



Improved Regional Seed Trade in the Common Market of East and Southern Africa (COMESA) and the East Africa Community (EAC) Region:

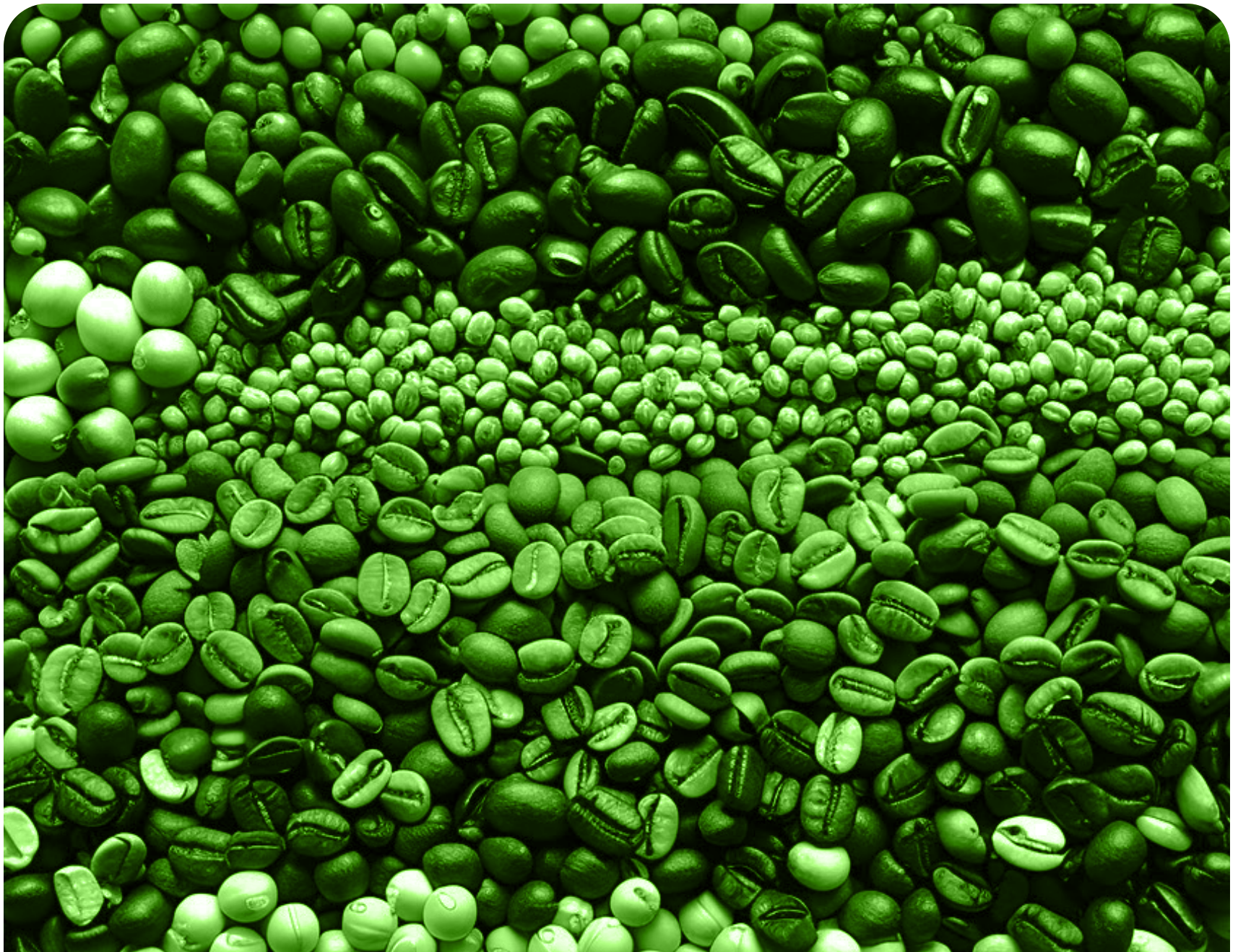
A Synthesis of Lessons from Recent Investments.

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In 2018, Agri-Experience conducted an assessment to support the promotion of regional trade in certified seeds of major staple food crops in Kenya, Uganda, Rwanda, Tanzania, and Zambia. Despite significant investments from regional, national, and development partners to harmonize regulations and reduce barriers, the assessment found that seed trade was not growing steadily.



The need for accelerating efforts to facilitate trade in inputs (i.e., seed and fertilizer) to promote access to high-yielding technologies is one of the most effective ways of attaining the continental goals.

