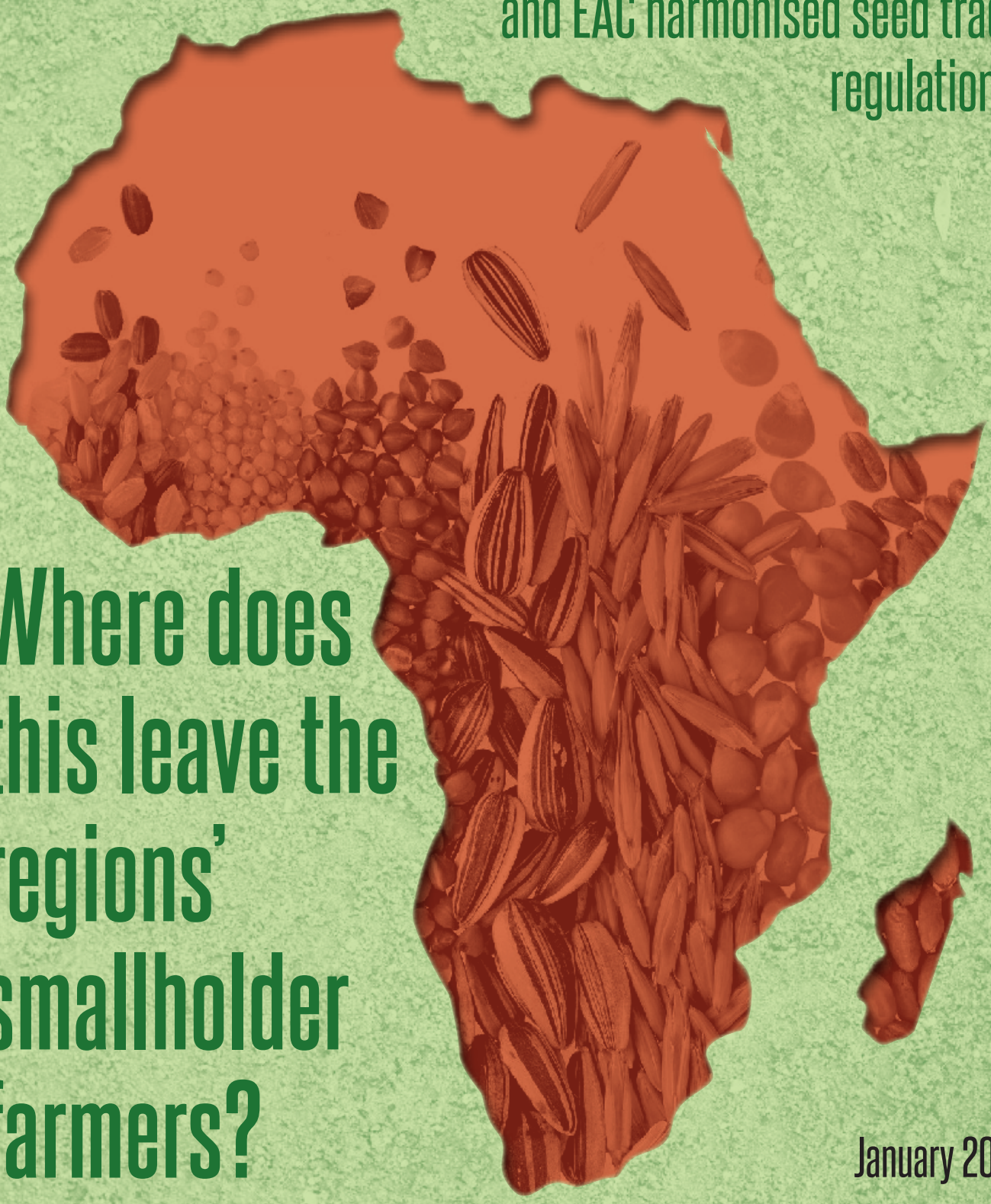
Status report on the SADC, COMESA and EAC harmonised seed trade regulations:



Where does this leave the regions' smallholder farmers?

January 2018

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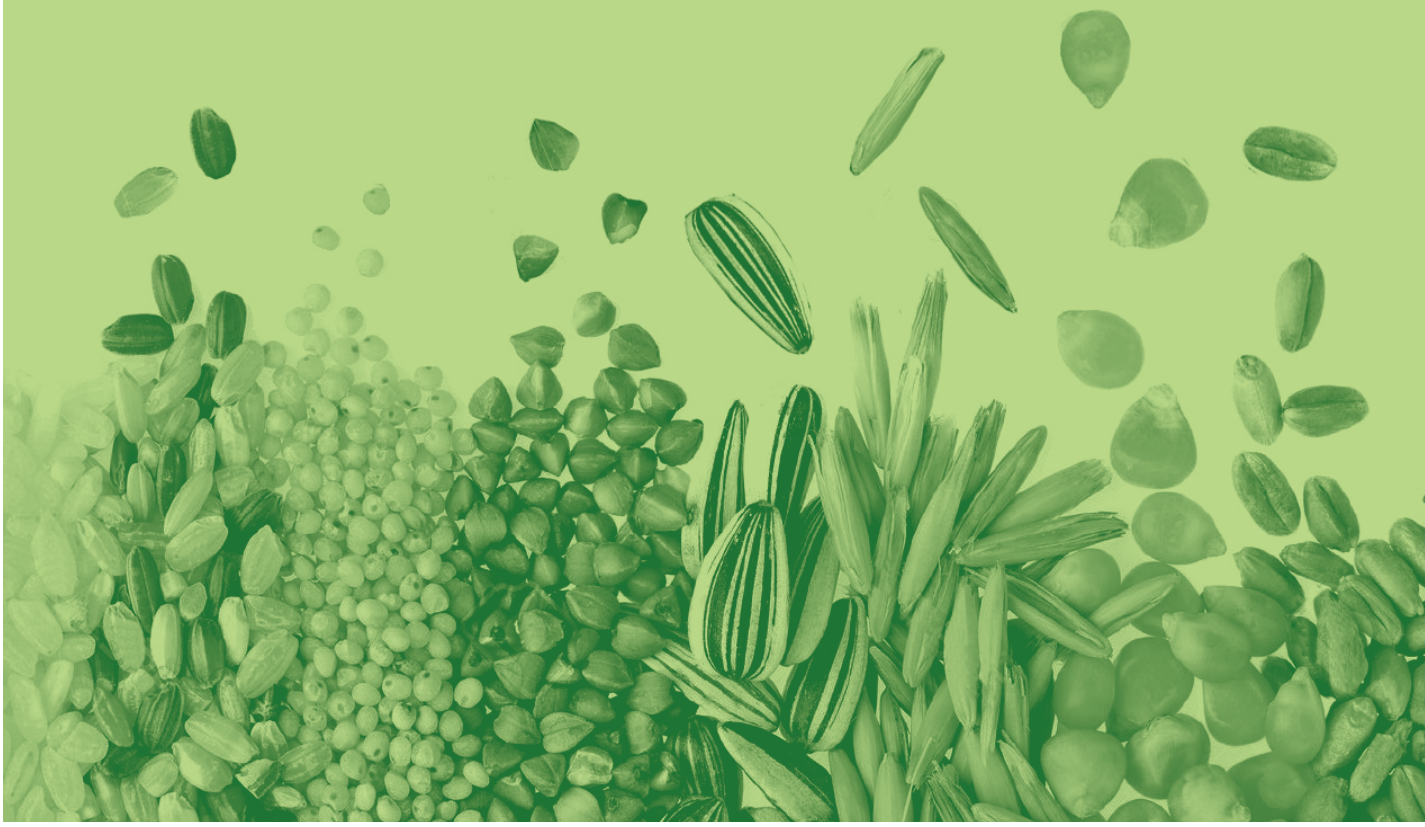

On 7 April 2015 the African Centre for Biosafety officially changed its name to the African Centre for Biodiversity (ACB). This name change was agreed by consultation within the ACB to reflect the expanded scope of our work over the past few years. All ACB publications prior to this date will remain under our old name of African Centre for Biosafety and should continue to be referenced as such.

We remain committed to dismantling inequalities in the food and agriculture systems in Africa and our belief in people's right to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and their right to define their own food and agricultural systems.

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Acronyms

ACB	African Centre for Biodiversity
AFSA	Alliance for Food Sovereignty in Africa
AFSTA	Africa Seed Trade Association
AGRA	Alliance for a Green Revolution in Africa
ACTESA	Alliance for Commodity Trade in Eastern and Southern Africa
ARIPO	African Regional Intellectual Property Organisation
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
BMGF	Bill and Melinda Gates Foundation
CAADP	Comprehensive Africa Agriculture Development Programme
CIMMYT	International Maize and Wheat Improvement Centre
COMESA	Common Market for Eastern and Southern Africa
COMSHIP	COMESA Seed Harmonisation Implementation Plan
CTA	Technical Centre for Agricultural and Rural Cooperation
DFID	Department for International Development (United Kingdom)
DUS	Distinct, uniform, stable
EAC	East African Community
EASCOM	Eastern Africa Seed Committee
ECAPAPA	Eastern and Central Africa Programme for Agricultural Policy Analysis
EU	European Union
FANR	Food, Agriculture and Natural Resources
FANRPAN	Food, Agriculture and Natural Resources Policy Network
FAO	Food and Agriculture Organisation
FISP	Farm Input Subsidy Programme
FoEA	Friends of the Earth Africa
FTF	Feed the Future (USAID)
ISSD	Integrated Seed Sector Development
ISTA	International Seed Testing Association
MoU	Memorandum of Understanding
NPT	National Performance Trial
NSA	National Seed Authority
OECD	Organisation for Economic Cooperation and Development
OP&H	Open-pollinated and hybrid
PBR	Plant Breeders' Rights
PVP	Plant Variety Protection
QDS	Quality Declared Seed
REC	Regional economic community
SADC	Southern African Development Community
SDC	Swiss Agency for Development and Cooperation
SSA	Sub-Saharan Africa
SSSN	SADC Seed Security Network
SCCI	The Seed Control and Certification Institute
TFTA	Tripartite Free Trade Area
UPOV	International Union for the Protection of New Varieties of Plants
USAID	United States Agency for International Development
VCU	Value for cultivation or use
WEMA	Water Efficient Maize for Africa

Use of terms

Certified seed
Quality-certified seed for seed multiplication; certified under national certification schemes.

