

ISSD Uganda



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Transforming the seed sector in Uganda The journey by ISSD Uganda

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Key Messages

1. Building strategic partnerships with public institutions and effective stakeholder engagements with seed sector stakeholders at national and local levels created consensus on inclusive seed policy directions and innovations tailored to a shift from a narrow focus on 'seed industry' to a more pluralistic 'seed sector' development.

2. Injecting new high-yielding crop varieties with farmer-and market-preferred traits into the seed systems and raising the capacity to produce sufficient quantities of quality early generation seed (pre-basic and basic) ensured the availability of certified seed and QDS. This will spur sector transformation in the short term and medium term.

3. The ISSD Uganda approach of interventions across the entire seed value chain has created opportunities for many seed sector players to be involved in quality seed production and delivery, strengthening market demand, public sector governance and service provision. It has also enhanced interaction among the sector players through zonal multi-stakeholder platforms, thus creating a shared vision of the seed policy and strategy towards sector alignment and accountability. However, funding for the strategy that indicates responsibilities and actions remains a challenge.

Introduction

The government of Uganda prioritises agricultural development as the key approach for poverty reduction, food security and economic development. It's Agricultural Sector Strategic Plan (ASSP) of 2015/16-2019/20, which is a roadmap for the development of agriculture in Uganda, seeks to widen community involvement in the transformation of agriculture from subsistence to commercial

farming. It focuses on enhancing agricultural production and productivity, improving access to markets, creating an enabling environment and prioritising institutional development.

Uganda's seed sector development started in 1968 with a public seed sector scheme that involved breeding, seed multiplication and marketing (MAAIF, 2010). The seed industry was liberalised in the 1990s and sparked the emergence of local and international seed companies. It is characterised by the domains in which stakeholders operate (public, private, formal and informal); the types of crops produced (food and cash crops); the varieties used (land races, improved, exotic, and hybrids); the type of quality assurance mechanisms that are in place (informal, semi-formal and certified); and the seed supply mechanisms (local exchange, agro-input dealers and subsidised distribution) (Mastenbroek and Ntare 2016). Each seed system is further characterised by who is producing the seed, which crops and varieties are being produced, the quality assurance measures in place and the way the seed is distributed.

By 2012, 23 registered companies were predominantly engaged in selling hybrid maize, exotic vegetable seed and sunflower. This only served a small market segment. It is estimated that this system contributes to 10-15% of certified seed use, 70% of which is maize (ISSD 2014).

Certified seed is sold directly by seed companies and is also distributed through agro-input dealer shops located mainly in urban centres, often far away from crop production areas.

In addition, government and non-government programmes procure and distribute certified seed to smallholder farmers for free. The seed sector stakeholders perceived the sector merely as seed companies providing seed to farmers.

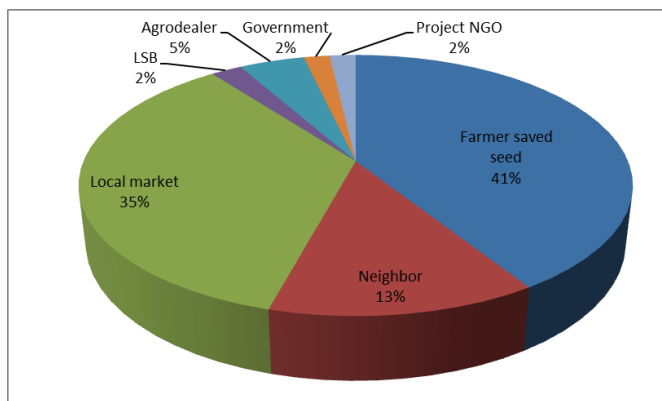


Figure 1: Farmer seed sources (ISSD Project baseline study, 2014)

