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NOT ALL SEED IS DECLARED EQUAL: IMPROVING ACCESS

PRESENTATION AUDIO TRANSCRIPT

FEBRUARY 28, 2017

PRESENTERS

Niels Louwaars, Plantum

Astrid Mastenbroek, Integrated Seed Sector Development Project

Latha Nagarajan, International Fertilizer Development Center (IFDC)

MODERATOR

Louise Sperling, Catholic Relief Services

Louise Sperling:

Good morning, good afternoon, good evening. Welcome to those in the room. You should know on the webinar we're expecting about 400 people, so it's a great group assembled together. Okay, this webinar is about seed, which is of course a critical input for smallholder farmers. But more specifically, this webinar is about a certification system for seed. Certification is a big issue, not a small issue. Certification is about livelihoods. A certification system shapes whether farmers can access the range of crops and varieties they need for production, for income, for nutrition and for resilience. The certification system shapes if farmers can get not just maize, but if they can get legumes, tubers, the minor cereals. Okay, the focus today is on a particular category of certification called Quality Declared Seed, QDS. QDS aims to be a seed quality assurance system, which delivers good seed, but at a level which is less demanding in time, money and rigor than full certification, and most of you might know certified seed, that's full certification. Quality declared seed standards are transparent, they've been formally outlined by the UNFAO, the Food and Agriculture Organization, and I want to draw your attention to two documents. This one here on the screen, 185, is the general overview document that looks at alternative seed quality guide standards for 92 crops. Then again, very transparently, there's another guide issued in 2006, which focuses specifically on the vegetatively propagated crops. Okay, in practice, to promote greater availability and access to good seed, there are a number of countries that have already adopted QDS regulations, and here I've made an initial list, but maybe those online and in the room could add countries. You can see there are some in Latin America, and then there's a growing number in Africa — Ethiopia, Uganda, Tanzania, Zambia — you know, these are all fairly recent developments. Finally, to spur thinking and to highlight the urgent need for greater flexibility in regulation, I want to go back to smallholder farmers, because that's where our focus has to be if we're going to have impact. A group of us have data on where smallholder farmers actually get their seed and the type, and this right now is the largest data set in the world, what I'm showing here is 9,660 entries, we now have about 15,000, it's growing. Important, what you see here in this circle chart is that smallholder farmers do access and buy certified seed, so they get it from commercial companies and agro-dealers. Farmers access certified seed, but it's only two percent of what they sow and most of that is maize. Otherwise, to get the range of crops they need, to get the varieties they need, smallholder farmers are going elsewhere, so they're going — some of

it is their own stock, but basically at this point in time, smallholder farmers are accessing 51% of their seed, over half, from local markets. So they're buying it, but they're not buying certified seed. Okay, so obviously we need to think about other mechanisms to put on offer good quality seed, which delivers a range of crops but in a less costly manner, and that's why we're here today.

Okay, let me introduce the speakers, and I'm going to introduce them in the order in which they're going to speak. I feel really privileged to be able to do this; it's a great group of people. Okay, Niels Louwaars — let me go back. Niels Louwaars is director of Plantum, which is the association of companies in the Netherlands dealing with plant reproductive materials. He's trained as a plant breeder at Wageningen University, and he spent 10 years working in the field in Asia and Africa and on seed projects before returning to Wageningen. Based on that international experience, he developed the concept of Integrated Seed Sector Development, ISSD, which basically provides policy space for looking at a diversity of systems, both formal and informal. Okay, in terms of policy specifically, you should know he's quite precise, he's looked at intellectual property rights in the WTO, national sovereign rights on biological diversity — you might know the CBD — farmers' rights, national seed laws, so covering the spectrum. Dr. Louwaars, Niels, has also advised for a range of agencies, the World Bank, the FAO, the CGIAR. Currently he represents the Netherlands seed sector nationally and internationally. Niels is also an external member of the Law and Governance Group of Wageningen University. Very much welcome.