Domestication
Changes to national seed-level legislation, or regulations to align with regional harmonisation regulations.

Distinct, uniform and stable (DUS) criteria
Distinct – The variety is clearly distinguishable from any other variety whose existence is a matter of common knowledge.
Uniform – A variety that is sufficiently uniform in its relevant characteristics, subject to the variation that may be expected from particular features of its propagation.
Stable – A variety's relevant characteristics continue unchanged after repeated propagation, or in the case of a cycle of propagation, at the end of each cycle.

Farmer-managed seed system
Also known as the informal seed system. The historical and traditional practices of farmers regarding the management of seed and propagating material, including the in-situ conservation, maintenance and selecting of seed diversity, and the saving, reusing, exchanging and selling of seed amongst family, neighbours and communities.

Harmonisation
The process of creating common standards for a particular regional economic bloc, e.g. for the Southern African Development Community (SADC).

Improved plant varieties
Seeds of a variety developed through the formal breeding system at a national or international research centre or by private breeding companies.

Landrace variety
Also known as local variety and farmer variety. This is a domesticated, locally adapted, traditional variety of a species of animal or plant that has developed over time, through adaptation to its natural and cultural environment, and due to its isolation from other populations of the species. Local varieties are passed through generations of farmers and are often unable to fulfil the DUS criteria.

Phytosanitary measures
The regional, national or local measures, regulations or official procedures that aim to prevent the introduction and/or spread of pests and/or diseases.

Plant Variety Protection (PVP)
Also known as Plant Breeders' Rights (PBR). This is the intellectual property protection given to the right holder over a new plant variety. PVP and PBR are often used interchangeably.

Quality Declared Seed (QDS)
A seed quality control system, developed by the Food and Agriculture Organisation (FAO), that offers to reduce the burden on government agencies; it is less costly and is intended for use in those areas and farming systems where a highly developed seed control system is difficult to implement.[1]

Seed certification
Systems that ensure seed quality and the genetic purity of seed that is multiplied.

Seed laws
Refers to the laws that govern the registration, marketing and trade of seed (plant and cultivation/propagating materials). (Such laws do not deal with PBR or PVP).

Value for cultivation or use (VCU)
Tests the performance of a new variety across multi-locations, to verify whether the variety has sufficient value to be released for cultivation.

Variety release
Seed variety evaluation, release and registration systems in order to release new varieties, as required by governments before seed production, distribution and marketing can take place.

1. FAO. 2006.*Quality Declared Seed System*. Accessed 2 Nov 2014, http://www.fao.org/docrep/009/a0503e/a0503e00.htm

About this paper

This paper aims to provide an update on efforts by regional economic communities to harmonise seed trade and marketing policy and legislation in East and Southern Africa. In this regard, it focuses on the Technical Agreements on Harmonisation of Seed Regulations of the Southern African Development Community (SADC, 2008), the Seed Trade Harmonisation Regulations of the Common Market for East and Southern Africa (COMESA, 2014), and the regional seed harmonisation programme of the East African Community (EAC).

It is beyond the ambit of this paper to address regional seed harmonisation taking place in Central, West and North Africa, and readers are directed to the Alliance for Food Sovereignty in Africa (AFSA)'s pending Africa-wide seed study.[2] Further, a forthcoming paper from the African Centre for Biodiversity (ACB) will cover the regional harmonisation of Plant Variety Protection (PVP) systems under the African Regional Intellectual Property Organisation (ARIPO) and the SADC.

This paper provides a brief background to these regional harmonisation processes, their current status, and a critique of these frameworks within the seed, agricultural, socio-cultural and ecological contexts of the Southern and East African regions. The skewed nature of these harmonisation efforts, which focus solely on the formal seed sector, has continued to neglect and obstruct participation by African civil society groups in the development of such regulations. This has prevented meaningful involvement by civil society and smallholder farmers in decision-making processes on issues that directly affect their livelihoods, seed and food systems. Nevertheless, we have attempted, to the best of our abilities, to put together this status quo report based on available information and interviews conducted.

2. The summary report can be found at http://afsafrica.org/wp-content/uploads/2017/10/AFSA-Seed-Policy-Summary-A5-English.pdf.

Key findings

Regional harmonisation efforts are important aspects of the green revolution agenda in Africa. They put in place the policy and legislative environments to enable the rapid transformation of seed and agricultural systems for all countries that are members of a particular regional economic community (REC). The aim of these harmonisation processes is to facilitate the trade in seed across national borders and expand the seed markets in the region. The focus of these regulations is solely on the formal seed sector, neglecting and, at the same time, prohibiting the historical and current role played by farmer seed systems, which indisputably provide the majority of seed for use in food production across the continent.

Harmonisation efforts centre on three core aspects: variety testing, registration and release; seed certification; and phytosanitary measures. The SADC and COMESA systems stipulate that once a variety has been released in two member states, the variety can be included in their regional variety catalogue, and, in this event, will be deemed to be registered in all member states that have signed onto and accepted the harmonisation process. The EAC requires a variety to be released in one member state only, before it can be made available for regional trade.

A variety must undergo testing for distinctiveness, uniformity and stability (DUS), and value for cultivation or use (VCU) before release and registration. VCU information is derived from field experiments over two years in two countries having similar agro-ecological zones, to determine the performance and adaptability of a candidate variety; such as the maturity period, yield storability, and resistance to disease and pests. Crop-specific requirements for the location and management of trials and performance criteria are yet to be developed under all three seed harmonisation frameworks. It is unclear how these tests can accurately determine the suitability of a variety's performance across diverse climatic and biophysical conditions in all the member states of a particular REC. Mechanisms for redress and compensation and the protection of national agricultural and economic conditions are still in need of being clarified, in order to protect farmers from crop losses in the event a particular variety fails to perform as anticipated.

The SADC Technical Agreements on Harmonisation of Seed Regulations – a guiding framework, not a legally binding instrument – became operational in 2013, once two-thirds of SADC countries (10 of the total of 15 countries)[3] had signed the Memorandum of Understanding (MoU). Angola, Zimbabwe, Seychelles and Madagascar have yet to sign the MoU. The SADC Seed Centre implements, coordinates and supervises the registration and development of the regional seed catalogue, and operates as the Secretariat to the SADC Technical Agreements. The Seed Charter, the Seed Centre's constituting document, was approved at the SADC Council in August 2017.

The latest seed harmonisation process, the COMESA Seed Trade Harmonisation Regulations, which were approved in 2014, is moving the fastest in terms of implementation. COMESA has been implementing the COMESA Seed Harmonisation Implementation Plan (COMSHIP), established in 2015, through its specialised agency, the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), across its 21 member states. Rwanda and Burundi have fully domesticated the COMESA Seed Regulations within their national seed laws. Uganda, Kenya, Malawi, Zambia and Zimbabwe are all in the advanced stages of bringing their seed laws in line with the COMESA Seed Regulations.

A comprehensive draft framework to guide the development of a harmonised seed legislation and regulatory framework for the EAC was developed in December 2015. The draft EAC harmonised regulatory framework should have been submitted to the Sectoral Council on Agriculture and Food Security for endorsement by mid-2016, to have

3. In August 2017 Comoros was admitted as a member state of SADC, bringing the membership SADC regional bloc to 16 countries.

been ready for validation and adoption by December 2016. However, at present it is not certain how far the process of adopting the framework has moved.

With many countries being members of more than one REC, there may be some difficulties in the operationalisation of these systems. The Tripartite Free Trade Area (TFTA), a mechanism to rationalise harmonisation efforts across the SADC, EAC and COMESA, has yet to agree on issues of seed harmonisation. Although there are many similarities between these harmonisation efforts, there are also significant differences, which will create many anomalies and confusion, particularly in countries that are member states of multiple economic blocs.

The exclusive focus on the formal seed system will have long-term implications on the regions' seed and food sectors. It will narrow both the range of genetic and agricultural diversity available on the market and in the fields, and the number of players involved in seed production and trade. Already the current regional catalogues of SADC and COMESA show that the registration of varieties have been granted principally to the largest seed companies – Syngenta, Monsanto, DuPont Pioneer, Pannar, HZPC and Seed Co – which focus on only a few commercially lucrative crops.

