Sweetpotato for Profit and Health Initiative (SPHI)
Sweetpotato Seed System and crop management Community of Practice (SSS-CoP)
Summary of online Discussion

TOPIC 13: Fast-tracking development of sweetpotato seed standards and inspection schemes

Lead discussants: Ivan Obare, Kenya Plant Health Inspectorate Services (KEPHIS) and Bramwel Wanjala, International Potato Center (CIP)

The Organization for Economic Co-operation and Development (OECD) defines seed certification as a quality assurance process whereby seed intended for domestic or international markets is controlled and inspected by official sources to guarantee consistent high quality for consumers. Quality attributes tested include; genetic purity, limits on seeds of other crops and weed species; germination capacity; limits on moisture content; limits on seed-borne diseases and pests; seed size and weight; seed vigour; and seed viability. Certification ensures that farmers receive high quality seed. In 1993, FAO published its first *Quality Declared Seed System (QDS) Manual – Technical guidelines on standards and procedures* which captured 92 crop species reproduced by means of true seeds. This was updated in 2003 and one of the recommendations was the need for an expert consultation on a quality assurance scheme for vegetatively propagated crops (VPCs). Afterwards an Expert Consultation was held on November 27 – 29, 2007 to develop common principles and structure of the protocols as well as standards for quality declared planting material (QDPM) for the different VPCs. Standards and norms for Quality Declared Planting Material (QDPM) for VPCs were then published in 2010. However, there has been limited application of these standards for sweetpotato mainly due to practicality and cost reasons. It should be noted that as root production becomes increasingly commercial demand for quality seed and obligation to adhere to legal requirements will likely increase. Several countries in sub-Saharan Africa (SSA) are currently in the process of domesticating the FAO standards for production of quality sweetpotato seed but the process is slow. On May 19 – June 7, 2017 the SSS-CoP held an online discussion that focused on strategies to fast-track development of seed standards and inspection procedures within SSA. Among the questions the SSS-CoP sought to answer were:

- How to fast-track development of seed standards and inspection schemes to satisfy increasing demand for quality planting material among farmers?
- Can communities be a viable option for enhanced quality assurance schemes?
- Can harmonized sweetpotato seed standards, regulations and procedures work across countries?

The discussion coincided with the launch of harmonized seed regulations by the Common Market for Eastern and Southern Africa (COMESA) aimed at improving seed production and certification within the region. The launch was held in Nairobi, Kenya on June 5 - 6, 2017 and brought together]

teams from Burundi, Kenya, Malawi, Rwanda, Uganda, Zambia and Zimbabwe. The aim of harmonizing country seed laws and regulations under the COMESA Seed Harmonization Implementation Programme (COMSHIP) (http://africaleadftf.org/wp-content/uploads/2016/09/COMESA-Seed-Harmonisation-Implementation-Plan-COM-SHIP-_JULY-2014.pdf) is to bring about consistent domestication, application, monitoring and improvement in seed certification, quarantine and phytosanitary measures and in the evaluation and release of seed varieties among COMESA member countries. - See more at: http://www.newvision.co.ug/new_vision/news/1454902/comesa-launches-harmonized-seed-trade-regulations#sthash.puTMlpuT.dpuf. The target crops are maize, rice, groundnuts, cotton, beans, cassava, wheat, potato, sunflower, sorghum, soybean and millet.

Led by Ivan Obare, KEPHIS, and Bramwel Wanjala, CIP, the SSS-CoP discussion attracted 19 contributions from thirteen members (Table 1). This was the second discussion in 2017.

Table 1: Summary of the respondents of the 13th SSS-CoP online discussion

Duration	No. of contributions	No. of unique respondents	No. and type of institutions	Number of countries
19/5/2017 – 7/6/2017	19	13 (12 males and 1 female)	NARIs: 4 CIP: 5 Regulatory bodies: 3	8 (Burkina Faso, Ethiopia, Kenya, Malawi, Mozambique, Nigeria, Tanzania and Uganda)

Members shared the status of seed standards and inspection procedures in various countries and so far, three countries (Ethiopia, Tanzania and Kenya) have officially approved standards (Table 2).

Table 2: Status of sweetpotato seed standards in select African countries

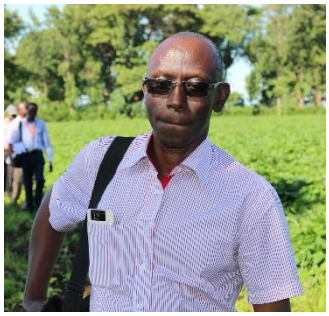
Country	Status
Ethiopia	Approved. Under implementation.
Tanzania	Approved in January 2017. Ready for implementation.
Kenya	Recently included under schedule two in the Kenyan law (Cap 326) which warrants mandatory certification of vines (seed). Yet to be circulated for use.
Malawi	Draft certification standards and protocols for root and tuber crops reviewed in June 2016. The recommendations were included in the country's Seed Act and Policy and are awaiting government approval.
Mozambique	Protocol for seed quality control and genetic purity of sweetpotato varieties finalized. To be submitted to the Ministry of Agriculture for approval.
Uganda	Technical guidelines for inspection and certification of sweetpotato planting material in Uganda completed in consultation with Makerere University, National Agricultural Research Organization (NARO), International Potato Center (CIP), HarvestPlus and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The guidelines have been tested by the Crop Inspectors from MAAIF.
Nigeria	Undergoing stakeholder consultation.
Burkina Faso	Inspection protocol was validated in April 2017 and sent to the National Seed Service for approval.
Rwanda	Stakeholder consultations completed. The Rwanda Standards Board (RSB) Has submitted the proposed standards for approval.