Okay, Astrid Mastenbroek, who will be the second speaker, she works for Wageningen University but very much in the field, and she's working for what's known as the Center for Development Innovation, CDI. For the last four years she's been chief of party for the Integrated Seed Sector Development project in Uganda, which is funded by the Embassy of the Netherlands. One of the major achievements of her teams has been to organize farmer groups into sustainable, local seed businesses that produce and market, not give free, but market Quality Declared Seed, which is a new class actually in Uganda, fairly new. More broadly, Astrid has been

working in Africa since 2005 in South Sudan, Northern Uganda, Kenya and Somaliland. She has a master's degree in irrigation and water management from Wageningen University and an MSc in ag-economics from SOAS, from the School of Oriental and African Studies at London University. So thank you for coming from Uganda.

Okay, and our third speaker, Latha Nagarajan, is a senior economist at the International Fertilizer Development Center, which is based here in Washington, D.C. Latha works primarily on issues related to agricultural input markets, technology, adoption and impact assessment. Latha has extensive field experience studying seed systems in markets in both South Asia and Africa, so the comparison is really excellent. She's part of the Rutgers Policy Impact Consortium with a research focus on seed policy. Latha has a PhD in ag-economics from the University of Minnesota and you should know that the work she's presenting today has been funded by USAID AGRA together, The Alliance for the Green Revolution in Africa.

That's my introduction, and now we get to the heart of why you're here, so let me please introduce Dr. Louwaars to give the first talk.

Niels Louwaars:

Thank you. Hello, everybody. Yeah, it's morning here, but where's the camera. Just hello. Thanks, Louise, for this extensive introduction. It might even see that my talk will be shorter than the introduction, and now I'm not sure how this is going to work. Maybe it's in front, okay, right, technology. Hello again. Seeds. Seed is life; seed is not just an input for agriculture in order to enhance yields, just like agrichemicals and fertilizers. No, seed is the basis of all crop production in the world, so seed — having seed, having the right seed, is a concern for every farmer, whether he's in Africa or in the Midwest or in Europe, it's the same. Seed has to be available, the identity of the seed has to be correct, and the quality of the seed has to be correct. Farmers have, and Louise hinted on that already, have different sources, and it's not that different farmers use different sources, no. One farmer may buy some vegetable seed which is imported. At the same time, he may buy some hybrid maize seed from a national or international company. At the same time, he may get some pure white

sesame seed from the trader who wants to buy his crop for export and it has to be pure white. Maybe he keeps cowpea seed or cuttings from cassava himself, he gets it from his neighbors or indeed goes to the market and buys seed or grain. What is it? So when we talk about seed, when we think about seed, and Louise used that word also, they need some flexibility, because thinking about hybrid maize seed provision may come — well, may be quite different, will be quite different, from cowpea seed provision or vegetable seed provision. There's no blueprint.

Today we're going to discuss one small but still important item in that whole story, and now I have to go through where we were, and it is that seed quality, you cannot see it by looking at the seed. Seed identity, which variety is it, very often you cannot look at it, you cannot see it by looking at the seed, so that's why, already many, many years ago, this whole concept of seed quality control and certification has come up. Farmers have to get some guarantees. So basically the whole seed quality control concept is a consumer protection system: if the consumer, that is the farmer, who buys seed, that he can trust a label that it is the right variety, that it is the right quality that he's expecting. But also at the same time, seed quality control systems serve to create a level playing ground for different seed suppliers. If you have to deal with the same quality characteristics, it means that fly-by-night seed providers — fly-by-night, is that American? I see here in the hall, so maybe you're out there, those seeds of crooks I mean, that they don't have a chance because they cannot get the same label, that's the whole idea.

