



FEED THE FUTURE ENABLING ENVIRONMENT FOR FOOD SECURITY PROJECT

ENABLING THE BUSINESS OF AGRICULTURE (EBA) SEED DATA IN ACTION

How World Bank 2017 EBA data can be applied to inform specific initiatives: A look at the seed data and its relevance to the Southern Africa Development Community (SADC) efforts to harmonize seed regulations (HSR).

BACKGROUND

In 2013, Southern Africa Development Community (SADC) member states agreed to cooperate in adopting a common regional framework for regulation of seed registration, certification, and quality assurance.¹ The primary objective of regional harmonization is to address problems of small and fragmented markets, lengthy variety testing and release procedures, and complications in seed trade regulations such as national variations in seed certification, quality control and quarantine, and phytosanitary measures.² It is widely touted that addressing these problems will benefit the entire seed sector by increasing investment and seed production, and opening access to more varieties at more competitive prices.³

The World Bank collects country-level data on laws and regulations impacting plant breeding, release, and quality control of seed as part of its Enabling the Business of Agriculture (EBA) dataset. Five of fifteen SADC member states have EBA seed data for a limited number of years beginning with the first publication in 2015; Mozambique (three years), Zambia (two years), and Malawi, Tanzania and Zimbabwe (one year). However, evaluating country performance over time is limited due to changes in indicator components and methodology.⁴

Purpose of Harmonized Seed Regulations

- Increase access of wider variety of high-quality, affordable seed to farmers.
- Reduce time and costs for new and existing varieties to gain access to SADC markets.
- Encourage faster and safer movement of seeds and reduce costs related to seed trade.

The SADC HSR framework and EBA data are highly congruent, making the EBA an excellent monitoring mechanism to track progress toward harmonization. Both efforts focus on the formal seed system.⁵

The SADC HSR is organized around three systems: (i) SADC variety testing, registration and release system; (ii) SADC seed certification and quality assurance system; and (iii) SADC quarantine and phytosanitary measures. Relevant EBA data is available in four areas: (i) variety registration; (ii) time and cost to register new variety; (iii) seed quality controls; and (iv) plant protections.

¹ The Technical Agreement defines the term “seed” as true botanical seed and vegetative planting materials. Tree seed is not included. Also note that Member States agreed to exclude all genetically modified seed at this time.

² SADC Secretariat 2008.

³ To explore political concerns raised, see USAID 2016.

⁴ Lodugnon-Harding 2017; Variety Registration and Plant Breeding have incurred scoring and coding methodology changes; Time and Cost to register new varieties and Seed Quality Control indicators were added in 2017.

⁵ EBA currently piloting indicators that incorporate the informal seed sector; SADC HSR aims to provide information on landraces and local plant varieties in its Seed Variety Database.



EBA Data Mapping to SADC HSR Technical Areas

SADC HSR Technical Areas	EBA Indicators
Variety testing, registration & release system	Seed: Variety registration
	Seed: Time & Cost to register new seed varieties
Seed certification & quality assurance	Seed: Quality control
Quarantine and phytosanitary measures	Markets: Plant Protections

HOW CAN EBA DATA BE USED TO INFORM PROGRESS TOWARD HARMONIZATION?

Implementation of the SADC HSR entails adopting common regulations and standards (a process called domestication) with leadership and coordination provided by the SADC Seed Centre and SADC Seed Committee responsible for creating and maintaining regional seed catalogues and databases, and providing technical guidelines for seed certification, among other tasks. Progress has been slow in both areas, hindered by severe capacity limitations in the newly established regional institutions as well as personnel within national government institutions throughout SADC.⁶ For example, a recent USAID/BFS/MPI seed specialist field trip revealed that the SADC Seed Centre exists in name only and does not yet have any employees. In addition, the SADC Seed Committee would benefit from more consistent participation from the same members and more frequent meetings, since meetings are typically only held every other year.⁷ As of September 2017, Mozambique has aligned its legal framework – although it is still working towards effective implementation – while Zambia and Malawi are in the process of amending their seed acts.⁸ Tanzania has implemented 98 percent of domestication of the East African Community’s (EAC) seed policy harmonization process and is complementary to the SADC framework.⁹ Zimbabwe continues to abstain from formally accepting the SADC HSR, but it has taken steps toward domestication of Common Market for Eastern and Southern Africa (COMESA), which shares many of the same principles.¹⁰ Of the five countries, Malawi has the least aligned seed system.¹¹

Average scores of the four EBA indicators directly relevant to SADC HSR efforts roughly mirror the degree of domestication undertaken by each country. Comparison of average scores suggest that Zambia is a strong contributor to SADC HSR success, followed by Tanzania, Mozambique, Zimbabwe, and Malawi.

