ISSD Africa

Synthesis paper

The support for farmer-led seed systems in African seed laws

Introduction

The objective of this report is to compare regional and national seed laws in Africa, and analyse the extent to which they support (or undermine) farmers' participation in seed systems. The paper pays particular attention to how or whether these laws recognize farmers as conservers and breeders of crop varieties, and as potential multipliers and providers of seed, through a range of potential means, from traditional exchanges at local levels to commercial sales at a national or even regional scale. The study is intended to encompass all African countries. Ultimately, we identified and analysed combinations of national policies, legislation, regulations and executive decrees regulating the seed sector in 35 African countries: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cote d'Ivoire, the Democratic Republic of the Congo (DRC), Ethiopia, Egypt, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Morocco, Mauritania, Malawi, Mauritius, Niger, Nigeria, Rwanda, South Africa, Senegal, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe (the list of instruments is included in Annex 1). We have concluded that the following thirteen African countries do not have a seed law: Comoros, Djibouti, Eritrea, Cape Verde, Guinea Bissau, Congo, Chad, Central Africa Republic, Equatorial Guinea, Lesotho, Libya, Namibia, Sao Tome and Principe, and Somalia[1]. We understand that the following countries have relevant laws, but have not been able to obtain copies so they could not be included in the scope of this study: Gambia, Liberia and Sierra Leone. In addition, we analysed three regional seed law harmonization agreements for the Economic Community of West African States (ECOWAS), the South African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA) sub-regions. We noted that very few crop species are considered in the laws, many others are left out.

Photo: Veerle Vanvenckenray

Participants of the Seed Laws Expert meeting in Cape Town South Africa, March 2016

"Seed laws protect the farmer by establishing a legal obligation for the seller to guarantee the quality of seed by means of standardized inspection and testing procedures" (FAO, 2015, p. 7). Also, they aim to create a level playing field, because the laws set the rules of the market for different seed suppliers (Louwaars, 2005). Yet, some civil society organizations argue that seed laws are only in place to adapt to demands of the seed and biotechnology industry, and in effect criminalize farmers (La Via Campesina and GRAIN, 2015). The need for seed legislation stems from the fact that the seed itself does not show the quality and identity of the variety, and so in the formal system farmers become dependent on labels and certificates, for they can no longer rely on the trust established between farmers and seed sellers based on former community trade. A policy and legal framework regulating the seed sector may include a combination of

[1] For Comoros, Djibouti and Eritrea, see Mukuka (2014); for Cape Verde, Guinea Bissau, see Figure 2 by P. Senghor in Kuhlmann and Zhou (2016, p. 9).

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higher level policies, strategies, legislation, regulations, decrees and administrative guidelines. The integrated seed sector development (ISSD) approach, endorsed by the African Union (AU) Commission in 2011[2], is emerging as one of the strategies pursued by the AU in the implementation of its broader agricultural development programmes, such as the Comprehensive Africa Agriculture Development Programme (CAADP) and the African Seed and Biotechnology Programme (ASBP). The ISSD approach recognizes that there are many seed systems that make up the seed sector of a country, and aims at the development of a "vibrant, pluralistic and market oriented seed sector in Africa, providing both female and male smallholder farmers access to quality seeds of superior varieties" (De Jonge et al., 2015, p. 2). However, the aim of seed laws is to regulate the formal system, and so they may possibly neglect or prohibit activities and actors within other seed systems. This paper aims to analyse whether and how the farmer-led seed system is recognized and supported in these laws.

Methodology

This report has been compiled through a review of literature concerning seed policies, and a desk (comparative) study of the national seed policies, laws and regulations, and regional seed policy harmonization agreements. Documents were retrieved through direct contact with experts inside or outside the countries reviewed, and through online databases, such as FAOLEX, the Collection of Laws for Electronic Access (CLEA), and the farmers' rights website www.farmersrights.org. All African countries were included in the scope of our research. The collection of legislative documents provided the basis for our initial analysis of the state of national laws. When we were uncertain about how to interpret sections of those documents, we contacted key informants from the countries concerned for additional information. We also asked experts[3] to review key sections of text. Finally, we compared our results with academic literature or other relevant reports. Since the objective of this report is to compare regional and national seed laws in Africa, and analyse the extent to which they support (or undermine) farmers' participation in seed systems, the following topics will be discussed:

- The freedom to exchange and sell seed within farmer-led seed systems.[4]
- The inclusion of farmers' varieties in the variety release system.
- The inclusion of other quality assurance systems, like quality declared seed (QDS), in the certification system.
- Requirements for registration to produce seed.
- The inclusion of farmers in relevant authorities and policymaking.

The analysis does not include intellectual property right (IPR) laws, therefore the paper does not look at how farmers' practices to save, exchange and sell seed might be affected by national IPR laws. Also, phytosanitary issues are beyond the scope of this paper. Even though we realize that whether such seed systems are supported or obstructed by the regulatory framework also depends on the extent to which the policies and laws are actually implemented on the ground, it is beyond the scope of this report to assess such implementation. This report is a synthesis of a more elaborate study that provides the full list of provisions (ISSD Africa, 2017), while this synthesis report provides the most relevant examples.

Regionally harmonized seed regulatory instruments

This section focuses on three regional seed regulations of the following partnerships:

- The Common Market for Eastern and Southern Africa (COMESA, 19 member countries)
- The Southern African Development Community (SADC, 15 member countries[5])
- The Economic Community of West African States (ECOWAS, 15 member countries)

Set up to regulate and harmonize rules largely governing so-called formal system actors, these instruments provide little encouragement to support smallholder farmers as breeders or enhancers of crop varieties, or as multipliers or providers of seed (either through exchange or sale). As mentioned above, the laws concern just a few crop species, many others are left out (see Table 1 for the crops that are regulated under each harmonized system). The ECOWAS regulations exempt farm grain and seed, which can be freely used. Farm grain and seed are defined as "any seed or grain produced by a farm meant for the personal use of the farmer and not destined for the market"[6].

[2] See, for example, African Union Commission (2013).

[3] Contributions to this report were made by Niels Louwaars, Peter Gildemacher, Bert Visser, Willem Heemskerk, Mohamed Hassena, Gloria Otieno, Enock K. Maereka, John Mukuka, Joan Sadie, Kalipochi Kawonga, Marja Thijssen, Asante Krobea. We also used information from an earlier version of this report written by Marcelin Tonye Mahop. We would like to thank them for their valuable contributions. Any fault made in this report remains our own.

[4] The farmer-led seed system is entirely managed by farmers and is mainly based on mass selection. It focuses predominantly on satisfaction of seed demands from family, friends or neighbours rather than market demand.