So what does it entail? What are the basics of seed certification without going into all details? Basically seed certification guarantees which variety is in the bag, that the variety in the bag is the same as what's on the label, and that's quite a complex thing. And the trick created many, many years ago was we need a generation system from pre-basic, basic, certified, certified 1, 2, 3, a limited number of generations from a very pure variety seed lot, breeder seed, to what farmers actually get, bulking it in a systemic way. Then we have seed quality control, seed testing, that's the important thing, will the seed indeed germinate, is it pure, is there a lot of rubbish in, and also the seed moisture has to do a lot with storability. So what does that

require in practice? It requires a lot of paperwork. Before you get the label, all farmers, all seed producers have to be registered, we have to know what they plant, what they harvest, etc. You have field inspection, meaning that preferably an outsider has to come and see other off times in the field, is it a healthy crop, etc., and there is seed testing, germination testing, purity testing, seed moisture. That's is a pretty complex thing to do, which was developed, well, about 100 years ago in some countries, in Europe, and I'm not sure here, but I'm pretty sure it was as well, and it has grown into a very precise procedure to guarantee the seed quality and identity. When we're talking countries where the seed sector is younger, we may understand that the situation may be different. Where seed inspectors cannot — well, I'm from the Netherlands. Going from the far south to the far north is two-and-a-half-hours drive, so you can visit fields in one day. Luckily we have inspectors in different places to make it even more efficient. I worked in Uganda for quite some time, and I worked in Sri Lanka for quite some time; infrastructure is a bit challenging. So simply having the human resources, having the financial resources, having the logistics ready to implement that complex system, it's quite cumbersome, and a lot of investments have gone into establishing seed certification systems in many countries. World Bank, present here, FAO, all kinds of bilateral donors have spent a lot of money developing that system, creating seed laboratories, training inspectors, etc. As soon as the kind of — well, call it the subsidies on seed quality control, started to disappear, then the question is who is going to pay for it, for the system? Obviously, the interested party, the seed producer. And there we run into a big challenge — well, more challenges than one. When the cost of seed certification can really become a bottleneck in producing seed, especially as a commercial guy, low margin seed, a lot of the margin will have to go into the quality control, and then what we see with a number of crops it's better not to start to produce, for example, legume seed in particular countries. So expensive seed certification systems may reduce the availability of quality seed for farmers, and that was exactly not the idea of building up a certification system. It was meant to enhance the availability of quality seed to farmers, and that's a bit of an issue.

Sorry, I'm too late with this one. This is what I just told you. The other risk of this whole system is that worse than having no certification system is having a poorly implemented system where you cannot — well, you can

wait for the inspectors and they don't come. At the end of the season, you don't have all the inspections done, it may not be certified, and I'm not even talking about how difficult it is to manage poorly paid government servants in these kinds of jobs. And the result there is that again, it is meant to create — oh, only five minutes left? There's a big risk of fake seed that you'll have smart people who copy the labels and put rubbish in the bag and that means that the whole idea of trust in seed is gone.

So official controls are not always necessary. In the local seed systems, where the buyer knows the seller, where the buyer has seen the crop, there's no need for official certification. And where it is useful, we have to think of how to reduce the cost of the whole operation. Answers are decentralized inspections, risk-based inspections, etc. And then this whole concept that Louise introduced in broad terms came up, can we develop a low-cost farmer protection through a risk-based seed quality control system which is locally operated and which should provide, not the top guarantee for every seed lot, but at least a proper — well, that farmers can be quite sure that they are not buying rubbish. And again, if this should reduce fake seed in the market, it should go hand in hand with market controls, of course. And this idea was developed for seed production of low-margin crops particularly. So Quality Declared Seed aims at making more quality controlled seed available to poor farmers and especially of different crops from where certified seed is very possible. It should help to reduce fake seed in the market that we all, of course, want, and it focuses on local seed trade, so it does not, it should not, compete with fully certified seed markets, and that's an important aspect as well, of course.

