public officers, an additional 300 private extension officers are employed by the 23 surveyed seed companies.²⁷ The number of extension officers equates to one public officer for every 1,613 farming households. However, DAESM estimates that the ratio is closer to 1:2,000, as there are many extension officers working in more than one sub-county. This is lower than the ratio recommended in the National Agricultural Extension

Strategy of one extension officer for every 500 farmers/ farming households (MAAIF, 2016). Both DAESM and the seed companies acknowledge that the current numbers are insufficient. The seed industry's satisfaction with public extension officers is low at 40%, reflecting concerns about their reach and effectiveness. The main challenge faced by the public extension officers is the lack of funds to cover their fuel/transport costs to the different farm locations.

Table 24: Number and adequacy of agricultural extension services

Indicators	2025
Number of public extension officers employed by the government	4,310
Number of private extension officers employed by surveyed seed companies	300
Number of agricultural households	6,950,353
Ratio of public extension officers to households	1,613
Seed industry satisfaction with public extension officers (out of 100%)	40%

extremely poor poor fair good excellent

CONCENTRATION OF THE AGRO-DEALER NETWORK

Agro-dealers play a key role in expanding the reach of seed distribution systems by connecting seed companies to individual farmers, especially in hard-to-reach rural areas, and are often the main point of sale for certified seed. A denser agro-dealer network means greater access to improved seed for smallholder farmers. TASAI tracks the number of agro-dealers and, where possible, distinguishes between registered and non-registered agro-dealers.

The Department of Crop Inspection and Certification (DCIC) under MAAIF is responsible for registering enterprises engaged in production, distribution, marketing, and trade in agricultural inputs. Agro-dealers are registered by the Agrochemicals Unit — one of DCIC's three units — under the Control of Agricultural Chemicals (Registration and Control) Regulations, which require all sellers of agricultural chemicals

²⁷ Note that, in addition to the 300 officers listed here, private extension officers work in other parts of the agriculture sector as well as with NGOs. However, TASAI studies only report the numbers employed by seed companies included in the TASAI survey.

to be registered with MAAIF. As of 2025, MAAIF had a record of 525 registered agro-dealers,²⁸ although, when asked, both the NSCS and the Ministry felt that this number was a significant underestimate.

Agro-dealers are trained by the Agrochemicals Unit of the MAAIF, in collaboration with Makerere University, in a mandatory five-day training program on the safe handling and use of pesticides. Those who successfully complete the program receive accreditation. As of August 2024, 623 agro-dealers had been trained.

Table 25 shows that seed companies reported working with an average of 318 agro-dealers each, with a range from 2 to 1,500; three companies reported working with more than 1,000. The seed industry’s satisfaction with the agro-dealer network stands at 60% — companies are broadly satisfied but remain concerned that agro-dealers are concentrated primarily in urban areas and trading centres.

NSCS does not have a comparable structured arrangement for registering seed sellers, despite Article 8(2) of the Seed and Plant Act (CAP 41) requiring NSCS to register all seed dealers, agents, and sub-agents. Article 38 of the Regulations further prohibits the sale of seed by non-registered entities. In practice, registration of seed sellers has only been undertaken under specific projects. The most recent project was the Agriculture Cluster Development Project, co-funded by the Government of Uganda and the World Bank. Under this project, MAAIF registered agro-dealers in 66 (out of 135) districts. The agro-dealers served as outlets for seed distributed using an e-voucher arrangement.

28 Source: <https://blog.plantwise.org/2025/03/24/how-agro-dealers-training-in-uganda-is-reducing-pesticide-risks-and-making-farming-safer/>

Table 25: Number of agro-dealers and satisfaction of agro-dealers network

Indicator	2025
Number of agro-dealers trained and accredited by MAAIF	525
Average number of agro-dealers per seed company	318
Seed industry satisfaction with agro-dealer network (out of 100%)	60%

