



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



## Southern Africa Regional Seed Sector Assessment January 2016

FEED THE FUTURE ENABLING ENVIRONMENT FOR FOOD SECURITY PROJECT



**USAID**  
FROM THE AMERICAN PEOPLE

Contents

<b>ACRONYMS</b> .....	<b>I</b>
<b>INTRODUCTION</b> .....	<b>I</b>
<b>BACKGROUND ON SADC HARMONIZATION EFFORTS</b> .....	<b>2</b>
KEY REGIONAL IMPLEMENTATION HURDLES FOR THE SADC HSR .....	5
<b>SUMMARY OF MEETING NOTES BY COUNTRY</b> .....	<b>8</b>
SOUTH AFRICA .....	8
ZIMBABWE .....	9
ZAMBIA.....	10
MOZAMBIQUE.....	11
MALAWI .....	13
<b>SARSS COUNTRY-LEVEL MARKET AND REGULATORY OVERVIEW</b> .....	<b>15</b>
MALAWI .....	15
MOZAMBIQUE.....	16
SOUTH AFRICA.....	17
ZAMBIA.....	18
ZIMBABWE.....	19
<b>RECOMMENDATIONS</b> .....	<b>21</b>
<b>ANNEX 1: REGIONAL SEED HARMONIZATION INITIATIVES &amp; PROJECTS</b> ..	<b>A1</b>
SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC) HARMONIZED SEED REGULATIONS (HSRS).....	A1
COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA) HARMONIZED SEED REGULATIONS.....	A2
TRIPARTITE FREE TRADE AREA AGREEMENT .....	A2
OTHER RELEVANT REGIONAL PROGRAMS .....	A2
NEW ALLIANCE FOR FOOD SECURITY AND NUTRITION.....	A4
<b>ANNEX 2: CONTACT LIST</b> .....	<b>A5</b>
<b>ANNEX 3: LITERATURE REVIEW</b> .....	<b>A6</b>
<b>ANNEX 4: TRAVEL ITINERARY</b> .....	<b>A7</b>

## ACRONYMS

ACTESA	Alliance for Commodity Trace in Eastern and Southern Africa
AFSTA	African Seed Trade Association
ASSMAG	Association of Smallholder Seed Multiplication Action Group
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Centre for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Centre
COMESA	Common Market for Eastern and Southern Africa
COMSHIP	COMESA Seed Harmonization Implementation Plan
DUS	Distinctiveness, Uniformity, Stability
EAC	East Africa Community
EGS	Early Generation Seed
EU	European Union
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
HaSSP	Harmonized Seed Security Project
HSR	Harmonized Seed Regulation
IIAM	Instituto de Investigaçao Agraria de Moçambique
ISTA	International Seed Testing Association
MS	Member State
NPPO	National Plant Protection Office
NSA	National Seed Authority
OECD	Organization for Economic Co-operation and Development
SADC	Southern Africa Development Community
SANSOR	South African National Seed organization
SSC	SADC Seed Committee
TFTA	Tripartite Free Trade Area agreement
UPOV	Union for the Protection of New Plant Varieties
USAID	United States Agency for International Development
VCU	Value for Cultivation and Use
FANR	Food Agriculture and Natural Resources Directorate

## INTRODUCTION

The Feed the Future Enabling Environment for Food Security program (EEFS) is a blanket purchase agreement designed to support USAID Missions and USAID/Washington with targeted approaches for diagnosing and addressing enabling environment factors that affect food security outcomes. Under the first call order of this mechanism, a team of seed sector experts conducted a rapid analysis of the Southern African Regional Seed Sector (SARSS) on behalf of the USAID Southern Africa Regional Mission and USAID's Bureau for Food Security. This study intended to document findings regarding the relevant laws and institutions that govern the seed sector to better understand the status of compliance with regional seed harmonization efforts in the Southern Africa Development Community (SADC), and to provide actionable recommendations to support more effective implementation of regional commitments.

The assessment took place between November 9 and December 4, 2015 and covered interviews with stakeholders from the public sector, private sector, and civil society throughout South Africa, Zimbabwe, Zambia, Mozambique, and Malawi. Desk study supplemented country travel and interviews.

The SARSS assessment team was led by Mr. Edo Lin (lead consultant), and was supported by consultants from countries in the Southern Africa region, including Pine Pienaar (South Africa and Mozambique), Vincent Gwarazimba (Zimbabwe and Malawi), and Thomson Kalinda (Zambia).

This report is structured as follows:

1. Background information on the SADC Harmonized Seed Regulation process, existing regional commitments, and the current status of implementation;
2. A summary of observations from interviews with stakeholders from the public and private sector
3. A country-by-country assessment utilizing a modified SeedCLIR framework to capture the status of national-level commitments implicated by the SADC Harmonized Seed Regulations (HSR); and then
4. Actionable recommendations for strengthening the legal and regulatory framework to help stand up the SADC HSR system.

A summary of regional harmonization initiatives and programs, a list of people consulted, literature reviewed, and the travel itinerary are provided as annexes to this report.

## BACKGROUND ON SADC HARMONIZATION EFFORTS

Regionalization of seed markets is a critical step in the evolution toward more efficient food production systems in southern Africa. National seed markets are fragmented and even the most sophisticated seed markets are too small to attract the attention of large-scale private sector investment. Small national variations among regulations regarding variety release, seed certification and quality control, and quarantine and phytosanitary regulations lead to increased transaction costs and duplicative procedures, which together raise the cost and increase the time required to get seeds to farmers. Regional harmonization would likely encourage trade among member states (MS) in seed and planting materials, thereby giving farmers a wider choice of improved seed and planting materials.

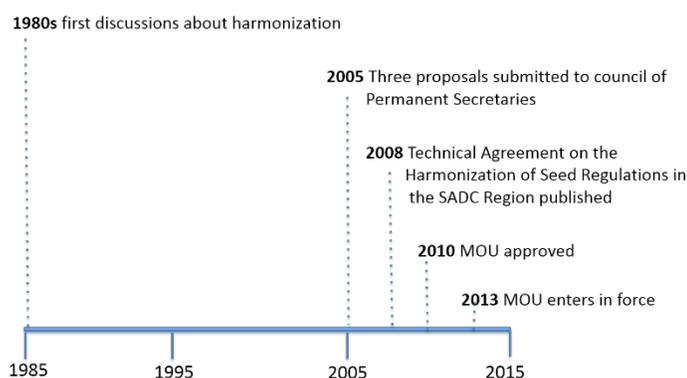
The overall benefit will be increased investments in variety development, increased seed production, farmer access to a wider choice of varieties, and increased competition. For the region these reforms offer an important step fully within the control of governments that can contribute to seed and food security, and thus support the overarching goal of poverty and hunger alleviation (SADC, 2008). By breaking down process and regulatory barriers to increased trade in seeds – the promise of effective regional harmonization – governments also put themselves on a path toward meeting commitments of trebling cross-border agricultural trade by 2025 pursuant to commitments established under the Malabo Declaration. Despite arguments in favor of regional seed market efficiencies, the path toward a functioning regional seed market in southern Africa has been slow and circuitous without a clear future aim.

**SADC reforms: lengthy discussions, slow implementation.** Discussions on seed harmonization in the SADC region go back to the late 1980s, although momentum for reform did not pick up in earnest until 2005. Through extensive technical and policy consultations with MS, three proposals were submitted to a meeting of member state permanent secretaries of agriculture in Maputo, Mozambique on December 7-8, 2005. The three proposals were: 1) the SADC variety testing, registration and release system; 2) the SADC seed certification and quality assurance system; and 3) the SADC quarantine and phytosanitary measures collectively form SADC HSR.

In February 2010 the SADC Ministers of Agriculture approved the Memorandum of Understanding (MOU) for the implementation of the SADC HSR, which was initially signed by five MS. However, for the MOU to become a binding treaty obligation, a super-majority comprising two-thirds of the MS must ratify an MOU; this was achieved in June 2013.

The SADC HSR system does not create duplicative SADC-regional seed certifying bodies at the national level, but rather utilizes existing national seed regulatory bodies in each MS. Further, regional rules promulgated under SADC do not take immediate effect within each MS; each MS must undertake the process of amending any non-compliant laws or regulations for SADC rules to become law, a process known commonly as domestication. In practice, this means that regulatory alignment is a necessary precondition before full implementation of the SADC HSR can take effect.

**Figure 1: SADC HSR Timeline**



The Food, Agriculture and Natural Resources Policy Network (FANRPAN) through its Harmonized Seed Security Project (HaSSP) made a four-year effort to assist Malawi, Swaziland, Zambia, and Zimbabwe to domesticate and operationalize their national seed legislation and regulations in line with the SADC Technical agreements. At the end of the project in 2014 the objectives were reached only partially with the new seed act in Malawi. In Zambia, a constitutional crisis has precluded the seed act from reaching parliament for debate and final vote. In Zimbabwe, a political deadlock occurred on whether to promulgate new regulations consistent with the SADC HSR, which is unsurprising considering that Zimbabwe has not yet ratified the relevant MOU.<sup>1</sup>

**Political economy: an unclear coalition.** Within the SADC community, domestication is not a clear, linear process “where national governments alter regulations by the simple stroke of a pen.” (CLAR, 2012) Rather, many factors of economic, political, social and legal nature influence this process because any proposal for regulatory reform brings concerns about threats to national priorities, loss of sovereignty, changes in institutional responsibilities, and the need for additional resources (CLAR, 2012).

Changes that affect the regulatory framework necessarily shift incentives and power dynamics among existing sector participants – sometimes known as entrenched interest groups - who have created viable processes to successfully navigate the existing seed regulatory system. Numerous seed sector stakeholders, primarily breeders and representatives of national seed regulatory bodies, articulated concerns that harmonization of seed regulations will directly and negatively affect workload, source of income, or power of decision making. An illustrative example is Malawi where despite vocalizing support for the abstract notion of regional harmonization, seed authorities insist on reserving the right to have varieties tested in-country for an additional year, ostensibly to protect Malawian farmers.

One respondent rightly pointed out that harmonization will involve only a small segment of the seed value chain and that variety development and registration and seed certification and quality assurance will still be a major task for the existing structures for the development of their respective national seed markets. Stakeholders offered up conflicting perceptions regarding the beneficiaries of regional harmonization: big multinational companies or smaller national seed companies. Generally, small seed companies supported harmonization efforts, yet also expressed a fear of being overwhelmed by big multinational seed companies with greater operational efficiencies, existing market share, and economies of scale in seed production. By contrast, large multinational seed companies indicated that regional harmonization would benefit the small companies in equal measures by reducing the costs associated with market entry for products in markets already served by the multinational players.

In practice, while smaller national seed companies talk optimistically about expanding market opportunities after full harmonization, these firms are often not well placed for export of their seed. Preferential treatment of domestic, small-scale seed companies reduces competitive pressures, which lead to less efficient operations for small, national seed companies in the region. For instance in Zambia small national seed companies rely heavily on the government-subsidized farm input scheme and would find it difficult to compete and survive without this assistance. Additionally, smaller-scale seed companies in the region often do not have the capacity to adequately scale up operations to address existing demand within national markets, let alone expanding into higher-risk regional export markets. The Association of Smallholder Seed Producers (ASSMAG) in Malawi favors expanding markets but currently produces only 800 metric tons (MT) of Open Pollinated Maize Varieties (OPV) and legumes, which is hardly enough to supply domestic demands.

---

<sup>1</sup> Notably, the SADC HSR does not need to be ratified by the government of Zimbabwe to take effect; as noted above, the SADC HSR has achieved the two-thirds supermajority of MS votes to become valid law within the SADC. Further, Zimbabwe is under no obligation to sign the SADC HSR MOU, as Zimbabwe may now simply accede to the SADC HSR since the MOU has become a binding obligation within the SADC. Nonetheless, Zimbabwe’s failure to sign the SADC HSR MOU is perceived as a symbolic gesture within the region.

From what information is presently available, it is clear that harmonized seed regulations throughout the SADC region will have direct benefits for larger, multinational companies by reducing transaction costs. While no reliable data exists from publicly-available sources, it was reported among the largest regional seed companies that intra-firm trade accounted for a significant proportion of formal cross-border seed trade among the largest producers.<sup>2</sup> between SADC countries where firms have subsidiaries or associated firms.. For example, Monsanto, Pannar, and Seed Co shift large quantities of seed between production centers and regional markets through intra-firm cross-border trading. While it is unclear whether SADC HSR will have meaningful impact in the short-term on the quantity of intra-firm trading that exists, it is likely that SADC HSR will open up trading with SADC countries where the largest firms have no existing subsidiaries or associates. Further, should seed regulation fall within the definition of the Tripartite Free Trade Agreement (TFTA) commitments negotiated between COMESA, the EAC, and SADC, then COMESA HSR and the SADC HSR will further broaden the geographic access for the largest seed companies.