So those are my three messages for my last minute, is that seed quality control is important and it aims at battling fake seed in the market, it helps food security and rural development through the planting of better seed. Official seed certification is very useful for the commercial crops, for the commercial farmers. It may be — it is less useful for low-margin crops like legumes and others, and Quality Declared Seed may provide the kind of silver standard, not challenging the gold standard of certified seed, that all together farmers get access to a much broader range of good seed to plant

good crops to sustain their families and sustain food security in their country. That's what I want to leave you with. Thank you very much.

Louise Sperling:

That's an excellent overview. We're now going to look at two case studies, and at the end, we'll take the range of questions, so please hold your questions, thank you. So our next speaker is Astrid Mastenbroek.

Astrid Mastenbroek:

Thank you, Louise. Thank you, Niels, for introducing the topic for today. Good morning, good afternoon and good evening, audience. Today I'm presenting about Quality Declared Seed as filling the gap between the formal and the informal seed as a case of Uganda. As Louise also mentioned, QDS is a fairly new seed class in Uganda, so we have some trends, and I would like to present them.

Quality assured seed is important for farmers because it's difficult to see as a product for a smallholder farmer whether something is good or bad seed, so for that, certification is important. And also, for that, the cost or the price of certification is important, as also Niels just presented on. So basically my presentation, I'll briefly look at the draft seed policy statement and the certification process, then what is Quality Declared Seed, and how is it quality assured in Uganda, then have some comparisons between certified seed and QDS, especially for legume crops, as we said, the small-margin crops, then we look a little bit at the potential, is there a market for QDS in Uganda, and then a few take-away lessons.

So basically if we look at the draft National Seed Policy in Uganda, which is at the moment with top management for endorsement, we look at a competitive, profitable and sustainable seed subsector, where all farmers and other seed users have access to affordable, quality seed. And its mission states to create a well-regulated seed sector that ensures availability of and access to safe and high-quality seed under our pluralistic seed sector. So you've seen I've highlighted a few words which are, I think, very important, because we want to avoid one size fits all. Different crops have different

needs, so a pluralistic system means, as Niels also explained, we have the multinationals mainly focusing on vegetables and maybe hybrid maize and some of the other hybrids; we have national seed companies, but we also have local seed producers, so different systems exist next to each other and have their own role. So similarly, we have different quality assurance systems that falls under the rural regulation. We have the government seed certification system for certified seed, for Quality Declared Seed, but also private inspection company, which was recently set up, so the different solutions to make sure that smallholder farmers can access quality seed.

So as I mentioned, in Uganda we have two recognized seed classes for marketing quality seed, so I'm not looking at the earlier generations or standard seed, because we're talking about quality seed. So we have certified seed produced by seed companies, that's the way it's set up in Uganda, and that focuses on hybrid maize, but also the other crops, also legumes, all the other crops. And we have Quality Declared Seed, which is produced by farmer groups and I'll come to that later. In the picture you see His Excellency the president of Uganda signing off on both of the quality standards, quality labels, the blue one for certified seed and the green one for Quality Declared Seed.

So what is Quality Declared Seed in Uganda? Basically it's produced by farmers and by farmer groups, and it's sold within the community. That is an important distinction from certified seed, which can be traded internationally and sold through the agro-dealer network. It's for locally demanded crops and varieties, so they don't have a national demand, but it's really focused on crops and varieties that farmers want in specific localities. It is quality assured, and it fills a gap for crops and varieties not served by seed companies. So if we look at the moment under the QDS scheme, we have several crops, mainly the legumes, roots and tubers, minor cereals like simsim, potato, beans, cowpeas, cassava, pigeon peas, groundnuts, soybeans, sorghum. So what you don't see is the hybrid maize, the OPVs [open-pollinated varieties], also the rice, because QDS focuses on self-pollinating crops and vegetatively propagated materials.