The informal seed system, on the other hand, supplies 85% of the seed requirements consisting of home-saved seed, seed obtained from social networks (family and friends), informal seed multiplication groups and the local grain market. The local grain market typically provides recycled seed of unknown origin and quality (Kansiime and Mastenbroek, 2016). Seed from farmers’ own farms, social networks and informal seed multipliers have social trust as an informal quality control mechanism because of the familiar and short supply lines (Kansiime and Mastenbroek, 2016; Hoogendoorn et al., 2018), but quality is not assured. Due to limited capacity (human and financial resources) in the regulatory system and the inability of seed companies to supply the required quantities of certified seed of most food crops, 30-40% of seed traded in the market is said to be counterfeit (Joughin, 2014; Marechera et al., 2016; Bold et al., 2017; Erenstein and Kassie, 2018). Some varieties developed and released by the National Agricultural Research Organisation (NARO) are rarely multiplied for commercial distribution due to limited resources for facilitating the diffusion processes resulting from weak linkages between research and extension services.

Seed companies face the challenge of investing in seed production of self-pollinated crops because of the low profit margins involved (Mastenbroek and Ntare, 2016). It is also costly to reach all areas, especially hard-to-reach ones with poor market infrastructures. This has resulted in seed companies concentrating on crops with high returns, such as maize hybrids and exotic vegetables.

ISSD Uganda Interventions

The ISSD approach was based on the relevance of integrated informal and formal seed systems co-existing in the country; complementary roles of private and public sectors; working along the seed value chain; promoting entrepreneurship and market orientation; promoting seed sector innovation; building programmes on a variation of seed systems and fostering pluralism. With this in mind, ISSD Uganda initiated an Integrated Seed Sector Development project in 2012 to enhance male and female smallholder farmers’ access to and use of quality seed of new, improved and preferred varieties. The vision was that of a vibrant, pluralistic and market-oriented seed sector. The focus was on unlocking pathways to transform the predominant informal seed system that coexists with the formal seed supply. To accomplish this transformation, the following steps were taken.

Supporting the development of the seed policy and regulatory frameworks

Multistakeholder engagements

Multistakeholder engagement with key sector players at national and zonal levels was critical. In addition, through memoranda of understanding, ISSD developed partnerships with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), NARO and its Zonal Agricultural Research and Development Institutes (ZARDIs) in the implementation of the project. The ISSD projects then embarked on organising and facilitating annual seed sector stakeholder workshops and targeted roundtable meetings with key staff from the ministry and the NARO institutes to identify critical areas of support and ensure the smooth implementation of engaging smallholder farmers in decentralised quality seed production and quality assurance services, as well as identifying the policy changes needed to support the initiative. With respect to MAAIF, communication centred on its Directorate of Crop Resources, which chairs the National Seed Board (NSB). The Seed and Plant Act mandates the NSB to coordinate and administer functions and services of the seed sector in the country. This engagement created a stronger voice for change and buy-in for the various innovations towards seed sector transformation. Building trust, confidence, transparency and consensus among the sector stakeholders was the cardinal outcome of these engagements.

The National Seed Policy and National Seed Strategy development

At the beginning of the ISSD Uganda programme in 2012, Uganda did not have an approved National Seed Policy (NSP) or National Seed Strategy (NSS), regulations to operationalise the Seed and Plant Act enacted in 2006 to regulate plant breeding, seed production and marketing guidelines, seed quality control guidelines or sector coordination guidelines. These instruments are a sine qua non of an enabling environment for a vibrant, pluralistic and market-oriented seed sector that provides smallholder farmers access to affordable, quality seed of superior varieties.

The development of the NSP went through a protracted process from 2004 to 2019. By 2013, the policy document had gone through five drafts. ISSD Uganda, in partnership with the USAID Feed the Future Enabling Environment for Agriculture (USAID-FtF EEA), actively reinvigorated the process through a national seed sector stakeholders' workshop. The objective of this workshop was to review draft five of the NSP and incorporate emerging issues to strengthen the document. One of those issues was to incorporate quality declared seed (QDS) as a new commercial seed class. The workshop tasked ISSD Uganda to facilitate and coordinate the incorporation of the recommendations of the national workshop to produce a sixth draft.

For the new policy document to be approved by the government, it had to be supported by a five-year seed strategy and implementation plan. Thus, in 2015, MAAIF asked the ISSD and FtF EEA to develop the NSS. The two partners jointly provided the technical and financial support to the ministry.