Strict certification standards set by these regional harmonisation frameworks create further barriers for farmer varieties and small-scale seed producers to enter both the national and regional seed markets.[4] The high costs involved, together with intensive labour demands based on international standards, make it difficult to certify and trade in seed, both nationally and regionally. The international standards for seed certification form the basis of many of the regional harmonisation efforts being discussed. The international standards include: the Organisation for Economic Co-operation and Development's (OECD) Schemes for the Varietal Certification or the Control of Seed Moving in International Trade; the International Seed Testing Association (ISTA), which develops and publishes international rules for seed testing and certification and offers an accreditation programme for seed laboratories; and the International Union for the Protection for the Protection of New Varieties of Plants (UPOV), which lists the criteria for the protection of new plant varieties and the rights conferred on the breeder of a protected variety. UPOV also determines guidelines for DUS criteria and the VCU tests.

Most countries that are part of the RECs have modelled their seed laws on these international standards and thus insist that only seed that has been certified under these or similar standards may be marketed. Consequently, these countries criminalise the sale and even the exchange of farmers' varieties, thereby criminalising the very foundations that hold up and support farmer-managed seed systems.

Traditionally, due to their heterogeneity and adaptability, landrace varieties have been unable to satisfy formal DUS and VCU tests. The SADC is the only REC to provide for the registration of landrace varieties. This provision opens new avenues for farmers' varieties to become part of the commercial seed sector and eligible for regional trade. It provides the opportunity for recognition of farmer varieties and the role played by farmers in maintaining such varieties, as well as agricultural biodiversity and food availability. However, it remains to be seen how this system will be operationalised and who will ultimately benefit from this process.

Farmers require access to good quality seed in sufficient quantities at the right time, but it is questionable whether these harmonised formal systems, which tend to support large-scale seed corporations, are suitable or appropriate to the seed needs in the region. Currently, by far the majority of seed is provided through farmer seed networks, and it is therefore the farmer-managed seed systems that should be protected, strengthened and supported, including farmer-led quality control systems.

All harmonisation efforts currently underway should assure the rights of farmers, and

4. We acknowledge that national laws that predate these harmonised frameworks also set similar certification standards; regional harmonisation seed laws entrench these even further.

particularly the rights of women farmers. What is required are comprehensive and appropriate national and regional seed policies that accommodate small-scale farmers' activities, ensures adequate seed is available for local production, protects agricultural biodiversity and supports agro-ecological farming.

Harmonised seed regulation processes underway in Africa

As the commercial seed market expands across sub-Saharan Africa (SSA),[5] the consolidation of national seed laws through regional regulatory processes will strengthen the stronghold of seed companies in the seed sector. Seed harmonisation emphasises the need to integrate smaller national seed markets into larger regional markets, easing the movement of 'quality' improved seed across borders by doing away with national regulatory systems for the purposes of regional trade. This responds to delays experienced particularly by seed companies, due to lengthy and costly variety testing and release processes conducted at the national level. Proponents of the seed regulations argue that this will allow greater availability of seed and expand farmers' access to improved seed across the region in question. (SADC, 2008; ACB, 2013; Mulvany & Mpande, 2013; COMESA, 2014).

A myriad of seed law harmonisation processes are underway, focusing on centralised regulatory systems to expedite trade in improved seed across the RECs.

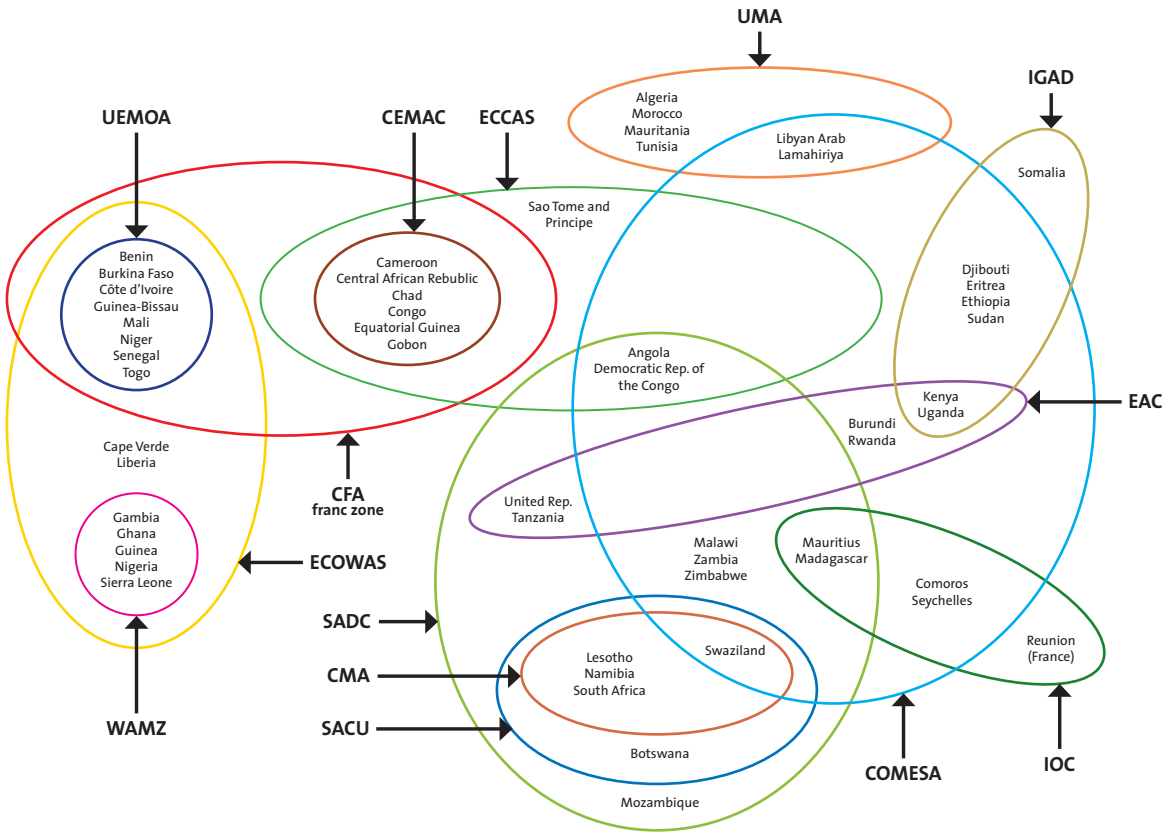
Currently eight RECs in Africa are recognised by the African Union (AU),[6] many of which overlap (see Figure 1). Of these, the three RECs that dominate in Eastern and Southern Africa are the SADC,[7] COMESA,[8] and the EAC.[9] These RECs have developed harmonised seed regulations and standards separately from one another, but modelled on: (1) UPOV's DUS criteria and VCU, also known as National Performance Trials (NPTs); (2) the OECD's seed certification schemes; and (3) ISTA's testing regimes. Harmonisation efforts require cooperation from member states that are party to RECs through the domestication of regional policies and legislation.

Seed harmonisation focuses solely on the formal, commercial seed sector and fails to recognise the significant, historical and current role played by farmers and farmer seed systems, which include developing and maintaining agricultural biodiversity, and ensuring seed and food availability and affordability. These harmonised legislation processes have been formulated for the benefit of corporate seed breeders and producers, often at the expense of small-scale farmers and small-scale seed enterprises, by neglecting and prohibiting the actors and activities that many farmers rely on to access seed (ACB, 2013). This focus on the establishment of a formal seed system is likely to have major ramifications for smallholder farmers and seed production across the region (ISSD Africa, 2017).

While there is no question that farmers require access to good quality seed, it is doubtful whether the harmonisation of seed regulations will achieve this in Africa, particularly across Eastern and Southern Africa, where the formal seed sector supplies only 10–20% of seed used by smallholders.

5. Private seed sector expansion by a diverse group (comprising a variety of large European and Asian multinational companies, large former national seed companies, and newly emerging local seed companies, many of which have received financial support from AGRA) has been taking place across the continent, in particular across the Guinea-Savannah agro-ecological zone, notably in the maize and horticulture sectors. See https://acbio.org.za/wp-content/uploads/2015/12/Seed-Sector-Sub-Sahara-report.pdf.
6. These include the Arab Maghreb Union (AMU/UMA), the Economic Community of West African States (ECOWAS), the East African Community (EAC), the Intergovernmental Authority on Development (IGAD), the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA), the Economic Community of Central African States (ECCAS), and the Community of Sahel-Saharan States (CENSAD).
7. Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe are member states of SADC.
8. Burundi, Comoros, DRC, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Sudan, Swaziland, Tunisia, Uganda, Zambia and Zimbabwe are member states of COMESA.
9. Kenya, Tanzania, Uganda, Rwanda, Burundi, and South Sudan are members of the EAC.

Figure 1: Overlapping SSA regional blocs



Source: UNCTAD, 2009.

Harmonisation processes seem to disregard the undeniable fact that the majority of seed is produced locally through farmer-managed seed systems. About 90% of seed sowed is accessed from informal systems, of which 60% come from local markets. (McGuire & Sperling, 2016).

It is often said, especially by proponents of harmonised seed laws, that these laws have no impact on farmers' activities and farmer-managed seed systems because the seed produced by the informal seed sector is not considered 'real' seed. This misperception undermines and undervalues farmers' seeds and seed systems. Local markets and local seed sources are sustainably available, and are often the preferred source of seed for the majority of food crops, except for maize and some vegetables (McGuire & Sperling, 2010). The so called 'informal' seed sector remains the core source of seed acquisition, despite substantial (and disproportionate) investments aimed at strengthening the formal seed sector (McGuire & Sperling, 2016). Reasons for this include inadequate access to markets by farmers in remote areas, limited access to financial resources or credit with which to buy seed, and the inability of formal systems to provide timely and adequate access to quality seeds of improved varieties and/or to varieties that are specifically adapted to local conditions (Louwaars & De Boef, 2012).