So if you look at the quality assurance procedure for QDS in Uganda, and I know different countries have slightly different systems, so this one was tailor made for Uganda, it's produced from the same starting material as certified seed. It's called foundation seed or basic seed, as Niels mentioned. So basically to produce seed, you need also starting material, so both certified seed and QDS use the same high-quality starting material. Also, like certified seed, the producers have to submit the planting returns, basically they have to give a list with the fields that they're growing the seeds, and also the amount of starting material that was planted to make sure that when it's harvested it's real seed and not something else. So in the case of QDS, it's to district agricultural officers, so it's a decentralized system to basically reduce the cost and to make sure that the inspection is close to the farmers. The QDS is inspected twice in the season compared to three times for certified seed, so there's another difference, and it's on a percentage of the fields. Not all the fields of all the farmers are inspected. These groups have very strong internal quality assurance mechanisms because they know very well that if they sell bad seed they are out of business immediately. So the district agricultural officers, they are accredited by the national seed certification services as delegated authority. The process is being formalized. As I mentioned, it's still a very new seed class. Then after harvest, the seed is also tested in the seed lab and germination and purity and moisture content standards are the same as for certified seed, so it has the same germination rates as certified seed as a minimum standard. So once the seed passes the inspections, they get positive reports and the seed test results are back positively, they buy the government-issued sample — sorry label — the green one which you can see on the sheet back here in the middle. It's a tamperproof label to avoid fake seed being brought on the market, and all the seeds are registered in a computer system.

So what are the benefits for quality declared seeds? I've picked an example of legumes because it's a crop with a low multiplication rate, so if you would plant one kilo of maize, you would get about 100 kilos in return; for legumes it's maybe if you plant one kilo you get maybe 10 or 15 kilos in return, so the yields are much lower. It's a quite bulky product to market from a marketing perspective because the seeds are rather big; it has a low profit margin, and the crops are self-pollinating, which means farmers can easily reuse the seed for a number of seasons, maybe three, four times, if

they keep the seed well, there's no problem with that. But as a seller, of course, it makes your market very uncertain because one year a farmer will come, the other year he may not come because he has enough at home. So I've compared the cost for beans. You see on the slides the blue bars are the sales prices and the red bars are the cost of production, approximately. So if we start on the right side, you see the local market, so basically the red bar is the farm gate price, the price at which the farmer sells his harvest, and the blue bar is the price he buys it back at if he would want to plant the same material as seed. So basically what we see is that there's a difference in cost of production for each of the graphs, the seed, the product, but you also see there's a difference in profit margin. So basically the most important message from this graph is that producing one kilo of certified bean seed costs 81 dollar cents, U.S. dollar cents, yet quality declared seed is on average sold at 76 dollar cents, so to produce quality declared seed is much cheaper comparatively, and also the profit margins are rather small.

So if we look for other crops like groundnuts, beans and soybeans, we can see that the QDS price, the middle, the orange bar, is quite close to the grain price, the local market price. But for the certified seed, there's quite a big difference. So the difference is around 30 to 40 percent in price for certified seed and Quality Declared Seed, so this provides a high potential for Quality Declared Seed. And if we look at, as I mentioned, the standards for germination seed purity, they're the same. So we had a number of tests from the national seed certification lab, and they showed that all the samples meet the minimum standards, so in this case, the 13 samples for beans, germination was between 90 and 99 percent, and the standard is 80 percent.

So we did some yield certification plots to compare home-saved seeds with QDS, and the yield increase is about 670 kilos per hectare, which means that a farmer would invest three dollars extra for the 23 kilos he needs to plant, and his return would be 23 dollars. So in dollars it sounds a bit small, but in Uganda, in shillings, it's actually quite a big difference.