[5] DRC, Madagascar, Malawi, Mauritius, Seychelles, Swaziland, Zambia and Zimbabwe are members of COMESA as well as SADC. Five countries, including Zimbabwe, have not signed the memorandum of understanding (MoU) for the harmonized seed regulations (USAID, 2016).

[6] ECOWAS Regulation C/REG. 4/05/2008 on Harmonization of the Rules Governing Quality Control, Certification and Marketing of Plant Seeds and Seedlings in ECOWAS Region, Art.1: Definitions. Available at http://www.coraf.org/wasp2013/wp-content/uploads/2013/07/Regulation-seed-ECOWAS-signed-ENG.pdf, accessed 1 March 2017.

The understanding here is that farm grain and seed can be freely used by the farmers and exchanged among themselves but not sold in the market.[7] Members of SADC or COMESA have to endorse this freedom for smallholder farmers in their national legislation. In all three the regions, national governments may set up variety lists that include farmer varieties. In addition to a catalogue, SADC maintains a database that includes varieties that have not been approved for registration in the catalogue, and landraces and local plant varieties, based on a description of the performance and merit of a variety and farmers' experiences. Nonetheless, there are no implications for the varieties included: the main function of the database is the collection of information for the seed authorities, and the database will not be available to the public due to privacy-sensitive information. SADC is establishing regional regulations for QDS. Part of the COMESA Seed Harmonization Implementation Plan (COMSHIP) is dedicated to smallholder farmers, yet the intentions to support smallholder farmers expressed in this policy document are not reflected in the regulations.

Table 1. Key aspects of regional regulatory instruments for seed harmonization in Africa

	COMESA	SADC	ECOWAS
Legal status	Binding; domestication required. Additional national legislation is allowed.	MoU. Regulation is in harmony with national legislation; national authorities retain full control.	Not legally binding. Additional national legislation is allowed.
Variety release	Data required on distinctness, uniformity and stability (DUS), and value for cultivation and use (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.	Catalogue comprises all registered varieties listed in the national catalogues of member states.
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.	After certification varieties can be traded and exchanged.
Seed classes	Pre-basic, basic, first and second generation (G1 and G2).	Pre-basic, basic, certified G1, G2, G3 and QDS.	Parental material, pre-basic G1, G2, G3, basic and certified.
Food crops regulated under the system	Beans, open-pollinated and hybrid (OP&H) maize; rice, groundnut, wheat, sunflower (OP&H), sorghum, soybean, pearl millet, cassava, Irish potato.	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.[8]	Pearl millet, sorghum, maize, rice, groundnut, cowpea, cassava, yam, Irish potato, onion, tomato.
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.	Registered variety, produced by licensed producer; tested at four stages in cropping cycle; packed, labelled and stored according to regulations; sold by licensed seller.
Consideration (smallholder) farmers	• Member states can endorse 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.	• The personal use of farm grain and seed by farmers and exchange among themselves is allowed if not destined for the market. • Countries are not precluded from establishing alternative national variety lists (which include landraces).

[7] Ibid, Art 3: Field of application.
[8] See Art. 3.3.2. of SADC Regulations: Seed classes. Available at http://www.sadc.int/documents-publications/memoranda-understanding/, accessed 23 February 2017.

Analysis of national seed legislation

Generally, only a limited number of major cash and food crop species are covered in national legislation, thereby falling under compulsory certification. Crops that are not covered by the laws may be multiplied, exchanged and sold without any requirements. In West and Central Africa these crops include maize, rice, sorghum, millet, cowpea, groundnut/peanut, soybean, cassava, yam, onion, tomato and legumes. Many other species that greatly contribute to food and nutrition for humankind and animals are classified as minor crops and are excluded. For several countries, the crops for which certification is required are listed in Table 2 below.

Exchange and sale of seed within farmer-led seed systems

The next section clarifies the positions of 35 countries on the sale and exchange of farm seed. One observation is that legislation from francophone countries is less concerned with guaranteeing the freedom of farmers to sell and exchange farm-saved seed; only three out of 18 countries (Senegal, Niger and Burkina Faso) have a related provision. Furthermore, legislation in 23 countries forbids the trade of unregulated seed – Algeria, Angola, Benin, Botswana, Burundi, Burkina Faso, Cameroon, Cote d'Ivoire, DRC, Egypt, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Morocco, Mauritania, Mauritius, Rwanda, Sudan, Togo, Tunisia. On the other hand, legislation in nine countries allows for local sale and exchange within farmer-led seed systems: Senegal, Niger, South Africa, Tanzania (full certification is not obligatory, yet seed does need to have its quality declared), Zimbabwe, Zambia, Malawi, Ethiopia and South Sudan. In addition, the exchange of farm-saved seed is allowed by two countries: Uganda and Nigeria; the law of Swaziland is silent on exchange. The specific provisions, stating the conditions under which trading is allowed, are discussed below.

The rationale behind the differences in restrictions can be found in seed policies. For example, Zambia wants to promote an integrated seed industry involving both the formal and farmer-led systems, yet it aims to protect "farmers from using insufficiently tested varieties"[9] and ensure "that quality seed of various crops is made available to farmers."[10] The Government of Swaziland also takes responsibility for the supply of improved seed.[11] The policy of Ghana focuses on quality seed, and points towards smallholder farmers as distributers of less-well-performing varieties: "Currently, due to the dominance of small-scale holders, the use of quality seed is very much limited. If not checked, this trend will lead to a continuous diminishing of agricultural productivity and compromise the cherished national goal of food security."[12] This perspective, that farmer varieties might have the adverse effect of reducing farm output, can be seen in the Plants and Fertilizer Act of Ghana (2010), which imposes restrictions on the exchange and sale of farm-saved seed. Contrary to this point of view, the draft policy of Uganda, while acknowledging the low output of smallholder farms and the vision to turn smallholder farmers into commercial entities, recognizes the value of farmer seed systems: "[…] the informal seed system dominates Uganda's seed sector, providing 80% of the national seed requirement. In addition, the informal seed system is strategically positioned to conserve biodiversity of land races and neglected varieties through communities' preservation systems for food security requirements and food safety."[13] The policy provides space for the role of smallholders in the development of the seed sector. Specifically, in the second objective of the law, concerning the development of seed production and conditioning,