***Agnes Kalibata
President, AGRA***



Foreword

Africa is at a crossroads – the continent faces the dilemma of implementing alternative reforms that can transform the food system within the context of multiple mounting crises (i.e., extreme weather events, high food inflation, regional and global conflicts, post-COVID-19 effects etc.) and rapidly evolving global markets. One of the key strategies to overcome these challenges is the African Continental Free Trade Area (AfCFTA), which entered into force on 30th May 2019, with trade commencing under the agreement on the 1st January 2021. The AfCFTA's objective of deepening and broadening economic integration is expected to accelerate the pace of reaching the continent's targets, which include tripling intra-regional trade, attaining zero hunger, halving poverty, doubling productivity, among others. With two years to go until 2025 – the deadline year for meeting the targets in the Comprehensive African Agricultural Development Programme (CAADP) – Africa is not on course to meet them. The 2023 State of Food Security and Nutrition showed that one in four people in Africa faced hunger over the past five-years, with 278 million of its citizens – essentially one third of the global total – going to bed hungry in 2022. More disturbingly, the 2022 UN Africa Sustainable Development Report projects that at least 492 million people will be left in extreme poverty by 2030, if the current trends persist. The continent has not been spared by the ravaging impacts of climate change, with the 2022 Malabo Montpellier Panel report estimating that climate change will lead to an equivalent annual

GDP loss in Africa of 10 to 20 percent..


Seed access is a huge opportunity in our midst. The need for accelerating efforts to facilitate trade in inputs (i.e., seed and fertilizer) to promote access to high yielding technologies is one of the most effective ways of attaining the continental goals. It is for this reason that we initiated a program on “Improving Regional Seed Trade in Common Market of East and Southern Africa (COMESA) and the East Africa Community (EAC) Region” that seeks to demonstrate practical ways to harmonize trade inputs across Regional Economic Communities (RECs). This work is inspired by the WTO Trade Facilitation Agreement (TFA), which entered into force on the 22nd February 2017, and contains provisions to expedite cross border movement of goods, compliance with customs procedures, and measures which deepen effective cooperation between customs and other border authorities. In that spirit, the program developed and piloted a range of seed trade facilitation tools, which include (a) an Information Guide for Trade Requirements, (b) a Seed Systems Audit template, and (c) a digital platform – SeedAssure – all of which collectively functioned to simplify and harmonize the implementation of a seed standards across the COMESA region. The program provided legal reviews that supported the alignment of national seed laws to regional seed standards, while also supporting efforts of harmonizing the nomenclature of identifying seed varieties, use of seed labels, and expanding a recognized regional seed variety catalogue.

This program is a product of immense effort and valuable contributions from a Consortia of partners through an investment by the United States Agency for International Development (USAID). The lessons learned from implementing trade facilitation tools will hopefully inspire regional leaders, national governments, private sector and development partners to build on these efforts and advance the trade facilitation agenda to promote access of seed and inputs across the rest of the African continent.

I am most grateful to the consortia partners for their efforts and support to the much-needed technical expertise, knowledge, and evidence on how to increase seed trade in Africa. I also appreciate our stakeholders in the field – the seed traders, regulators, customs officials, border authorities, development partners – for their professionalism, guidance, and insights. This tool for increasing cross-border trade in seeds in Africa gets us closer to facilitating sharing of technologies between countries, and ensuring that every African farmer has a chance to a life-changing opportunity that gets them more connected to other farmers across the continent through a vibrant AfCFTA.

Agnes Kalibata
President,
AGRA





With rising food insecurity emanating from the post-effects of the impact of COVID-19 still being felt across the continent, together with regional and global conflicts, and the pervasive negative effects of climate change, the need for promoting access to reliable and high-quality seed to smallholder farmers has never been more urgent.

Boaz Keizire
Head of Policy, Advocacy and Food Systems
AGRA



Acknowledgements

This report focuses on accelerating trade in seeds in sub-Saharan Africa, and it is part of a broader effort to promote access to high-yielding seed varieties to smallholders and promote increased productivity, incomes and food security. The report documents the potential of increasing trade using various trade facilitation tools which harmonize policies and regulations across Eastern and Southern Africa. With a proof of concept described herein, the hope is that the momentum created by this work can attract further support and funding to scale such efforts to lead to a meaningful increase in seed trade across the Eastern and Southern African region. With rising food insecurity emanating from the post-effects of the impact of COVID-19 still being felt across the continent, together with regional and global conflicts, and the pervasive negative effects of climate change, the need for promoting access to reliable and high-quality seed to smallholder farmers has never been more urgent. Promoting increased trade in seed across the region is admittedly a complicated endeavour, and therefore requires a unique consortia investment that covers a range of issues, disciplines and contributions from various partners.