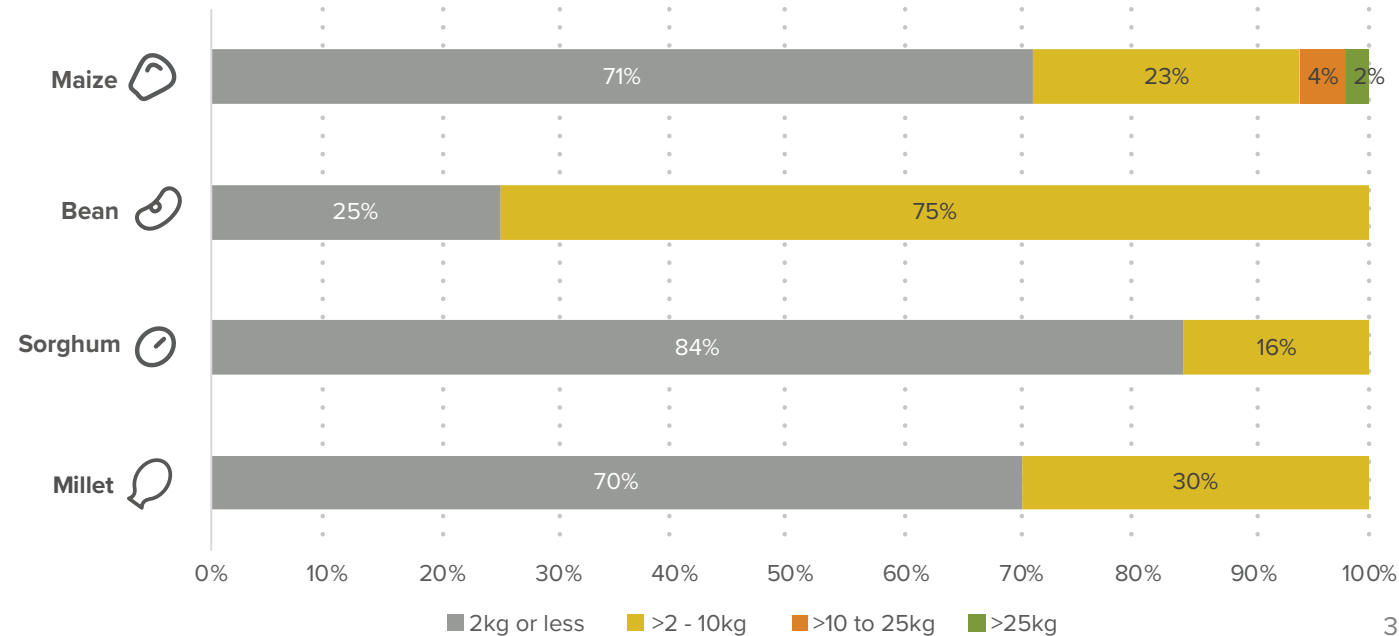
extremely poor
poor
fair
good
excellent

AVAILABILITY OF SEED IN SMALL PACKAGES

Because most farmers in sub-Saharan Africa operate on a small scale, making seed available in smaller, more affordable packages is an effective way to increase adoption rates. TASAI tracks the percentage of seed sold in four package size categories: 2 kg and below; above 2 kg to 10 kg; above 10 kg to 25 kg; and above 25 kg.

Figure 12 shows the breakdown of seed packages by crop and size, as reported by the 23 surveyed seed companies. Most maize seed is sold in packages of 2 kg or less, partly because companies sell maize seed through agro-dealers, some of whom have been known to open larger packages and replace certified seed with grain — small packages are harder to tamper with undetected. Bean seed is also sold through agro-dealers, typically in larger, 10 kg, bags, as the recommended seeding rate for bean is between 20 and 40 kg per acre. Despite the larger package size, there appear to be fewer reported cases of counterfeit bean seed than for maize. Millet and sorghum seed is mostly sold to NGOs, which specify their preferred package sizes in bidding documents.

Figure 12: Percentage of seed sold in different package sizes (2024)





AVERAGE SEED AND GRAIN PRICES

Seed and grain prices at planting time are a useful measure of the affordability of improved seed. Many smallholder farmers face a choice between purchasing certified seed and planting grain saved from the previous harvest; the greater the price difference, the less likely resource-poor farmers are to purchase certified seed. This indicator tracks the retail price of seed as reported by seed producers, compared with the market price of grain at planting time

Table 26 shows the average seed prices, as reported by the seed companies, and the average grain prices, published in the MAAIF Statistical Abstract of 2024. As expected, the average price of hybrid maize varieties is approximately three times that of OPV maize. The price of hybrid varieties varies by source, however: imported maize hybrids (UGX 11,250 per kg on average) are approximately 60% more expensive than locally produced hybrids (UGX 7,071 per kg on average). Similarly, hybrid sorghum varieties — all of which are imported — are more expensive than OPV sorghum varieties. Bean seed is the most expensive of the non-hybrid varieties across the four crops.