The commercial sector is growing across the SADC, COMESA and EAC regions, although there is a lack of reliable data on the trade in seed and cultivating material between countries in these regions. Hybrid maize seed accounts for the largest share of cross-border seed trade and is dominated by few, large, multinational seed companies (USAID, 2016). The formal seed sector concentrates on developing and marketing varieties for large-scale commercial production, while the farmer-managed seed system provides the majority of crops produced and consumed (Mulvany & Mpande, 2013).

Clearly, harmonisation of seed laws across the region will favour expansion of the formal seed system and the spread of corporate seed, while continuing to neglect

Expansion of the corporate seed sector in Africa

Africa's seed systems are in transition, moving away from farmer-managed seed systems – where farmers and public researchers are the primary agents of breeding, selecting, and distribution – towards systems that are led and shaped by the private sector (ACB, 2015). This is due to the dominant belief by policy makers that corporate seed and agro-chemical inputs are the only solution to Africa's low agricultural productivity, and to meeting the need of feeding a burgeoning and urbanising African population.

Expansion of the corporate sector in Africa is linked to the green revolution push cascading across the African continent (ACB & FoEA, 2017). Policy, infrastructural and legislative transformations, as well as subsidised input programmes, are encouraging long-term reformations in the seed and agriculture sectors. Corporates are provided with access to and support from government programmes, to disseminate technological packages incorporating improved (hybrid) seed, synthetic fertiliser, credit and control over commercial markets (ACB & FoEA, 2017). Corporates are, thus, the primary beneficiaries of these programmes, which also deliver secured and captive input markets.

The establishment of the Alliance for a Green Revolution in Africa (AGRA) in 2006 saw the emergence of many small and medium-sized African seed companies. However, increased market concentration over time is a feature of a privatised seed industry and there is evidence that this is happening in SSA. The African seed sector consists primarily of the largest multinational companies (Monsanto, DuPont-Pioneer, Syngenta and Vilmorin & Cie); large multinationals from Europe and Asia; and large former national seed companies, such as Zimbabwe's Seed Co, the Kenya Seed Company (KSC), Zamseed (Zambia) and Tanseed (Tanzania). In 2017, three seed and agro-chemical mega-mergers were negotiated, consolidating six of the largest multinational companies into three seed and agro-chemical giants (Bayer-Monsanto, Syngenta-ChemChina and Dow-DuPont). In 2015 the 'Big Six' (BASF, Bayer, Dow, DuPont, Monsanto and Syngenta) together controlled 75% of the global agro-chemical market, 63% of the commercial seed market, and over 75% of all private sector research and development in the sector (ACB, 2017).

The international donor community is complicit in the expansion of the seed industry throughout SSA. These donors include large philanthropic organisations, such as the Bill and Melinda Gates Foundation (BMGF) and the Rockefeller Foundation, as well as national donors. Many of the donors are actively involved in the G8's New Alliance for Food Security and Nutrition (NAFSN) and are also financially supporting investments for new African seed companies (ACB, 2015). For example, CGIAR (formerly the Consultative Group on International Agricultural Research), a key player in the Asian green revolution, is a major research body in SSA. It is heavily funded by the BMGF and USAID and has entered into a number of public-private partnerships with multinational seed companies, such as Monsanto, DuPont Pioneer and Syngenta, the Water Efficient Maize for Africa (WEMA) project being one example.[10] USAID is an historical funder of corporate expansion in Africa and is active across the continent.

Maize and horticulture are the two biggest seed markets on the continent, valuing around US$ 500 million and US$ 250 million respectively, where the majority of private sector interest and investments has focused (ACB, 2015). The total seed market in SSA is less than 2% of the global total. This accounts for a small minority of overall seed supply to farmers in the region, although formal or certified seed adoption is higher in some crops and countries than in others.

10. See ACB, 2017. *The Water Efficient Maize for Africa (WEMA) Project: Profiteering NOT Philanthropy*. https://acbio.org.za/wp-content/uploads/2017/08/WEMA-Discussion-Doc-web.pdf. See also ACB, 2015. *Profiting from the climate crisis, undermining resilience in Africa*. http://acbio.org.za/wp-content/uploads/2015/05/WEMA_report_may2015.pdf.

and marginalise farmer varieties and farmer-managed seed systems. This will have major implications on seed availability, and therefore the future of food production across the continent.

COMESA, SADC and EAC seed harmonisation processes

There are significant differences and similarities between the harmonised seed regulations across the three main regional blocs: COMESA, SADC and EAC (See Table 1). All three frameworks are, however, aligned with the targets set by the Comprehensive Africa Agriculture Development Programme (CAADP), under the AU.[11] So far, COMESA and SADC have regional CAADP compacts,[12] while the EAC is revising a draft CAADP compact (Kuhlmann, 2015). Each regional harmonisation framework must be implemented through domestication at the country level in each member state that is a party to the respective REC, despite there being several countries that are members of the SADC, the EAC and/or COMESA.[13] The TFTA, with a combined number of 29 countries and a population of about 625 million (USAID, 2016), aims to align the SADC, COMESA and EAC. However, there is still no agreed mechanism on how to rationalise and harmonise these processes. The implications for countries that are members of multiple RECs, and the operationalisation of the seed systems within each REC, are still unclear.

Efforts to harmonise seed regulations focus on three main aspects: variety registration and release, certification and quality control, and phytosanitary measures. This is intended to facilitate the faster movement of seed within the RECs. Harmonisation processes include the criteria and costs of registering varieties that will appear in regional variety catalogues, the procedures for seed multiplication and ensuring that seed is true-to-type, and disease and pest control measures. Various institutions are required to regulate and implement these systems. Already regional catalogues are dominated by varieties that belong to large seed companies, such as Monsanto, Pannar, Seed Co and Syngenta. At the time of publication, the SADC's regional variety list featured mostly maize varieties, with one sorghum variety and one wheat variety,[14] all of which belong to the large seed companies. This indicates that regional seed markets are, and will continue to be, dominated by the largest seed companies, with their focus on a narrow range of commercially lucrative crops (ACB, 2015).

The DUS criteria for variety registration and release and quality control are strict and inflexible. Further, they are oriented towards genetically uniform and commercially bred varieties as the main option for seed provision among the SADC, COMESA, and the EAC. Small farmers in Africa, who are cultivating, developing and maintaining varieties that have been adapted to local environmental conditions over many years, are excluded from these variety release systems, because they do not fulfil the requirements for DUS. Furthermore, small-scale farmers will be unable to afford the cost of purchasing seeds on the regional market. Even at this stage, smallholder farmers are unable to afford 'improved' seed, and access seed through farm input subsidy programmes (FISPs). For example, the costs of registering a variety are very high; currently, COMESA's fee to register a variety is US$ 400, its transfer fee per country is US$ 300, and its annual fee is US$ 200.[15] This begs two questions: What direction will the seed system take? Who will ultimately benefit from the system?

11. The two main targets set by CAADP are: 1) Countries commit to raise the annual agricultural productivity to a minimum of 6% by 2015. 2) Countries commit to increase public investments in agriculture to at least 10% of their annual national budgets by 2008 (revised to 2015 in an AU Summit Decision, 2009).
12. CAADP compacts are agreements that are signed by all key partners after countries have identified priority areas for investment.
13. The Democratic Republic of Congo, Madagascar, Malawi, Mauritius, Zambia and Zimbabwe are members of SADC and COMESA. Kenya, Uganda and Rwanda are members of COMESA and EAC. Tanzania is a member of SADC and EAC.
14. Currently only the maize variety list is available on the website.
15. https://varietycatalogue.comesa.int/web/fillinghelp.

Table 1: Comparing harmonised seed regulatory systems in COMESA and SADC

	COMESA	SADC
Legal status	Binding; domestication required. Additional national legislation allowed.	MoU, therefore not legally binding. Regulation is in harmony with national legislation; national authorities retain full control.
Variety release	Data required on DUS and VCU over two seasons, from two member states.	Data required on DUS from one country, and on VCU from two countries, over at least two seasons.
Freedom to trade	After release and certification, variety can be freely traded in region.	After release and certification, variety can be marketed in all countries.
Seed classes	Pre-basic, basic, first and second generation (G1 and G2).	Pre-basic; basic; certified G1, G2, G3; and QDS.
Food crops regulated under the system	Beans, open-pollinated and hybrid (OP&H) maize; rice; groundnuts; wheat; sunflowers (OP&H); sorghum; soybeans; pearl millet; cassava; Irish potatoes.	Pigeon pea, soybean, sunflower (OP&H), rice, pearl millet, sorghum (OP&H), wheat, cowpea, maize (OP&H). Vegetable seed, including vegetatively propagated material and other crops not covered by the SADC Variety Catalogue, will be traded outside the system until SADC standards have been developed.
Certification requirements	Registered variety; field and laboratory tests; labelled according to regulations; post-control tests.	Registration of seed fields; field inspections; seed samplers; laboratory testing; produced on registered fields; packaged and labelled according to regulations; certified seed lot; post-control tests.
Consideration of smallholder farmers	Member states can endorse the exchange and sale of quality seed of improved varieties by farmers. Countries are not precluded from establishing alternative national variety lists (which include landraces).	Member states can endorse the exchange and sale of seed by farmers. Variety can be denied for registration if it is deemed unacceptable by farmers because of specific well-known characteristics. Seed produced under other quality assurance systems can be traded. Landraces will be registered in the database without further consequences/benefits. As the regulations are not legally binding, countries are not precluded from establishing alternative national variety lists.