An additional government requirement for approval of the NSP was to conduct a regulatory impact assessment (RIA). This involved organising countrywide seed sector stakeholder consultative workshops. Once again, in 2016, MAAIF sought technical support from ISSD Uganda and USAID FtF EEA for subregional RIA workshops.

Three one-day subregional workshops each bringing together over 150 representatives from a wide range of stakeholders were held between May and July 2018. A national validation workshop was held in August 2016. ISSD Uganda facilitated and coordinated the incorporation of the recommendations from the RIA to prepare the seventh draft. The NSP, with the updated NSS and RIA, were submitted to MAAIF for processing and approval. Through lobbying and brokerage, the NSP was finally approved in October 2018 and launched in March 2019. This marked a significant stage in creating an enabling environment for a vibrant, competitive and pluralistic seed sector in Uganda.

The implementation of the NSP emphasises all categories of stakeholders in the seed sector, ensuring that public, private and other non-state actors are involved in a way that does not preclude anyone. In this respect, pluralism and financial realism are the guiding principles for sustainable availability of, access to and affordability of high-quality seed.

The regulatory framework for seed production and services

Provisions of the 2006 Seed and Plant Act were not effectively implemented without a policy framework. There were also no regulations to implement the law which mainly concerned the regulation of seed production by seed companies. ISSD Uganda played a significant role in the finalisation of the Seed and Plant Regulations, which were harmonised with the Common Market for East and Southern Africa (COMESA) regional seed trade regulations. This was gazetted in February 2017. With the introduction of the QDS class in the policy and harmonised regulations, it was deemed necessary to develop separate regulations for QDS specifically for the domestic seed market to avoid confusion in the seed market. ISSD Uganda supported all development and the final legal drafting of the Seed and Plant (Quality Declared Seed) Regulations that was gazetted in January 2020. An overview of the current level of implementation of the Seed and Plant (QDS) regulations is presented in Table 1.

The vision of the NSP 2018

A competitive, profitable and sustainable seed sub-sector where farmers and other seed users have access to affordable quality seed.

The mission of the NSP 2018

To create a well-regulated seed sector that ensures the availability of and access to safe and high-quality seed under a pluralistic seed system.

Table 1: Current level of implementation of the Seed and Plant (QDS) regulations

Regulation	Implementation	Challenges	Needed actions
Eligible varieties	Only released and registered varieties in the national variety list are recommended for QDS	Unregistered popular farmers' varieties not yet authorised	Lobby for inclusion of farmers' varieties in the national variety list
Registration of quality declared seed producers	The NSCS registers QDS producers (individuals, groups of farmers, associations and cooperatives) meeting a range of criteria. QDS fields are inspected by District agricultural officers (DAOs) and seed samples tested by the NSCS at the central seed testing laboratory	QDS producers not yet formally registered by NSCS	Formal registration of QDS producers to complete institutionalisation of the QDS system
Production of QDS	Like certified seed, the initial seed source is pre-basic, basic seed or certified seed of a registered producer; Only registered maize or hybrid seed shall be produced under the QDS system; a QDS producer must submit planting returns to the NSCS.	Lack of sufficient basic seed from research, Unregistered QDS producers, staggered small size seed plots	Decentralised basic seed production, formal registration of QDS producers, aggregated seed plots, establishment of certification hubs at the zonal level
Quality assurance during field production	QDS is inspected by an authorised seed inspector following established field procedures. QDS fields inspection is currently done by DAOs; only ten percent of the fields are inspected but seed from all fields is sampled for laboratory testing;	Many small size plots make it difficult for effective field inspection	Plan aggregation/clustering of production where practical
Quality assurance of seed harvested	Processed seed is bulked in appropriate and clearly marked seed lots; seed sampling is done for 10% of QDS produced; laboratory testing is done for variety purity, germination and moisture content	Side selling before sampling; mechanical mixtures if more than two varieties are produced and processed from the same place, Inappropriate storage facilities make seed sampling processes lengthy	Put in place mechanisms for affordable credit to QDS producer for cashflow management Facilitate LSBs to obtain proper seed stores
Seed packaging and labelling	QDS is packaged in various packages ranging from 1-25 kg and bags for planting materials. The packaging labelled with a tamperproof green label issued by the NSCS.	Delays in completion of laboratory tests force farmers to start selling seed before they receive the tamperproof green labels from NSCS	Need for the seed lab staff to increase capacity to handle the increasing number of seed samples; decentralise seed testing by establishing seed testing hubs at the ZARDIs
Marketing	The sale of QDS is limited to geographical areas where the seed is produced. Seed that is not in appropriate packaging material and labelled as QDS cannot be offered for sale	Some individual farmers of groups target large buyers and get frustrated when the seed is not procured. Some seed companies are buying QDS from farmers and repackaging it as certified seed and sold at a much higher price than QDS	QDS farmers are advised to produce what they can sell based on actual demand from farmers within their regions.