Development of sweetpotato seed standards: Highly consultative processes

Development of sweetpotato seed standards in various SSA countries followed highly consultative processes which brought together key stakeholders including farmers, scientists and regulators among others. Published documents such as the FAO QDPM Manual were critical in ensuring that the standards are practical without compromising local and internationals levels.

"In Malawi, standards and protocols for certification of vegetatively propagated crops (including sweetpotato, potato and cassava) were drafted in 2013. The process was initiated by the National Agricultural Research System (NARS) in collaboration with CIP and the International Institute for Tropical Agriculture (IITA). Nevertheless, the draft document was shared with other stakeholders such as NGO's', Departments within the Ministry of Agriculture, Universities and Private Sector. A bit of awareness on the existence of the quality standards has been made and to some extent standards for sweetpotato and potato have been piloted and validated. During the 2014/15 and 2015/16 growing seasons, Malawi experienced floods and drought respectively and sweetpotato was brought in as a recovery crop. However, this was more of an emergency response and resulted in mass distribution of low quality vines leading to low yields. Based on this experience, the draft certification standards and protocols for root and tuber crops were reviewed in June 2016 under the coordination of Root and Tuber Crops Development Trust (RTCDT). The recommendations were included in the country's Seed Act and Policy and are awaiting government approval." **– Kennedy Masamba, DARS, Malawi.**

"The review process in Tanzania was protracted and highly consultative. CIP and IITA played a significant coordination role. Initially, each CG Center was going to the Tanzania Official Seed Certification Institute (TOSCI) and ministry individually but later we decided to address the three crops; sweetpotato, potato and cassava as a team. We only missed bananas. The standards and certification procedures were a consensus borrowing from at least four published standards to generate what is practically possible without compromising seed quality both at national and international levels." – **Rogers Kakuhenzire, CIP, Tanzania.**



"The Technical guidelines for inspection and certification of sweetpotato planting material in Uganda were duly completed in consultation with Makerere University, National Agricultural Research Organization (NARO), International Potato Center (CIP), HarvestPlus and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). The guidelines have been tested by the Crop Inspectors from MAAIF who have also been trained in their use especially pest and disease identification." – **Bernard Yada, NARO, Uganda.**

"We just concluded the meeting of stakeholders to come up with acceptable seed standards for all sweetpotato seed classes in Nigeria. We reviewed the FAO and the East African version for guide. In addition, we tried to harmonize the terminologies of different seed classes. This harmonization is very important as terminologies differ from one country to the other. For instance, Uganda call breeder seed pre-basic or nuclear and refer to foundation seed as basic. They have up to five seed classes while in Nigeria, we have breeder seed, foundation seed and certified seed per the seed decree of 1992. Through the just concluded meeting we advocated for quality declared planting material to be included. We considered in our protocol only diseases and pests of economic importance and proposed acceptable levels of tolerance. We considered only sweet potato virus disease (SPVD) for disease and weevil (Cylas spp) and possibly leaf eating insects. This will make the work of inspectors less cumbersome and reduce stringent procedures so that seed producers can remain in business." – **Jude Njoku, CIP/NRCRI, Nigeria.**

"In Ethiopia, standards for QDS and other seed classes were developed for several crops including sweetpotato. The process of standard development is as follows:

- *Ministry of Agriculture and Natural Resources (MoANR) submits request to the Ethiopian Standard Agency (ESA), specifying the level of standard to be developed (QDS and/or full certification) and listing the crops.*
- *MoANR and ESA assign a technical committee from diverse institutions (research, MoA, seed enterprise, etc) and diverse disciplines (breeders, agronomists, pathologists, seed specialists etc). I am member of the committee.*
- *The committee develops the standards based on the international standards and national research findings.*
- *ESA presents the draft standards to the decision makers for approval.*
- *ESA distributes/sells the standards.*

Standards are revised after every 5 years to incorporate new developments or remove obsolete ones." – **Fekadu Gurmu, South Agricultural Research Institute (SARI), Ethiopia.**

"In Kenya, sweetpotato seed standards were recently put under schedule two of the Kenyan law (Cap 326) which warrants mandatory certification of vines (seed). This means anybody who deals with sweetpotato seed must be a registered seed merchant. The sweetpotato seed systems stakeholders were involved in the review and ratification of the sweetpotato certification standard which is yet to be circulated for use." – **Maureen Mwangangi, Kenya Plant Health Inspectorate Service (KEPHIS), Kenya.**

Implementation experiences

Currently, Ethiopia is leading in implementation of seed standards for sweetpotato. Inspection for quality declared seed (QDS) is conducted by the Agricultural Inputs Quality Control and Quarantine Authority. The inspectors are paid salaries and inspection expenses (e.g fuel, per diem etc.) by the government. However, the multipliers are expected to start covering those payments soon. The multipliers are strictly following the standards/guidelines for fear that their fields would be rejected. The early generations (pre-basic and basic seed) are produced in the research centers where they are also inspected for quality.