Source: ISSD Africa, 2017.

Regarding the common quarantine and phytosanitary measures, for example, in the SADC countries, two lists of pests have been introduced. The first is a list of pests that require control when trading seeds between SADC member states, and the second is a list of pests that require control when trading seeds into an SADC country, from outside the region.[16] The recent outbreak of the Fall Armyworm, which caused devastation across much of SSA, illustrates the failure of the phytosanitary measures currently in place, which facilitated the movement of Fall Armyworm via grain imports from the Americas. It is still unclear how the new harmonised phytosanitary measures will deal with such issues that have catastrophic consequences for farmers in the region.

Both the SADC Technical Agreements and COMESA Seed Trade Harmonisation Regulations fail to recognise the significant role that farmer-managed seed systems have played, historically and currently, in maintaining seed systems in the regions. About 80–90% of seed used for food production in these regions is produced through these seed systems. However, the SADC is the only REC to provide for the registration of landrace varieties, which recognises farmer varieties and the role they play in maintaining agricultural biodiversity. It is necessary for smallholder farmers in the SADC region to engage strongly with this process, in order to ensure that it does not do more harm than good.

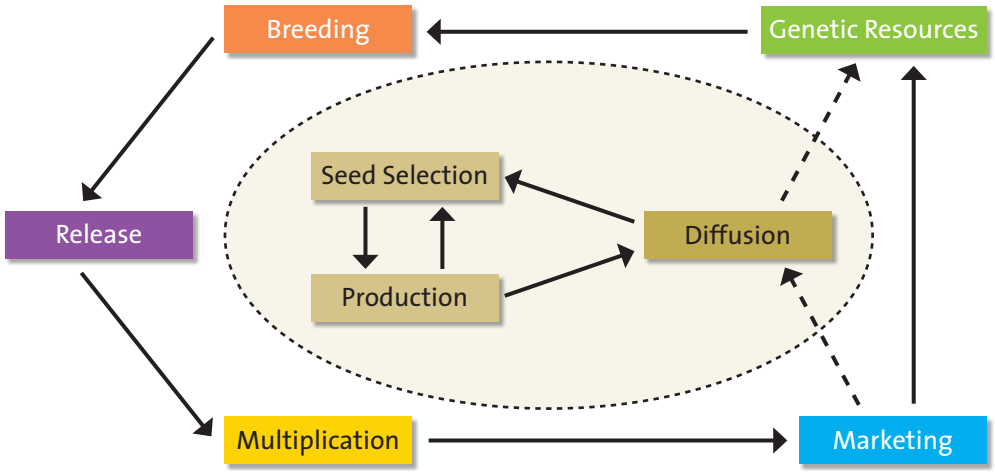
The Harmonised Seed Regulation Systems (HSRS) in both the SADC and COMESA have not included registration of GM varieties in their regional catalogues. This will remain the case for the SADC until its member states agree on a common position for the region regarding an expedited trade regime for genetically modified organisms (GMOs).[17] However, on the other hand, the COMESA Biotechnology and Biosafety Implementation Plan (COMBIP) is stirring a wave of revisions which are weakening national biosafety legislation, and enabling the introduction of GM crops at the national level.[18] Revised Biosafety laws in Tanzania and Mozambique provide evidence of this influence, which has appeared in the wake of projects aiming at introducing the commercial cultivation of GM crops, for example, the WEMA project. In many respects the COMESA Biotechnology and Biosafety Policy usurps national sovereign decision-making on biosafety, by giving final decision-making about risk assessment to a small group of experts. This not only infringes on the sovereign rights of member states but promotes an unworkable and expensive risk assessment procedure which is not aligned to the provisions described in the Cartagena Protocol on Biosafety.[19]

Transforming African seed systems: Concerns for farmers, farmers' seed systems, agricultural biodiversity and food sovereignty

Many of the countries within the SADC, EAC and COMESA are agrarian, therefore agriculture is central to the livelihoods of much of the population in these regions. The various seed harmonisation efforts will undoubtedly support the expansion of the formal seed sector *at the expense* of farmer-managed seed systems. The implications of this for livelihoods, seed and food security could be drastic – particularly in the long term, with the growing need to adapt to changing climatic conditions.

16. Tables 4 and 5 respectively, from the SADC Technical Agreements.
17. 'Until SADC countries have agreed to a common position on acceptance of Genetically Modified (GM) varieties, such varieties will not be eligible for inclusion in the SADC Variety Catalogue. In the meantime, GM varieties can still be released at the national level in countries allowing for this.' SADC, 2008: 25 (Section 2.3.8).
18. The COMESA Regional Biotechnology and Biosafety Policy was adopted in 2014, spearheading the development of national biosafety legislation across Africa.
19. See ACB's comments on the COMESA Draft Policy on GMOs, 2010. http://acbio.org.za/wp-content/uploads/2015/02/COMESA-Comments-2010.pdf.

Figure 2: Linkages between the formal and informal seed systems



Source: Louwaars & De Boef, 2012.

The regulations fail to recognise the significant role that farmer-saved seed plays in seed and food security in the region. The FAO estimates that 90–98% of seed in West Africa, and 70–95% of seed in North, East and Southern Africa, comes from farmer seed systems (FAO, 2011). Linkages between the formal commercial sector and informal seed systems are limited but do exist (see Figure 2). Farmers access seed from a variety of sources, such as purchasing from formal and informal traders, exchanges with family and neighbours, or the development of emergency seed programmes, and do not differentiate between the formal and other systems and/or between protected and unprotected improved varieties.

It is of concern that these seed trade laws in their current form promote genetic uniformity, and hence erode genetic diversity and agricultural biodiversity. The corporate agro-industrial system is modelled on homogeneity and promotes a narrow range of crops and seed varieties. This creates a serious risk to the diversity that underpins Africa's seed systems. It is essential that farmers are encouraged to continue their seed saving and exchange work, which acts as a safeguard in an increasingly risky and vulnerable food system. Farmer-managed systems counter the disadvantages of homogeneity, providing instead desired variability and diversity, and are vital for adaptation to changing local conditions, and biotic and abiotic stresses. On-farm conservation and development of seed is vital for adaptation to changing agro-climatic conditions and to diffuse the risk of crop failure due to pests, diseases and weather conditions (ACB, 2013). Despite the fact that this heterogeneity and adaptability is crucial for current and future food production and nutrition security, the role played by farmers in the provision of local seed is disregarded by regional harmonisation processes and farmers are excluded from participating in seed markets.

Overall, there is a focus on commercial crops and little or no attention given to other crops that are important for nutritional and traditional diets. Although smallholder farmers, farmer-managed seed systems, landraces, and women, in particular, are at the heart of seed and food availability in the regions, minimal initiative or incentives are offered to ensure they are supported, strengthened and protected. Despite the focus by all institutions on improving seed security, there has been no publicly available baseline research on seed systems in these regions. There are also no provisions within these harmonisation efforts to monitor the impact on seed accessibility, affordability and diversity, which is of great concern.

Although SADC, EAC and COMESA countries differ significantly in terms of their agro-ecological conditions, there is a curious (and nonsensical) expectation that VCU testing will accommodate such differences.

Currently, for the SADC and COMESA systems, once a variety is released in two member states, that variety can be included in the various variety catalogues, and is therefore eligible for bulking up and distribution into all member states. The criteria for testing suitability across diverse climatic and biophysical conditions are unclear; and the processes for the protection of national agricultural and economic conditions, in order to protect national sovereignty, need clarification. Regulations are silent on who is liable for losses and damages as a result of non-performance of certified seed, and do not provide mechanisms for redress and compensation in the case of crop failure.

Both registration and certification processes are administratively complex, onerous and expensive, making it unlikely that smallholder farmers and small-scale seed enterprises will be able to participate. We are witnessing the exclusion, neglect and criminalisation of farmers' seeds and farmer-managed seed systems, despite their role in the maintenance and production of agricultural biodiversity. These farmers use and demand ongoing access to their own varieties, which have been adapted over the years to their local agro-ecological conditions (ACB, 2016).

On the international level, farmers' rights are recognised under Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA),[20] also known as the 'International Seed Treaty'. However, the implementation of farmers' rights rests solely on the contracting member states. This has led to little or no domestication of the Treaty at national levels, especially by most of the African governments who are contracting members within the SADC, COMESA and EAC regions. The seventh session of the governing body of ITPGRFA took a major decision to create an Ad Hoc Technical Expert Group, specifically to guide the implementation of farmers' rights. This marks an impressive turning point for the Treaty regarding matters relating to farmer-managed seed systems. The Ad Hoc Technical Expert Group will have its own clear terms of reference and will, among other tasks, produce an inventory of national measures that may be adopted from the best practices and lessons learned from the realisation of farmers' rights. It will also encourage, guide and promote the realisation of farmers' rights as set out in Article 9 of the Treaty. In addition, the farmers' rights resolution adopted by the meeting included several recommendations. Among them, contracting parties will be invited to consider reviewing or adjusting national measures affecting the realisation of farmers' rights, in particular, regulations concerning variety release and seed distribution. This may be interpreted as international recognition of farmer-managed seed systems and farmers' varieties, and their contribution to global agriculture and agricultural biodiversity. It is imperative that the regional seed harmonisation processes take their cue from the ITPGRFA meeting and consider farmers' rights in their seed regulations.