Smaller seed companies that have traditionally focused on national rather than regional distribution models will likely maintain a different competitive position, especially if they do not have access to proprietary germplasm (whether their own breeding program or access to exclusive licensing of public varieties). One strategy that smaller firms may become exclusive agents for the larger companies for regionally listed varieties and continue to develop the market for “minor” crops (small grain cereals, legumes, etc.). This would follow a pattern of consolidation similar to what has happened in the USA and Europe.

**Current level of trade between and from SADC countries.** There are currently few reliable statistics on trade in seed and planting materials between SADC countries or from SADC countries to non-SADC countries. Customs data do not differentiate between grain and seed, and where available, the data conflicts wildly.<sup>3</sup> Hybrid maize seed accounts for a large portion of cross-border seed trade.

The value and volume of improved seed in the region is dominated by a limited number of large, multinational seed companies. For instance in Zambia, Seed Co and Pannar account for 65% of all improved seed production. Together with Zamseed and MRI/Syngenta these four companies account for 85-90% of all improved seed production.<sup>4</sup> There is anecdotal evidence of trade across SADC borders of other seeds but no data are available as these transactions are mostly informal among smaller firms.<sup>5</sup>

---

<sup>2</sup> In one interview, a representative from one of the three largest regional seed companies noted that longer-term impacts

<sup>3</sup> For instance the Customs bureau in Mozambique reported in 2009 the importation of 90.5 MT of seed while other sources reported 1,469 MT (WB Agribusiness Indicators: Mozambique, 2012)

<sup>4</sup> WB Agribusiness Indicators: Zambia, 2012.

<sup>5</sup> Respondents in Zambia described a high prevalence of informal cross-border seed trade and the role that input subsidy schemes play in creating price arbitrage opportunities, particularly along the border with Malawi. However, little reliable data exists on informal cross-border seed trades.

## KEY REGIONAL IMPLEMENTATION HURDLES FOR THE SADC HSR

Commitment	Responsible body	Status & Notes
SADC Seed Committee established and meets twice a year.	FANR Directorate	<b>Pending.</b> Responsibility for foundation of committee is unclear.
Regional Variety Catalogue.	Seed Centre.	<b>Operational.</b>
Existing varieties included in Regional Variety Database.	Seed Centre	<b>Pending.</b> Inadequate staffing & funding.
Regional Variety Database available	Seed Centre	<b>Pending.</b>
Register of seed inspectors, seed samplers and seed analysts	Seed Centre	<b>Pending.</b> Requires instructions to NSAs.
Register of licensed seed labs	Seed Centre	<b>Pending.</b>
Guidelines for DUS and VCU testing	Seed Committee	<b>Pending.</b> Seed Committee must be formed.
Develop crop specific requirements for certification and quality assurance system	Seed Committee	<b>Pending.</b> Seed Committee must be formed.
Develop audit guidelines for certification and quality assurance system	Seed Committee	<b>Pending.</b> Seed Committee must be formed.
Qualification criteria and training requirements for seed inspectors, samplers and analysts	Seed Committee	<b>Pending.</b> Seed Committee must be formed.
Establish two rationalized pest lists	Seed Centre; NPPOs	<b>Operational.</b> Requires routine update
Register of national seed laws and regulations; other key documents.	Seed Centre	<b>Pending.</b>

**Establishment of regional institutions.** The necessary instruments for harmonization are in place (MOU on the implementation of the SADC Technical Agreements on Harmonization, regional variety catalogue, and the SADC Seed Centre), but many practical steps have not yet been taken to launch a harmonized system.

The **SADC Seed Centre** plays a facilitating role in the HSR implementation. It administers the regional variety catalogue; the regional variety database; a register of all authorized and qualified seed inspectors; seed samplers and seed analysts in the SADC region; a database of all accredited seed laboratories; and a register of all national seed laws and regulations. Of all these duties, only the regional variety catalogue has been set up and contains nine maize hybrids submitted by the private sector.<sup>6</sup>

In principle, the breeder, through the National Seed Authorities (NSAs), applies for inclusion in the regional variety catalogue, and then the Seed Centre verifies the application; if the variety is eligible it notifies all MS for verification. On paper, MS need to give their opinion within 30 days of notification by electronic approval. In practice, the first nine hybrids were notified in November 2014 but full verification by all MS is still pending.<sup>7</sup>

At the moment, an interim coordinator runs the SADC Seed Centre without staff or funding, and faces extraordinary limitations on the capacity to execute the mandate of the SADC Seed Centre. An absent SADC Seed Committee (SSC) to support the functioning of the Centre seriously compromises effective functioning. The upcoming USAID/HSR project, which will be based at the SADC Seed Centre, will hopefully provide increased staff and funding. The interim coordinator sees as priority tasks the

<sup>6</sup> According to the interim coordinator 12 applications were received but only 9 were approved. The web-based catalogue needs to be adjusted accordingly.

<sup>7</sup> The reasons why approval of all MS has not been received are unclear; it might be the lack of capacity in some MS to evaluate the approval procedure. We therefore recommend that in the future, only those MS directly affected by the inclusion of a variety in the regional variety catalogue should be consulted.

preparation of an inventory at national levels to benchmark implementation by the different key authorities (National Plant Protection Offices (NPPO), Seed Services, accredited seed inspectors/laboratories etc.).

Although the SADC Seed Centre was established per the agreements, without adequate staffing the center cannot sufficiently implement its core functions. The SSC on the other hand has yet to be established. Members have still not agreed on fees payable for registration and maintenance. The regional variety database has been established in principle and the first nine maize hybrids from the private sector are listed. However, the verification process by all MS has not yet been completed. The regional variety database has not been established nor the database of official and accredited seed inspectors. No concrete recommendations have been made toward self-financing the system. The SADC harmonization system is still operating in a donor project mode and will continue to need donor funding even if and when a fee paying structure is in place.

The implementation schedule envisioned in the 2008 Technical Agreements has not been achieved. As originally planned, the introduction and implementation phase was to occur from 2008-2010. An SSC would coordinate the introduction and operationalization of the system and be a technical backstop to the NSAs. Also during this phase, opportunities for self-financing would be studied and the SADC Seed Centre would facilitate the system. The last phase, scheduled for 2011-2012, would have seen consolidation and revenue generation.

The SSC plays a key role in the implementation of the SADC HSR system. Not only does the SSC provide technical backstop services, the SSC is also tasked with leading the development of implementation instruments, such as guidelines for Distinctiveness, Uniformity, Stability (DUS) and Value for Cultivation and Use (VCU) testing; and developing requirements for seed inspectors, seed samplers and seed analysts, etc.

**Registration of public varieties.** Another recurrent theme across all countries in the region is the position of varieties developed by the public sector and how to include them in the regional variety catalogue. The Consultative Group of International Agricultural Research (CGIAR) centres, such as the International Maize and Wheat Improvement Centre (CIMMYT), International Centre for Tropical Agriculture (CIAT), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), develops the majority of public varieties. The respective National Agricultural Research Institutes (NARIs) then evaluate these varieties, and if they find them suitable then the varieties are registered and released under the NARI authority. Based on these producers, the de facto owner of the variety is vague and therefore it is unclear who could apply for inclusion on the regional variety catalogue (and pay for the application and maintenance fees). Also, the same variety may be registered in multiple countries under the same or different denomination, which makes bilateral trade possible without having been registered on the regional variety catalogue. Public good varieties, especially of small grain cereals (millets and sorghum), legumes (cow peas, pigeon peas, soybean, Bambara nuts, etc.) and root and tuber crops are key to regional food security and are often not of commercial interest to large multinational seed companies. It is therefore urgent to identify which varieties are registered where and by whom and assess the need for inclusion in the regional variety catalogue. The CGIAR system should at the same time consider exclusive licensing to the private sector under its own Intellectual Asset Policy.<sup>8 9</sup>

**Communication gaps.** Communication poses a key issue for implementing harmonized seed regulations. Broad failure in stakeholder engagement was widely cited as a critical limitation in the development phase of the SADC HSR system. The SARSS assessment noticed important communication gaps. For example, the South Africa National Seed Organization (SANSOR) mentioned that their associated seed companies did not know where and how to apply for regional listing. In Zambia, the

---

<sup>8</sup> CIMMYT is currently the only CGIAR Centre that does exclusive licensing to private sector seed companies of maize hybrids.

<sup>9</sup> The CGIAR published in 2012 the Principles on the Management of Intellectual Assets (for a summary see [www.tinyurl.com/p5rd5ag](http://www.tinyurl.com/p5rd5ag)).

Director Advisory Services (Extension) had no knowledge of the system; further, in most of the countries visited, the Customs and Excise departments have been absent in discussions or workshops.

**Marginalized groups/voice/dialogue.** The role of civil society organizations (CSOs) and the issue of farmers' rights arose repeatedly throughout this assessment. The rapid assessment timetable limited the opportunity for the SARSS team to engage with CSOs. Nevertheless, public and private sector meetings across the region repeatedly noted that farmers' rights to save, sell, or barter seed of local varieties may be a severely underestimated political dynamic at play within the SADC HSR domestication process, and may play a significant role in the political dialogue. Experience from West Africa has shown that the voice of civil society is becoming more vocal, and in the SADC region these voices are likely to become stronger as the SADC moves forward to implement harmonized Plant Breeders Rights (PBR).<sup>10</sup>

**SADC, COMESA, and the TFTA.** Although the first consensus on seed harmonization within the SADC region was reached in 2005, full implementation is still a long way off. **COMESA** started work on the harmonization of seed regulations in 2008 and has made big strides in its implementation.<sup>11</sup> Under the COMESA treaty, the Council of Ministers can create regulations that become legally binding on MS. MS must still gazette their national laws and regulations, but do not have a lot of leeway to divert from the regulation adopted by the ministers. Because COMESA took the SADC Technical Agreement as a basis for its own regional harmonization document, the two systems exhibit few technical differences. The COMESA Seed Harmonization Implementation Plan (COMSHIP), implemented by the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), a specialized agency of COMESA, seems to be on schedule with implementation. Several SADC countries, including Malawi and Zambia are also COMESA MS. Although difficult to delineate exactly what dual membership implies, the forthcoming USAID/HSR project should consider that COMESA might overtake SADC in harmonization.

The **TFTA** was signed in June 2015 and includes three Regional Economic Communities (RECs): SADC, COMESA, and the EAC; these three combine 29 countries with a total population of 625 million. Each of the RECs have their own seed harmonization system. Although the TFTA documents do not specifically mention seed, sanitary and phytosanitary measures are mentioned as targets for harmonization. It is too early to tell how the TFTA will affect regional seed regulation harmonization, but it will greatly influence the trade and dissemination of seed and related inputs in the enlarged free trading bloc.

**Lack of capacity for advocacy.** In general there seems a lack of advocacy at the highest ministerial and permanent secretary level throughout the southern Africa region. Ministers of agriculture are political appointees that routinely change after elections and often do not have a technical background. National seed trade associations are best placed to intensify advocacy and lobbying at the higher levels, and the upcoming USAID/HSR project could play a role in capacity building for advocacy, development of explanatory notes and fact sheets, and possibly the creation of a regional seed trade association.

---

<sup>10</sup> See for instance: Plant Variety Protection in SSA: Balancing Commercial and Smallholder Farmer's Interests. De Jonge, B. Journal of Politics and Law. Vol 7 No3:2014. This article cites that over 80 CSOs have criticized the draft Protocol for the Protection of New Plant Varieties (Plant Breeder Rights) in the SADC region. See also: Towards a balanced *sui generis* Plant Variety Protection Regime. UNDP, 2008. The latter document suggests other *sui generis* regimes for plant variety protection that Plant Breeder Rights under UPOV 1991.

<sup>11</sup> The COMESA regional variety catalogue was officially launched in a series of national workshops in November 2015.

# SUMMARY OF MEETING NOTES BY COUNTRY

## SOUTH AFRICA

The SARSS mission started in South Africa on November 9, 2015 with a briefing at the USAID regional mission in Pretoria. Meetings were held with SANSOR, the Potato Certification Service, the Registrar of the Plant Improvement Act of the Ministry of Agriculture Forestry and Fisheries, FANRPAN, Premier Seed, and Hygrotech.