Regulation	Implementation	Challenges	Needed actions
Supervision by government	NSCS has trained and provisionally authorised District Agricultural Officers (DAOs) to inspect QDS fields	DAOs are yet to be offered authorisation certificates. This limits their full engagement since the activity is not budgeted for in the district local government annual work plans and budgets.	MAAIF needs to fast-track implementation of an institutional framework for QDS and appoint para inspectors from both public and private agencies
Offences and penalties	QDS producers are aware that selling or exposing for sale any seed which does not correspond with the description in any certificate required to be produced or displayed under these Regulations commits an offence; is liable to a fine not or imponent or both	Not yet implemented	Sensitisation of QDS producers on consequences of falsifying seed.

In addition to the 2006 Seed and Plant Act, other laws were also enacted to enhance access to improved high-yielding crop varieties and regulate seed import and export. These include the 2014 Plant Variety Protection (PVP) Act and the 2015 Plant Protection and Health (PPH) Act. However, these two laws could not be implemented without regulations. MAAIF again requested ISSD Uganda’s financial and technical support to draft the respective regulations. The PPH was gazetted in 2020 while the PVP regulations passed the legal drafting stage and awaited formal gazetting.

Decentralised seed production and quality assurance

The ISSD Uganda eight-year projects (2012-2020) introduced and promoted a decentralised farmer-led seed production and marketing approach (popularly known as the local seed business (LSB) model) to more than 250 active and well-trained seed producer groups across six agro-ecological zones in the country. These groups acquired skills in quality seed production and marketing, group dynamics and governance, and gender inclusiveness. Throughout the project period, they produced substantial quantities of QDS of mainly self-pollinated crops (cereals except maize, grain legumes, oil seed crops and vegetatively propagated crops). The QDS of these crops is filling the gap in quality seed supply because they are produced in proximity to farming households and are affordable (see quantities of QDS marketed in Figure 3).