Table 2. Food crops included in national seed legislation

Country	Crops
Ghana	Maize, hybrid maize, self-pollinated sorghum, open-pollinated millet, self-pollinated rice, self-pollinated groundnut seed, self-pollinated cowpea, self-pollinated soybean, self- pollinated tomato, cross-pollinated pepper, cross-pollinated eggplant, cross-pollinated okra, onion, cassava, yam, sweet potato, mango, citrus, pineapple
Kenya	Maize, wheat, barley, sorghum, millet, oats, triticale, beans (dry), beans (green podded), peas, cowpea, pigeon pea, sunflower, oilseed rape, linseed, soybean, sesame, setaria, Rhodes grass, Sudan grass, Panicum spp., Columbus grass, centro, Stylo desmodium, clover, lucerne, siratro, lupin, Irish potato
Mozambique	Maize, rice, sorghum, groundnut, sunflower, common beans, cowpea, pigeon pea, sesame, millet, soybeans, bambara groundnut, Irish potato, wheat, sweet potato and cassava cuttings, fruit trees; as well as quality declared seed of improved varieties of maize, rice, sorghum, groundnut, common beans, cowpea and millet
South Africa	Onion, groundnut, oats, forage rape, blue buffalo grass, pumpkin, squash, carrot, smuts finger grass, weeping lovegrass, soybean, barley, Italian and Westerwold ryegrass, white lupin, narrow leaf lupin, tomato, lucerne, dry beans, garden beans (runner), garden beans (dwarf), forage sorghum, white clover, wheat, triticale, high quality protein maize, white grain maize, yellow grain maize

[9] National Seed Policy of Zambia, 1999, Art. 5.15: Variety release and registration, p. 7.
[10] National Seed Policy of Zambia, 1999, Art. 4.0: Policy objectives, p. 5.
[11] Seed Policy of Swaziland, 1993.
[12] National Seed Policy of Ghana 2013, Paragraph 1.1 Introduction, p. 13.
[13] Draft National Seed Policy of Uganda, 2014, p 12.

Photo: Antoine Nyirigira, Rwanda Agricultural board

Farmers and scientists from Bioversity International and the Rwanda Agricultural Board conduct participatory evaluation of bean varieties on a farm in Rubaya, Rwanda

which is aimed at increasing "the availability of and access to quality seed of preferred varieties not provided for by the formal system."[14] In this objective, farmer' and community groups are seen as potential producers of "quality seed with the focus on crops and varieties that have a high food security value". Also in South Sudan, Mali, Benin and Guinea, recognition can be found for the important roles played by landraces and local varieties in the context of crop improvement, adaptation to climate change and resistance/tolerance to pests, diseases and soil disorders, etc. Therefore, the governments are committed to preserving these varieties and allowing farmers to multiply and share seed among themselves.

In defining the scope of the acts or regulations, most countries describe that seed that is sold needs to be from a variety that is listed in the national catalogue, and/or which has been certified or has had its quality declared. For example, Tanzania states that "no seed shall be offered for sale unless it is certified in accordance to these Regulations or rules made under regulation 26(4)";[15] while the Seed Act of Malawi affirms that "only varieties that have been approved for release and notified and included in the variety list may be sold"[16]. This may be followed by provisions exempting practices of farmer-led seed systems. In francophone countries, most of the exemptions relevant to smallholder farmers are related to the local or traditional genetic diversity that communities conserve. There are few exemptions related to the sale and exchange of farm-saved seed. The following countries allow for the sale of seed produced by smallholder farmers under certain conditions: Senegal, Burkina Faso, Niger, South Africa, Tanzania, Zimbabwe, Ethiopia, South Sudan, Malawi and Zambia. Examples of these provisions are[17]:

- The Seed Proclamation of Ethiopia "may not be applicable to (a) the use of farm-saved seed by any person; (b) the exchange or sale of farm-saved seed among smallholder farmers or agro-pastoralists."[18] A 'small farmer' in Ethiopia is someone who is not registered; it is not related to the size of the land (M. Hassena, personal communication, 6 December 2016).[19] In practice, the difference is usually found in the fact that smallholder farmers pay taxes for their land, while companies lease ground. Small farmers may exchange and sell landraces as well as registered varieties to neighbours and in the markets. When smallholder farmers register as a cooperative, the

[14] Draft National Seed Policy of Uganda, 2014, p 16, paragraph 3.3.
[15] The Seeds Regulations 2007, Tanzania, Art. 32.1: Seed for sale.
[16] Seed Act 1996, Malawi, Art. 5: Variety list.
[17] The full list of exemptions can be found in the ISSD Africa (2017).
[18] Ethiopian Seed Proclamation No. 782/2013, Art. 3.2: Scope of application.
[19] Mohammed Hassena, Deputy Project Manager, ISSD Ethiopian Project.

Photo: Willem Heemskerk, KIT

Farmer in Tanzania demonstrating a new sweet potato variety

regulations do not apply to its individual members. Small farmers that are part of a registered cooperative can thus exchange and sell seed, as long as this trade is not done under the label of the cooperative.

- Burkina Faso's law recognizes local genetic diversity as national heritage that should be preserved for today's and future use.[20] It guarantees the farmers' right to freely use any varieties on their farms. Use and sharing of farm-saved seed locally is allowed, but the sale of this seed in large markets is prohibited.
- Tanzania provides an exemption to the rule that all seed that is sold needs to be certified: "Nothing in this Act shall, be construed as preventing the sale of quality declared seeds as such to a neighbour farmer, whereby such seeds are grown by a smallholder farmer for use as seeds in his own farm."[21] Quality declared seed refers to seed that is produced by a registered smallholder farmer, conforms to the specified standards, and has been subject to quality control measures.[22] As seed that is sold between farmers also needs to have its quality declared, it appears that the sale of farm-saved seed is illegal.
- The Act of Zimbabwe "shall not apply to the sale of seed (a) which is intended only for use as food or stock feed or for industrial purposes."[23] This provision does not provide space for smallholder farmers to sell their seed produce, yet a provision that exempts sellers from registration does allow farmers to sell their seed for planting, if it concerns "the sale of seed which is grown by any farmer and sold by him to a person for use as seed by such person."[24] Thus, farmers are allowed to sell seed for seed use. The provision does not specify the conditions of the sale itself – i.e. whether farmers are allowed to sell to neighbours, or if they are also able to sell seed in the local market.
- According to the Seed Act of Malawi: "The provisions of this Act shall not apply (i) to any sale of prescribed seed, which is not Malawi certified seed, which has been produced by a seed producer on his own land and is sold by him for sowing by the buyer and not for the purpose of resale."[25] During an ISSD expert meeting in 2016, it was clarified that farmers in Malawi cannot sell farm-saved seed on the market, but are allowed to use and share their seed as grain.[26]

Uganda, Nigeria and Swaziland do not allow the sale of farm-saved seed, but farmers can exchange certain seed.