South Africa does not appear to require any further support to align its Seed Act and regulations with the SADC Technical Agreement. Regarding standards for quality assurance, South Africa meets or exceeds SADC standards. The key distinction between the SADC HSR and the existing seed legislation governing the seed sector in South Africa is that South Africa does not require any VCU test, which makes variety registration and release a formality once DUS criteria have been met.

Discussions with the Potato Certification Service and other seed sector stakeholders in South Africa revealed an issue with harmonization of Quarantine and Phytosanitary Measures and the lack of capacity in other SADC countries to establish rigorous surveillance and identification systems to carry out pest risk analysis. The Potato Certification Service expressed the fear of inferior quality potatoes coming into the country and, for instance, the rapid spread of the tomato leaf miner *Tuta absoluta*.<sup>12</sup>

Both Premier Seed and Hygrotech are mainly vegetable seed companies that sell domestically but also re-export seed sourced in the Netherlands and Israel to other African countries. Both these businesses would favor harmonized Quarantine and Phytosanitary Measures. As an example, South Africa will only issue a phytosanitary certificate for tomato seed listing six pests while the Mozambican pest list has eight pests that need to be declared.

HaSSP, funded by the Swiss Agency for Development and Cooperation (SDC) and led by FANRPAN, was implemented in four countries (Zambia, Zimbabwe, Swaziland, and Malawi) intended to successfully domesticate and operationalize harmonized seed systems by its end in April 2013. The project aimed to ease the trade bottlenecks affecting movement of seeds across borders in the region so that poor smallholder farmers in these countries could have greater accessibility (availability and affordability) to higher quality seeds; consequently, staple food yields and household farm incomes would improve. Although these outcomes were not achieved, HaSSP did successfully assist in the domestication of the seed regulations in Malawi, Zambia, and Swaziland. In addition to harmonization work, HaSSP also trained farmer groups in seed production and facilitated the establishment of additional seed quality control facilities in Zimbabwe and Zambia. One assisted seed producer group in Zimbabwe (ZAKA Super Seeds) managed to export seed from Zimbabwe to Lesotho and Zambia. Now, the SDC has shifted away from seed issues and does not intend to follow up HaSSP. However, HaSSP has a legacy that could be useful to the upcoming USAID/HSR project. In particular, USAID/HSR could draw on the established FANRPAN country nodes (which included participation from the public sector, private sector, academia, and farmer organizations) and the training provided under HaSSP that was not completed during the project.

---

<sup>12</sup> *T. absoluta* originates from South America but was introduced through Spain into Sub-Saharan Africa with devastating consequences for tomato cultivation in Kenya and Tanzania. The insect has also been identified in Mozambique and Nigeria. *T. absoluta* potentially is also a threat to potato production.

## ZIMBABWE

Zimbabwe has traditionally been strong in seed production and a key exporter of seed to the region. Unfortunately, political and economic dynamics over the past two decades have changed the country from a net exporter to an importer of seed. However, the structures still exist to support a strong seed sector, such as Seed Services, Crop Breeding Institute (CBI), and private sector seed companies. Under the right conditions, Zimbabwe could play a vital role in the development of a regional seed sector. In addition to a wealth of relevant seed technologies for the region through national seed companies, Zimbabwe could also provide locally adapted, simple, and low-cost seed processing equipment.

Zimbabwe is one of five countries that have not yet signed the SADC MOU on the HSR. This delay seems to be mainly a political issue and none of the respondents interviewed know how to advance the issue. According to information gathered for this study, the matter was referred to the Ministry of Justice for advice on how to move forward. Because of certain restrictions, the assessment team did not meet with Ministry of Agriculture personnel outside the strictly technical areas.

The SARSS assessment team consulted the following entities: Ministry of Agriculture (Policy and Research Divisions), Seed Services, CBI, the German Technical Cooperation Agency (GTZ), the Food and Agriculture Organization (FAO), CIMMYT, Zimbabwe Seed Trade Association (ZSTA), Plant Protection Institute, Klein Karoo, Progene Seeds, and Seed Co/Prime Seeds. Although most respondents confirmed their support for the regional seed harmonization, we did get the impression that this is mainly so within the context of Zimbabwe exporting seed. Making seed imports easier was equated with giving away jobs and seems to be politically challenging.<sup>13</sup>

CIMMYT is quite outspoken and blames the slow process on politics and ignorance. Variety registration is not sufficiently harmonized. Registration in South Africa is easy but in Zambia, Zimbabwe, and Malawi registration still causes bottlenecks. CIMMYT runs multi-location trials across SADC countries that cover 150 locations and contain both public and private sector maize varieties. Trials with the same set of varieties are run over two seasons and give a wealth of data that could be used for registration purposes; however, the NSA does not consider this data as they insist on their own VCU trials for an additional two years. According to CIMMYT, if NSA would use the CIMMYT data, one year VCU/DUS testing would be more than sufficient. CIMMYT recently started to issue exclusive licenses on hybrids to private seed companies covering all SADC countries. Although CIMMYT trials are open to private sector varieties, the requirement to provide a GMO-free certificate and its associated costs (US\$150 per variety) prevent especially the smaller seed companies from participating.

The CBI breeds maize, small grain cereals, and legumes. Released varieties (hybrids) can be licensed to the private sector. Interested seed companies are requested to give a presentation on how they see the commercialization of the variety. When granted, royalties payable are 2.5 percent of gross sales plus the annual fee for maintenance on the variety list. The CBI has noticed that seed companies without their own breeding program prefer to license CIMMYT hybrids rather than those developed by CBI.<sup>14</sup>

Provision of breeder seed is not a problem if companies pay royalties due and order in advance. Seed companies are allowed to produce their own foundation seed. CBI faces problems covering off-station trials and continuous staff turnover.

The ZSTA surprisingly does not have its own secretariat but is run from the president's own office at Agriseed.<sup>15</sup> ZSTA has 22 members and has been in existence for over 25 years. According to ZSTA

<sup>13</sup> According to sources interviewed, import permits take on average one month and involve several departments.

<sup>14</sup> It is surprising that national agricultural research institutes such as CBI still devote in excess of 65 percent of available funding on maize breeding and try to compete with large multinational seed companies and CIMMYT. It would be better to divert the little funding available on crops less attractive for the private sector, such as small grain cereals and legumes.

<sup>15</sup> In Zimbabwe but also in Malawi, the fact that the Seed Trade Association's president is also manager of a seed company is seen as a problem and potential conflict of interest.

smaller companies will gain from harmonization while larger companies face more competition. Michael Jenrich (consultant for GIZ) echoed this sentiment and stated that larger seed companies are complicit in delaying the harmonization implementation in Zimbabwe and other countries. According to ZSTA, variety registration and release is a transparent process and professionally conducted, but seed certification by the National Seed Service is problematic because of transport challenges.

Based on interviews with private sector and civil society representatives, it is unclear the extent to which the seed sector in Zimbabwe sees participation in the SADC HSR system as a priority for seed sector development. While seed sector stakeholders in Zimbabwe are eager to utilize the benefits conferred by regional harmonization with respect to accessing new markets, numerous interviewees noted that they would be less eager to open up national markets for regional competition; a deeper analysis of the political economy for government, private sector, and civil society actors will be useful.<sup>16</sup>

## ZAMBIA

Zambia has made tremendous strides in developing its private seed sector over the past two decades. Major seed companies have installed offices and processing centres or have taken over local seed companies. The regulatory environment facilitates greater private sector investment, and Zambia leads the way in accrediting private sector seed inspectors and seed laboratories.

The SARSS assessment team visited and interviewed the SADC Seed Centre, the SADC Plant Genetic Resources Centre, the Zambian Seed Trade Association, private seed companies (Syngenta/MRI, Monsanto, Kamano, Zamseed), the Ministry of Agriculture, the Seed Control and Certification Institute (SCCI), the Plant Quarantine and Phytosanitary Services, the Indaba Agricultural Policy Research Institute, the Zambia Agricultural Research Institute, and ACTESA.

According to the Seed Trade Association of Zambia, the Ministry of Agriculture has approved the Technical Agreements on the HSR in the SADC region but the new regulations remain with the Ministry of Justice before they can be sent to the Parliament for approval. The Quarantine and Phytosanitary Measures are a statutory instrument and do not need full Parliament approval.

Variety registration is a transparent process with a clear fee structure. The Variety Release Committee (VRC) has 19 members drawn from the private sector, research centers, universities, and the Seed Control and Certification Service. The VRC meets at least twice a year. The meeting in February 2016 intends to register and release irrigated crops, and will follow up with a meeting in September to register and release dryland crops. The VRC is funded from fees levied on registered varieties and, according to our informants, is self-financing.

The SCCI has three technical sections:

1. **Variety testing, registration, and protection.** Varieties are tested for a minimum of two years in six locations (two locations for each agroecological zone). Cost: US\$125/variety/year/DUS+VCU. 90 percent of the newly-registered varieties come from the private sector. Zambia does not perform on-farm trials but depends on seed companies to supply on-farm data.
2. **Seed inspection and seed system development.** This section is responsible for the registration of seed growers, seed sellers, field inspections, etc.
3. **Seed testing section.** This service is highly decentralized with seven regional laboratories, 150 licensed seed inspectors from the private and NGO sector, and four private sector seed laboratories. Licensed inspectors receive a two-week training course and are monitored through random visits and bi-weekly reports. Licensed laboratories are audited annually.

<sup>16</sup> Because of certain restrictions, the assessment team could not interview Zimbabwe government officials other than those directly concerned with technical matters.

According to SCCI, the revised, aligned seed act is still with the Ministry of Justice while work on the enabling regulations is ongoing; everything should be finalized by the end of 2015. SCCI expressed that the harmonized system will not reduce jobs because the HSR will only affect a small part of the national seed systems while the bulk of the work still has to be carried out to satisfy the domestic markets.

Monsanto is upbeat about the HSR and believes that it will be good for small companies, and most importantly, should lead to increased competition that translates into better choices for farmers. They expressed their concern about the lack of incentives to develop especially legume crops. Another area of concern raised by several respondents is the general lack of awareness regarding the HSR at different levels, including the benefits proffered by the SADC HSR system and the procedural steps for how the system will work.<sup>17</sup>

Syngenta/MRI exports maize hybrid seed to Zimbabwe (200 MT), Malawi (300 MT), and Mozambique (100 MT); it also has registration trials in Tanzania and Kenya. With assistance from the USAID/South Africa Trade Hub they recently exported 2 MT of hybrid maize seed to Swaziland to test the HSR and the regional variety catalogue. Syngenta/MRI questioned the real benefits of the HSR apart from variety registration.

Kamano Seeds is a small national seed company mainly involved in small grain cereals, legumes, and OPV maize seed. They also develop and commercialize orange maize under the Harvest Plus program. Kamano is dependent on the government's Farm Input Supply Program and sells about 4,000 MT through this program. They have a small export activity to Angola and Malawi. Like a typical small national seed company, they find it difficult to register varieties in another SADC country to qualify for inclusion in the regional variety catalogue and are looking to the Zambia Agriculture Research Institute (ZARI) and CIMMYT for assistance.

As another complementary regional seed harmonization scheme, the COMESA Council of Ministers of Agriculture approved the HSR in April 2014. Under the COMESA Treaty, regulations issued by the Council of Ministers are binding on all MS. MS will still have to domesticate their national Seed Acts and Regulations but they do not have the leeway to change the contents and standards as under the SADC system. COMESA officially launched the regional variety catalogue in November 2015. COMESA developed an implementation plan, COMSHIP, which was approved by the Council Of Ministers. COMSHIP includes assistance to MS to align national seed policies, training, awareness creation, and monitoring of implementation with annual reports to the Council of Ministers. Regarding staffing, four new posts are being created (monitoring and evaluation, capacity building, administration, and training of seed inspectors and seed laboratories).

The Plant Quarantine and Phytosanitary Services stressed the importance of updating pest lists with the increased trade. However, not all SADC countries have the capacity to develop and update pest lists because of limited financial or human resources, or the ability to identify pests and do surveillance. HaSSP started a pest risk analysis but did not finish.