In Kenya, people/companies dealing with sweetpotato seed are supposed to register as seed merchants. Only a few sweetpotato seed merchants have been registered so far. This could be due to the charges involved - registration fee is 750 USD. The registration fee is a one-time payment that covers registration as a seed merchant (the parent company) responsible for seed multiplication and marketing. This fee covers certain aspects such as certification forms (which are provided at no extra charge after the payment). The fee is only applicable for the first year of registration after which the company renews registration at 100 USD per year. The company can then subcontract seed growers who only pay an initial fee of five (5) dollars for the first year and thereafter an annual fee of three (3) dollars. The growers are therefore cushioned against high costs since the parent company covers that. The parent company also pays for the inspection fees of 2.8 $ per ha with a minimum fee of 12$ per crop per inspection.

Seed producers are also required to be registered in Tanzania and Uganda. In Uganda, they apply for inspection of their seed when they need certificates to supply large quantities of seed commercially. The practice is being adopted by many seed producers as certificates are being demanded for the supply of large quantities of seed to government and non-governmental organizations implementing food security programs.

Malawi started with awareness creation on the existence of seed certification standards/ protocols as well as on the need to use quality vines. Stakeholder meetings have been held to also link buyers (NGO's) and vine multipliers. The 2016/17 growing season has seen a positive response as buyers have shown interest to buy and distribute quality vines by seeking advice from experts (CIP, NARS and RTCDT).

Way forward

After approval of seed standards, the regulatory bodies such as TOSCI in Tanzania and KEPHIS in Kenya should start implementation but in liaison with other stakeholders. There is need to carefully look at the registration and inspection fees and come up with figures that are affordable especially to small-scale seed producers. The process should be simplified so that the standards do not become a bottle neck in production of quality planting material. It is important to think about the implications of official certification on access and availability of clean planting material. For example, currently the Ethiopian government pays for inspection but at some point, the multipliers will start paying. How will the multipliers respond when that time comes? Will they be able to pay or they will abandon the process? And will certification stifle the seed system or improve it?

Government subsidies are important but for sustainability the registration and inspection fees should be affordable to all parties. Subsidies can be justified to get the system up and running, but in the end, it should be able to sustain itself. The Dutch model with *produktschappen* (branch organizations bringing together employers and workers by product column or chain with a public law like the boards that exist in many countries for export crops) can be a useful way; *Produktschappen* were dissolved in 2015 as the Dutch system became more aligned with EU.

Communities can also be a viable option for enhanced quality assurance schemes since self-regulation is a useful tool to ensure quality. This has its drawbacks because the involved parties may tend to form a cartel and sacrifice the public good to private profits. A semi-public board solution which brings together producers under the auspices of government but with a large room for self-regulation may be a better solution than leaving it only to the private parties.

In addition, stakeholders should familiarize themselves with the harmonized definitions for the different seed classes for ease of communication across countries. The SSS-CoP has made good progress towards reaching a common understanding on the definitions (http://www.sweetpotatoknowledge.org/harmonizing-definitions-sweetpotato-seed-classes-role-monitoring-learning-evaluation-practitioners/). It is also important to start thinking about harmonized sweetpotato seed standards, regulations and procedures across countries. As indicated above, COMESA has already set the stage for maize, rice, groundnuts, cotton, beans, cassava, wheat, potato, sunflower, sorghum, soybean and millet. However, harmonization should take into consideration that standards may be equal but implementing them in each country will be different. It is important to reconnect to any institutional memory that may exist regarding Irish potato seed system development.

Moving forward, enforcement of quality assurance will stimulate vine multiplication business as well as increase root yields. Therefore, deliberate efforts are needed to convince/show the smallholder farmers that using quality vines of appropriate varieties coupled with good agronomic practices is key to increasing root yields. Farmers' appreciation of the benefits of quality seed coupled with an increase in commercially-oriented growers will increase the demand for quality seed. In turn more farmers are likely to embrace the idea of buying seed – a practice that is now becoming common especially in areas with long dry periods. With increasing demand for quality planting material sweetpotato seed production is expected to become a viable enterprise hence the need for a system that will ensure that farmers get what they pay for. Stakeholders involved in sweetpotato seed systems in various countries should come together and develop standards that are appropriate within the local contexts. Indeed, through a series of stakeholder consultations several countries have made good progress. To replicate this in other countries there is need to:

a) Lobby relevant government agencies to start discussions on sweetpotato seed standards.
b) Provide data on root yield benefits of planting quality seed.
c) Adopt a collaborative approach to ensure that no one is left out.
d) Sensitize communities on the benefits of quality seed.

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