Table 26: Average seed and grain prices (2024)

Crop	Average seed price (UGX/kg)	Average seed price (USD/kg) ²⁹	Average grain price (UGX/kg)	Average grain price (USD/kg)
 Maize (hybrid)	8,591	2.35	1,800	0.49
 Maize (OPV)	2,920	0.80	1,800	0.49
 Bean	6,283	1.72	4,600	1.26
 Millet	4,000	1.10	2,525	0.69
 Sorghum (hybrid)	9,667	2.65	1,900	0.52
 Sorghum (OPV)	3,071	0.84	1,900	0.52

²⁹ Exchange rate: UGX 3,650 = USD 1





CONCLUSION AND RECOMMENDATIONS

The formal seed system in Uganda is at an important stage of growth. Having been liberalized about 30 years ago, the sector is characterized by a fairly robust private sector, active public breeding programs, and a national seed quality assurance system which is led by the government.

The report has presented a mixed picture on the status of the seed sector in Uganda. There are several positive aspects which need to be sustained or improved. One positive is that most seed companies that source basic seed from NARO are adopting the variety allocation system and signing licensing agreements with NARO. In addition, most companies are sourcing basic seed through the NHL pre-ordering arrangement. These developments have multiple advantages: first, they allow for more effective forecasting of early-generation seed requirements; and second, they support the government's seed traceability efforts.

A second positive development is the closure of the government seed support programme under OWC/NAADS, which has caused seed companies to build markets and divert their sales from government to agro-dealers or directly to farmers.

Thirdly, USTA is consistently recognized as a key platform for the private sector in the seed industry. Its efforts need to be sustained, and their constraints addressed. Finally, the Seed Tracking and Traceability System (STTS) is a promising tool that, when fully implemented, would greatly improve seed traceability, address the challenge of counterfeit seed, and provide industry data for planning, decision-making, and forecasting.

Despite these positive aspects, the seed industry in the country is still grappling with multiple structural and operational constraints. The following recommendations are proposed in response to the challenges.

Strengthen capacity at NSCS. NSCS faces significant human resource and logistical capacity challenges: only 12 of the 18 positions for Agricultural Inspector under the Division of Seed Inspection and Certification which are prescribed by the Ministry of Public Service have been filled. This has contributed to a substantial proportion of seed companies — between 32% and 39% — reporting that their fields are not being fully inspected.

Strengthen efforts to address the challenge of counterfeit seed. Counterfeit seed remains a persistent problem, eroding farmer confidence in locally produced varieties — particularly hybrid maize. There is need for a sustained concerted effort by government and the private sector to jointly address the issue.

Develop and implement a system for registering seed sellers. NSCS is legally required to register all seed sellers, as per Article 8(2) of the Seed and Plant Act (CAP 41) and Article 38 of the Seed and Plant Regulations, but this requirement is not currently being met. NSCS should:

- develop a system to register all active seed sellers and agro-dealers, in close collaboration with the Agrochemicals Unit (which already registers agro-input dealers of agricultural chemicals) and with district and municipal authorities; seed seller registration should be managed through the STTS; and
- conduct awareness campaigns and training for seed sellers on how to register through the STTS.

Enforce and then monitor the implementation of the STTS. The STTS rollout in 2025 was conducted by USTA and NSCS with support from AGRA. Compliance levels across all categories of seed actors — seed companies, QDS producers, breeders, and agro-dealers — must be monitored closely, and this should be accompanied by sustained outreach to entities that have not yet adopted the system.

Plug outstanding gaps in the NHL pre-ordering system. The NHL pre-ordering system has made significant progress over the years, and seed companies are generally satisfied with the availability of basic seed supplied through NHL. However, NHL needs to work closely with seed companies and NARO to address the outstanding gaps in its business model, specifically:

- working with NARO to ensure the timely supply of breeder seed for hybrid maize varieties;
- improving NARO's capacity to maintain breeder seed for varieties that have been developed but not yet commercialized or not regularly demanded;
- expanding NHL's irrigation facilities to improve seed production capacity and manage the challenge of erratic rainfall; and
- sustaining regular communication with seed companies and QDS producers to identify, understand, and respond to challenges in the pre-booking arrangements

Finalize amendments to the Seed and Plant Act (CAP 41). Following the Law Reform Commission's review. If passed, the proposed amendments would eliminate redundancies and remove inconsistencies with other relevant policy and legal instruments, including the National Seed Policy of 2018 and the COMESA Seed Trade Harmonization Regulations of 2014. The amended Act would also strengthen

coordination across the seed sector by clarifying the roles and responsibilities of key institutions. Once enacted, the Seed and Plant Regulations — the Act's main implementing instrument — would also need to be revised accordingly.

Strengthen the capacity of USTA. USTA plays a key role in the formal seed sector in Uganda. This is recognized by their members, who rated their satisfaction with the association at 70%, the highest rating since 2015. Further, a significant number of seed companies (USTA members) have been active for at least 15 years and are therefore relatively mature. As the seed industry continues on its development trajectory, USTA's role should evolve accordingly — moving beyond advocacy and member representation to building internal capacity to deliver specific seed-related services to companies, including support for seed quality control systems and monitoring of STTS implementation.