- Nigeria's seed law describes the following exemption: "Nothing in this Decree shall apply to any seed of any notified kind or variety grown by a person and delivered by him on his own premises direct to another person without any monetary consideration for being used by that person for the purpose of sowing or planting."[27] The exemption extends to any seed, so improved varieties as well as farmers' varieties can be shared or bartered, yet not sold, under these circumstances.
- The Seeds and Plant Varieties Act of Swaziland states that "only varieties of plants that are listed in the variety list may be sold[28]" after they meet the following requirements: "A prescribed variety shall not be sold for the purpose of cultivation unless it (a) is of a variety which is entered in the variety list, (b) complies with relevant requirements (c) has been tested for germination within a period of 6 months before it is intended to be sold, pack and labelled in prescribed manner."[29] The word 'only' seems to indicate that seed sale of unregistered varieties is forbidden. The law is silent on the issue of seed exchange.

[20] Law N° 010-2006 on the Regulation of Plant Seeds in Burkina Faso, Art. 12
[21] Seeds Act 2003, Tanzania, Art. 19.2: Prohibition.
[22] Seeds Act 2003, Tanzania: Definitions.
[23] Seeds Act 2001, Zimbabwe, Art. 11A: Savings as to the sale of seed.
[24] Seeds Act 2001, Zimbabwe, Art. 8.1 and 2: Unregistered person or laboratory may not sell or test seed.
[25] Seed Act 1996, Malawi, Art. 67.
[26] Presentation made by Hastings Musopole – Agricultural Research Scientist at the Department of Agricultural Research Services, Malawi – at the Expert Meeting on the Impact of Seed Laws on Smallholder Farming Systems in Africa: Challenges and Opportunities under the Auspices of ISSD Africa Programme, in collaboration with partners. The meeting took place in Cape Town, 16-17 March 2016.
[27] National Agricultural Seeds Decree 1992, Nigeria, Art. 30: Exemption.
[28] Seeds and Plant Varieties Act 2000, Swaziland, Art. 15.2: Provisions for the recognition of a variety.
[29] Seeds and Plant Varieties Act 2000, Swaziland, Art. 14: Requirements relating to the sale of seed.

In Rwanda, Ghana, Kenya and Mauritius, in addition to restricting the sale of seed by farmers, the practice of exchange is not allowed. These countries have no provisions aimed at facilitating the practice of seed sale or exchange by farmers. The legislation therefore puts severe restrictions on farmers' distribution of seed.

- The Seeds Bill of Mauritius states that "no person shall cultivate, for commercial purposes, the seed of any variety of any kind of plant unless that variety is registered"[30], and "any person who, having produced or acquired any seed which has not been tested […] and intends to sell the seed for the purposes of cultivation, shall cause a sample of the seed to be delivered to NPVSO for testing."[31]
- Seed legislation in Ghana restricts persons to the following: "Subject to the Exports and Imports Act 1995, (Act 503) a person shall not produce, condition or market any seed unless (a) the seed is of a registered variety, (b) is of a standard prescribed by this Act or its Regulations, (c) it is multiplied in a seed multiplication farm, conditioned in a seed conditioning plant or tested in a registered laboratory, and (d) packaged and labelled as prescribed by this Act or its Regulations."[32] This restriction complies with the goal of the policy to prevent the distribution of less well-performing varieties that the government believes are grown by farmers.

Special criteria for registration of farmers' varieties

To enter the formal system, countries have a prerequisite that varieties are officially released. Ethiopia defines the release of a variety as "the permission by which a registered seed can be multiplied, produced or supplied to the domestic market."[33] Moreover, the recognition of a variety is commonly associated with ownership or recognition of origin and can therefore have consequences for breeders' rights and aspects of access and benefit-sharing. Lastly, in order to submit seed for certification, varieties must be officially released.

Varieties must be officially tested and evaluated by a committee before being released and admitted to a national and/or regional variety catalogue; this often includes DUS and VCU testing. A DUS trial evaluates whether a candidate variety meets the criteria set for the particular species or crops in relation to distinctness and uniformity in important characteristics, and stability in repeated multiplication cycles. VCU testing is commonly conducted in national performance trials (NPTs), where newly developed varieties are evaluated to determine whether there are any substantial increased benefits in value for their cultivation and use compared to the local or standard varieties. These tests are usually executed over the course of two years or two seasons in a prescribed minimum number of sites. The process of release is expensive and time consuming and therefore often not accessible to smallholder farmers. Aside from that, farmers' landraces and local varieties are characterized by a high degree of genetic and phenotypic diversity, which are said to make them more resilient and adaptable to local agro-ecology. Farmers' varietal selection maintains this diversity, which is discouraged from the perspective formulated in the legislation. Furthermore, landraces are commonly adapted to quite specific local conditions, and do not perform well in national trials. Varieties admitted to the catalogues are therefore those that do well 'on average', and may not always be those most preferred by farmers. Farmers who wish to engage in the production of certified seed, will have to multiply the released varieties. Current practice requires DUS and VCU testing before a variety will be included in national catalogues. South Africa is the exception in Africa, requiring only a VCU trial in case of doubt, which makes registration merely a formality, providing DUS data to describe the variety characteristics.[34] In Mozambique, varieties that pass the DUS test only are registered in the 'National Variety List', while varieties that have passed both DUS and VCU tests, and whose use in agriculture has been sufficiently proven, are recorded in the 'List of Recommended Varieties'. A third list, the 'Official Variety List', includes the varieties that are authorized for use in Mozambique.[35] Another important exception made by some African countries is to accept varieties of vegetables with no or automatic variety registration. Kenya, Uganda and Nigeria are known to do this (Gisselquist et al., 2013).

Only Benin has an actual list in which farmers' varieties are registered. Seven other countries have expressed policy commitments in relation to farmers' varieties with no actual alternative list (or criteria): Niger, Malawi and Uganda (expressed in draft policy) will register landraces subjected to looser criteria; Burkina Faso, Mali and Kenya have provisions that protect ownership over and/or strive to preserve local varieties; Ghana does not aim to register farmers' varieties, but will support farmers in releasing their varieties officially.

- In Benin, seed of landraces and local varieties with specific interesting traits can be multiplied and sold. There are three lists of varieties in the catalogue of Benin: List A comprises released varieties that must be tested for DUS and VCU to be registered; List B consists of varieties tested for DUS only, which can be multiplied exclusively for export; and List C comprises

[30] Seeds Act 2013, Mauritius, Art. 7: Cultivation of seed.
[31] Seeds Act 2013, Mauritius, Art. 15.1: Testing of seed; NPVSO refers to the National Plant Varieties and Seeds Office.
[32] Plants and Fertilizer Act 2010, Ghana, Art. 3 8.2: Seed production and marketing.
[33] Ethiopian Seed Proclamation No. 782/2013: Definitions, 2(17).
[34] See, for example, Gisselquist et al. (2013).
[35] Decree no. 12/2003, Seed Regulations, Mozambique, Article 1: Definitions.

traditional/local varieties that must be tested for VCU to be registered. In the current catalogue, there are 16 popular traditional varieties of yam in List C against only one variety in List A; seed of these local varieties is produced and sold.