The following sections explain in greater detail how EBA data can be used to inform progress toward SADC seed harmonization efforts. Distance to frontier (DTF) scores are used throughout this brief, which are calculated from aggregated index scores comprised of country-level responses and are explored in more detail in the EBA 2017 methodology [here](#). Higher index scores reflect greater adoption of legal and regulatory best practices. Index scores are then converted into DTF scores that compare a country’s performance to the highest performing country (frontier). The higher the score, the more of a top performer the country is in a particular area.

EBA Indicator DTF Scores (0-100)

	Variety Registration	Time & Cost to Register a New Maize Seed Variety	Seed Quality Control	Average of Three Selected Indicators
Malawi	69	12	50	44
Mozambique	75	58	50	61
Tanzania	50	82	54	62
Zambia	68	62	67	66

⁶ USAID 2016; Kuhlmann 2015.

⁷ Huisenga 2017.

⁸ SADC Secretariat 2017.

⁹ African Centre for Biodiversity 2016. The Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) includes the EAC seed harmonization efforts.

¹⁰ Kuhlmann 2015.

¹¹ Mpofu 2017.

EBA Indicator DTF Scores (0-100)

	Variety Registration	Time & Cost to Register a New Maize Seed Variety	Seed Quality Control	Average of Three Selected Indicators
Zimbabwe	50	58	71	60

Note: Country-level responses captured in Annex 1.

1. SADC variety testing, registration and release system

The SADC HSR Technical Agreement states, “The purpose of the SADC Variety Release System is to make it easier and cheaper for new and existing varieties to gain access to SADC countries.” Accordingly, the SADC Seed Centre is responsible for facilitating a process that allows seed varieties released in at least two SADC countries to be sold without restrictions to all SADC Member States¹². These varieties are made public in the SADC Variety Catalogue¹³. The Centre also maintains a SADC Seed Variety Database that provides a more inclusive body of public information, including descriptions of landraces and local plant varieties.

Feeding into the SADC Variety Release System are registration legal requirements and approval procedures of each member state. The EBA variety registration indicator captures legal and regulatory factors that influence the transparency and predictability of the system, including testing requirements, composition and function of Variety Release Committees (VRC), and management of national seed variety catalogues.

EBA data also measures the time and cost involved for the private sector to register a new maize variety with the government. This indicator was added in 2017 to ensure the efficiency (time) and affordability (cost) of country-level implementation practices were accurately captured, whereas the variety registration indicator focuses on the legal and regulatory framework. Although there are positive correlations between the time to register new varieties and both a balanced VRC composition and frequency of VRC meetings,¹⁴ the indicators remain separate because there are processes not related to the legal framework that ultimately influence time and cost.¹⁵

Cross-comparison of EBA variety registration indicator scores reveal that Mozambique has adopted 88 percent of best practices in this area, giving it a DTF score of 75/100.¹⁶ This suggests that Mozambique’s seed law establishes a strong regulatory framework, which includes accepting DUS¹⁷ testing results from foreign authorities as official data for registration purposes, a legally established VRC that attempts to strike a balance between private and governmental representatives that meets bi-annually, and maintains an up-to-date variety catalogue listing new varieties that includes suitable agro-ecological zones. By comparison, Zimbabwe’s legal and regulatory framework only adopts 50 percent of best practices (DTF score of 50/100), with notable deviations in not accepting DUS testing data from other countries and requiring additional processes after VRC approval.

Malawi and Zimbabwe illustrate the complementarity of time and cost to the variety registration indicator. Malawi’s DTF score of 69/100 reflects 75 percent best regulatory practices, yet the cost to register new maize varieties is very high at more than 2,000 percent income per capita. Zimbabwe’s scores reflect the converse. Despite a weak legal and regulatory framework for seed registration with a DTF score 50/100, Zimbabwe has the lowest cost to register a new variety, making it attractive for the private sector. Factors in Zimbabwe such as sufficient capacity to undertake DUS and Value of Cultivation and Use (VCU) trials and market viability are not captured in the variety registration indicator, but are indirectly captured in

¹² However, as noted above, in practice the Seed Center was still unstaffed as of October 2017.