## MOZAMBIQUE

In Mozambique, the SARSS assessment team met with representatives of the private sector (Sementes de Moçambique (Mozambique Seeds Company, SEMOC), Pannar, Phoenix seed, Associação de Provedores de Sementes (National Seed Trade Association in Mozambique, APROSE)) and the public

---

<sup>17</sup> For instance SANSOR in South Africa would like information on the procedure for regional variety catalogue listing for South African breeders. The Director of Extension Service in Zambia had no knowledge about the SADC HSR even though extension workers will have to advise farmers on these new varieties. Custom & Excise personnel, especially those at the borders, need to be informed about the HSR and especially about the rationalized pest lists. One of our recommendations is therefore to move away from regional workshops/trainings to national workshops/trainings to reach a larger audience. Another of our recommendations is to clean up the text of the Technical Agreements and make these more widely available.

sector (Instituto de Investigaçao Agraria de Moçambique, (Agricultural Research Institute of Mozambique, IIAM), FAO, Phytosanitary Services, and Alliance for a Green Revolution in Africa (AGRA)). In general, the level of awareness throughout the seed sector concerning the SADC HSR seems lower than in the other countries visited.

APROSE came about from the National Seed Dialogue Platform launched in 2014 to ensure seed quality, on-time delivery to small-scale farmers, representation for seed companies on government policy issues, and discipline in the seed sector.

Over 40 seed companies in Mozambique are registered with the Mozambique Seed Trade Association, but not all are active. Manica and Nampula have the greatest concentration of seed companies, followed by Zambezia and Beira. An estimated 90,000 MT of seed is used in Mozambique each year, of which 10,000 MT are quality seeds of improved varieties.

One of the largest seed companies is the privately-owned firm SEMOC that produces maize seed (mainly OPV), sorghum, cow peas, beans, and pearl millet. Varieties are sourced from IIAM and no royalties are paid. SEMOC thinks seed harmonization will be beneficial as it allows knowledge sharing and quality control of imported seed. SEMOC is basically a national company with no intrinsic interest in the HSR system and only occasionally exports seed (e.g. to Angola).

The Seed Department of the Ministry of Agriculture is responsible for all seed-related regulatory activities, including the provision of import and export licenses. It operates three regional seed laboratories. The central laboratory in Maputo received several seed germination cabinets from FAO but none are in working order.<sup>18</sup> Several private sector seed companies complained about the lack of staff and the long delays in seed certification and seed testing results. The Seed Department itself pointed to equipment needs and staff training as key issues. The new Seed Act (decree 12/2013), aligned with the SADC HSR, is not yet available in an English version.

Pannar mentioned that variety testing takes three years and costs US\$2,300/variety/year, which is more expensive than other SADC countries.

In Mozambique, early generation seed (EGS) production represents a critical gap in accessing the seed for preferred crop varieties in timely fashion. EGS production is hampered by availability and capacity of breeders and agronomists. There is nothing to suggest that IIAM cannot provide quality seeds of improved varieties. More often there are on-farm infrastructure constraints (irrigation) and signaling failures from markets that hampers EGS production. The general consensus was that IIAM personnel are competent but not well connected to the seed industry.

Poor coordination and information asymmetry were recurring constraints throughout Mozambique's seed sector. Mozambique's seed industry suffers from coordination failures: there is very little planning. IIAM says that seed producers typically want EGS of specific varieties just before planting season with little or no prior notice of their demand. IIAM must spend one to two years multiplying their varieties with little or no forecasting capability. From the seed companies' perspectives, it is very difficult to forecast future demand. Their key sources of demand information are big traders and processors, not smallholder farmers. In some countries seed companies are hesitant to share information as this sensitive information could affect competitive positioning of seed companies; this is not so much the case in Mozambique because the market is so undeveloped and there is ample opportunity to grow the market.

The seed industry is generally not organized. There is a dearth of information about new varieties IIAM is developing, DUS information on released varieties, availability of EGS of specific varieties, quantities

---

<sup>18</sup> At the time of the field portion of this trip during the onset of the planting season, no seed laboratory activity was noticeable.

available, and other key gaps in important market data. Mozambique has a seed catalog containing over 200 varietal releases but it hasn't been updated since 2008, and it is not available electronically. There is an opportunity to improve seed certification, inspection, marketing and industry coordination by digitizing the seed catalog. If DUS information is included in an updated, digital catalog, seed inspectors would be able to conduct random inspections of seed companies' varieties to determine if their varieties are true-to-type. Such an approach would be oriented toward enforcement on the basis of truth-in-labeling.

In addition to sector-wide communications and information-sharing, fundamental gaps in market organization and supply lead to dramatic shifts in seed availability. There is a general lack of quality certified seeds throughout Mozambique. According to seed dealers, not a lot of companies are committed to selling good seed and some seeds on the market are really just grain. There are routinely shortages of some EGS varieties, while there may be oversupply of EGS of other varieties. The most sought-after varieties are often not available from IIAM or USEBA when seed companies want to buy them. In some cases, possibly in desperation, seed companies are selling foundation seeds as certified seeds. For cooperatives such as Ikuru, which produces certified seed for its members, difficulties come from shortages of breeder seeds of specific varieties. On-farm and off-farm infrastructure is inadequate. Irrigation for off-season EGS production is a particular problem.

USEBA is IIAM's producer of foundation seed and there is broad agreement that the quality of its seeds is very low, and is one of the weakest links in the seed value chain. Until recently, USEBA was a monopoly producer; this situation is changing though there is still uncertainty about the final form that USEBA will take. What seems certain is that its organization will be decentralized to at least several regions. One suggestion is that USEBA itself should be subject to seed inspections. These decisions are planned to be made during the second week of November, 2015. Meanwhile, some seed companies have been allowed, or even encouraged, to undertake their own EGS production and management.

The National Seed Service is another key actor in the EGS value chain by providing inspectors. Its inspectors are required to visit every seed company outgrower three times during the production season to issue a certificate. Oruwera (seed company) has 35 outgrowers in its Nampula region network, and other seed companies have their outgrowers. Three inspectors cover the entire northern region. Clearly there are not enough days in the season for every outgrower to be inspected three times each. Seed that does not receive an inspector's certificate must be sold as grain. The national seed legislation does not preclude the use of private inspectors and many key informants would like to see GOM pursue this option. Seed Inspectors often do not have the training and experience necessary to do their jobs and there needs to be support for inspector capacity building. The way seed inspections are carried out is also problematic. Seed companies must pay all inspection expenses, creating potential conflicts of interest as inspectors then feel obligated to issue certificates. Decisions on how to reorganize the National Seed Service are planned to be made at an upcoming meeting the third week of November.

## MALAWI

The SARSS assessment team met with the private sector (Seed Co, Pannar, and ASSMAG) and the public sector (Ministry of Agriculture, Plant Protection Office, Seed Services Unit, Agricultural Technology Transfer Clearing Committee, and CIAT) in Malawi. From across these stakeholders, the general impression is that the Malawi seed sector is quite vibrant and that seed regulatory issues are transparent.

The new, aligned Seed Act is in Parliament for approval and should clear in 2016. The initial draft Seed Act was rejected by the Ministry of Justice in the absence of a Seed Policy. It was the Ministry of Justice'

opinion that there can be no Act before there is a National Policy in place. The National Seed Policy was drafted and approved in 2014. The National Seed Policy recognizes the existence of a formal and informal seed sector in Malawi but does not specify any supporting actions for the informal sector other than encouraging village seed banks for seeds not handled by the formal sector.

The Seed Act establishes a National Seed Commission (NSC) as a semi-autonomous entity responsible for all seed regulatory issues. The NSC will take the place of the Seed Services Unit. The Malawi Plant Protection Act is also currently under review. The new Act will have three regulations (import, export, and quarantine), which will have direct implications for the SADC HSR regime.

SANSOR has trained 40 accredited seed inspectors in the private sector. Three seed companies with private seed laboratories have applied for accreditation with the Seed Services Unit.

The Agricultural Technology Transfer Clearing Committee (ATTCC) through its Variety Release Subcommittee handles variety registration and release. For national release, varieties are tested for three years (two years on-station and one year on-farm). The ATTCC maintains that SADC registered varieties will still need one year testing in Malawi.

ATTCC use software developed by the SPEAR project for variety registration and the national variety catalogue. The national variety catalogue was last updated in 2011. The Variety Release (sub) Committee meets twice a year and the meetings are funded by the Ministry of Agriculture and Irrigation.

The Malawian government still implements the Farm Input Subsidy Programme (FISP). For 2015-16, this program plans to provide two million beneficiaries subsidized seed and fertilizer. Pannar Seed estimates that 90 percent of all seed produced in Malawi goes through the subsidy scheme.

ASSMAG has 500 members, 45 percent of which are women. Members have a minimum of 1 hectare for seed production. Seed produced are mainly OPV maize, groundnuts, pigeon peas, cow peas, beans, and soybean. Annual production is estimated at 800 MT and is sold mainly through the FISP and NGOs (World Vision, Action Aid, and Self Help Africa).

Two farmer groups were trained under the HaSSP project and reached quality standards in line with SADC seed standards. However, in spite of competition from multinational seed companies, the Malawi market, especially for groundnuts and soybeans, is big enough for ASSMAG.

# SARSS COUNTRY-LEVEL MARKET AND REGULATORY OVERVIEW

Country	Status	Legal Framework and Notes
<b>Zambia.</b>	<b>Pending</b>	Plant Variety and Seeds Act (CAP 236) aligned with SADC HSR. Not yet in Parliament. Plant Breeder's Rights Act (2007) approved but enabling regulations pending. Plant Pest and Disease Act (CAP 231) needs to incorporate the two SADC rationalize pest lists – this can be done by statutory instrument and does not need parliament approval. Zimbabwe:
<b>Malawi</b>	<b>Pending</b>	Malawi Seed Act (1996) reviewed and aligned. Not yet passed by Parliament. Still at Min of Justice. Plant Breeder's Rights Act is at Cabinet level before being tabled at Parliament. Plant Protection Act – draft bill but not yet tabled at Parliament.
<b>Mozambique</b>	<b>Legal Framework Domesticated; Support Required for Implementation</b>	Decree 12/2013 was approved and provides the framework for production, certification, QA and trade in seed. Plant Variety Protection decree was approved. The two SADC rationalized pest lists are incorporated in the Plant Protection decree.
<b>Zimbabwe</b>	<b>Not aligned.</b>	Seed Act 1965 (amended 1971), Notice 2000 Seed Regulations and Seed Certification Scheme, Plant Breeder's Right Act 1979 and Plant Pest and Disease Act.

## MALAWI

### *Overview of the Seed Value Chain*

In contrast to many other SADC countries, the Malawi seed sector has an active private sector. The private sector, consisting of national and international seed companies primarily in maize and cash crops, controls 90 percent of the seed market.<sup>19</sup> Monsanto, Pannar, and Pioneer are all involved in maize varietal development, breeding, seed production, multiplication, and distribution. A number of NGOs and local associations including ASSMAG and the National Smallholder Farmers' Association of Malawi (NASFAM) facilitate seed multiplication at the community level for cash crops. NASFAM, for example, provides over 600 MT of certified groundnut, 150 MT of soybean, and 100 MT of pigeon pea.<sup>20</sup> For many other crops, however, informal seed systems dominate and there is often a seed shortfall.<sup>21</sup> In 2015, for example there was an estimated foundation seed shortfall of 939 MT in beans, 788 MT in groundnuts, 142 in peas, 87 MT in soybeans, and 54 MT in cow peas.<sup>22</sup>

<sup>19</sup> Centre for Applied Legal Research: The SADC Harmonized Seed Regulatory System: A review of National Seed Policy Alignment Processes in HASSP Project countries, 2012

<sup>20</sup> Swiss Agency for Development and Cooperation, 2015, Country-level foundation seed studies (on key food crops) in Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe

<sup>21</sup> ISSD Briefing Note – September 2012 Malawi Seed Sector Assessment

<sup>22</sup> Swiss Agency for Development and Cooperation, 2015, Country-level foundation seed studies (on key food crops) in Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe

### Legal Framework

According to the 2014 New Alliance progress report, Malawi has been making strong progress on implementing the legal framework to align with the SADC HSR. Malawi completed a draft **National Seed Policy** in 2014. The policy establishes a semi-autonomous Malawi National Seed Committee,<sup>23</sup> which will work with the private sector to develop the legal, regulatory, and institutional framework for the seed industry. The Committee will work with the private sector to implement a variety improvement program and will oversee seed certification and quality control. The policy has come under criticism from farmers groups for only recognizing the formal seed system, as well as ignoring the International Treaty on Plant Genetic Resources for Food and Agriculture.<sup>24</sup>

The **Crop Variety Protection Legislation** and amended **Phytosanitary Legislation** have been drafted and are awaiting the approval of Parliament.

