

- **By W. M. Muiru**

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GLOBAL BEST PRACTICES IN PHYTOSANITARY AND SEED QUALITY SYSTEMS; IMPACT ON SEED QUALITY AND AVAILABILITY

Muiru, W.M

University of Nairobi

Department of Plant Science & Crop Protection



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Introduction



- Seed is a key input for improving agricultural productivity and ensuring food security.
- seed is the foundation for much of agriculture. For the yield potential of any variety to be realized, good quality seed must be sown.
- Dealing with agricultural materials presents risks –pest pathway.
- Seed trade is essential for both agricultural growth and regional seed security.
- Seed production has to comply with numerous regulation and standards in order to access export markets.
- Due to diversity of national regulatory systems in the countries, farmers continue to be seed insecure.
- **Variations** in national standards for seed certification and quality control, and in quarantine and phytosanitary measures for seed, **complicate the trading** of seed between countries and cause difficulties for the **efficient movement** of emergency seed consignments.
- Africa's share of the global seed trade, currently standing at less than 2%



Overview of global seed system models



- Formal, semi formal and informal seed systems
- The formal seed system dominates the informal seed system in
- Common features of the formal seed system
 - (i) Dominance of the production process by a few multinational companies
 - (ii) Very well-regulated formal seed sector. This is positive from the point of view of maintaining quality and integrity of seed being used in agriculture.
 - (iii) Tightly regulated system also makes it very difficult for small-scale seed producers to enter into the system, or for the development of points of intersection between the formal and informal systems.



Industry Participants	Roles
Breeders and researchers – public, private, and NGO	Develop new varieties by using scientific methods to systematically combine germplasm pools to achieve the desired variety characteristics. Are also responsible for maintaining good, pure breeder seed of varieties over time. Can also be responsible for overseeing production of pre-basic and basic seed, depending upon how responsibilities are assigned.
Foundation seed bulkers – public, private, NGO	Are responsible for taking small quantities of breeder seed and multiplying, or bulking, it to pre-basic and basic levels, which are then used to produce a certified seed crop.
Certified seed producers – corporate, government, contract growers, NGOs	Produce the crop of seed which then becomes certified for distribution in the formal sector, and is known as certified seed. Government and the private sector often contract outgrowers to perform this function.
Processors and packagers – private, government, NGOs	Take raw seed as it is brought in from the field, then dry, clean, sort, test, treat and package it. They also ensure required inspections are done for certification.
Marketers/Awareness Creators – seed companies, extension agents, NGOs	Create awareness and demand for seed of improved varieties via demonstrations, meetings, publications, radio programs, etc.
Distributors – agents and agrodealers, private seed companies, NGOs,	Typically purchase seed, frequently on credit, from seed companies and other producers and then transport and sell seed to the end users. Some distributors give seed away for free.

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government entities, multilaterals	
Policy makers and regulators – government and government-contracted entities	Establish formal government policy for the sector, and set up and execute mechanisms for implementing the policy. Their key activities in Kenya include making seed legislation, releasing varieties, certifying seed, licensing seed companies and agents, and enforcing laws that combat fake seed.
Financiers – commercial and donor	Provide both working capital and longer term financing to seed companies to meet seasonal production costs as well as capital investment needs for warehousing, processing machinery, vehicles, irrigation and other farm equipment, etc.
Users – commercial farmers, non-commercial farmers (for their own or shared consumption), industrial purchasers	Plant the end product themselves to obtain a food crop, or purchase it for their own contracted farmers in the case of industrial purchasers.

Source: Agri Experience



Phytosanitary measures



- Seed production has to comply with numerous **regulation and standards** in order to **access export markets**.
- Such regulations and standards **cover** such broad **areas** as human and environmental health, plant health, introduction of alien species, worker welfare and consumer tastes
- These regulations are **enforced** through a number of **bilateral and multilateral mechanisms** and arrangements between and among trading partners, for example, the World Trade Organization (**WTO**).
- The fundamental **requirement** of WTO's **regulation** is to ensure that agricultural products are **safe and pose no risk** to human, animal and plant health.