Improve the system for national variety release and registration. While the COMESA variety release pathway is clear, efficient, and low-cost, both private and public breeders have raised concerns about the national process. Improvements should include: (i) establishing a fixed calendar for variety release; (ii) gazetting official sites for DUS and NPT tests; (iii) appointing independent third parties to oversee DUS and NPT testing as permitted under Article 9 (13) of the Seed and Plant Act (CAP 41); and (iv) establishing the Appeals Tribunal provided for under Article 16 of the Seed and Plant Act, to which breeders dissatisfied with NVRC decisions can appeal³⁰.

Fund the national agricultural extension system. The Department of Agricultural Extension and Skills Management (DAESM) in collaboration with the Department of Agricultural Investment and Enterprise Development need to be adequately funded to implement the National Agricultural Extension Strategy. Funds are needed to plug the human resource gap of more than 5,000 agricultural extension officers at district and sub-county level. The increase in the number of officers should be complemented by the provision of means of transportation.

Increase funding to public research institutes to sustain the development, maintenance and supply of varieties that are responsive to consumer and industry demands, climate smart, and pest and disease tolerant. The research institutes need to increase their efforts in building long-standing and sustainable relationships with the private sector and farming communities to ensure that the pipeline of varieties reaches the end-users.

30 Article 16 of the Seeds and Plant Act (CAP 41) establishes an Appeals tribunal to respond to decisions made under the law. However, the tribunal has not yet been established.

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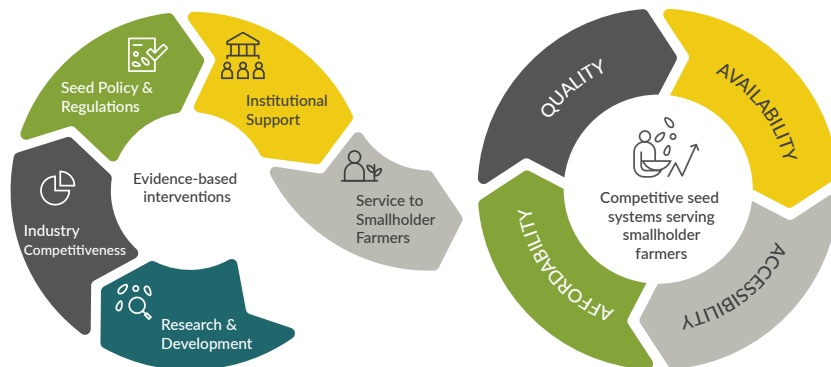
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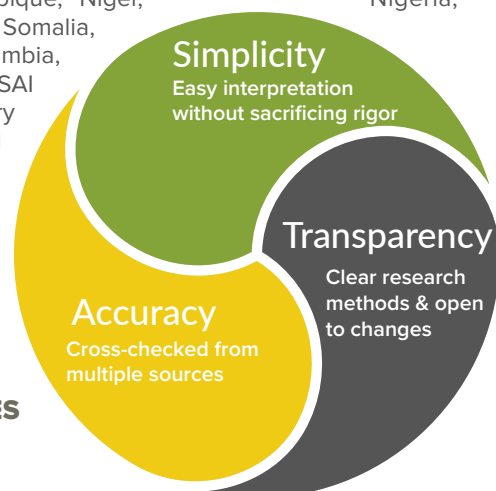


PILLARS OF COMPETITIVE SEED SECTORS

The African Seed Access Index (TASAI) is a seed industry research initiative that is coordinated by the nonprofit organization TASAI Inc. TASAI's goal is to encourage African governments and other seed industry players to create and maintain enabling environments that will accelerate the development of a vibrant private sector-led seed system serving smallholder farmers. It is this enabling environment that TASAI seeks to measure, track, and compare across African countries. The intended outcome of the index is improved access to locally adapted, affordable, and high-quality seed of improved varieties by smallholder farmers in Sub-Saharan Africa.

To assess the status of the seed industry value chain, TASAI tracks indicators in the following five categories: Research and Development, Industry Competitiveness, Policy and Regulations, Institutional Support and Service to Smallholder Farmers. By the end of 2026, TASAI studies will have been completed in 24 African countries: Burkina Faso, Burundi, Cameroon, Cote d'Ivoire, the Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. In each country, TASAI works closely with local seed industry actors, government and international development agencies to share the TASAI findings and to identify the next steps for creating a vibrant national seed sector. TASAI's approach is guided by the principles of Simplicity, Transparency, and Accuracy.

TASAI PRINCIPLES





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