### Implementing Institutions

**Variety testing and release.** Both the Department of Agricultural Research and private seed companies evaluate maize varieties. The Agricultural Technology Clearing Committee approves maize varieties for release based on a minimum of two to three years of data. The DUS test is not required. Data from other countries with similar agro-ecological conditions may be used to supplement national data.<sup>25</sup>

**Seed certification and quality assurance.** The Seed Certification and Quality Control Unit was established in 1976 and is responsible for seed certification. It conducts field inspections and seed testing in laboratories in partnership with Chitedze Research Station, and is accredited to the International Seed Testing Association (ISTA). The unit provides training on seed production and issues seed trade licenses to private companies.<sup>26</sup> This unit has the financial assistance and capacity to undertake its core functions.<sup>27</sup>

**Common sanitary and phytosanitary measures.** The Plant Protection Act is overseen by the Plant Protection Services unit. The act is severely outdated and phytosanitary regulations and procedures, including pest lists, do not align with the SADC HSR.

## MOZAMBIQUE

### Overview of the Seed Value Chain

The public sector dominates the Mozambique seed market. Of the 90,000 tons of seed planted for food crops, 70 percent is farmer-saved seed, 20 percent from informal trading, and only 10 percent through the formal sector. Of that 10 percent though, only one-fifth (1,800) tons is sold outside the government-subsidized system. Two large companies, SEMOC and Pannar, produce over 90 percent of open pollinated maize seed and provide production and marketing of improved maize varieties for the government at subsidized prices.<sup>28</sup> Constraints to the seed sector include a lack of available quality seed,

---

<sup>23</sup> The National Seed Committee is proposed in the National Seed Plan and should take over the functions of the Seed Services Unit. Its regulatory oversight is contained in the revised Seed Act. Unfortunately we did not have access to either document at the time of our visit.

<sup>24</sup> Global Forum on Agricultural Research, Analysis and Recommendations on the draft Malawi National Seed Policy and Strategies, 2013

<sup>25</sup> CIMMYT, 2009, Variety Testing and Release Approaches in DTMA Project Countries in sub-Saharan Africa

<sup>26</sup> ISSD Briefing Note – September 2012 Malawi Seed Sector Assessment

<sup>27</sup> Swiss Agency for Development and Cooperation, 2015, Country-level foundation seed studies (on key food crops) in Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe

<sup>28</sup> ISSD Africa, 2012, Mozambique Seed Sector Assessment

crowding out of the private sector, and unawareness of the benefits of seed. The cost of certified seed, for example, can often reach 30 times the price of grain retained by smallholder farmers.<sup>29</sup>

### *Legal Framework*

In 2013, Mozambique approved a new Seed Law, which sought to strengthen plant variety protection and private sector seed certification.<sup>30</sup> According to the Centre for Applied Legal Research, the government has shown great commitment to the reform process and leads many other SADC countries in domestic policy alignment.<sup>31</sup> In 2013, Mozambique approved a new Seed Law establishing the regulatory framework for seed production, trade, quality control, and seed certification to better comply with the SADC HSR in terms of variety release, seed certification and quality assurance, protection of plant breeder's rights, and quarantine and phytosanitary measures.<sup>32</sup>

### *Implementing Institutions*

**Variety testing and release.** The Seed Services department within the Ministry of Agriculture is the primary implementer of the Seed Law. IIAM conducts variety testing, although independent institutions can also submit their own data. Both DUS and VCU testing are required for a minimum of two seasons (although DUS can be for one year provided the breeder provides an additional description to supplement the test).<sup>33</sup> The Seed Services department presents variety testing results to the multi-stakeholder National Seed Committee that ultimately approves variety releases and publishes the National Varieties List. Members of this committee include the National Director of Agriculture, IIAM, farmers' associations, seed growers' associations, seed companies, and the Ministry of Agriculture.<sup>34</sup> The variety release system is regarded as being poorly functional, with over 80 varieties awaiting approval. A major bottleneck is the capacity within IIAM to conduct the required tests. To overcome this constraint, the Ministry of Agriculture is allowing the provisional release of varieties based on data provided by breeders.<sup>35</sup>

**Seed certification and quality assurance.** The Seed Services department is responsible for seed certification. Its primary tasks include field inspections, seed quality laboratory tests, and the issuance of official certificates.

**Common sanitary and phytosanitary measures.** Mozambique allows both imports of registered varieties of seed and non-registered varieties subject to an import license from the Seed Department. An import license usually takes one to two weeks to process. Mozambique's quarantine regulations are harmonized with SADC HSR.

## **SOUTH AFRICA**

### *Overview of the Seed Value Chain*

The seed industry in South Africa is advanced and primarily serves commercial farmers. Over 100 seed companies are part of SANSOR. The total seed market was worth US\$423 million in 2013, of which 65 percent was maize.<sup>36</sup> South Africa accounts for fifty percent of all African seed trade, with over US\$73 million worth of seed exports and \$89 million seed imports in 2013.<sup>37</sup>

<sup>29</sup> USAID, 2014, Brief Review of Mozambique Seed

<sup>30</sup> USAID, 2014, Brief Review of Mozambique Seed Market

<sup>31</sup> Centre for Applied Legal Research: The SADC Harmonized Seed Regulatory System: A review of National Seed Policy Alignment Processes in HASSP Project countries, 2012

<sup>32</sup> New Alliance, 2014, New Alliance Progress Report: Mozambique

<sup>33</sup> ISSD, 2012, Mozambique Seed Sector Assessment

<sup>34</sup> CIMMYT, 2009, Variety Testing and Release Approach in DTMA Project Countries in Sub-Saharan Africa

<sup>35</sup> World Bank, 2012 Agribusiness Indicators: Mozambique

<sup>36</sup> TASAI, The African Seed Access Index, 2015

<sup>37</sup> TASAI, The African Seed Access Index, 2015

### *Legal Framework*

Variety testing and release is regulated through the **Plant Improvement Act (1976)** and the **Plant Breeders' Right Act (1976)**. Seed Certification in South Africa is governed by the **Plant Improvement Act (1976)** and accompanying regulations. The **National Agriculture Pest Act of 1983** governs the import of seeds.

### *Implementing Institutions*

**Variety testing and release.** Before being allowed onto the national variety list, new varieties must pass the Union for the Protection of New Plant Varieties (UPOV) DUS test conducted by the Department of Agriculture. In addition, the Agricultural Research Council coordinates optional National Variety Performance Trials that evaluate yield performance against other existing varieties.<sup>38</sup> An average of 103 varieties are released a year, with maize comprising 75 percent of this total.<sup>39</sup>

**Seed certification and quality assurance.** SANSOR has undertaken the official private sector seed certification on behalf of the Ministry of Agriculture, Forestry and Fisheries since 1989. It has over 200 seed inspectors and complies with the national seed certification scheme, SADC HSRs, the Organization for Economic Cooperation and Development (OECD), and the Association of Official Seed Certifying Agencies.<sup>40</sup> Seed varieties can only be certified if they are listed on National Variety List or on the OECD Variety List.<sup>41</sup>

**Common sanitary and phytosanitary measures.** The National Plant Protection Organization of South Africa requires an import permit to import seeds. Further, it only issues a phytosanitary certificate once import requirements are met.

## **ZAMBIA**

### *Overview of the Seed Value Chain*

The Zambian seed industry was liberalized in 1991 and today, a number of large agribusinesses dominate this highly competitive seed market. The legal and regulatory environment is regarded as having a strong basis for regulating and supporting the seed sector, and government institutions such as SCCI and ZARI have significant capacity to deliver on their respective mandates.<sup>42</sup> Zambia's maize seed industry is regarded as one of the strongest in SADC.<sup>43</sup> By 2010, 203 maize varieties had been released, at least 70 institutions were involved in seed production, and 35,000 ha of seeds were produced.<sup>44</sup> That same year, 16,000 tons of seed was exported, of which 95 percent were maize seeds.

### *Legal Framework*

Broadly speaking, Zambia is generally already compliant with the SADC HSR. The Plant Variety and Seeds Act (1976) guides the provision of seed in Zambia. The act provides a mandate for SCCI to license private laboratories for seed testing and certification. The Plant Breeders' Rights Act (2007) promotes the development of new plant varieties. The act provides for a Variety Release Committee to release crop varieties after evaluation by SCCI. The Plants Pests and Disease Act governs the protection from pest and diseases from other countries.

<sup>38</sup> CIMMYT, 2009, Variety Testing and Release Approach in DTMA Project Countries in Sub-Saharan Africa

<sup>39</sup> TASAI, The African Seed Access Index, 2015

<sup>40</sup> <http://sansor.org/aosca-seed-certification/>

<sup>41</sup> <http://sansor.org/aosca-seed-certification/12>

<sup>42</sup> ISSD, Zambia Seed Entrepreneurship Assessment, 2010

<sup>43</sup> HARVEST Plus, the Changing Structure of the Maize Seed Industry in Zambia, 2013

<sup>44</sup> African Seed Trade Association Baseline Study/Survey on the Seed Sector of Zambia, 2012

SCCI is in the process of implementing the variety release and seed certification technical agreements, and the Plant Breeders Rights Act duplicates much of the language from the draft SADC Plant Variety Protection protocol. A number of accompanying reforms are necessary, but these changes are minor compared to other SADC countries. Ongoing tasks include: updating the regulations to reduce seed testing from two to one years, adding a validity period for released varieties to the Plant Variety and Seeds Act, adding specific provision that SADC varieties can be traded in Zambia, aligning minimum standards, and including the SADC pest list in the regulations.<sup>45</sup>

### *Implementing Institutions*

**Variety testing and release.** Both DUS and VCU tests are required to be conducted by the SCCI. A Variety Release Committee manages the variety release processes. The SCCI serves as the chair of the committee, and other members include Zambia Seed Trade Association and the University of Zambia.<sup>46</sup> Both private sector research institutes (including ZARI, University of Zambia, Cotton Development Trust, and the Golden Valley Agricultural Research Trust), and private agribusinesses (SeedCo, Zameed, Pannar, Monsanto, Pioneer, and Premier) are involved in applying for variety release.<sup>47</sup>

**Seed certification and quality assurance.** SCCI is regarded as having adequate capacity to carry out its mandate.<sup>48</sup> SCCI is ISTA accredited; it tested over 50,000 tons of seed in 2009, which is over 70 percent of the total in the country. Two private sector labs, Zamseed (24 percent) and Dunavant (4 percent), tested the remainder.<sup>49</sup>

**Phytosanitary measures.** The Plant Quarantine and Phytosanitary Services department within ZARI enforces the act. To import seeds in Zambia, three documents are required: 1) Notice to Import Seed from SCCI, 2) Plant Import Permit from ZARI, and 3) Import Permit from the Department of Marketing in the Ministry of Agriculture. Plant health inspectors at the border clear imported seed. For seed export, a Phytosanitary Certificate is required from ZARI (as well as an ISTA seed analysis certificate if needed).

## ZIMBABWE

### *Overview of the Seed Value Chain*

Private seed companies dominate the mature seed industry in Zimbabwe. There are 21 active breeders and four private companies (SeedCo, Pannar, Pioneer, and Quton) who control more than 50 percent of the market. Maize is the primary focus of the sector and the national maize grain requirement is 2,000,000 MT per year, of which 50,000 MT is certified.<sup>50</sup> About 80 percent of the 35 varieties released over the past three years were for maize.<sup>51</sup> Other key food crops include sugar beans, wheat, soybeans, groundnuts, sorghum, millet, and cow peas. Ten companies have their own breeding programs where they produce foundation and breeder seed themselves or through elite seed farmers.<sup>52</sup> The smaller seed companies depend on CBI for foundation seed and pay royalties after selling the seed.

<sup>45</sup> African Seed Trade Association Baseline Study/Survey on the Seed Sector of Zambia, 2012

<sup>46</sup> CIMMYT, 2009, Variety Testing and Release Approach in DTMA Project Countries in Sub-Saharan Africa

<sup>47</sup> African Seed Trade Association Baseline Study/Survey on the Seed Sector of Zambia, 2012

<sup>48</sup> African Seed Trade Association Baseline Study/Survey on the Seed Sector of Zambia, 2012

<sup>49</sup> African Seed Trade Association Baseline Study/Survey on the Seed Sector of Zambia, 2012

<sup>50</sup> Swiss Agency for Development and Cooperation, 2015, Country-level foundation seed studies (on key food crops) in Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe.