¹³ This catalog is currently being maintained by South African National Seed Organization (SANSOR) on behalf of SADC.

¹⁴ World Bank 2017.

¹⁵ Lodugnon-Harding 2017.

¹⁶ [EBA 2017 Report \(See Table B.1 Scoring methodology for seed indicators\)](#).

¹⁷ Distinctness, Uniformity and Stability (DUS) – testing for DUS establishes specific qualifications of a candidate variety which provides the variety with a proper identity; World Bank 2017.

the time and cost indicator.¹⁸ Therefore, both the EBA seed variety registration indicator and the time and cost indicator are useful tools to gauge the degree to which member states contribute to the success of the regional variety release system whose intended outcome is to improve the ease for new varieties to gain access to SADC countries. That is, the variety registration indicator provides a proxy for the degree of transparency of the legal and regulatory framework in each country, and the EBA time and cost indicator provides a quantifiable snapshot of the efficiency and affordability of the seed variety registration process for each country. Together, shorter time, lower costs, and more transparent and accessible seed registration systems benefit SADC harmonization efforts directly by making it easier and cheaper for new and existing varieties to gain access to SADC countries, thereby strengthening the breadth¹⁹ (number of qualifying countries) and speed of the streamlined SADC variety release system. This, in turn, will stimulate availability of more varieties, encourage investment in seed systems, and increase farmers' choice and access to high quality seed.

2. SADC seed certification and quality assurance system

The SADC HSR Technical Agreement states, "The purpose of the SADC Seed Certification and Quality Assurance System is to ensure that seed of varieties listed in the SADC Regional Variety Catalogue and traded among SADC Member States are of consistently high and known quality, and that movement of the seed is more efficient and thus less costly." Accordingly, the SADC Seed Committee is responsible for developing rules, directions, and standards that include crop specific quality requirements, auditing guidelines, penalties, and dispute resolution. Adopting these common standards will in turn allow more efficient movement of seed in the region through the use of a common seed certification scheme, terminology, standards, procedures, seals and labels; and save time and resources by eliminating the need to re-test imported seed.²⁰ The SADC Seed Centre is tasked with cataloguing qualified certification entities and facilities and providing technical assistance when necessary.

The EBA seed quality control indicator captures 12 practices influencing the quality control process following the release and multiplication of new varieties, including third party accreditation for seed certification, legal obligations to track traceability of plant material, requirements to perform post-control tests, and guidelines and penalties for labeling seed containers. Further alignment with the rules, directions and standards guidance issued by the SADC Seed Committee will be necessary. Nonetheless, EBA seed quality control scores are positively correlated to the speed of certification and quality of seed released into the market, aspirational outcomes of the SADC system.

Mozambique and Malawi underperform in seed quality control where both countries score 50/100. Zimbabwe has the highest score of 71/100, closely followed by Zambia at 67/100 and Tanzania at 54/100. Zimbabwe distinguishes itself in this area by legally requiring plant breeders to retain records of their plant reproductive material by retaining records of their suppliers for at least two years. There are no traceability obligations in the other three countries. Mozambique falls behind by not providing transparent guidelines for private seed companies and/or third parties to perform certification activities. Malawi falls behind by not publishing an official fee schedule for seed certification activities carried out by the national seed authority or providing clear labeling guidelines for seed containers.

3. SADC quarantine and phytosanitary measures

The SADC HSR Technical Agreement states, "The purpose of the SADC Harmonized Quarantine and Phytosanitary Measures for Seed is to reduce costs related to seed trade, and encourage faster and safer

¹⁸ USAID 2016; World Bank 2017.

¹⁹ "Breadth" here refers to increasing the number of countries that are considered attractive to private companies for registering new seed varieties. More "qualifying" countries provide greater opportunities for smaller seed companies to participate, thereby increasing seed offerings, competition of seed prices, in short, a more dynamic seed sector. Seed registration procedures also provide jobs and government revenue.

²⁰ SADC Secretariat 2008.

movement of seed.” This will be accomplished by introducing SADC pest lists for the movement of seed between member states and from outside countries into the region, and establishing common and transparent Quarantine and Phytosanitary Measures for seed in the SADC region.²¹ Keeping the SADC pest list updated over time (and securing the needed time and financial resources to do so) will be a challenge to ensure the list remains relevant.