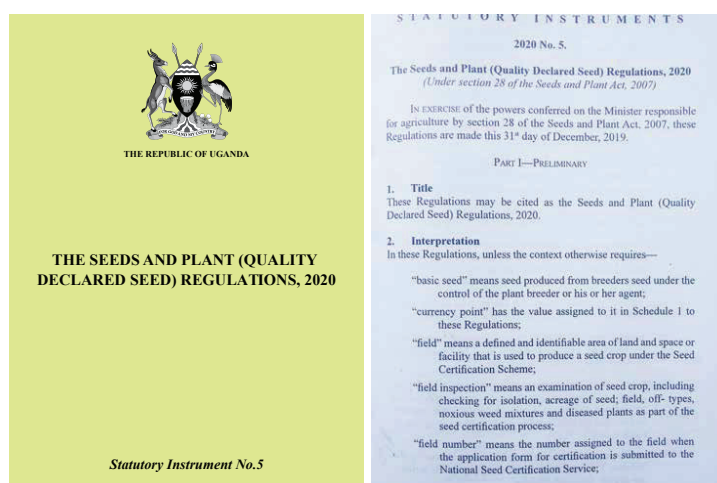


Figure 2: Extract of the Seed and Plant (QDS) Regulations

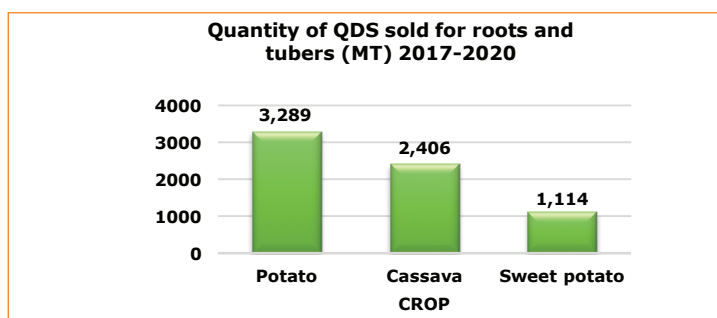
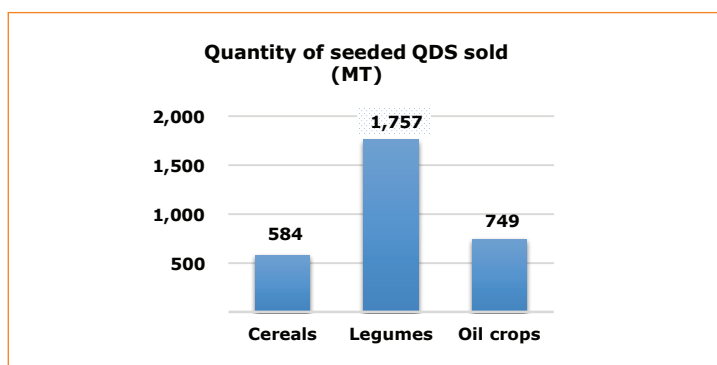


Figure 3: Quantity of QDS marketed over the project period

For the LSBs to be sustainable, it was recognised that their functioning needed to be embedded within the national seed sector governance. Accordingly, in 2015, ISSD Uganda and the National Seed Certification Service (NSCS) piloted a decentralised quality assurance scheme (field inspections) for QDS and innovations under LSB governance, which involved the LSBs having internal quality control committees (for self-regulation) and district agricultural officers (DAOs) authorised to conduct field inspections. The NSCS directly conducted seed sampling, seed laboratory testing and the printing and issuance of tamperproof QDS labels.

ISSD Uganda also took a leading role in creating awareness of seed quality standards and establishing a regional seed testing laboratory at Ngetta ZARDI in northern Uganda to pilot the decentralisation of seed sampling and laboratory testing. These pilots provided evidence that properly coached farmer groups can produce and market high-quality seed in their communities. The outcome was the formal inauguration of the QDS green label by the president of the Republic of Uganda. These processes offered QDS producers and their clients a quality assurance service adapted to their needs. Like certified seed, QDS is a progeny of basic seed from authorised sources; the only difference being the number of field of the same variety inspected (10%) and the number of visits for field inspection (at least once depending on the crop). The QDS must meet purity, germination percentage and moisture content requirements similar to those of regular certified seed.

Strengthening seed value chain functions

The first phase of the project provided evidence of the capacity of ISSD Uganda to influence change in the policy and regulatory environment to support the growth of the seed sector in the country. Thus, the second phase (2017-2020) focused on sector-wise initiatives across the whole seed value chain (i.e. early generation seed production through cost-recovery production and delivery models; scaling out production and marketing of quality seed; quality assurance, and uptake by farmers). The approach used was as follows:

1. Coordinating regular national and zonal level multistakeholder platforms that enhance dialogue by seed sector actors
2. Mobilising stakeholder engagement to pass relevant policies and regulations; supporting MAAIF in setting up an institutional framework for quality assurance of early generation seed and QDS and a tracing and tracking system for all seed along the value chain

3. Empowering smallholder farmers in seed production as a business and alternative livelihood options with revenues re-invested in diversified income-generating activities; aligning seed production with demand from specific farming communities; promoting uptake of quality seed; and helping the users of quality seed (seed buyers) generate more income and food from higher yields

4. Incorporating climate-smart technologies (e.g. integrated crop management) practices to boost seed yields and system resilience