<sup>51</sup> <http://tasai.org/wp-content/uploads/Zimbabwe-brief-final.pdf>

<sup>52</sup> Swiss Agency for Development and Cooperation, 2015, Country-level foundation seed studies (on key food crops) in Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe

### *Legal Framework*

The **Plant Breeders' Rights Act** of 1972 grants property rights to public and private sector entities on any varieties commercialized by seed companies. The Seed Act Chapter of 1971 governs seed certification. As of 2015, the Ministry of Agriculture had not signed the MOU for the implementation of the SADC HSR. Moreover, the Seed Centre is not in place to ensure effective coordination on the HSRs, and institutional support at the national level is weak. The Plant Breeders' Rights regulations were last revised in 1998 and need to be updated and aligned to both the SADC regional protocols and the international UPOV. As of July 2015, the head of Seed Services noted they had not started this reform process.<sup>53</sup>

### *Implementing Institutions*

**Variety testing and release.** The Seed Services unit within the Research Services Division of the Department of Agriculture oversees variety release and seed certification. New varieties must pass the DUS test (carried out by Seed Services) and VCU tests (carried out by the breeder). VCU trials require two testing seasons and, once complete, the results are presented by the breeder to the Variety Release Committee. This committee has representatives from Seed Services, CBI, Zimbabwe Farmers' Union, Grain Marketing Board, and private companies. A released variety joins the national variety catalogue.<sup>54</sup>

**Seed certification and quality assurance.** The Seed Services Unit has an official Seed Testing Laboratory accredited to the ISTA. Zimbabwe has initiated the procedure for acceding to the UPOV convention. However, the head of the Seed Services Unit notes much difficulty in the capacity to meet these requirements.<sup>55</sup> The Seed Services Unit also participates in the OECD certification scheme for maize, sorghum, cereals, herbage, and oil seed crops. The government insists on Orange International Certificates for any seed export.

**Phytosanitary measures.** The Plant Quarantine Services within the Department of Research and Specialist Services is responsible for phytosanitary measures under the remit of the Plant Pests and Diseases Act. Zimbabwe has a list of plant diseases, but not a list of pests as is required under the SADC harmonization. Plant Quarantine Services carries out additional inspections, including field inspections, during growth and pre-shipment inspection of seed crops.<sup>56</sup>

---

<sup>53</sup> Email correspondence with Head of the Seed Services Institute, July 2015

<sup>54</sup> CIMMYT, 2009, Variety Testing and Release Approach in DTMA Project Countries in Sub-Saharan Africa

<sup>55</sup> Information collected in phone interview in July 2015

<sup>56</sup> African Seed Trade Association, 2010, Zimbabwe Seed Sector Baseline

## RECOMMENDATIONS

1. **Develop a new and realistic implementation plan.** An initial timetable for introduction, implementation, and operationalization of the HSR system as included in the Technical Agreements on HSR in the SADC region (2008). According to this initial timetable, the HSR would be fully operational and generate revenue by 2011-2012. These dates have proven to be unrealistic, and many preconditions for full implementation have not yet been met. A new, realistic implementation plan must be developed. The chief priority should be the immediate establishment of the SSC, which will guide the implementation process as it provides technical advice and backstopping, and a full staffing plan for the SADC Seed Centre. The implementation plan should also include a clear statement on budgetary implications and the way forward on self-financing.
2. **Clarify the authority of the SADC Seed Committee (SSC).** The Technical Agreements on HSR in the SADC region (2008) suggests that the SSC will consist of six members: four representing the NSA and two representing NPPOs. Each year three members will be replaced by members of countries not represented on the Committee. The SSC will meet twice a year at regular intervals. From the Technical Agreements it is not clear who has the authority to constitute the SSC or to whom it reports. The work of the SSC is highly technical (for instance designing criteria for DUS and VCU testing with crop specific requirements) so the SSC will have to rely heavily on outside expertise to carry out the commitments under the Technical Agreements. The SSC also has an auditing function of Seed Certification and Quality Assurance that will involve travel to MS. Apart from the actual formation and inauguration of the SSC, financial implications for its functioning need to be established and sources of funding identified.
3. **Clean up the Technical Agreements on HSR in the SADC region.** The text of the Technical Agreements date from 2008 and still reflect the project nature of the undertaking. There are inconsistencies in the text for instance the utilization of project management unit, which is now the SADC Seed Centre, and national focal points, which are now NSAs.
4. **Develop a model for self-financing.** The Technical Agreements on HSR in the SADC region (2008) indicated a few ideas on income generation and expected the system to be self-financing by 2012. Income generation would consist of fees levied on inclusion and maintenance in the regional variety catalogue (without specifying the amount of the fees) and income from other activities such as support to relief seed operations, coordination of basic seed supply, project service fees and fees for training, conferences etc. The COMESA fees of US\$300 for registration on the COMESA variety Catalogue and US\$200 per annum for maintenance should be taken as a guideline for SADC fees. The other potential sources of income are speculative and not recurring.<sup>57</sup>

Even with accelerated variety registration on the regional catalogue, self-financing of the system remains a dream, and therefore other stable sources of funding need to be identified. We believe there is a certain donor fatigue concerning the SADC harmonization issue and it is doubtful that sustainable donor support can be identified to absorb the running cost of the SADC Seed Centre and the SSC. The only realistic option is for SADC to provide core funding for the operations to supplement a realistic income projection from fees and incidental income.

---

<sup>57</sup>The current nine maize hybrids listed on the regional catalogue did not incur registration fees and it is not clear whether they are subject to maintenance fees.

5. **Simplify the procedure for Regional Variety Catalogue listing.** Under the current procedure, a variety needs to be registered in at least two MS before it can be considered for inclusion in the regional catalogue. Applications have to be made through a NSA in one of these countries and the dossier is submitted to the SADC Seed Centre. After examination of the dossier and having established that the variety is eligible verification is sought from all MS. MS can object to regional variety listing. Currently nine maize hybrids are listed as candidates for regional listing 12 months after the first application; verification by MS is still ongoing. To streamline the system, the seed company or breeder needs to clearly state in the application in which MS it intends to market the variety, and the Seed Centre should only solicit verification from those MS.<sup>58</sup>
6. **Harmonize import and export regulations.** While the SADC HSR primarily aims to increase trade in seed and planting materials between MS, little thought has been given to the harmonization of import and export regulations. According to informants, the process of obtaining import and export licenses in Mozambique is quite straightforward, but in Zambia approval is needed from five different institutions.
7. **Waive fees for public varieties.** Public varieties are predominantly developed by the CGIAR centres and tested for adoption by the NARIs. NARIs are responsible for registration of their varieties on national variety catalogues and the distribution of basic seed to the private sector or NGOs. CGIAR-developed varieties are considered as public goods and in general (with the exception of CIMMYT maize hybrids) no exclusive licensing agreements are extended to the private sector. Public varieties, especially of small grain cereals, legumes, and root and tubers are critical for food security and nutrition but these crops' seeds are mainly produced by smaller national seed companies and NGOs and are of minor interest to the larger, multinational seed companies. Therefore, these varieties should be registered on the SADC regional catalogue.<sup>59</sup>

However, ownership of these varieties is unclear and so is the issue of who is responsible for paying the registration and maintenance fees. No seed company will be willing to pay these fees unless it has ownership in the form of an exclusive licensing agreement. It is therefore recommended that registration and maintenance fees be waived for public varieties.

8. **Standardize DUS and VCU testing.** The DUS test forms part of the SADC variety release system and is used to establish that a variety ready for release is distinct from all other varieties of common knowledge in at least one characteristic. DUS testing is mostly associated with the extension of PBR. Uniformity measures the presence of characteristics in a given population and stability measures the presence of the characteristic over several generation. The Technical Agreement on the HSR in the SADC region (2008) states that the SSC and the SADC Seed Centre will develop guidelines for DUS testing in accordance with UPOV guidelines. Standardization of DUS testing in SADC is urgently needed. Breeders need to know what particular characteristics will be examined to complete the required technical questionnaire.

UPOV has developed and published technical guidelines for many crop species. These guidelines offer recommendations for the conduct of DUS testing and a detailed list of (morphological) descriptors that can be used to describe a variety and establish whether a variety is different

---

<sup>58</sup> It hardly makes sense that MS like Mauritius and the Seychelles are solicited for an opinion for a variety introduction in, for instance, Zambia.

<sup>59</sup> CGIAR varieties, for instance groundnuts from ICRISAT and maize from CIMMYT, are registered simultaneously in several countries (often under different variety denominations) and can therefore already be traded between countries where the registration took place.

from any other variety in at least one character. Individual authorities can select those descriptors that are deemed suitable for their circumstances. For instance the technical guidelines for maize contain 41 separate descriptors, and a choice has to be made.<sup>60</sup> With the current state of the art in SADC, 8 descriptors for maize should suffice with two added descriptors to be used in case of doubt. It is recommended that the SADC Seed Centre and the SSC (once established) consult with the NSA in the MS and draw up a definite list of descriptors to be used by all countries for DUS testing. This list should then be widely communicated to seed companies and breeders to assist them in preparation of the required technical questionnaires. As for the foreseeable future hybrid maize seed will be the most traded commodity under the SADC HSR it is recommended to limit DUS testing and training on DUS testing initially to maize. As it is unlikely that PBR will be applied for on small grain cereals, legumes or root and tuber crops, DUS testing of these crops has relatively limited merit.

As the DUS test is designed to establish whether a candidate variety is distinct from all other varieties of common knowledge, a reference collection of varieties of common knowledge needs to be established and individual varieties from that collection need to be selected to be grown side by side with the candidate variety. This process is highly technical and beyond the capacities at national level.

DUS testing needs a good understanding of plant morphology, environment interactions and quantifying of traits. Additional training will need to be provided with trainers sourced from the more advanced MS such as South Africa and Zimbabwe, countries that have run Plant Breeder Rights schemes for an extended period.

9. **VCU testing is a cornerstone of the SADC HSR system.**<sup>61</sup> Normally VCU testing is carried out over a number of years in a number of locations and may be conducted at research stations and on-farm. Currently, individual MS have different approaches to VCU testing and the data that should be collected. In the Technical Agreements on HSR in the SADC region (2008) the provision is made that the SSC and the SADC Seed Centre will develop guidelines for the VCU test. This work should start urgently so as to harmonize testing protocols across SADC MS and provide transparency to applicants for variety release.

<sup>60</sup> Some of the descriptors are asterisked and these are the recommended descriptors to be used for international harmonization purposes and shall be included by all UPOV members. See also UPOV Technical Guidelines TG1/3, General Introduction to the examination of DUS and the development of harmonized descriptors of new varieties of plants.

<sup>61</sup> All SADC countries with the exception of South Africa require VCU testing for registration purposes. Outside Africa, the European Union requires VCU testing (except for vegetable seeds) but the US does not (in fact, the US does not require variety registration and release at all). The argument for VCU testing is often that it is required to protect farmers from buying varieties unsuitable for their environment while the countries that do not require VCU testing maintain that it is ultimately the reputation of the seed company at stake and farmers are capable of making informed choices. The truth is, for Africa at least, somewhere in between (certainly considering the issue of fake or adulterated seed in the market). However, VCU testing is costly in terms of finance and manpower. Zambia for instance requires two locations in each of its three agroecological zones for two seasons, which means deployment of qualified staff for planting, in-season observations, and harvesting at six locations. Malawi does not require on-farm trials but still requires on-station VCU trials. These on-station trials are carried out at Chitedze and may not be representative of other regions in Malawi. CIMMYT carries out some 150 regional trials but these data are not taken into account by national authorities. Agroecological zones overlap in many instances (for instance Malawi and Zambia's Eastern Province, Zambia's Norther and North Western Provinces with Northern DRC (Katanga/Lumumbashi) and shared VCU data could lower testing requirements and costs. In the European Union, the private sector provides VCU data at time of application. The public sector is only responsible for DUS testing. A similar obligation could be imposed in SADC whereby the private sector is issued with clear instructions on how to perform VCU testing and what the minimum data requirements are needed. Company data supplemented with the CGIAR regional trials should form a solid basis for decision making on variety release.

10. **Encourage (restricted) exclusive licensing of public goods.** Currently, public good varieties developed by the CGIAR centres (with the exception of CIMMYT maize hybrids) are not licensed on an exclusive basis to the private sector. Seed companies will be reluctant to invest in regional variety listing or organize outreach activities for products where they are unable to address the free rider problem. The CGIAR system has an Intellectual Asset Policy whereby restricted exclusive licensing of varieties is a possibility. Restrictive means in this sense limited and defined geography and limited in time. Further dialogue is needed with the CGIAR centres on how and when to operationalize this policy.