Phytosanitary risk is cited as a common concern among SADC countries when discussing increased seed trade resulting from seed harmonization efforts, with issues of low capacity to conduct pest risk analysis especially prevalent.²² Indeed, the EBA plant protections scores suggest that four of the five SADC countries evaluated have poor plant protection measures with scores between 25/100 and 38/100.²³ The EBA plant protections sub-indicator (bundled within its markets indicator) captures eight legal and regulatory practices such as designation of a government agency to carry out pest surveillance on plants and maintain a list of regulated quarantine pests, and availability of pest information. These are important to the SADC HSR effort, as implementing a common quarantine and phytosanitary regime throughout the region is challenging if member states fail to adequately conduct pest surveillance and maintain a list of regulated quarantine pests, at a minimum. However, the indicator is not specific enough to seed (as opposed to all plant products) for it to be considered a good proxy for SADC Harmonized Quarantine and Phytosanitary Measures.

LIMITATIONS OF THE EBA DATA

An appropriate legal and regulatory framework is necessary to improve seed systems, but not sufficient. EBA was designed to have a limited scope with an emphasis on legal and regulatory policy. It does not measure country capacity to implement legal and regulatory requirements. This could lead to misleading conclusions. For example, Mozambique’s high plant protection score (63/100) does not reflect that the country lacks functioning quarantine facilities and accredited laboratories.²⁴

Similarly, there is an important omission of trained and certified seed inspectors. Lack of trained inspectors are the main limiting factor to SADC seed systems at this point in time. Zambia has privatized seed inspectorate services and introduced a transparent online certification system. There are a reasonable number of certified inspectors to keep the system working. Furthermore, Zambia’s seed certification system exceeds SADC HSR requirements with its OECD certification and ISTA-accredited seed labs and reflected by high value production and export of early generation (maize) seed.²⁵ This capacity is not reflected in Zambia’s mediocre scores for variety registration (68/100), time and cost to register new maize seed varieties (62/100), and seed quality control (67/100). Mozambique has none of these elements, yet its EBA scores are similar to Zambia.

FINDINGS & RECOMMENDATIONS

Consider use of EBA indicators as proxies for member state contribution to harmonization success

Capacity limitations for the regional SADC HSR coordination bodies are evident. The SADC Seed Committee was established in May 2016, and the SADC Seed Centre does not currently have any personnel.²⁶ For the time-being, the majority of SADC seed harmonization efforts are taking place within

²¹ Pest lists are rationalized by including only pests that are of economic significance, not known to occur in the SADC region, and which are seed borne; SADC Secretariat 2008.

²² USAID 2016.

²³ Plant protection indicator captures legal framework governing plant protection of all agricultural plant material, not just seed.

²⁴ Huisenga 2017.

²⁵ Ibid. Another lens by which to gauge seed system performance is through the value of seed production and exports. For example, evidence of Zambia’s strong performance can be seen in the FAOSTAT data on maize seed value, whereby Zambia produces some of the highest value seed in the SADC region (TASAI 2017). Much of this production is very high value early generation (breeder and foundation) seed that is exported throughout COMESA and SADC.

²⁶ Tjeleleand Kawonga 2017; Mpofu 2017.

each member state through domestication of the HSR regulatory framework for seed registration, certification and quality assurance. Many member states are still in the process of aligning their systems.

Fortunately, contribution toward the successful implementation of SADC seed harmonization objectives can be tracked through three selected indicators from the World Bank's EBA data collection efforts. The higher the EBA score, the more the Member State is poised to make a positive contribution toward shared objectives. For example, the seed quality control indicator evaluates regulatory practices in quality control processes that correspond directly with the SADC objective of efficient certification procedures at reduced costs with high-quality seed.

EBA Indicator	HSR Technical Agreement
Seed Variety Registration and Time and Cost <i>Evaluates:</i> transparency, efficiency and affordability of variety registration	SADC Variety Testing, Registration and Release System <i>Outcome:</i> Greater ease for new varieties to gain access to SADC countries
Seed Quality Control <i>Evaluates:</i> regulatory practices in quality control process	SADC Seed Certification and Quality Assurance System <i>Outcome:</i> Efficient certification procedures at reduced costs; high seed quality
Plant Protections <i>Evaluates:</i> plant protection measures	SADC Harmonized Quarantine and Phytosanitary Measures <i>Outcome:</i> Faster, safer, cheaper movement of seed

The EBA data provides a convenient proxy for the adoption of best regulatory practices which are often complementary measures to HSR technical directives. This is true not only for the SADC seed harmonization efforts, but also COMESA and EAC which share many similarities.²⁷ However, EBA does not capture specific regulatory alignment (i.e. adoption of specific HSR rules and guidelines), nor does it provide detailed implementation procedures or capacity assessment.