5. Facilitating Regional LSB Associations to coordinate input access and quality assurance activities along the seed value chain; embedding seed production in cooperatives

6. Creating awareness of the National Seed Policy and support for effective implementation

7. Seed sector alerts and assessment of level of performance

Achievements toward seed sector transformation

Combining efforts with the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the National Agricultural Research Organisation (NARO) USAID FtF EEA, and Uganda Seed Trade Association (USTA), the project brought some changes in status quo, including a major shift from a narrow focus on 'seed industry' towards more pluralistic 'seed sector' development; acknowledging the different seed systems (formal, intermediate and informal) that can co-exist; embedding QDS in the National Seed Policy and existing regulations which expedite multiplication, ownership and access to improved seed and planting materials by smallholder farmers. All of this helps to bridge the gap in quality seed supply by the formal seed system.

ISSD Uganda supported over 250 LSBs each having a membership of 20 to 30 male and female smallholder farmers producing and selling QDS. This QDS seed systems complements the formal seed system, relies on farming communities' capacities, and is able to deliver quality seed to the last mile of those crops with lower profit margins, which may be unattractive to seed companies. QDS producers operate with low transaction costs and are more aware and capable of responding to specific local demands.

Support for MAAIF in the development of the NSP, NSS, Seed and Plant regulations (both for the regional and domestic separate QDS regulations) seed markets completed the process of putting in place an enabling environment, a sine qua non for the growth of the seed sector. ISSD Uganda also fully supported the development of the PVP and PPH regulations to facilitate access to public and private improved varieties and regulate seed import and export. This enhances Uganda’s competitiveness in the East Africa Community (EAC) and the COMESA seed markets.

The dissemination of the NSP and NSS created an understanding by DAOs and farmers’ representatives of their mandates, roles and responsibilities in the implementation of the NSP at the local level. It also provided an opportunity for the district local government (DLG) leadership to appreciate the importance of embedding seed-related activities into their development, annual work plans and budgets. Farmers also appreciated that it’s only when they buy quality seed (certified or QDS) that they can contribute to the growth of the seed sector.

Pivoting to digital applications in the seed sector, ISSD supported MAAIF to develop a digital Seed Tracking and Tracing System (STTS) with multiple benefits for seed sector stakeholders. For example, farmers will have real-time information on seed availability and location; seed growers will benefit from online processes (including ordering basic seed, submitting planting returns and paying fees for services prescribed in the regulations), thus saving on advertising costs; and the NSCS will be able to maintain a central database on seed growers, seed supply and demand, since its services will be online, which will enhance effectiveness and efficiency in its operations. This is expected to eliminate the rampant sale of counterfeit or fake seed in the country.

ISSD Uganda, through various communication pathways, promoted the uptake of quality seed, including seed fairs and road shows, and mass media (radio talk shows). This increased awareness of quality seed use for open pollinated crops. These promotional activities also emphasised the quality attributes of both QDS and certified seed to allay farmers’ underlying fear for fake seed on the market.



Figure 4: Extract of the National Seed Policy, popular version

ISSD and NARO piloted decentralised cost-effective early generation seed production models and established a basic seed enterprise (S4S (U) Ltd) primarily as a social enterprise that produces and sells quality basic seed on a cost-recovery basis. S4S will also be a central coordination point for basic seeds from NARO Research Institutes, ZARDIs and LSBs in basic seed production, thus institutionalising access to public varieties. It will also raise the profile of NARO in its social obligations to support the seed sector with the periodic supply of improved seed with farmer- and market-preferred traits.

ISSD Uganda participated in a seed sector scan on the impact of the COVID-19 pandemic on access to quality seed, which revealed that government measures to stop the spread of COVID-19 (mobility restrictions and gatherings as a result of total lockdown) had a knock-on effect on activities related to access to quality seed in the first quarter 2020. The alerts focused on the impact on processes of variety development and release; the production and supply of quality basic seed; access to inputs, labour and services for quality seed; and input prices hindering access to agro-inputs for the local production of quality seed. Actions to mitigate the above were proposed and contributed to an African Union white paper to guide policy changes in Sub-Saharan Africa on resilient seed systems.