So what is the potential? We've seen that the potential is it brings more affordable quality seed to the markets, and I've also come to that it shifts —

it hopefully encourages farmers to shift from buying grain or potential seed from the local market, which is poor quality, to quality seed, because we've seen there's a smaller price increase. So going quickly over the volumes that have been produced under the system, under the ISSD project and the pilot with the ministry, you can see, for example, for beans, it's about 200,000 metric tons was produced in 2016, so that would reach on average 8,600 farmers because they use on average 23 kilos of seed. So it's still very small. We see an increase in trend in groundnuts as well as in soybean, the market is picking up.

So who are the customers? The majority of the customers are actually the smallholder farmers buying from these local seed businesses, as we call them, but also NGOs and governments and seed companies are buying some of the seed. So if we look at the potential customer segmentation, as Louise already mentioned, also in Uganda, only two percent of the seed farmers buy from agro-dealers or seed companies, and then another maybe two percent is from the local seed businesses, so they are about the same. So if you look here, this is certified quality seed, both QDS and certified seed, so it's only nine percent in total, of which five percent is free handouts from the government and NGO projects. Then we have the home-saved seed, and as I mentioned, there's nothing against home-saved seed, because farmers can reuse the seed for multiple seasons, but what we want to target is here — I'm running out of time, so I have to speed up a little bit. We see here 43% is low-quality seed or seed from the local market. That is the target for QDS. If we look at during periods of stress, we see even this becomes more pronounced, it's almost 70% of the farmers buy their seed from the local market. So when we talk about climate-smart agriculture, we also need to look at seed sources. They hardly have any home seed for legumes, but they have to look at their neighbors, but of course the neighbors are equally as stressed as well. So the ones that did better are sharing the seed with others, but especially it becomes 70% of all the smallholder farmers; that's a huge potential market, and that also means there is space for everybody, for certified seed, for QDS, and the market segment is the local market segment or the grain that farmers buy from the local market and plant as seed for legumes, for minor cereals like millet, for planting materials, because they're already in the habit of buying seed, but

they need affordable seed basically because that's why they go to the local market.

So I want to highlight also I've presented a very rosy picture, so of course there are also some challenges to making the system sustainable, which basically circle around there are few producers, so we need to work with like-minded organizations that focus on smallholder entrepreneurship. Our groups have many women also in them. It's the limited capacity for inspection, and as Niels said, the country is huge, so you need many inspectors, so decentralization and accreditation of district agricultural officers is needed as well as decentralization of accessing the labels, which come at the moment from Kampala, as well as the inputs, the foundation seed as well, because at the moment you have to travel quite far because it's centrally produced. And then lastly, also, we need coordination, just like there's a Uganda Seed Trade Association, the quality declared seed producers also again in zone or level have organized themselves already because they see a need for coordination.

So basically, I would say Quality Declared Seed is filling a gap between certified seed and the local market seed. It's quality assured, it's the silver standard. There's a difference in the certification process, as you've seen. It is affordable, as you also saw in the previous slides, the difference between the grain price and the QDS price is not that much because of the reduced cost of certification, but also because of reduced transport costs, because it's sold within the vicinity, and it can also provide a source of quality seed, especially during climatic stresses, and replaces farmers buying seed from the local market. So thank you very much.

Louise Sperling:

Okay, Astrid, thank you very much. We'll hold the questions, of which there are many coming online. We'll have the last case now from Tanzania, and then we'll start to answer the questions. Thank you. So Latha Nagarajan.

Latha Nagarajan:

So greetings to all, and thank you, Louise, for organizing this very important forum. The work I'm presenting here is funded by USAID through a project called Scaling Seeds and Technologies Partnership that is being implemented by Alliance for Green Revolution in Africa, AGRA. SSTP is operating in six countries in Africa, but for today's presentation, I will be focusing on the experience of their working with legume seed production, quality legume seed production, in Tanzania. Dr. Richard Jones, who is the chief of the party of SSTP, and also the co-author of this presentation is joining us online from Senegal, and he will be happy to answer any of your questions at the end of this presentation.