11. **Ensure equivalence of SADC Seed Certificates.** Seeds moving in international trade are often accompanied by an Orange International Certificate and a blue OECD certification tag to confirm that the seeds have been tested by an ISTA accredited laboratory and have been certified according to the OECD certification rules. The importer of the seed may specifically request these two identifications. Within the SADC region only South Africa, Zambia, Zimbabwe and Malawi have ISTA accredited seed testing laboratories and are allowed to issue Orange certificates. Only South Africa and Zimbabwe are OECD accredited and may issue blue OECD tags.

ISTA membership and accreditation are costly. Membership is about US\$5,000 per annum and accreditation adds another US\$2,000. Accreditation requires an audit of the applying seed laboratory and its procedures which costs another US\$13,000 per audit. Once accredited regular audits (at US\$13,000 per audit) are compulsory. Membership fees of the OECD Codes and Schemes are not published but they are based on a lump sum plus a variable amount based on the GDP of the participating country. Taken together, ISTA accreditation and OECD membership are a heavy burden and may not be realistic for all SADC MS. SADC (and COMESA) have designed and established their own certificates for Seed Quality. There needs to be a consensus that SADC certificates are equivalent to ISTA/OECD certificates and that these certificates suffice for export/import between SADC MS. This may need further consultation with ISTA and the OECD Codes and Schemes.

12. **Undertake confidence building measures.** During the SARSS mission the issue of confidence in each other's capacity to properly test and certify seeds came up repeatedly. The HSR system will only work if each country can have full confidence that each MS has reached acceptable levels of proficiency to apply the SADC seed standards. The Technical Agreement on HSR in the SADC region (2008) makes provisions for (1) proficiency testing of national seed laboratories and (2) the minimum training requirements for seed inspectors, seed samplers and seed analysts. It also makes provisions for audits of the Quality Assurance system. These provisions need to be implemented as soon as possible and will require additional training resources.

- a. **Develop and implement a laboratory proficiency testing scheme.** Under a proficiency testing scheme (based on ISTA proficiency testing principles), participating seed laboratories receive samples from one identical seed lot and perform laboratory tests according to ISTA rules. Test results are collected and analyzed by the organizing laboratories. If the results of a participating laboratory are outside acceptable limits a diagnosis can take place. Usual causes of differences are malfunctioning equipment or staff capacity to do the test. Within the SADC region, either the national seed labs of South Africa, Zimbabwe or Zambia would be the best candidates to organize this proficiency testing which could be financed through a grant under the USAID/HSR project.



Further, extension agents will be confronted with new varieties introduced from third countries under the harmonized regulations and will need a minimum of knowledge to assist farmers in making choices. It is therefore recommended that extensive consultations, training and workshops will be undertaken at national levels to fully inform and train all departments and Ministries relevant to the full implementation of the system.

16. **Pilot full implementation between two to three countries.** In the EAC, Kenya, Tanzania and Uganda (followed later by Ethiopia and Rwanda) decided to adopt each other's variety list and procedures ahead of the COMESA/EAC full implementation. A similar initiative could be piloted in SADC whereby two or three countries conclude a bilateral agreement on full recognition in line with the SADC HSR system. This pilot could serve as an example to other MS on how the system can function.
17. **Recognize incentives that may encourage seed companies to focus registration in a certain subset of member states, and the implication for resourcing among countries in the region.** The Technical Agreements on HSR in the SADC region stipulate that a variety needs to be registered in at least two MS before it can be applied for inclusion on the regional variety catalogue. Logically, seed companies will want to choose the countries where registration is transparent and painless. South Africa (which does not require VCU testing and where variety registration is seen as a formality) will likely be the country of choice followed by Zimbabwe or Zambia. This puts other countries such as Malawi and Mozambique at a disadvantage as they risk missing out on registration trials and a potential source of income. There is therefore an urgent need for other countries to become more transparent in their variety registration procedures and build the capacity to carry out DUS and VCU trials according to SADC standards.
18. **Consider the European Union (EU) paradox.** The current SADC standards under the HSR are copied from the strict rules developed in the European Union regarding DUS/VCU testing and Quality Assurance. Although various Seed Policy documents produced in SADC countries recognize the existence of both the formal and informal seed sectors little is said of exemptions for the latter. In contrast, the EU is recognizing the need for exemptions for conservation varieties (including land races) which are important elements in low-input agriculture and increase resilience in face of climate change. Under a new proposal for a regulation on the production and making available on the market of plant reproductive material (plant reproductive material law), conservation varieties are exempt from DUS, VCU testing and compulsory seed certification. A variety description is required but this can be provided outside the official registration framework.<sup>62</sup> SADC should seriously consider similar exemption provisions in future revisions of the harmonized seed regulations to cover traditional varieties and land races commonly in use by smallholder farmers.
19. **Update SADC Quarantine and Phytosanitary Measures.** According to one NPPO interviewed, that last updated SADC pest list dates from 2009 and since then no SADC meetings on Quarantine and Phytosanitary Measures were held. Pest lists are living documents with new pests introduced all the time for which Quarantine and Phytosanitary Measures need to be put in place. SADC NPPOs should therefore meet on a regular basis. The proper identification of pests and Pest Risk Assessment are crucial and more training needs to be provided.

---

<sup>62</sup> COM (2013)262 final

It is therefore recommended that under the upcoming USAID/HSR pest risk training, analysis will be provided at three levels: 1) Strategic level training for senior managers of Government authorities, 2) tactical level training for NPPOs, Universities and research institutes and 3) operational level training for point of entry personnel of NPPOs and other agencies, importers/exporters, growers and the general public.

20. **Include all SADC MS.** For reasons that are not clear, SADC work on Harmonized Seed Regulations has focused on a narrow selection of countries. The HaSSP focused on Malawi, Zambia, Swaziland and Zimbabwe and the upcoming USAID/HSR project will focus on Malawi, Zimbabwe, Mozambique and Zambia (Feed the Future/aligned countries). Most of the larger seed companies consulted however also export substantial quantities of seed to DRC, Tanzania, Botswana, Angola and Madagascar. The question is how to get some of these other SADC countries involved in the harmonization effort and support them in domestication their national seed laws and regulations and build the necessary capacity to implement. It is recommended that the upcoming USAID/HSR project consider taking a wider view and identify strategic opportunities to frame key activities within a wider SADC context.
21. **Address constraints to long term storage of reference samples.** The Technical Agreements on HSR in the SADC region (2008) require applicants for variety registration to submit a reference sample of the variety in question to the NSA in the country where the DUS test takes place. It is not specified how long reference samples need to be stored but it is assumed that the reference sample will be used in case of disputes and need to be stored for the total time that a variety is maintained on the regional variety catalogue or regional variety database, i.e. 20 years. At this time it is doubtful whether NSA in most countries have the necessary facilities (cold storage) to do this. The possibility to store reference samples in the cold store facilities of the SADC Plant Genetic Resources Centre should be investigated but may need additional funding to expand the existing facility.
22. **Facilitate registration in third countries for smaller seed companies.** Smaller, national seed companies find it difficult to register varieties in a second country, the requirement for inclusion in the regional variety catalogue. As it is often these smaller companies that market small grain cereals and legumes for which the large companies have no commercial interest it would be important that they participate in international trade under the HSR. It is recommended that access to registration in third countries by smaller national seed companies is facilitated for a limited time, for instance through an innovation fund.
23. **Link up and learn from the BMGF/USAID Early Generation Seed (EGS) initiative.** The Bill and Melinda Gates Foundation and USAID signed a MOU in March 2015 which identified six priority areas, two of which are relevant to this assessment: 1) scaling proven technologies and practices to ensure the timely and sustainable delivery of (seed) inputs to smallholder farmers; and 2) strengthening institutions and systems, specifically the informal and formal seed systems, including addressing systemic bottlenecks such as early generation seed provisions. In an Early Generation Seed study undertaken by Monitor-Deloitte, a conceptual framework was developed identifying four market archetypes. The framework shows that for some crops such as hybrid maize in Zambia, the profitability is sufficient to allow for vertical integration, including the production of Early Generation Seed by the private sector. In contrast an analysis of the market for improved sorghum seed in Ethiopia showed the need for strong public sector support in the provision of EGS as the sorghum seed value chain is not profitable enough for the private sector to assume that responsibility. The current proposal includes two SADC MS, Malawi and Mozambique but under the USAID/HSR project close links should be

sought with USAID/STTP to determine what lessons are learned that could be applied to other SADC countries.<sup>63</sup>

24. **Move from regional to national workshops and stakeholder meetings.** A number of informants mentioned that within the HSR context workshops and stakeholder meetings are normally organized at regional level with individual participants travelling from their country to the meeting venue. It was suggested that workshops and stakeholder meetings at national level (and facilitated by the SADC Seed Centre) would be preferable as a larger audience and cross section of stakeholders could be informed and participate in the debate. We fully support this move to national rather than regional workshops and stakeholder consultations especially now that the HSR will move to the implementation phase.
  
25. **Secure high-level buy in.** To reach full implementation a new impetus needs to be given to get aligned, national legislation and regulations approved by parliaments and signed by heads of state. A concerted effort should be made to identify high level champions to get the HSR tabled for discussion at one of the next meetings of heads of state. Such a discussion could give a renewed impetus to move legislation that is now pending at Cabinet or Ministry of Justice levels forward for enactment. This needs to be accompanied by briefing notes reiterating the potential benefits of the HSR system.

---

<sup>63</sup> See: Multiple Pathways for Promoting the Commercial and Sustainable Production and Delivery of Early Generation Seed for Food Crops in Sub-Saharan Africa. Convening Report. BMGF/USAID, 2015. Available at <https://docs.gatesfoundation.org/documents/EGS%20Convening%20Final%20Report.pdf>

# ANNEX I: REGIONAL SEED HARMONIZATION INITIATIVES & PROJECTS

## SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC) HARMONIZED SEED REGULATIONS (HSRS)

The SADC HSRs are designed to facilitate the movement of seed between countries in the region. By removing national barriers to seed trade, the region will benefit from economies of scale, market stability, and greater availability of low-cost, high-quality seed. The Memorandum of Understanding (MOU) for the SADC HSRs was signed by the SADC Council of Ministers in 2010 and came into force in July 2013, after the tenth country adopted the agreement (As of March 2015, 11 of the 15 SADC states had signed the MOU).<sup>64</sup> The HSRs establish common regulatory standards, rules, and procedures across three core areas based on the accepted Technical Agreements on the HSR in the SADC region (2008):

1. **Common variety testing and release:** A variety testing and release system details the different seed varieties that can be marketed in a country. This helps ensure trust in the sector by providing a quality control mechanism.<sup>65</sup> The SADC Variety Release System aims to lower the time and cost for new and existing varieties to gain access to SADC countries. This system establishes a SADC Variety Catalogue, where listed varieties can be sold without restriction across different countries. Once a variety is released in at least two SADC countries, the variety may apply for regional release through one of the national seeds authorities that have already approved release, and be entered into the catalogue.<sup>66</sup>
2. **Common seed certification and quality assurance:** Seed certification is the procedure whereby the genetic purity of a seed variety is measured and confirmed. Common seed certification standards across countries ensure that traded seed is of a known quality, reducing the need for additional tests and lowering the time and cost of import and export. The SADC Seed Certification and Quality Assurance System provides common seed certification schemes, terminologies, standards, procedures and labelling to promote seed varieties listed in the SADC Regional Variety Catalogue. It is the responsibility of the national seeds authorities to implement this system by licensing field inspectors, accrediting laboratories, conducting tests, and ensuring that traded seed meet SADC minimum laboratory standards.<sup>67</sup>
3. **Common quarantine and phytosanitary measures:** Phytosanitary measures help safeguard against the introduction of pests and diseases on imported commodities. Countries often have different lists of pests and diseases, and separate testing slows the movement of seed across borders. Under the SADC Harmonized Quarantine and Phytosanitary Measures, member countries agreed to an established set of pest and diseases and a common approach to testing. Testing and quarantine measures are only needed for diseases that are not common in all SADC member states (MS), and the need for re-testing of seed consignments on arrival is reduced.<sup>68</sup> This lowers the time and cost of trading seed among SADC countries.

<sup>64</sup> Within the SADC context MOUs are not legally binding on MS

<sup>65</sup> USAID, 2011, Building an Enabling Environment for Seed Sector Growth

<sup>66</sup> <http://sadcseedcentre.org/index.php/seed-harmonisation>

<sup>67</sup> <http://sadcseedcentre.org/index.php/seed-harmonisation>

<sup>68</sup> <http://sadcseedcentre.org/index.php/seed-harmonisation>

Although not part of the original harmonization effort, a protocol for the protection of new varieties of plants (plant breeder rights) for the SADC region, was introduced in 2012 but is still in draft form.