ISSD Uganda conducted an online survey to assess the level of performance of the seed sector functions and services. Overall, these were rated fair (3 on a scale of 5; where 1= very poor/not meeting sector needs and 5= very good/meeting sector needs). Key areas that need attention were variety development and release, early generation seed production and supply, seed quality supply and quality assurance, marketing, financing, coordination, utilisation and elimination of fake seed on the market. This will guide seed sector actors in setting priorities to enhance the growth of an effective and efficient seed sector in Uganda.

Conclusion

Lessons learned

Improving farmer-based seed production schemes and transforming the informal seed supply for food security crops and varieties is crucial for the development of an inclusive seed sector in the country. Strengthening the intermediate seed system will help to maintain crop diversity that is essential for resilient seed systems.

The farmer-led seed enterprises are filling the gap in quality seed supply of those crops and varieties that do not make a business case for seed companies because the QDS being produced is demand driven, quality assured, and affordable by smallholder farmers. This has the potential to replace (poor quality) seed bought at grain markets. The most progressive and experienced LSBs are not only tapping into the market for seed but also diversifying their activities to increase and stabilise revenues.

The ISSD Uganda experience demonstrates that QDS is an attempt to reconcile the continuing need to improve quality seed supply to farmers, with the desire to reflect and accommodate the diversity of farming systems, particularly in the more difficult areas where highly organised systems do not function well. It is a relatively open scheme, which meets farmers' needs.

ISSD Uganda playing broker, bridge and catalyst roles was fundamental for effective stakeholder engagements to create coalitions on innovations tailored to enhancing the growth of the seed sector, building trust, confidence and transparency in general.

Way forward

While an enabling environment for the seed sector has been put in place, the implementation of the seed strategy requires deliberate efforts by the DLGs to embed seed-related activities in their annual works plans. This is especially critical for activities related to field inspection, supporting LSBs in their seed businesses, and disseminating good agricultural practices to enhance crop yields to have surpluses for agro-industrial processing – a theme in the National Development Plan III (NDP III). Further, the Seed and Plant (Quality Declared Seed) Regulations need to be disseminated to guide the LSBs in their seed businesses.

Coordinated actions by all stakeholders in the seed sector are essential to foster integrity and transparency, both of which are critical in building trust in the sector among farmers. It is also imperative to strengthen the National Seed Board & NSCS, which are the main regulators.

It is essential that; all sector actors clearly understand their roles and responsibilities for effective implementation of the National Seed Strategy (NSS); breeders develop variety descriptors to guide farmers in variety choice; the market potential of new improved varieties stimulates demand for quality seed; and above all that the technical capacity of seed producers is enhanced. This will go a long way in addressing challenges in the utilisation of quality seed by smallholder farmers.

To ensure that farmers get quality seed, it is essential to streamline the multiple seed supply chains. This can be achieved by operationalising the digital Seed Tracking and Tracing System (STTS) recently developed by MAAIF and with the financial and technical support of ISSD Uganda. This will further eliminate the sale of fake seed.

Decentralisation of seed testing and issuing of labels at the zonal level will improve accessibility and affordability. ISSD Uganda supported NARO in establishing a seed testing laboratory at Ngetta ZARDI in northern Uganda, but the NSCS has yet to accredit it. Such zonal labs would enhance service delivery to all quality seed (certified and QDS) producers.

The number of seed producer groups are still few and not well spread out in all districts. Currently, LSBs exist in only 63 of 146 districts. To scale these nationwide, like-minded organisations need to come together to support interested farmer groups using a similar methodology and train them in seed production and marketing.

The decentralised basic seed production by the ZARDIs and selected LSBs creates a coordination challenge of seed inspection as demand for quality basic seed increases. It is desirable to strengthen the zonal associations and MSPs to enhance their capacity to play their role.

The decentralised quality assurance scheme is designed to relieve the pressure on the national certification by decentralising inspection services at the district level. ISSD Uganda has supported the NSCS to train DAOs to conduct field inspections and issue recommendations on quality. It is essential that the DAOs are formally accredited so that districts can embed this service into their annual work plans and budgets.

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