Just to give a quick context before getting into the SSTP interventions with regard to legume seed production in Tanzania, I just wanted to give a quick context of the situation of the legume crops in Tanzania. They occupy more than 10% of the area in Tanzania. The key legume crops are mainly common beans, pigeon peas and cowpeas. Soybean is also gaining momentum with the initiation from the private sector. And the legume crops in Tanzania are considered to be very important in terms of providing household food security, nutrition and income security with its soil health benefits. Apart from tolerating drought, it is a resilience crop, more and more it's being viewed. Moreover, legume — if you see the legume crops in Tanzania and the importance of legume crops in Tanzania, it is gaining momentum in terms of its importance, offering importance in terms of regional trade and also export potential, especially pigeon peas, there is a great demand for pigeon pea exports from East Africa, especially from Tanzania, with their South Asian counterparts, and also the regional trade with regard to common beans.

If you see the legume seed supply situation in Tanzania, as created by my previous presenters, there are three kinds of seed systems existing in Tanzania. One is semiformal — one is formal, semiformal and informal. We categorize QDS, or the quality declared systems, under the semi-informal systems, because it has the characteristics of both. So you can see that the adoption of the improved varieties of the legumes — of the improved varieties per se is less than 5% of the total acreage, and of the total certified system of seed supplied, you can see it's less than 1% of the seed

used by the farmers are certified. The QDS, the quality declared system, which is very popular, especially for maize and rice in Tanzania, produces a very limited amount of legume seeds in Tanzania, as you can see, it basically supplies less than 20 metric tons for the leading crops in Tanzania. So currently you can see that the legume seed supply is dominated by the informal systems, which is farmer-to-farmer exchanges, or buying through local markets, or through the farmer-saved system. This is possible especially in the case of the legume crops because the physiological quality is less of an issue in legume seeds, but you cannot rely on this informal systems because it's not a structural system to introduce any new varieties with good quality traits.

I just wanted to give you a quick overview of the seed system functioning and the actors for legume crops in Tanzania. You can see that the public sector dominates all stages of the seed production, right from mostly the early seed generation, and also the foundation seed, and also it goes all the way up to commercial seed production, production and marketing system. Of late, the Tanzania law allows the private firms to enter into the foundation seed production, but very few companies have entered into this particular sector. QDS, increased interest by private firms in commercial seed production, in addition to farmer groups and farmers involved in quality declared system in Tanzania. You can see that there is a huge potential for QDS producers who can exploit this kind of commercial seed production on a large scale, especially for legume crops in Tanzania.

Just to give a quick overview of the quality declared system in Tanzania: Tanzania is one of the pioneer countries in Africa who first introduced quality declared systems into their seed system, I would say that. They are the first country to adopt, and as explained by my previous presenters, it's produced by the registered and trained farmers or farmers group in their own locality and for their own use wherever the seed is produced. The QDS system in Tanzania started on a pilot scale in 18 districts in 1998, in the late 1990s, with the DANIDA [Danish International Development Agency] program, and the Tanzania, also, Seed Act also recognizes the Quality Declared Seed production since 2003. From 2007 onwards, it has been a part of the national seed law of Tanzania also, and more than 90% of the

districts are covered — are under adoption of the quality declared system for some kind of crops, either cereals or legume crops or even tubers.

So one can see that there are a few constraints also in the quality declared system in Tanzania because the existing rule in Tanzania does not allow QDS. It is the same as Uganda or anywhere else where it is being practiced beyond the districts where it is being produced, and also the lack of marketing capacity. This limits the QDS seed to government seed distribution and NGO investments and also exchange of seed with neighboring farmers in the locality.