- Seed policy in Niger restricts seed production to varieties that have been registered following DUS and VCU testing. However, it recognizes that traditional varieties or landraces that are known as reservoirs of useful genes and are of high economic value, belong to farmers' communities, who are allowed to use them freely for their needs. The policy guarantees de facto ownership to farmers over these varieties. The government takes the necessary measures to record, characterize and conserve the germplasm, to give them the importance they deserve in the national catalogue.[36] The law goes further to indicate that landraces once selected for use, are registered in the national catalogue.[37] The national seed policy encourages farmers to contribute to breeding and selection of new varieties. Successful farmers are rewarded.[38]
- In Kenya, a promising amendment was published in 2015, with the aim to "require Parliament to enact legislation to recognize and protect the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics and their use by Kenyan communities, and the protection of genetic resources and biodiversity for equitable sharing of the accruing benefits."[39]
- The policy of Ghana states that: "Scientists and farmers will be encouraged and supported to test and release popular local landraces as official varieties",[40] but does not elaborate on how to bring this into practice. As the aim is to release landraces as official varieties, we assume that the requirements of DUS and VCU testing will be maintained.

Provisions on seed classes other than certified seed

Broadly speaking, the seed laws of African countries reviewed in this study recognize and promote five different classes of seed: breeder seed, basic (foundation) seed, certified seed (one or more generations), standard (or emergency) seed and quality declared seed. No other quality assurance systems, like truth-in-labelling, are currently mentioned in the legislative seed documents that were reviewed. The legal recognition of these categories of seed is based on the premise that it is produced according to prescribed standards, and on that basis it is trustworthy with regard to its quality (e.g. appropriate germination rate, disease free, genetic and physical purity) having been through the prescribed testing and quality control. In order to submit seed to a certification scheme, nations usually require seed to be of an officially released variety. The minimum requirements that seed must adhere to, as set by the minister or ministry, may differ for each seed class.

An important class that provides less stringent standards for certification, and/or establishes different procedures that are less time-consuming and costly, is quality declared seed (FAO, 2006). Currently, eight countries mention QDS in either their acts or policies: Ethiopia, Ghana, South Sudan (draft policy), Tanzania, Uganda (draft policy), Mozambique, Malawi and Zambia. Rwanda also defines

Table 3. Overview of seed classes currently recognized, as indicated in laws or regulations by country

Country	Recognized seed classes - other than parental, pre-basic, basic and certified				
Algeria	Authorized/standard	**Ivory Coast**		**Senegal**	
Angola	Not indicated	**Kenya**	Standard	**South Africa**	Not indicated
Benin	Standard (vegetables)	**Malawi**		**South Sudan**	Quality declared and non-certified
Botswana	Tested	**Mali**		**Swaziland**	Not indicated
Burkina Faso		**Mauritius**	Not indicated	**Tanzania**	QDS and standard
Cameroon	Standard	**Morocco**		**Togo**	
Chad		**Mozambique**	Improved guaranteed seed; basic plants; mother plants; certified plantlets	**Uganda**	QDS and standard
Ethiopia	QDS, emergency	**Niger**	Registered seed	**Zambia**	QDS and emergency class
Gabon	Standard	**Nigeria**		**Zimbabwe**	Standard grade seed
Ghana	Minimum standards, QDS, emergency	**Rwanda**	QDS		

[36] National Seed Policy 2012, Niger.
[37] Decree N° 90-55/PRN/MAG/EL of 1 February 1990, Niger, Art. 9.
[38] National Seed Policy of Niger 2012, p. 10.
[39] Seeds and Plant Varieties (Amendment) Bill 2015, Kenya, p. 2311: Statement of objects and reasons for the Bill.
[40] National Seed Policy 2013, Ghana, Section 10.2.3: Policy action.

QDS as a seed class in its draft act, yet does not offer further provisions.[41]

- Ethiopia regards QDS as "seed produced by organized and/or registered smallholder farmers in conformity with the required quality standards."[42] The regulations for this seed class are in Amharic, and follow FAO's guidelines, allowing for checks on only 10% of the seed crops and seed for sale. The sale of QDS is only allowed within the locality where the seed is produced, e.g. woreda or district (G. Otieno, personal communication, 11 December 2016).[43] Farmers' varieties that are registered can be used in the QDS system. At present, QDS regulations are in place for approximately 35 crops, yet the level of implementation varies (M. Hassena, personal communication, 6 December 2016).[44]
- In 2000, Tanzania modified and adopted the QDS system, and later incorporated QDS in the Seeds Act (2003). QDS is defined in the act as "seed produced by a registered smallholder farmer which conforms to the specified standards for crop species concerned and which has been subject to the quality control measures prescribes in the regulations".[45] QDS seed is sold in the locality where it is produced by registered smallholder farmers, or a group of smallholder farmers.
- In Mozambique, QDS can be produced from improved and local varieties; such details are indicated in specific labels (W. Heemskerk, personal communication, 14 December 2016).[46] Varieties must be included in a national variety list, which requires DUS testing. The production of QDS from multiple seed classes – for example, 1st and 2nd generation – is permitted. Field checks, as well as checks on germination, physical purity and moisture content are conducted. In practice, QDS in Mozambique is not yet an official label; the law is in place but the regulations for operationalization are not (W. Heemskerk, personal communication, 14 December 2017).
- Malawi's current seed law (1996) makes provisions for QDS seed; however, the new Draft Seed Act of 2013 does not, thereby removing one potential form of accommodation for the farmer-led seed systems.

Several countries have added an escape clause that allows for the loosening of standards when there is an emergency (Rwanda, Kenya, Tanzania, Tunisia), or when there is a seed shortage (Uganda). In Zimbabwe, a 'standard grade' class is available for crops other than the eight most commercially important crops in the country (maize, wheat, tobacco, barley, soybean, cotton, potato, oats). Only purity and germination tests are required. However, registration is needed for people involved in the selling of seed, and seed growers cannot sell standard grade seed directly to farmers, instead they must sell through official seed outlets (Dube and Mujaju, 2013). Algeria, Benin, Cameroon and Gabon have also indicated standard seed in their laws. Standard seed generally ensures minimum quality and security to users and therefore is an alternative to certified seed. It is affordable and accessible to smallholder farmers.

Registration criteria for farmers, farmers' organizations or communities as seed producers

In general, seed laws are framed to regulate the production of certified seed of registered varieties. On that basis, entities that wish to enrol in seed production are expected to abide by the competencies, skills and infrastructural requirements prescribed by the regulations, and must undergo an evaluation process resulting in the issue of a permit, authorization or certificate. Countries differ in the type of entities for which registration is required, and few countries provide exemptions, creating specific conditions for farmer seed enterprises. Usually, the registration of growers, sellers and often processors is required.