Phytosanitary measures cont'd



- WTO's Sanitary and phyto-sanitary (SPS) agreement has two main objectives:
 - To recognize the **sovereign right** of members to **provide the level of health protection** they deem appropriate
 - Ensure that SPS measures do not present unnecessary, arbitrary, scientifically unjustifiable or **disguised restrictions** on international trade.
- These measures allow countries to **set their own** seed or food safety and animal and health **standards and regulations**
- **Wide array** of phytosanitary measures **available** and used to prevent and reduce risk of disease
- Examples of the phytosanitary measures
Import permit, certification scheme, pre-inspection, defined entry ports, inspection /testing on entry, post entry quarantine (PEQ), disinfestation



Good practices in phytosanitary measures



(i) Science based

- Based on scientific principles
- Encourage members to use international standards, guidelines and recommendations where such exist.
- Once a WTO Member has established its appropriate level of protection, the SPS Agreement provides that the SPS measures it takes to achieve that level of protection must be based on scientific principles
- Must not be maintained without sufficient scientific evidence
- May be applied only to the extent necessary to protect human, animal, or plant life or health.



Phytosanitary measures cont'd

(ii) Risk Assessment

- The SPS Agreement requires
 - Each Member to ensure that its SPS measures are based on an **assessment of the risk** that a particular substance or product, process or production method, poses no risks to human, animal, or plant life or health.

(iii) Justifiable and not discriminatory

- Measures should not be disguised as restrictions on trade
- Ensure that their SPS measures are **not more trade-restrictive** than required to **achieve that level of protection**, taking into account technical and economic feasibility.



Phytosanitary measures cont'd



(iv) Harmonization of regulations

- Need of harmonization for seed regulations
- Base SPS measures on international standards, guidelines, and recommendations developed by international standard setting organizations. So as to facilitate trade by harmonizing different WTO Members' SPS measures on as wide a basis as possible
- There exists differing systems, inconsistent policies, standards, regulations and procedures in the seed industry

Benefits of harmonization

- Promote the **entry** of new improved varieties and **ease the movement** of quality seed from countries with **surplus** to countries **in need** of seed.
- Improved **access** to quality seed will contribute to **seed and food security**, and thus support efforts to alleviate hunger and poverty.



Benefits of harmonization cont'd



- Save time and resources because importing countries no longer need to re-test the imported seed
 - Allow more efficient movement of seed in the region through the use of a common seed certification scheme, terminology, standards, procedures, seals and labels
 - A survey on sector policy in eastern and central Africa and concluded that **enactment and implementation of harmonised** seed policies, regulations and procedures is needed.
 - Technical agreements on seed policy harmonization are in five key areas: variety evaluation and release; seed certification; plant variety protection; phytosanitary regulations and seed import and export procedures
- (v) Transparency**
- The SPS Agreement requires WTO Members to **publish promptly** all adopted SPS measures in a manner that enables other interested WTO Members to become acquainted with them prior to their **entry into force**.



Impact of phytosanitary measures on seed quality



- Provide basis for healthy competition among seed traders by ensuring ethical practices
- Ensuring exchange of clean germplasm (about 30% of the world's food production is derived from crops originating in other countries).
- Lack of harmonization of regulations impedes movement of seeds across borders thus impacting negatively on the seed availability
- Facilitates the import and export of all seed and assures the quality of the seed in line with National & Int'l regulations/requirements
- Assures traceability from on-farm seed production to seed merchant/seller



Global best practices in seed quality systems



Seed quality measures

- Several international **organizations and industry associations** e.g. International Seed Testing Association
- Have developed widely recognized tests, guidelines and standards
- Ensuring the quality of seeds (for purity, germination capacity, etc.)
- Seed health testing is one of the important **tools** for **monitoring seed quality** and ensuring that the **best quality** seeds are produced and sold to farmers



Global best practices in seed quality systems



(i) Integration of both formal and informal seed systems

- The developing countries has both the formal seed sector and the informal seed sector coexisting together.