SADC technical agreements on the harmonisation of seed regulations

The primary objective of the SADC harmonisation system is to address problems in the SADC countries, such as farmers being seed insecure and having limited choices because 'seed markets are segregated, small and difficult to access' (SADC, 2008:8). The idea is to integrate smaller, isolated national seed markets into one larger SADC seed market.

The SADC was established in 1992 by the SADC Treaty. It is a regional group of 15 countries and has its headquarters in Gaborone, Botswana. The SADC Seed Security Network (SSSN) was initiated in 2001 and its main objective is to improve seed security in the region (Mulvany & Mpande, 2013). Discussions on seed harmonisation for the

20. The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) currently has 144 contracting members.

SADC began as far back as the late 1980s (USAID, 2016). In 2004 the Swiss Agency for Development and Cooperation (SDC) began funding the SADC SSSN. Phase 1 of the SSSN was managed and implemented directly by the SADC Secretariat through its Food, Agriculture and Natural Resources (FANR) directorate. FANR facilitated the development of the SADC Technical Agreements on Harmonisation of Seed Regulations (referred to as the SADC Technical Agreements), which were adopted in 2007/8 by the Permanent Secretaries of Agriculture and the Ministers of Agriculture in all SADC member states. The SADC Technical Agreements comprise three technical components: SADC crop varietal testing, registration and release; seed certification and quality assurance; and SADC quarantine and phytosanitary measures for seed.

The SADC Harmonised Seed Security Project (HaSSP) was launched in 2010. It was intended to advance implementation in four pilot countries: Malawi, Swaziland, Zambia and Zimbabwe. The pilot project operated on an overall budget of US$ 3 676 000 and ended in December 2013. This phase was managed by the Pretoria-based Food, Agriculture and Natural Resource Policy Analysis Network (FANRPAN), and aimed to improve the food security situation of smallholders in the SADC region through increased availability of and access to seeds (Mulvany & Mpande, 2013). The objective for the four countries was to align their national seed laws with the SADC Technical Agreements. At the end of the first phase, legislation or amendments to existing legislation had been drafted in all four countries, but none had enacted these. The pace of domestication was very slow, and capacity very weak in all four countries, but seed systems and the required infrastructure had been developed. Between 2011 and 2013/14, the SDC was the main funder, through FANRPAN, of the SADC's Harmonised Seed Regulation System.

The Technical Agreements became operational in 2013, once two-thirds of the SADC countries (that is, 10 countries) had signed the MoU.[21] The Technical Agreements are a guiding framework and not a legally binding instrument. Different countries have different domestication procedures and there is no formal monitoring system to monitor implementation levels in each country.[22]

In December 2015 USAID began its Feed the Future (FTF) Southern Africa Seed Trade Project, taking over from the SDC, and began the process of operationalising the SADC Technical Agreements. Since 2016, the focus has been on building capacity to implement the Technical Agreements. USAID has committed to fund the project for five years, until December 2020, and has allocated roughly US$ 18 million for project activities. USAID has contracted Development Alternatives International (DAI), which has an office in Pretoria, to implement the FTF project.

The FTF programme operates in four countries: Malawi, Mozambique, Zambia and Zimbabwe (three of which were part of the SDC-funded pilot project). USAID's approach has focused on the main seed-producing countries (Zambia and Malawi) and hopes that 'benefits accrue to all [SADC] countries',[23] such as Angola, Tanzania and the Democratic Republic of Congo, which are potentially very large seed markets. Domestication processes have already started in Malawi and Zambia. According to USAID, Zimbabwe is already domesticating its seed law, in order to bring it in line with the COMESA seed trade harmonisation regulations, but it has not yet acceded to the SADC MoU. Mozambique has already domesticated its seed law with the SADC Seed Harmonised Regulations.[24]

USAID funding derives from its regional agricultural development and food security programme. The strategy for the FTF programme was developed in 2010, primarily

21. Angola, Zimbabwe, Seychelles, and Madagascar have yet to sign MoUs.
22. Interview with SADC Secretariat and SADC Seed Centre Coordinator, Gaborone, 21 April 2017.
23. Interview with USAID, Pretoria, 26 April 2017.
24. Interview with USAID, Pretoria, 26 April 2017.

aiming to increase agricultural production, increase trade in staples and improve policy implementation. USAID has been supporting seed and trade since 1998.[25] Funds directed to the SADC are used for:

- The implementation of the SADC Technical Agreements, putting in place the systems and the associated human capacity and infrastructure;
- Developing a regional seed authority – the SADC Centre; and
- Developing a PVP protocol. (This will be discussed in a separate publication during 2018.)

There are four institutions that coordinate and implement the SADC harmonised seed regulation system:

1. The SADC Seed Centre, which implements, coordinates and supervises the registration and development of the regional seed catalogue;
2. The National Seed Authority (NSA), which coordinates and implements variety registration and certification;
3. The National Plant Protection Organisation (NPPO), which coordinates and implements phytosanitary measures; and
4. The SADC Seed Committee, which was established to oversee the regional seed system and the activities of the Seed Centre.

The SADC Seed Centre operates as the Secretariat while the Seed Committee is the technical authority and handles the technical aspects of harmonisation, such as, *inter alia*, approving the release of a variety.[26] The Seed Committee was established in May 2016.

The Seed Charter was approved at the SADC Council in August 2017 and is the constituting document of the Seed Centre. As of April 2017, there were 25 varieties on the regional variety catalogue.[27] At that time the catalogue had not been made publicly available.[28]

The Seed Committee is made up of four representatives from NSAs (currently Zambia, Mozambique, and Swaziland; the fourth country was not specified), two from the NPPO (Botswana and Lesotho), two from the private sector (Namibia and Tanzania), one from the SADC secretariat, and three co-opted members – FAO and USAID, representing donors, and International Maize and Wheat Improvement Centre (CIMMYT), representing CGIAR.

25. Interview with USAID, Pretoria, 26 April 2017.
26. Interview with SADC Secretariat and SADC Seed Centre Coordinator, Gaborone. 21 April 2017.
27. Interview with SADC Secretariat and SADC Seed Centre Coordinator, Gaborone. 21 April 2017.
28. The SADC Seed Variety Catalogue can be found at http://sadcseedcentre.org/index.php/catalog.

Registration of landrace varieties
The SADC Technical Agreements provide for the registration of landrace varieties under Chapter 2, sub-section 2.3.7:

> *Landraces and other local plant varieties will be registered in the SADC Variety Database upon making available the description of the variety in terms of performance, farmer experiences during cultivation, its name(s) as well as the merits of the variety.*
>
> *SSC will develop a procedure for registration of landraces and other local varieties. The procedure will outline characteristics that are essential for registration and will take into consideration difficulties that may be associated with the provision of DUS and VCU information for such varieties.*

This provision opens new avenues to include farmers' varieties in the commercial seed sector by allowing them to be eligible for regional trade. Traditionally, landrace varieties have not been subjected to formal DUS and VCU tests because of their heterogeneity, which enables their adaptability and resistance to climatic changes.

Guidelines for the registration of landrace varieties are in the early stages of development. They are expected to cater for the certification, multiplication and marketing of farmers' varieties, based on the standard known as Quality Declared Seed (QDS), which is lower than the quality standard applied by the OECD. It is still unclear whether registration will be based on the DUS criteria. The Seed Classes are shown in Table 2, below.

Although inclusion of farmers' varieties in the commercial seed sector appears to be a move in the right direction, landrace varieties are viewed only in the context of the formal seed system. In addition, there is a need for long-term commitments for building institutional capacity, and there are questions regarding (a) the procedures for multiplying and certifying QDS and (b) impacts in areas where the system is already operational, such as in Tanzania.[29] There are also concerns that, while QDS is less onerous and expensive, it is embedded in the top-down process applied by the formal seed sector, which aims to set the stage for more advanced certification systems.

Table 2: SADC Seed certification and quality assurance system: Seed classes

Seed class	Code	Produced from	Label colours
Pre-basic seed	A	Breeders' seed	Violet band on white
Basic seed	B	Pre-basic or breeders' seed	White
Certified seed (1st generation)	C1	Basic of higher seed classes	Blue
Certified seed (2nd generation)	C2	C1 or higher classes of seed	Red
Quality declared seed	QDS	Complies with special requirements	Green

Source: SADC, 2008

29. For more information see ACB, 2016: *Changing seed and PVP laws in Tanzania: Implications for farmer-managed seed systems and smallholder farmers*. https://acbio.org.za/wp-content/uploads/2016/05/Tanzania-Seed-Law-2016.pdf.

As part of initiating the development of these procedures, the SADC Seed Centre conducted a survey to elicit inputs from a range of civil society organisations, including the ACB. The survey asked for information on known landraces, specifying:

- The name;
- The geographical spread of cultivation;
- The names and contact details of farmers and/or communities holding the landrace;
- Whether these landraces have characteristics that are distinct, uniform and stable;
- The importance of these characteristics;
- The owner of the variety (farmer, community and/or state);
- The value of cultivating the landrace;
- Whether the landrace has undergone independent field tests; and
- What, other than DUS requirements, prevents the release of this landrace variety.