The MOU commits MS to align national seed laws and enabling regulations (domestication) across each of these three areas. The SADC Seed Centre assisted by the SADC Seed Committee (SSC) has been established to play a coordinating and facilitating role, but implementation is guided by the principle of subsidiarity, i.e. that decisions should be taken at a local level rather than by a central authority. As such, it is the responsibility of MS to introduce the regulatory frameworks and implementation structures to implement the HSR at the national level.

## COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA) HARMONIZED SEED REGULATIONS

In 2014, COMESA's Council of Ministers approved the harmonized seed regulations<sup>69</sup> across all 19 MS. The harmonization program began in October 2010 under the COMESA Regional Agro-Inputs Program (COMRAP) and was based on the three SADC HSR technical areas (regional variety release system, regional seed certification, and regional quarantine and phytosanitary measures). The regulations came into force in February 2014 and the COMESA Seed Harmonization Implementation Plan (COMSHIP) was endorsed in February 2015. National seed authorities are responsible for implementing the plan with coordination by the Alliance for the Commodity Trade in Eastern and Southern Africa (ACTESA) and the COMESA Seed Committee. Seven countries are member of both SADC and COMESA and five countries are member of COMESA and EAC. Tanzania is member of all three RECs. This could lead to confusion as to which harmonization effort will be implemented.<sup>70</sup>

## TRIPARTITE FREE TRADE AREA AGREEMENT

In July 2015, Africa's three main trading blocs launched the COMESA-EAC-SADC Tripartite Free Trade Africa (TFTA). The TFTA is designed to lower the time and cost of trade between the 26 African countries, with a combined population of 625 million people, through the removal of intra-regional tariffs, quotas and non-tariff barriers. TFTA will impact each country differently depending on the previous trading bloc(s) they were aligned to. Although the available documents (annexes) do not specifically mention seed, the TFTA is likely to further boost the free flow of seed technologies throughout Eastern and Southern Africa. However, this potential impact is currently unclear as some countries are committed to align with SADC, COMESA or EAC harmonization initiatives.

However, a dialogue between SADC, COMESA and EAC regarding the impact of the TFTA in the medium term on Harmonized Seed Regulations is urgently needed before further financial commitments are made. For instance there is a serious concern about having three established seed committees while ultimately one TFTA seed committee would suffice.

## OTHER RELEVANT REGIONAL PROGRAMS

**CAADP Country Compacts and Investment Plans:** In 2003, African leaders pledged to commit ten percent of their national budgets to agriculture as part of the Comprehensive African Agriculture Development Programme (CAADP). A notable success as part of the CAADP process has been the development of National Agricultural Investment Plans (NAIPs). NAIPs serve to outline a country's key

---

<sup>69</sup> Unlike SADC MOUs, COMESA regulations are legally binding on MS.

<sup>70</sup> In November 2015, the Malawi Minister for Agriculture declared that Malawi would align with the COMESA seed harmonization regulation.

target areas for agricultural investment and requirements for private sector investment. The following are the primary commitments as they relate to seed.

<p><b>Malawi Agriculture Sector Wide Approach</b></p>	<p>“Increase maize productivity from 1.2 to 3 MT/Ha through reforming the input subsidy program, registering new improved varieties, and multiplying breeders seed and basic seed.”</p> <p>“Increase productivity of pulses (beans, soy bean, pigeon peas, cow peas) and ground nuts from 0.5 to 1MT through multiplication and distribution of improved legume seed varieties, inclusion in the Input subsidy programme, staff and farmer training, and promoting GAP.”</p>
<p><b>Mozambique National Agricultural Investment Plan, 2014-2018</b></p>	<p>“The main objective of Component I is to accelerate production through interventions in production, focusing on facilitating physical and financial access of producers to inputs and technology packages, in particular the production of foundation seed, the multiplication of improved seeds and access to agro-chemicals, in complementarity with the extension programme for cash and nutritious food crops.”</p>
<p><b>Zambia National Agricultural Investment Plan 2014 – 2018</b></p>	<p>“Will enhance production, seed and variety testing, registration, protection and seed extension. Key intervention areas will include: decentralize seed services to all provinces and border posts, and; monitor and backstop satellite and private seed testing facilities. This component will also consider the informal seed system (e.g. non-certified seeds, of either local or improved varieties that are saved/recycled/exchanged through local markets). During the next 5 years, a total of 525 varieties and cultivars of different crops will be tested, protected and released and DUS test undertaken. A total of US\$ 26.44 million will be spent in the next five years on improving the seed sector delivery services.”</p>

**Feed the Future Country Strategies:** The Feed the Future Initiative (FTF), launched in 2010, is the U.S. government’s global food security initiative. Each country has a developed multi-year strategy. The commitments for seed reform are below.

<p><b>Malawi Feed the Future Multi-Year Strategy</b></p>	<p>“A significant constraint to the development of competitive groundnut and soybean value chains is the inadequate production of breeder seed. Ten years ago, USAID/Malawi established a \$250,000 revolving fund to support ICRISAT in contracting out groundnut breeder seed production, but the FISP addition of legume seed packs the significant gross margins of legumes has driven demand far beyond local seed production capacity. Given the importance of reliable input supplies to Malawi’s FTF strategy, USAID and Irish Aid will partner to expand local capacity for production of quality, certified legume seed. USAID will invest in expanding the existing revolving fund and link in the International Institute of Tropical Agriculture to enable the expansion of their efforts in soy breeder seed production. Irish AID will expand its assistance to small and medium sized enterprises to develop their capacity of to multiply groundnut seed – currently only one company (Seed Co.) is involved in soybean seed production using privately developed germplasm.</p> <p>In addition, Malawi also lacks an International Organization for Standardization (ISO) certified laboratory for testing and certifying groundnuts and soybeans, which limits access by exporters to broader export markets. Currently, companies that export groundnuts send samples to South Africa for testing, which is costly and limits export capacity. With Irish Aid support, ICRISAT and NASFAM are developing a low cost, rapid testing technology; however, achieving ISO certification will be costly. The EU and UNDP will also begin work next year on a project designed to support the processing and exports side of legume value chains, a major component of which will focus on bringing the Malawi Bureau of Standards up to ISO certification. USG resources will support GoM efforts to establish a national sanitary/phyto- sanitary (SPS) strategy and achieve COMESA SPS compliance, as</p>
--	--

	well as to build the capacity of Bunda College and the MoAFS research stations to conduct aflatoxin mitigation research.”
<b>Zambia Feed the Future Multi-Year Strategy</b>	“USAID/Zambia will promote income and production diversification for smallholders by strengthening the oilseeds and legumes value chain. In particular, FTF will target men and women smallholders to diversify increasingly from maize into soy, sunflower and groundnuts. The program will promote access to seeds and inputs through private stocks, agribusiness out-grower schemes, and the GRZ extension system.”

## NEW ALLIANCE FOR FOOD SECURITY AND NUTRITION

The New Alliance is a multi-stakeholder partnership to accelerate implementation of the CAADP through joint commitments to policy reforms and investments. Within Southern Africa, Mozambique and Malawi are New Alliance countries.

### Malawi New Alliance Cooperation Framework\*

Improve access to land, water, farm inputs and basic infrastructure to support food security and nutrition	Commitment to implementation of SADC and COMESA Seed Harmonization Program through: a. Enactment of crop variety protection legislation (Plant Breeders Right Bill has been concluded and is awaiting enactment) b. Enactment of amended phytosanitary legislation (Malawi Plant Protection Act, 1969) c. Reviewing of National Seed Certification System (Seed Act, 1996) d. Reviewing the current Pesticide Act e. Fast track the development of the Fertilizer Regulatory Framework and the Contract Farming Strategy	June 2015 December 2013 January 2015 March 2014 June 2014
Seed Related LOIs signed	1. Ex-Agris Africa (certified seed production) 2. ASSMAG (increase certified seed production to 1000 MT/year. 3. Monsanto	

\*New Alliance for Food Security and Nutrition, Malawi New Alliance Cooperation Framework

### Mozambique New Alliance Cooperation Framework\*

Establish policies and regulations that promote competitive, private- sector agricultural input markets, especially for smallholder farmers.	1. Revise and Implement National Seed Policy, including: a) Systematically cease distribution of free and unimproved seeds except for pre-identified staple crops in emergency situations. b) Allow for private sector accreditation for inspection. 2. Implement approved regulations governing seed proprietary laws which promote private sector investment in seed production (basic and certified seed). 3. Revise and approve legislation regulating the production, trade, quality control and seed certification compliant with the Southern African Development Community (SADC) seed protocol requirements.	Nov 2012 June 2013 Nov 2013
Seed related LOIs signed	1. Advanta India 2. Syngenta	

\* New Alliance for Food Security and Nutrition, Mozambique New Alliance Cooperation Framework

Both of these countries are further along in implementing the SADC HSRs than non-New Alliance countries.

## ANNEX 2: CONTACT LIST

Available upon request. Please direct inquiries to [eefs@fintrac.com](mailto:eefs@fintrac.com).

## ANNEX 3: LITERATURE REVIEW

Background Note on Seed Harmonization in Africa	<a href="http://futureoffood.org/pdfs/EDGE_Background_Note_on_Seed_Harmonisation.pdf">http://futureoffood.org/pdfs/EDGE_Background_Note_on_Seed_Harmonisation.pdf</a>
Keyser, John C.	Opening Up the Markets for Seed Trade in Africa. Africa Trade Practice Working Paper. World bank, Washington DC, 2013.
Centre for Coordination of Agricultural Research & Development for Southern Africa (CCARDESA)	Medium Term Operational Plan 2013 – 2018.
Mloza-Banda, H.R. <i>et al</i>	Evaluation of the Malawian Seed Sector for the Common Market for Eastern and Southern Africa (COMESA) Harmonized Seed Regulations and Policies. AFSTA, Nairobi, 2012. <a href="http://afsta.org/wp-content/uploads/documents/MALAWI%20SEED%20SECTOR%20BASELINE%20STUDY.pdf">http://afsta.org/wp-content/uploads/documents/MALAWI%20SEED%20SECTOR%20BASELINE%20STUDY.pdf</a>
Global Forum on Agricultural Research (GFAR)	Analysis and Recommendations of the Draft Malawian National Seed Policy and Strategies. GFAR, 2015.
Nakhumwa, T & Kaudzu, G.	Strengthening and Replicating successes of the Smallholder Seed Multiplication Industry in Malawi: Case Study of ASSMAG and ICRISAT Seed Multiplication Models. (Draft)
SADC	Technical Agreement on the Harmonization of Seed Regulations in the SADC region. SADC 2008.
Mukuka, John	Status of the COMESA Seed Trade Harmonization Regulations. Presentation 2014.
Sperling, L <i>et al</i> .	Seed System Security Assessment Southern Malawi. 2011
HaSSP	Annual Report June 2011
Cortes, J	Building an Enabling Environment for Seed Sector Growth. EAT/USAID, 2011.
Malawi Ministry of Agric and Irrigation	G8 New Alliance. Malawi 2014 Annual Progress Report.
GFAR	Analysis and Recommendations on the Draft Malawi Seed Policy and Strategies. 2014.
MARD	Constraints and Strategies for the Development of the Seed System in Mozambique. 2001.
MARD	G8 New Alliance. Mozambique Annual Progress Report.
ISSD	Mozambique Seed Entrepreneurship Assessment. ISSD Briefing Note. 2013
Anon	Stimulating the Private Sector Investment in Mozambique. The Seed Registration Process. 2013.
AGRA	PASS Mid-term Review Malawi. 2010
CLAR	The SADC Harmonized Seed Regulations System: A Review of National Seed Policy Alignment Processes in HaSSP Project Countries. Harare, 2012.
Kuhlman, K.	Harmonizing Seed Regulations in sub-Saharan Africa: A comparative Assessment. Syngenta Foundation 2015.
World Bank	Agribusiness Indicators: Zambia. 2012
World Bank	Agribusiness Indicators: Mozambique. 2012

## ANNEX 4: TRAVEL ITINERARY

Nov 7	Paris – Addis Ababa- Johannesburg – Pretoria
Nov 7 – 11	Pretoria consultations
Nov 12	Johannesburg – Harare
Nov 12 – 17	Harare Consultations
Nov 17	Harare – Lusaka
Nov 18 – 24	Lusaka Consultations
Nov 24	Lusaka – Maputo
Nov 25 – 28	Maputo consultations
Nov 29	Maputo – Lilongwe
Nov 30 – Dec 2	Lilongwe consultations
Dec 2	Lilongwe – Johannesburg
Dec 4	Johannesburg – Paris