I just wanted to quickly go through the SSTP interventions, the project, the Scaling Seed and Technology Partnership interventions on producing good quality legume seeds, an increase of production of legume seed production in Tanzania. USAID funded the Scaling Seed and Technology Partnership to promote the sustainable partnerships for accelerated access to and adoption of new seed varieties, not only legumes, but for other cereal crops also. They have adopted two kinds of interventions. One is at the project level, and the other is at the policy level. It is very important that the policy compliments the project level interventions to have a complete system in place. As I mentioned earlier, the projects of SSTP focus more on reducing the cost of the seed delivery, including the production, transportation and marketing, and making from the conventional ways and cheaper alternatives of producing good quality seed and distribution mechanisms to the farmers, especially the legume seeds.

The first project which is being implemented in northern Tanzania to improve the access to new bean seed varieties, it's being operated in a public/private partnership mode. The research materials, all the early generation seed materials, are given by CIAT [International Center for Tropical Agriculture], and it's being completely controlled — and further seed production is taken with the help of private seed farms at the commercial seed production level, and also public agencies like ASA [Agricultural Seed Agency], the seed agency of Tanzania, and technology transfer happens through the private extension — sorry, public extension

system as the input dealers. The major approach here is building an effective multi-stakeholder seed system platform, through which the awareness of the demand is created for the legume seed. Legume seed marketing itself is a new concept in Tanzania that with the commercial seed system didn't exist before. In addition to this, adding value to the seeds because the crops like legumes where the seed quality is often compromised by pest and disease attack, especially in the store rate, seed treatment is a very important vehicle to be packaged along with the seed.

The second approach is completely through a commercialized system that does the private sector, so it is a pure business model in legume seed production and delivery, and here demand is stimulated through private extension using the private sector.

The third major intervention by SSTP is creating an enabling environment to address the legal and regulatory challenges facing the seed industry and legume seed also. This would require accreditation that is recognizing the private firms, licensing the private seed inspectors, and easing the barriers to introducing new varieties into the system. All these things are aimed to reduce the cost of seed certification or the seed quality control mechanisms in place, so enhance the quality of the seed delivered and by scaling up and then by competition.

I just wanted to give a quick analysis, comparative analysis, of the cost of seed production, which we calculated in the SSTP for beans, comparing the formal, informal and semi-formal systems. Here our results indicate that yes, farmer-saved systems have higher returns compared to formal and semi-formal systems of seed production. However, one should realize that a snapshot like this does not capture the benefits to be gained by the introduction of new varieties into the system. When comparing the formal and semi-formal, the QDS, it is clear that QDS is an effective vehicle for dissemination of the new varieties, and it is cost effective, and the seed producers, the major — one of the major things that is required at this point is it should be linked to a reliable supply of quality early generation seed.

The main takeaways one could get from these three interventions on legume seeds in Tanzania is as such, you know that the commercial firms in Tanzania sell only the certified seed as per the law, and QDS is very localized. One should be aware of the fact that the commercial seed firms in Tanzania, especially the private firms, are recognizing the quality of the seed produced through QDS, and they are interested in marketing them, there is an opportunity to be exploited by allowing the private firms to do the marketing and use the QDS producers market beyond the local areas. Seed marketing is a — legume seed marketing is a very — relatively a new concept in Tanzania or anywhere else in sub-Saharan Africa, you could say that. The experience shows that the small seed packs stimulate effective demand, and over-regulation sometimes prevents the local competition, also. In more developed markets in India, increased competition between seed companies leads to diversification of the companies into offering more crops and varieties and also moving towards the higher forms of quality control, which is internally controlled rather than externally regulated. So after all, you know, seed regulatory agencies, as Louise also mentioned in her presentation, need to be flexible to move away from the stringent certified regime to much more relaxed QDS and ultimately with more and more commercial firms participating in this endeavor of moving towards the truthfully labeled system which you can claim that as a gold standard where the onus is — the responsibility of the producer is to maintain the quality. I would like to thank you all, and I would like to acknowledge the contributions made by the SSTP team, my colleagues from the Rutgers University Consortium, and Mark Huisenga, BFS-USAID, and of course, Louise. Thank you.

[End of Audio]