Four countries provide exemptions or have fewer criteria to enlist as a seed producer within a farmers' community (Mozambique, Malawi, Nigeria and Zimbabwe).

- Mozambique differentiates between formal seed producers and non-formal seed producers. Formal producers require full registration in order to produce seed for commercial goals, while non-formal producers are allowed to produce seed and vegetative production material for planting after authorization. This can imply that local authorization will be sufficient.
- In Malawi, only premises where seed is processed, distributed and sold require registration, not the persons performing these actions. Yet, registration of the premises where seed is sold is not required if the sale concerns seed "(a) which is grown and cleaned by a bona fide farmer for his own use; (b) which is sold to a bona fide cleaner of seed in order that it may be cleaned, graded or treated before it is used as seed."[47] The draft law adds farmers' communities to part (a) of this provision. This extension could imply that farmers may sell seed from unregistered premises directly to other farmers.
- Nigeria's requirements of registration do not apply to "a person growing and delivering seeds of any variety direct to another person without monetary consideration for use by that other person for sowing on the

[41] Law N005/2016 of 05/04/2016 Governing Seeds and Plant Varieties in Rwanda: Definitions.
[42] Ethiopian Seed Proclamation 2013: Definitions.
[43] Gloria Otieno, Associate Expert, Genetic Resources and Food Security Policy at Bioversity International.
[44] Mohammed Hassena, Deputy Project Manager, ISSD Ethiopian Project.
[45] Seeds Act 2003, Tanzania: Definitions.
[46] Willem Heemskerk, a small-farmer-oriented agronomist, Royal Tropical Institute, Amsterdam.
[47] Seed Act 1996, Malawi, Art. 26: Registration of seller of seed.

latter's own farm."[48] So in Nigeria, unregistered farmers can exchange, but not sell seed.

- In Zimbabwe, the rule that only registered sellers may sell seed does not apply to "the sale of seed which is grown by any farmer and sold by him to a person for use as seed by such person."[49] In effect, farmers are allowed to sell seed to other farmers, and would not be going against the law even if they are not registered. If Zimbabwean farmers wish to sell their seed in local markets, and therefore want to meet certification standards, meeting these standards will be facilitated (Visser, 2015).

In the context of QDS production, Ethiopia and Tanzania provide for smallholder farmers to register as QDS producers.

In some seed policies, recognition of and/or support for smallholder farmers as seed producers can be found.

- The draft policy of South Sudan supports farmers in the following provision: "Farmers or any group of farmers who produce seed for their own use or for use by their neighbours or others in their immediate area shall be eligible for all Government guidance and support, so as to improve the quality of their seed and operations."[50] South Sudan intends to set up different standards for categories of seed production fields and seed lots, in order to secure high seed quality and cost-efficiency, seeking "a balance between the needs of farmers for high quality vs. realistic production capabilities".[51]
- Uganda, in its Draft Seed Policy (2014), strives to transform the farmer-led seed system into a regulated system, yet gives credit to the role of the farmer-led system in relation to biodiversity conservation of landraces and neglected varieties. It states that "Breeders include both public and private breeding institutes and farmers and may register their varieties for protection. Laws covering variety development and plant variety protection shall protect the rights of Plant Breeders and the local communities' traditional breeding".[52] However, the Seeds and Plant Act (2006), does not follow up on this statement of principle. Farmers' and community groups are seen as possible producers of quality seed with the focus on crops and varieties that have a high food security value. In the draft policy, one of the objectives of the government is to promote and increase "the capacity of farmer and community groups to produce and market quality seed with the focus on crops and varieties that have a high food security value."[53] Another objective in the draft policy is to increase the availability of and access to quality seed of preferred varieties not sufficiently served by the formal system.[54] The Seeds and Plant Act (2006) does not offer provisions that support these objectives of the policy.
- Zambia also encourages the participation of farmers in local germplasm conservation and utilization,[55] and in the establishment of small seed enterprises.[56]

The supply of breeder seed to the farmer-led system is supported by the governments of Zambia and Ghana. In Ghana, this can be either local cultivars or adapted research releases.[57] Zambia provides for this seed on a cost recovery basis.[58]

Inclusion of farmers, civil society and/or the private sector in authorities and in the establishment of legislation

To execute the mandate of the law, authorities are established to advise the minister on seed-related issues, or to perform functions like variety release and certification. Most countries specify which members should be included in their authorities. Farmers are often represented, alongside a larger number of other representatives, like decision makers, researchers and specialists and the private sector. The inclusion of farmers does not guarantee that different farming systems are represented.

Of the countries that describe the membership in their legislation, all countries, except Mauritius, include a farmers' representative in their seed commission – Algeria, Benin, Burkina Faso, Cameroon, Mali, Madagascar, Burundi (participation is open to volunteers), Morocco, Tunisia, Kenya, Ghana, Nigeria, Mozambique, South Africa (in draft law), South Sudan (in draft policy), Swaziland and Uganda. Farmers are also included in variety release and certification agencies in Ghana, Malawi, Mozambique, Rwanda and Swaziland. Tanzania includes farmers in the variety release committee, but not in the National Performance Trial Technical Committee; the documents reviewed for this study do not describe the members of Tanzania's certifying agency. When identifying which groups should be represented, the laws do not distinguish between large commercial farmers and smallholder farmers, except in the case of Rwanda, where it is specifically stated that the representatives should come from small farmers' organizations.

[48] National Agricultural Seeds Decree 1992, Nigeria, Art. 22.2: Prohibition on processing etc. of seeds for commercial purposes.
[49] Seeds Act 2001, Zimbabwe, Art. 8.1 and 2: Unregistered person or laboratory may not sell or test seed.
[50] Draft Seed Policy 1993, South Sudan: Definitions.
[51] Draft Seed Policy 1993, South Sudan, Section 17.2: Seed and seed field quality control.
[52] Draft National Seed Policy, 2014, Uganda, Principle 4: Plant breeders' rights will be protected to foster innovation in the seed sector.
[53] Ibid.
[54] Draft National Seed Policy 2014, Uganda, Section 3.3, Objective 2: To increase the availability of and access to quality seed of preferred varieties not sufficiently served by the formal seed system.
[55] National Seed Policy 1999, Zambia, Section 5.0 Policy measures/strategies, Art. 5.5.
[56] National Seed Policy 1999, Zambia, Section 5.0 Policy measures/strategies, Art. 5.33.
[57] National Seed Policy 2013, Ghana, Section 8.3: Policy action.
[58] National Seed Policy 1999, Zambia, Section 5.0 Policy measures/strategies, Art. 5.9.