At this time, EBA scores do not reflect the benefits directly attributed to harmonization efforts themselves. That is, comparison of average scores from COMESA and SADC regional blocks should reflect that COMESA countries perform better than SADC countries due to more progress.²⁸ The scores simply do not reflect better performance in COMESA countries, nine of which are included in the EBA dataset (three are also SADC members).²⁹ Instead, SADC countries perform better on average in all three indicators. Finally, the HSR regional bodies remain responsible for specific outputs of the HSR such as shepherding the process for the two-country variety release system, establishing and maintaining the SADC seed variety catalogue and pest list, and providing other technical directives and support. These are, and should continue to be, out of the EBA scope.

Expand EBA seed quality control indicator to address infrastructure and personnel capacity

Many countries suffer from capacity constraints to sufficiently implement best practices in legal and regulatory policies. Expanding the seed quality control indicator to incorporate infrastructure and personnel capacity would strengthen these indicators. Specifically, the Organization for Economic Co-operation and Development (OECD) has developed common international rules for varietal certification through the OECD Schemes for the Varietal Certification or the Control of Seed Moving in International Trade (OECD Seed Schemes). Secondly, the International Seed Testing Association (ISTA) has an accreditation program for seed testing laboratories. OECD Seed Schemes and ISTA accreditation serve as guidelines for many regional seed harmonization efforts, SADC HSR included, though these are

²⁷ For example, SADC and COMESA HSR seed certification field standards and laboratory standards are the same for most crops. However, SADC includes quality declared seed (QDS) seed as a Seed Class while COMESA does not. Furthermore, the COMESA seed certification system includes a wider array of crops than the SADC system, including root crops potato and cassava, and hybrid rice; conversely, the SADC system includes tobacco, pigeon pea and pearl millet which are not included in the COMESA system. Mpofu 2017.

²⁸ Kuhlmann 2015.

²⁹ COMESA countries included in 2017 EBA dataset are: Burundi, Ethiopia, Kenya, Malawi, Rwanda, Sudan, Uganda, Zambia, Zimbabwe.

considered more rigorous standards than SADC aspirations. Some countries have already advanced harmonization efforts to meet international standards. For example, Zambia and Zimbabwe are OECD certified and Tanzania is seeking formal compliance with the OECD seed certification scheme; and Zambia, Tanzania, and Malawi have ISTA accredited labs.³⁰ Mozambique has neither. Therefore, it is recommended to add two questions to the seed quality control indicator to assess whether or not countries have obtained OECD Seed Scheme certification and ISTA laboratory accreditation. Positive responses would be positively scored.

Apply EBA indicators to SADC countries not included in EBA dataset

Until the World Bank adds the remaining 11 SADC member states to future rounds of EBA data collection, gaps will exist in the dataset. The tool can still be useful, however. Each of the four relevant EBA indicators captures a prioritized list of best practices that can be evaluated on a binary basis for compliance. Applying this analysis to countries not currently included in the dataset can provide a quantifiable, and comparable, benchmark for contribution to SADC HSR goals.

Focus country-specific harmonization efforts toward addressing weaknesses in EBA indicators

Focusing limited resources to generate the greatest benefit is always desirable. In the case of SADC seed harmonization, resource maximization can be achieved by directing efforts toward improving weaknesses identified through the EBA. Assuming that a higher EBA blended score of relevant indicators is positively correlated to achieving greater HSR success, then the EBA tool, in turn, can be used to prioritize areas of the legal and regulatory framework that play critical roles in the efficient functioning of the seed system in those respective countries. Infrastructure and personnel capacity constraints should also be prioritized.

Use plant breeders' rights EBA indicator to inform readiness to adopt new technical note

Defective intellectual property laws and enforcement are cited as a significant constraint to African seed systems.³¹ Member states have not yet approved the technical note on plant breeders' rights.³² However, EBA captures a separate indicator on this subject that focuses heavily on the legal framework granting and protecting intellectual property rights of plant materials. This indicator could be used by interested parties to inform readiness of member states to participate in a regional effort on this subject.