Traditional seed systems or informal seed systems

- Accounts for about 90–95%, for smallholder farmers' seed demands.
- Due to lack of control or facilities, it is not always possible to produce high quality seeds and seed that is produced and distributed in this way is often of uncertain quality
- Need to address this important sector
Integration can be in the form of seed producing companies contract growers with:
 - Knowledge on seed production
 - Adequate land to provide the stipulated isolation distance from crops of the same species.



Global best practices in seed quality systems cont'd



(ii) Involvement of regulators in all decision making fora

•The NPPO has membership/representation and participates in/partners with governing and decision making bodies and fora locally, regionally and internationally:

•Locally the following players needs to work together

- Ministry of Agriculture
- Research institutions/Universities
- Seed companies
- Farmers

Regionally and internationally

- EAC, COMESA (representation in the regional blocks)
- IPPC, ISTA-OECD, CODEX (representation in the international arena)

✓ There is need to address the gaps in policy and practice regarding production and trade in seed across countries



Global best practices in seed quality systems cont'd



(iii) public-private partnerships

- To address seed quality there is need for inclusive participation
- Need to bring together
 - representatives of the private sector through the national seed trade association
 - the technical arm through the national breeders' association
 - the regulatory arm through the national seed certification agency
 - the policy arm through the ministry of agriculture
- Farmers are teaming up with:
 - private-sector seed companies where farmers are linked as outgrowers to a private seed company (e.g., Kenya Seed company)
- Farmers are organised in groups and work with research institutes (e.g., KALRO)
- Facilitation of partnerships that bring private sector and public/regulatory authorities together to discuss, build trust, reach consensus and foster collaboration on key issues.



Global best practices in seed quality systems cont'd



(iv) Capacity building

- To support the smooth implementation of quality control standards
- To address the emerging issues in pests, pest detection, management methods
- To allow continued review and update of existing phytosanitary measures
- Encouraging and supporting on-farm seed production by farmers is seen as one approach to sustainable seed delivery in Africa.
- The decentralized seed system and linking it to participatory plant breeding and variety selection.
- Human resource development and skill upgrading/ training programmes for Scientists, Researchers and others.



Global best practices in seed quality systems cont'd



(v) Fostering , building and exploiting synergies

- Recognition of the differences as well as the importance of the various technical experts is vital
 - scientists and policy makers who have to domesticate the agreement
 - regulators who have to enforce implementation
 - legislators who enact the agreements into bills and laws.
- Bringing these diverse teams together
 - to maintain a healthy balance between encouraging competitive production of seeds and providing oversight for implementing quality control/assurance schemes.



Global best practices cont'd



(vi) Regular reviewing and updating of standards

- E.g. Ethiopian seed standards are excessively high, which has resulted in the rejection and destruction of good quality seed.
- It is therefore recommended that standards be reviewed and revised as necessary to comply with international standards and otherwise to determine what is appropriate for each variety



Impact of phytosanitary and seed quality systems on seed quality and availability



Seed quality

- Ensures seeds of high quality and disease free
- Meet consumer demands for specified qualities
- To increase volume of certified seed produced to reach more farmers
- Promotion of local seed enterprises
- Improved access and adoption of new crop varieties
- To promote the transition of farmers' group seed production schemes into commercial businesses at micro level

Seed availability

- Systems for instance where the informal systems are integrated in the production of certified seeds ensure more availability of improved and quality seeds to the farmers
- Phytosanitary rules if not harmonized well can serve as a barrier to accessing export market and farmers to obtain quality seeds
- Excessive high standards results to rejection and destruction of good quality seeds—case of Ethiopia



Conclusions



- Phytosanitary and seed quality systems are vital for growth and posterity of seed industry
- There are no perfect phytosanitary and seed quality systems anywhere in the world and the laws and regulations may need to be frequently amended in response to changing circumstances.

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