Photo: Fetien Abay, Mekelle University

Farmer in Tigray Ethiopia demonstrating a barley variety with unique traits that make it suitable for medium and high altitudes and drought affected areas

Conclusion

Regulating the seed handling approaches of smallholder farmers is not the primary goal of seed laws; however, the formulation of laws can impose restrictions on the practices of smallholder farmers. When seed laws only allow the establishment of the formal seed system, smallholder farmers and their seed production, exchange and sale can become marginalized or even incriminated. In essence, it can be said that seed laws in 23 countries forbid the trade of unregulated seed: Algeria, Angola, Benin, Botswana, Burundi, Burkina Faso, Cameroon, Cote d'Ivoire, DRC, Egypt, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Morocco, Mauritania, Mauritius, Rwanda, Sudan, Togo, Tunisia. While seed legislation in nine countries allows for local sale and exchange within farmer-led seed systems: Senegal, Niger, South Africa, Tanzania (full certification is not obligatory, yet seed does need to have its quality declared), Zimbabwe, Zambia, Malawi, Ethiopia and South Sudan. Exchange of farm-saved seed is allowed by two countries: Uganda and Nigeria; the law of Swaziland is silent on exchange. Other topics discussed in this report were less frequently mentioned in legislative documents. Four countries allow the registration of farmers' varieties with less stringent requirements (Benin, Niger, Malawi (draft) and Uganda), and eight countries mention QDS in their legislation (Ethiopia, Ghana, South Sudan (draft policy), Tanzania, Uganda (draft policy), Mozambique, Malawi and Zambia). Four countries have looser registration criteria standards for local farmer seed producers (Mozambique, Malawi (draft), Nigeria and Zimbabwe). These are encouraging examples, yet the majority of national laws don't include many (or any) provisions that recognize or aim to support farmer-led seed systems. Also, few regional agreements include or support any of the exemptions/special treatment that we see in some national laws, and since those agreements are one of the main driving forces in the next generation of national seed law development, they represent lost opportunities to promote seed system integration. As a result, any such accommodations in national law will be purely voluntary efforts at national levels, without the benefit of encouragement from the actors supporting regionalization. Recognition and support for the benefits and needs of farmer-led seed systems seems to be growing. Seed policies, which are often more recent than the seed laws in respective countries, include more recognition for farmer-led seed systems than the seed laws themselves. Still, most laws and regulations require revision in order to represent all seed systems in all diverse aspects. While allowing for the benefits of a free market seed system, the legal framework should take into consideration local/smallholder needs and livelihoods (Otieno et al., 2016).

Seed Fair at Chikankata Zambia, August 2015

Photo: Gloria Otieno, Bioversity International

References

African Union Commission (2013) *Second Communique on Integrated Seed Sector Development,* available at https://www.au.int/en/newsevents/27104/second-communiqu%C3%A9-integrated-seed-sector-development, accessed 22 February 2017.

De Jonge, B., Halewood, M., Mushita, A., Wafula, D., Mukuka, J. [Thematic working group 3] (2015) *Thematic scoping paper: matching global commitments with national realities.* ISSD Africa.

Dube, P. and Mujaju, C. (2013) 'A simplified technical guide for seed certification procedures for some crops of commercial importance in Zimbabwe', *Advanced Journal of Agricultural Research,* 1(006), pp. 95-104.

FAO (2015) *Draft guide for national seed policy formulation.* FAO Commission on Genetic Resources for Food and Agriculture, fifteenth session, Rome, 19-23 January 2015. Rome: FAO. Available at: http://www.fao.org/3/a-mm546e.pdf, accessed 22 February 2017.

FAO (2006) 'Quality declared seed', *FAO plant production and protection paper,* 185, pp. 13. ISBN 92-5-105510-6. Available at http://www.fao.org/docrep/009/a0503e/a0503e00.htm, accessed 24 February 2017.

Gisselquist, D., Pray, C., Nagarajan, L., Spielman, D. (2013) 'An obstacle to Africa's green revolution: too few new varieties, *SSRN's Working Paper Series.* Available at http://ssrn.com/abstract=2263042, accessed 24 February 2017.

ISSD Africa [thematic working group 3] (2017) *How can national and regional seed laws promote the development of a robust, integrated seed sector that supports smallholder farmers' needs?* Wageningen: Centre for Development Innovation, Wageningen University and Research.

Kuhlmann, K. and Zhou, Y. (2016) Working paper. *Seed policy harmonization in ECOWAS: the case of Ghana.* Syngenta Foundation for Sustainable Agriculture (SFSA). Available at https://www.syngentafoundation.org/file/2456/download?token=FF8vGmmd, accessed 22 February 2017.

La Via Campesina and GRAIN (2015) *Seed laws that criminalise farmers: resistance and fightback*. Available at https://www.grain.org/article/entries/5142-seed-laws-that-criminalise-farmers-resistance-and-fightback, accessed 22 February 2017.

Louwaars, N. (2005) *Biases and bottlenecks. Time to reform the South's inherited seed laws?* Grain. Available at https://www.grain.org/article/entries/473-seed-laws-biases-and-bottlenecks, accessed 22 February 2017.

Mukuka, J. (2014) *COMESA Seed harmonization implementation plan (COM-SHIP)*. A COMESA 2014-2020 strategy to implement COMESA seed trade harmonization regulations leading to increased seed production, reliability, trade and competitiveness of the seed industry in the COMESA region. Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA); COMESA. https://d3n8a8pro7vhmx.cloudfront.net/eatradehub/pages/520/attachments/original/1429604562/COMESA_Seed_Harmonisation_Implementation_Plan_(COM-SHIP)__JULY-2014.pdf?1429604562, accessed 22 February 2017.

Otieno, G., Reynolds, T.W., Lopez Noriega, I., Karasapan, A. and Currier, A. (2016) *Implication of seed policies for on-farm agro-biodiversity and food security in Ethiopia and Uganda.* XX Conference of the International Consortium on Applied Bioeconomy Research (ICABR), 26-29 June 2016, Ravello, Italy. Available at https://www.conftool.com/icabr2016/index.php?page=browseSessions&cols=0&form_session=97&letter=M&mode=table&presentations=show&type=sessions, accessed 28 February 2017.

Visser, B. (2015) *A summary of the impact of national seed legislation on the functioning of small-scale farmers' seed systems in Peru, Vietnam and Zimbabwe*, International Fund for Agricultural Development (IFAD)-Oxfam programme "Putting Lessons into Practice: Scaling up Peoples Biodiversity Management for Food Security". Available at http://www.sdhsprogram.org/assets/wbb-publications/90/IFAD_excerpt_seedlaw_study_4%20january.pdf, accessed 27 February 2017.