Add value of cultivation and use (VCU) question to Variety Registration indicator

The subject of VCU testing is currently omitted from the variety registration indicator. DUS and VCU testing is often required for new variety registration. Adding a question regarding the law's provisions for allowing VCU testing by the applicant under the supervision of the NSA or independent third party would further inform the ease by which new varieties can obtain approvals and enter markets. Further discussion on whether positive responses would be positively or negatively scored is necessary, as opinions differ. A negative response would add another requirement to obtaining approval. Some exemplary varietal release systems do not require VCU testing but instead offer voluntary inclusion of VCU data in seed catalogs.³³ A positive response would raise transparency of seed quality and agronomic use.

Include actual cost to register a new seed variety

To best compare country performance over time, it would be useful for the EBA data to include the actual cost (USD) to a company of registering a new seed variety, in addition to the percentage income per capita currently provided. The relative figure hinders the ability to understand changes in actual costs because they are influenced by exogenous changes in per capita income.

³⁰ Khulman 2015.

³¹ USAID 2016.

³² Protocol protecting plant breeder rights for the SADC region was introduced in 2012 but remains in draft form.

³³ Huisenga 2017.

ANNEX I. COUNTRY RESPONSES TO INDICATOR QUESTIONS³⁴

Country Responses to EBA Variety Registration Indicator Questions					
Questions	Mozambique	Malawi	Tanzania	Zambia	Zimbabwe
DUS testing data from other countries' authorities is accepted as official data	Yes	Yes	No	Yes	No
Has a legally required variety release committee (VRC) in country	Yes	Yes	Yes	Yes	Yes
Balanced composition between government and non-government representatives	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat
VRC meets bi-annually in practice	Yes	Yes	Yes	Yes	Yes
In practice, a newly registered variety can be commercialized immediately after the approval of the registration body	Yes	Yes	No	No	No
Country has a variety catalogue listing new varieties and is available online	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat
Does the catalogue specify agro-ecological zones suitable for planting of each listed variety?	Yes	Yes	Yes	No	No
Variety catalogue is updated annually	Yes	No	No	Yes	Yes
Percentage best practices achieved	88%	75%	50%	69%	50%
Variety Registration DTF Score	75	69	50	68	50

EBA Time and Cost to Register New Seed Varieties					
Factors	Mozambique	Malawi	Tanzania	Zambia	Zimbabwe
Time to register a new seed variety (days)	582	579	333	544	607
Cost to register a new seed variety (% income per capita)	86	2038	62	70	41
Time & Cost DTF Score	58	12	82	62	58

³⁴ For full description of the methodology see: [Enabling the Business of Agriculture 2017 Table B1 and Table B5](#).

Country Responses to EBA Seed Quality Control Indicator					
Questions	Mozambique	Malawi	Tanzania	Zambia	Zimbabwe
There is an official fee schedule for seed certification activities carried out by the national seed authority	Yes	No	Yes	Yes	Yes
Law obliges plant breeders to ensure the traceability of their plant reproductive material	No	No	Yes	No	Somewhat
Law requires plant breeders to retain records for at least 2 years, or while variety is in use	No	No	No	No	Yes
Law establishes a framework for the accreditation of private seed companies and/or third parties for the performance of certification activities in your country	Yes	Yes	Yes	Yes	Yes
In practice, private seed company and/or third parties (non-governmental institutions) are accredited for the performance of certification activities in your country	No	Yes	Yes	Yes	Yes
Seed certification activities that can be performed by an accredited third party include field inspection, sampling, lab testing, and labeling.	No	Yes	Yes	Yes	Yes
The law requires the national authority to perform post-control tests on certified seed	Yes	Somewhat	Somewhat	Somewhat	No
The law requires a certain percentage of certified seed to be subject to post-control tests by the national seed authority each year	No	No	No	No	No
In case of non-compliance with the varietal purity standards, the law requires withdrawal of seed from the market	No	Somewhat	No	Somewhat	No
The law requires the labelling of seed containers for sale	Yes	Yes	Yes	Yes	Yes
The following information must appear on the seed label: Name and address of seed producer, Crop species, Class of seed, Net weight, Lot number, Certificate number, Germination (min %), Purity (min %), Year of production, Repacking or relabeling, Chemical treatment on the seed	Yes	No	No	Yes	Yes
The law establishes a penalty for the fraudulent sale of mislabeled seed bags	Yes	Yes	No	Yes	Yes
Percentage best practices achieved	50%	50%	54%	67%	71%
Seed Quality Control DTF Score	50	50	54	67	71