While the development of procedures to register landrace varieties allows the possibility of promoting new options for the legal trade and maintenance of genetically heterogeneous varieties, regulations remain focused on commercial, technocratic concepts of a functional seed sector. This focus continues to ignore the role played by farmers and farmer seed systems in facilitating access to seed in the region. In addition, there are concerns about:

- How the information gathered will be used and how the system will be operationalised;
- Ownership rights for varieties that will be included in the registration system, and how such rights will be determined across households and communities, all of whom may have contributed to their development and enhancement;
- What methodology will be used by the SADC to ensure coherence between SADC regulations under a harmonised seed system and national seed laws – especially within those seed regimes that do not recognise farmers' varieties or cater for QDS at a national level.

Overall, it is necessary to ensure that farmers robustly engage with this process. Farmers much be involved and understand how this initiative will strengthen their current systems, which have been built on diversity, in situ conservation, seed production, variety selection, exchange and trade.

SADC harmonised regulations, although recognising that there may be farmer varieties that are good for regional trade, do not recognise the farmer-managed seed system, nor do they provide adequate safeguards to protect the diversity of farmer varieties from exploitation and misappropriation.

29. For more information see ACB, 2016: *Changing seed and PVP laws in Tanzania: Implications for farmer-managed seed systems and smallholder farmers*. https://acbio.org.za/wp-content/uploads/2016/05/Tanzania-Seed-Law-2016.pdf.

COMESA seed trade harmonisation regulations

The Common Market of Eastern and Southern Africa (COMESA) was created in 1994, with headquarters in Lusaka, Zambia. In 2008 the COMESA Council of Ministers signed a Declaration that aimed to rationalise and harmonise seed regulations and policies, which were approved in 2014. Legal instruments adopted by the COMESA Authority are binding on COMESA member states, as are regulations issued by the Council of Ministers in terms of Article 9 of the COMESA Treaty.[30] The COMESA Council of Ministers approved the COMESA Seed Trade Harmonisation (2014 Seed Regulations) in Kinshasa, Democratic Republic of the Congo. The regulations are divided into two parts: the first part established the administration and enforcement system, the certification system, the variety release system, and quarantine and sanitary and phytosanitary measures; the second part comprises ten schedules that record, amongst others, the required certificates, the label colours, and the label contents (Kuhlmann, 2015). The regional Seed Committee was established in 2015, in the same location as the SADC Seed Centre.

Regulations are legally binding on member states but require domestication through national level legislative and regulatory measures, in order to implement the requirements. Across all 21 member states COMESA has been implementing COMSHIP through its specialised agency, ACTESA.

According to a COMESA/ACTESA document published in 2016, COMSHIP culminated in October 2015, focusing on four key areas:

1. Preparation for and support of phased domestication;
2. Awareness creation of the COMESA Seed Trade Harmonisation Regulations;
3. Monitoring and improving implementation of the COMESA Seed Trade Harmonisation Regulations; and
4. Building capacity for the production of quality seed and support for smallholder farmers.

Five of the COMESA countries have already domesticated, some partially, some fully. Rwanda and Burundi have fully domesticated COMESA seed regulations in their national seed laws. Uganda, Kenya, Malawi, Zambia and Zimbabwe are all in advanced stages of domesticating their seed laws, in accordance with the COMESA seed regulations (COMESA/ACTESA, 2016). The DRC had no seed laws at all, but has drafted seed regulations that are aligned with COMESA's regulations. Ethiopia, Djibouti and South Sudan aimed to align with COMESA regulations during the first quarter of 2016.

The overall COMSHIP budget is US$ 35 million. The Department for International Development (DFID) provided GBP 1.2 million for seven targeted countries (COMESA/ACTESA, 2016) and USAID provided US$ 500 000 for the Democratic Republic of Congo and Ethiopia. Other partners include the One Acre Fund in Kenya, and Feed the Future Uganda's Enabling Environment for Agriculture Activity. The DFID funding came to an end in October 2017.[31] COMESA hopes that countries previously supported by DFID will integrate relevant expenses into their national budgets. This has already taken place in Uganda, where the budget was approved for COMSHIP activities from June 2016 (COMESA/ACTESA, 2016). COMSHIP has been launched in 13 COMESA member states and currently plans to launch in a further six countries: Mauritius, Seychelles, Comoros, Eritrea, Djibouti and South Sudan (COMESA/ACTESA, 2016).

One of the main objectives for COMSHIP is the creation of public awareness. Consequently, information and education materials have been developed in three of the COMESA languages: English, French and Arabic.

30. http://www.comesa.int/wp-content/uploads/2016/06/COMESA-Treaty.pdf.
31. Interview with John Mukuka, Argent Chuula, and Getachew Belay, COMESA headquarters, Lusaka, Zambia, 31 May 2017.

Forty seed varieties appear in the COMESA variety catalogue for maize, sorghum, potatoes, wheat, common beans and groundnuts.[32] These are registered by international seed companies, including Monsanto, Syngenta, Seed Co, DuPont Pioneer, and HZPC. There is no information about what seed varieties, if any, have been traded. The variety catalogue has been published with support from AGRA's Scaling Seeds and Technologies Partnership (SSTP) and DFID. 'Seed companies now have the opportunity to exploit a seed market of 80 million smallholder farmers.' (COMESA/ACTESA, 2016: 8). This illustrates the strong interest in expanding into the African market, while offering little benefit to local seed enterprises.

Table 3: Status update on the domestication of COMSHIP

Country	Update on domestication	Other information on seed systems
Burundi	COMESA Seed Trade Harmonisation regulations were launched nationally on 18 February 2015, 'enhancing quality seed availability'. Burundi National Seed Review Team was launched in 2015; Draft report on the alignment of national seed law/regulations to COMESA STHR, and validation of Ministerial orders, compiled in November 2015.	The National Seed Council (NSC) coordinates the seed industry. Burundi provides special criteria for the registration of farmers' varieties, having two national variety lists: list A varieties are fully compliant with DUS and VCU, while list B varieties are traditionally cultivated and proposed by the breeder, the user, or any other person (Mahop, 2016).
Ethiopia	Ethiopia has passed its Seed Act, which has helped to align the country's legal system with COMSHIP, although alignment will take another 3–5 years. The Seed Proclamation No. 206/2000 and legal frameworks are not aligned with COMESA.	83% of the population lives in rural areas. The formal seed system contributes 15% to overall seed production, while the informal seed system contributes 80% of seeds produced in the country. There are 31 registered private local companies, 5 public seed enterprises, about 240 community-based seed producers, some cooperative unions, and some unregistered seed out-growers. Private companies supply about 40% of hybrid maize produced in the country. The national variety list is well established, with 1 044 varieties of crops released. 350 varieties of the 12 COMESA crops[33] are already registered on the national variety list. The national seed laboratory is a member of ISTA.

32. See https://varietycatalogue.comesa.int/web/varietycatalogue.
33. These include beans, maize, rice, groundnuts, cotton, wheat, cassava, potatoes, sunflower, sorghum, soya beans and millet.

Kenya	Kenya has seed legislation, including the Seed and Plant Varieties Act (CAP 326), the Plan Protection Act (CAP 324), and the National Biosafety Act of 2009. The Seed and Plant Varieties Act was amended in 2012. The National Seed Review Team was launched in 2015 and has finalised alignment with the COMESA Seed Trade Harmonisation Regulations. Kenyan standards are higher than COMESA standards.	Kenya has over 120 seed companies. Kenya's seed industry comprises formal and informal seed sectors, with farmers relying on the latter for 75–100% of seed for their major crops, except for maize and rice (Vernooy, 2017). Kenya acceded to UPOV 1991 in 2016.
Malawi	Seed laws are still being revised by a national review team. COMESA to provide resources to assist with accelerating the alignment process.	Access to seed is primarily through farmer seed systems, non-governmental organisations (NGOs) and national programmes (FISPs). Malawi currently has over 20 national seed companies, whereas in the 1980s there were only two.
Rwanda	Rwanda has aligned its National Seed Law with the COMESA seed system, starting in 2015 and completed in February 2016. Other challenges for domestication include translations required for the three official languages in Rwanda – Kinyarwanda, English and French – and the fact that Rwanda is not a member of ISTA, OECD or UPOV.	The agricultural sector accounts for 5–8% of the country's GDP and employs 87% of the country's active population, directly or indirectly. Both formal and informal seed systems exist; COMESA suggests that 90% of seed demanded is supplied by the formal sector. Private sector produces both certified seed and QDS.
Swaziland	Swaziland is in the process of developing PBR legislation but is not yet affiliated with UPOV. Cabinet has given approval Cabinet to amend the law. A working committee/task team was constituted and alignment with COMESA is underway.	OPVs of maize and legumes are produced through the smallholder seed sector/ community seed production. Hybrid seed is imported. Smallholder seed producers obtain OPVs from CIMMYT through the Malkerns Research Station.
Uganda	A National Review Team (NRT) has been established. Alignment of national seed regulations with COMSHIP started in May 2015. Revised draft regulations were presented in August 2015 and approved in September 2015.	There are two main categories of seed supply systems in Uganda: formal and informal. 30 seed companies have been registered, producing 1 000 metric tons, i.e. 20–25% of seed supply. The informal seed sector contributes about 75–80% of seed supply.