USAID (2016) *Southern Africa regional seed sector assessment*. Feed the Future Enabling Environment for Food Security Project, United States Agency for International Development (USAID). Available at https://www.fintrac.com/sites/default/files/SARSSAssessmentReportFinal_public.pdf, accessed 20 March 2017.

Annex 1. List of seed legislation (policies, laws and regulations) of African countries acquired for this study

Algéria
Loi n°87-17, 1er Août 1987
Décret exécutif n°92-133, 28 mars 1992
Loi 05-03, 06 Février 2005

Angola
Lei n. 7/05
Decreto n. 15/95
Decreto executivo conjunto n5/95

Bénin
Décret N°87-302, 28 Septembre 1987
Catalogue béninois des espèces et variétés végétales (CaBEV), Septembre 2011
Rapport sur l'atelier national de validation du document actualisé de politique semencière nationale du Bénin, 25 Février 2015

Botswana
The Seeds Certification Act, 1976, Chapter 35:07

Burkina Faso
Loi n°010-2006/AN, 31 mars 2006

Burundi
Loi n°1/07, 19 Mai 2009
Décret-Loi n°1/033, 30 Juin 1993
Loi 1/08, 23 Avril 2012

Cote d'Ivoire
Decree N°92-32 of July 1, 1992

Cameroun
Loi n° 2001/014, 23 Juillet 2001
DECRET N° 2005/153, 4 Mai 2005

DRC
Avant-projet de loi sur l'activité semencière mit à jour, 27 Décembre 2015
Loi n° 11/022, 24 décembre 2011

Ethiopia
Seed Proclamation No. 782/2013
Council of Ministers Seed Regulations No. 375/2016
Ethiopian Seed Council of Ministers Regulations No. 16/1997

Gabon
Ordonnance n°004/PR/2009 du 16 juillet 2009
Décret n°0294/PR/MAEPDR du 30 juin 2010

Ghana
National Seed Policy, 2013
Plants and Fertilizer Act, 2010
Seeds (certification and standards) Regulations
Arrangement of Regulations, 2014

Kenya
The Seeds and Plant Varieties (Amendment) Bill, 2015
The Seeds and Plant Varieties (Amendment) Act, 2011
The Seeds and Plant Varieties Act, 1975, Chapter 326
The Seeds and Plant Varieties (Seeds) Regulations, 1991
The Seeds and Plant Varieties (National Performance Trials) Regulations, 2009

Malawi
Draft Seed Act, 2013
Seed Act, 1996 (Act No. 9 of 1996) Amended

Mauritius
Seeds Act, 2013

Madagascar
Loi n° 94-038, 28 Décembre 1994
Décret N°2010-0958, 30 Novembre 2010
Décret N°2010-1010, 14 Décembre 2010
Décret N° 2010-1009, 14 Décembre 2010
Décret : N° 2006-618, 22 Août 2006

Mali
Loi n°95-052, 05 Mai 1995
Décret n°10-428/P-RM, 09 Août 2010
Politique semencière du Mali, 2010
Rapport sur l'état des lieux du cadre normatif et institutionnel du système semencier et de la place des semences paysannes et des droits des agriculteurs au Mali, Juin 2016

Mauritanie
Loi n° 96-025, 08 Juillet 1996

Maroc
Arrêté n° 863-75, 22 Septembre 1977
Décret n°1-69-169, 25 Juillet 1969
Décret n° 1-72-472, 19 Septembre 1977 modifiant le Décret n°1-69-169, 25 Juillet 1969
Arrêté n° 864-76, 22 Septembre 1977
Décret n° 1-96-255, 21 Janvier 1977

Niger
Décret n° 90-55/PRN/MAG/EL, 1er Février 1990
Politique semencière nationale, Décembre 2012

Nigeria
National Agricultural Seeds Decree, 1992

Rwanda
Draft Law governing seeds and plant varieties in Rwanda, 2016
Ministerial order No001/11.30 of 18/08/2010 appointing the Variety Release Committee
Ministerial order No003/11.30 of 18/08/2010 setting forth condition required for marketing quality seeds
Ministerial order No002/11.30 of 18/08/2010 determining regulations on quality seeds production and control of seeds produced and marketed

Sénégal
Loi n° 94.81, 23 Décembre 1994
Décret n° 97-602, 17 Juin 1997
Décret n° 97-616, 17 Juin 1997
Décret n° 97.603, 17 Juin 1997

South Africa
Draft Plant Improvement Bill, 2015
Plant Improvement Act No. 53 of 1976
Regulation relating to establishments, varieties, plants and propagating material

South Sudan
The Republic of South Sudan Draft Seed Policy, 2013

Swaziland
National Seed Policy Swaziland
The Seeds and Plant Varieties Act, 2000

Tanzania
The Seeds Act, 2003
The Seeds Regulations, 2006
The Seeds Regulations, 1976

Tunisie
Loi n° 99-42, 10 Mai 1999
Loi n° 2000-66, 03 Juillet 2000 modifiant Loi n° 99-42, 10 Mai 1999
Décret n° 2000-102, 18 Janvier 2000
Décret n° 2004-2322, 27 Septembre 2004 modifiant
Décret n° 2000-102, 18 Janvier 2000
Décret n° 2000-101, 18 Janvier 2000
Décret n° 2002-621 du 19 Mars 2002 modifiant Décret n° 2000-101, 18 Janvier 2000

Tchad
Projet d'appui à la formulation de la politique semencière nationale, 03 Février 2014 ; Code TCP/CHD/3403 ;
Url : www.fao.org/tchad/fr/

Uganda
Draft National Seed Policy, 2014
Seeds and Plant Act, 2006

Zambia
National Seed Industry Policy of Zambia, 1999
The Plant Variety and Seeds Act (as amended by Act No.21 of 1995)
Agriculture (Seeds) Act, 1968
Plant Variety and Seeds Regulations, 1997

Zimbabwe
The Seeds Act, 1971, Chapter 19:13

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ISSD Africa is a community of practice that unites African seed experts, seed programmes and associated organizations, and which aims to increase farmers' access to quality seed through the development of a market-oriented, pluralistic and vibrant seed sector in Africa.

The ISSD approach is a farmer-focused and demand-driven seed sector development approach, which caters for the diversity of seed demands. Through this approach interventions are designed that are tailored to specific crops, value chains and seed systems. It is a seed sector-wide and inclusive approach.

ISSD Africa is coordinated by a consortium of Wageningen Centre of Development Innovation (CDI) of Wageningen University & Research, the Royal Tropical Institute (KIT), the Future Agricultures Consortium and Tegemeo Institute of Agricultural Policy and Development in Nairobi Kenya.

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