Country Responses to EBA Plant Protections Indicator Questions					
Questions	Mozambique	Malawi	Tanzania	Zambia	Zimbabwe
There is a specific government agency or unit designated by law to conduct pest surveillance on plants	Yes	No	No	No	Yes
The government or national plant protection agency maintain a list of regulated quarantine pests	Yes	Yes	No	Yes	No
The list of regulated quarantine pests is uploaded to the IPPC website and/or relevant government website	Somewhat	Yes	No	Somewhat	No
Growers/producers can obtain information on plant pests and disease on a government website	No	No	Yes	No	No
Land owners/users are obligated to report pest outbreaks to the government with penalties in place for non-compliance with the obligation to report pest outbreaks to the government	Somewhat	No	Yes	Somewhat	No
There is a specific government agency or unit designated by law to conduct pest risk analysis (PRA) for imports of plant products	Yes	No	No	No	Yes
PRA reports are publicly available online	No	No	No	No	No
The law allows for phytosanitary import inspections to be carried out on a risk-management basis	Yes	Yes	Yes	No	No
Percentage best practices achieved	63%	38%	38%	25%	25%
Plant Protections DTF Score	63	38	38	25	25

REFERENCES

- African Centre for Biodiversity. Changing Seed and Plant Variety Protection Laws in Tanzania – Implications for Farmer-Managed Seed Systems and Smallholder Farmers. April 2016.
- Lodugnon-Harding, Jean-Philippe, World Bank Private Sector Development Specialist, Global Indicators Group, Development Economics, telephone interview 18 September 2017.
- Huisenga, Mark, USAID Senior Program Manager. Email exchange 19 December 2017.
- Kuhlmann, Katrin. Harmonizing Regional Seed Regulations in Sub-Saharan Africa: A Comparative Assessment, Syngenta Foundation for Sustainable Agriculture, September 2015.
- Mpofu, Bellah. USAID Mission Staff. Email exchange 20 September 2017.
- SADC Secretariat, Technical Agreements on Harmonization of Seed Regulations in the SADC Region, 2008.
- The African Seed Access Index (TASAI). TASAI Data Appendix. 15 November 2017.
- Tjelele, E. and K. Kawonga, Achievements on the Implementation of the SADC Harmonized Seed Regulations, Southern African Development Community (SADC) Seed Centre. Presentation to AFSTA Annual Congress 28 February to 2 March 2017.
- USAID, Southern Africa Regional Seed Sector Assessment, January 2016.
- USAID, Early Generation Seed Investment Plan Guide, September 2016.
- World Bank, Enabling the Business of Agriculture Report 2017.
- World Bank, Enabling the Business of Agriculture - Seed Data 2015.
- World Bank, Enabling the Business of Agriculture - Mozambique Country Profile 2016.
- World Bank, Enabling the Business of Agriculture - Zambia Country Profile 2016.
- Zhou, Yuan and Katrin Kuhlmann, Seed Policy Harmonization in SADC and COMESA: The Case of Zimbabwe. Syngenta Foundation for Sustainable Agriculture, September 2015.

Acknowledgements

The project wishes to acknowledge the following contributions: Stephanie Haille (technical writer), Bellah Mpofu, (USAID/Southern Africa Regional Mission Staff for providing clarifying regional context), Jean Philippe Lodugnon Harding (EBA Seed Theme Lead, World Bank for clarifications on the EBA methodology), Davida Louise Cannon (EBA Markets Theme Lead, World Bank for clarifications on the EBA methodology), Mark Huisenga (Senior Program Manager USAID), and Gloria Kessler (USAID).

This publication was made possible through the support provided by Feed the Future through the U.S. Agency for International Development, under the terms of Blanket Purchase Agreement Contract No. AID-OAA-E-15-00001, Call Order No. AID-OAA-E-16-00031. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

The [Feed the Future Enabling Environment for Food Security](#) project is a global support mechanism designed to assist Feed the Future focused and aligned Missions as they work to address legal, institutional, and market constraints affecting food security. Launched in late 2015, it is managed by the USAID Bureau for Food Security's Office of Market and Partnership Innovations (MPI). For more information, contact Lourdes Martinez Romero (COR) at lmartinezromero@usaid.gov or Nate Kline (Director) at nkline@fintrac.com.