Zambia	The Seed Control and Certification Institute (SCCI) operates through the Plan Variety and Seeds Act (CAP 236) of Zambian law. The PVP-Plant Breeders' Rights Act, No. 18 was passed in 2007; as of 2015, a total of 135 varieties of different crops had PBRs. The biotechnology laboratory at SCCI Headquarters became operational in 2015. Zambia is the first country to implement and operationalise the SADC Harmonisation of Seed Regulations system. The Draft Plant Variety and Seeds Regulations were finalised in 2015. The Draft Quarantine Pest and List of the Statutory Institute (SI) 2015 of Plant Pests and Diseases Act (CAP 233) have been developed and are awaiting approval by the Ministry of Agriculture and the Ministry of Justice.	Zambia has a well-developed formal seed sector which includes plant breeding, variety evaluation and release systems. Plant breeding is carried out by both public and private research programmes. The SCCI conducts variety evaluation and release. The informal sector is also an important part of the seed sector. The formal sector dominates the cereal grain seed, while the informal sector dominates smaller crops and OPV maize. The informal sector meets the bulk of national seed demand. Zambia has three private seed testing labs accredited to SCCI. The private sector drove the initiative to become a member of OECD. Zambia has begun to comply with UPOV. A 'lack of awareness 'was given as the reason for slow pace at ministerial level.
Zimbabwe	The Seed Act of 1971 is being revised; it does not require a parliamentary sitting. Draft regulations must be prepared and submitted to the Cabinet Committee on Legislation (CCL), and then sent to the Attorney General's Office for clearance, approval, and gazetting.	42 seed houses are engaged in production, processing and marketing. Zimbabwe has over 3 000 agro-dealers.

Source: COMESA/ACTESA, 2016.

EAC harmonised seed regulations

The EAC was established in 1991. Regarding quality assurance systems and regulations for seed quality assurance, and in line with regional frameworks and international standards, the EAC's Agriculture and Food Security Department plays a coordinating role among national seed programmes, national seed control agencies, policymakers, private seed companies, training institutions, seed growers and farmers, among others.

Currently the EAC has not finalised a seed harmonisation framework, although, since 1999, a number of seed harmonisation processes have taken place. These include the regional harmonisation agreements in 2002 around: (i) variety evaluation, release and registration process; (ii) seed certification process; (iii) phytosanitary measures; (iv) PVP; and (v) import/export documentation (Waithaka et al., 2011).

The EAC's work on seed harmonisation has taken place largely under the auspices of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA).[34] In 1997, ASARECA created the Eastern and Central Africa Programme for Agricultural Policy Analysis (ECAPAPA), which later was transformed into the Policy Analysis and Advocacy Program (PAAP). One of the priority areas for ECAPAPA was to rationalise and harmonise agricultural policies, laws, standards and regulations in Eastern and Central Africa. ECAPAPA's seed initiative, funded mainly by USAID, started in 1999 and involved Kenya, Uganda and Tanzania, where country analyses were conducted to identify constraints within national policy frameworks. In 2002, the second-tier countries, Burundi, Eritrea, Ethiopia, Rwanda and Sudan, were incorporated into the project. The final two countries – the Democratic Republic of Congo and Madagascar – were brought into the initiative in 2003. From 2002 to 2011, USAID gave funds totalling US$ 20 million to ASARECA, which was roughly 25% of the organisation's budget. The BMGF also funded the seed harmonisation process (ACB, 2012).

Harmonised East African seed standards, regulations and procedures were agreed upon in 2002 (ECAPAPA, 2002). A Seed Regional Working Group was developed, involving members of both the public and private sectors, including breeders, regulators, policymakers and public representatives from each country (CTA, 2014). The Working Group was later transformed into the Eastern Africa Seed Committee (EASCOM) and became a sub-committee of the EAC's Committee on Agriculture and Food Security.

EASCOM's role is to spearhead the review of policies, laws and regulations; strengthen national seed and plant breeders' associations; operationalise harmonised agreements and the development and maintenance of databases; and build capacity and representation in both the EAC and COMESA. EASCOM's scope of coordination has included eight ASARECA countries: Burundi, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. At the national level, East African countries are enacting and revising their Seed and Fertiliser Acts in line with harmonisation agreements arranged under EASCOM. By 2013, the EAC was set to harmonise seed and fertiliser policies under the agricultural inputs systems development project, which received financial support from AGRA amounting to US$ 300 000 (Ubwani, 2013). EAC technical committee meetings, supported by the World Bank Group and the International Finance Cooperation (IFC), have also taken place in order to harmonise seed certification standards of crops in the region.[35]

In 2013, the EAC technical committee harmonised seed certification standards for maize, sorghum, sunflower, soybeans and groundnut seeds. In 2014, the same

34. ASARECA is a not-for-profit sub-regional organisation of the National Agriculture Research Systems (NARS) of 11 countries, namely: Burundi, the Democratic Republic of the Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, South Sudan, Tanzania and Uganda.
35. Rwanda's Ministry of Agriculture and Animal Resources www.minagri.gov.rw.

committee proposed that cassava, wheat, common beans, rice and sesame form part of its future work. Countries have also adopted the four main seed classes, as per the OECD seed schemes. According to ASARECA, since the beginning of harmonisation, notable gains have included: Kenya has released 140 new crop varieties, of which 30% came from the private sector; Uganda has released 27 varieties, of which 50% came from the private sector; and Tanzania has released 121 varieties, of which 30% came from the private sector. The extent to which any of these varieties has been traded is not yet known.

Under the EAC Treaty, laws and regulations agreed by member states are automatically binding. However, this does not apply to regional harmonisation efforts developed through other institutions, such as ASARECA. Variety release and registration under the EAC harmonised agreements requires only the testing of a variety released in any one EAC member country for one season only, combined with sufficient data on previous testing from similar agro-ecological zones (Waithaka et al., 2011). This requires the participation of the private sector in the National Performance Trials (NPTs). According to ASARECA, this has reduced the time period for testing from three to two seasons, and for variety release from three or more years to two seasons. Kenya and Uganda already have ISTA-accredited laboratories, while Tanzania, already a member, is in the final stages of implementing an ISTA-accredited laboratory. In addition, Kenya and Uganda participate formally in the OECD Seed Schemes, while Tanzania follows OECD formalities and is preparing for the process of formal participation.

With the combined efforts of EAC partner states, ASARECA and the private sector, a comprehensive draft framework to guide the development of harmonised seed legislation and regulatory frameworks was developed in December 2015 (Wafula & Waithaka, 2016). The process is aligned to the COMESA harmonised seed regulations. Priority areas are the same as those agreed and coordinated by EASCOM. A document to guide harmonisation of seed legislation and regulatory framework was to be submitted to the Sectoral Council on Agriculture and Food Security for its endorsement by mid-2016, and the EAC harmonised regulatory framework to be ready for validation and adoption by December 2016. However, it is not certain how far the process of adopting the framework has moved.

Challenges, opportunities and the way forward

The orientation of harmonised seed regulatory systems is deeply embedded within the green revolution ideology. This promotes large-scale agribusiness involvement as the solution to seed insecurity in Africa. Civil society across Africa has long advocated for systems that support seed and food sovereignty, agrobiodiversity and agro-ecology, as central to the future of African seed and food systems.

The ACB is on record for stating that there is no evidence to demonstrate the consultation or involvement of citizens, particularly small-scale farmers, in processes to draft and formulate the regulations (ACB, 2013). Engagement even with other non-state actors has been poor; even seed companies have been unclear about where and how to apply for regional listing (USAID, 2016).

This report emphasises the need to find an appropriate platform for civil society to engage with regional and national decision-making processes, to ensure that the interests of smallholder farmers and citizens at large are considered. It is also vital to point out that not all civil society represents the same constituency. For example, while the South African National Seed Organisation (SANSOR), which administers seed certification schemes in South Africa, is a non-governmental organisation, it represents the interests of the formal seed sector and, especially, the seed industry. This is confirmed by the USAID review, which notes that civil society organisations and farmer associations, who represent the voices of the marginalised and who are interested in protecting farmers' rights to save, sell and exchange local varieties, should be integral to the political dialogue (USAID, 2016).

Farmer-managed seed systems provide the most sustainable source of seed in the three regions (as is the case through the continent). It is critical, therefore, to strengthen and support farmer-managed seed systems, seed banks, farmer-led quality control and phytosanitary systems and other innovations, to ensure that small-scale farmers (who are already the most vulnerable in the society) and their seed are not locked out of the system and further marginalised. Greater relegation will surely have increased negative implications for local and regional food sovereignty.

All the harmonisation efforts underway should make provision for assuring the rights of farmers, especially the rights of women farmers. This requires comprehensive and appropriate national and regional seed policies that take into account the activities of small-scale farmers and ensure adequate and available seed for local production, and protect agricultural biodiversity, indigenous knowledge systems and cultural practices. The Ethiopian Seed Law is an example, where farmers' activities are recognised and protected.

The threat of RECs enforcing strict, exclusive, and one-sided seed laws through domestication at national level is already underway. This stands as a missed opportunity for Africa to develop appropriate seed systems, building on and strengthening farmer seed systems.

The power to implement appropriate and relevant seed trade regulations rests with national governments. We call on all member states to ensure that national laws protect the interests and livelihoods of their farmers, their agricultural biodiversity, and their seed and food sovereignty. Furthermore, these countries should adhere to the decisions made under the farmers' rights resolution during the seventh session of the governing body of ITPGRFA, to review or adjust national laws that affect the realisation of farmers' rights, in particular the regulations concerning variety release and seed distribution. We call for greater engagement with smallholder farmers to draft comprehensive seed policies for farmer-managed seed systems, to ensure egalitarian, sustainable and thriving national and regional seed systems.

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