The project titled “Improved Regional Seed Trade in Common Market of East and Southern Africa (COMESA) and the East Africa Community (EAC) Region” benefitted from the generous funding of the United States Agency for International Development (USAID), and the technical support and guidance of a coalition of expert contributors who helped to conceptualize, implement activities, assemble empirical evidence, and document the critical issues and key messages in this report. We wish to recognize the following institutions and individuals for their immense efforts:

- **ECI-Africa – Ed Rege, Christine Awuor, and Chagema Kedera**
- **New Markets Lab – Tara Francis, Adron Naggayi Nalinya, and Katrin Kuhlmann**
- **COMESA – Temhlanga Nkambule, John Mukuka, and Fungwa Kabati**
- **AFSTA – Grace Gitu, Mercy Bor, and Justin Rakotoarisaona**
- **CellSoft – David Lawrence Brown, Doreen Kanana, and Stephen Ng’ang’a**
- **AgCuity – Kinyua Mmbijewe**
- **AGRA – Joseph Rusike, Tinashe Kapuya, Eunice Kagiri-Ndei, and Nyasha Mhosva**
- **USAID – Mark Huisenga**

Our deepest appreciation goes to the public officials, NSAs, Seed Traders Associations, seed companies and seed traders that were part of the consultations, training, and the broader effort to develop, test and implement trade facilitation tools that were piloted in this project. The immense contribution of these stakeholders and partners has set a foundation for the creation of a community of practice that will be shaping seed trade across the region for years to come. We hope that this project can become the premise upon which further efforts to deepen and advance seed trade in the region.

Boaz Keizire
Head of Policy, Advocacy and Food Systems
AGRA

A handwritten signature in black ink, appearing to read 'Boaz Keizire', written over a white circular graphic element.



Executive Summary

During the past 40 years or so, the Common Market for Eastern and Southern Africa (COMESA) and East African Community (EAC) have taken various actions to enhance intra-regional trade. These efforts have included, and not limited to, free trade area, customs union protocol, common market protocol, trade facilitation, harmonized road transit charges, one-stop border posts, anti-dumping, competition policy and law, re-export of goods, removal of non-tariff barriers to trade and standards and measures for trade and investment, consumer protection, establishment of Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) to facilitate seed trade among others.

Despite all these investments, an assessment to support the promotion of regional trade of certified seeds of major staple food crops in Kenya, Uganda, Rwanda, Tanzania, and Zambia carried out by Agri-Experience in 2018 found that seed trade was not growing steadily despite substantial regional, national, and development partner investments to harmonize regulations and reduce barriers. As a follow-up, Africa Lead, a United States Agency for International Development (USAID) funded program, implemented a Regional Pilot Seed Activity in 2019 centred around facilitating national and regional conversation including holding learning events to address the key bottlenecks to seed trade. The key recommendations from the Seed Activity were to convene regular regional stakeholder dialogues, develop an information guide on all the cross-border seed trade requirements, and establish a seed sector audit mechanism.

The above recommendations were part of the interventions supported by the Alliance for a Green Revolution in Africa (AGRA) through the **Improved Regional Seed Trade in Common Market of East and Southern Africa and the East African Community Region Project (2020–2022)**. The project was implemented by six (6) partners including the African Seed Trade Association (AFSTA), Emerge Centre for Innovations – Africa (ECI-Africa), New Markets Lab (NML), CellSoft, and AgCuity Consulting. The purpose of the consortia was threefold:

- i. **Strengthen the convening of dialogue forums at national and regional levels.**
- ii. **Develop and put in place regionally aligned seed laws and regulations.**
- iii. **Develop an information guide to facilitate seed movement including digitizing COMESA/EAC seed certification procedures.**

The above-mentioned objectives were collaboratively implemented by leveraging the capacities of the six (6) partners, each of whom had integrative objectives. The project relied on a consultative and collaborative approach with the key stakeholders, aiming to capitalize on the momentum gained by the Africa Lead Pilot Seed Activity in 2019. This meant maintaining the relationship with the stakeholders i.e., Regional Economic Community (RECs) officials, inspectors, seed traders, border and customs officials and the designated heads of the national seed authority. In each country, partners worked through various institutions, including members of the Seed Work Advancement Team (SWAT), National Seed Authorities, National Seed Traders Associations, Border Authorities etc. These key contacts were crucial in identifying and mobilizing the right people who would facilitate the development of the various tools (i.e., information guide, seed system audits, SeedAssure etc.). The highly consultative process was to ensure ownership and to obtain goodwill in implementing the project during the Coronavirus pandemic (COVID-19). Due to the pandemic and the ensuing closure of borders, the process had to be done in a hybrid setup.



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AGRA (2023). Improved Regional Seed Trade in the Common Market of East and Southern Africa (COMESA) and the East Africa Community (EAC) Region: A Synthesis of Lessons from Recent Investments. Nairobi, Kenya.

A close-up photograph of a hand with light purple nail polish holding a small amount of golden-brown seeds. The hand is positioned above a black tray filled with dark brown soil. Some seeds are falling from the hand into the soil. The background is blurred, showing more of the soil and seeds. The overall image has a soft, natural lighting.

Chapter 1

Within the Common Market in Eastern and Southern Africa (COMESA) region, only 20% of the total 80 million COMESA small-scale farmers have access to quality and improved seeds.



Introduction

1.1. Preamble

The Common Market for East and Southern Africa and the East Africa Community (EAC) is committed to enhancing and facilitating inter and intra-regional trade, especially in agricultural inputs and outputs. The regions and their Member States are pursuing this by reducing the cost of cross-border trade by removing internal barriers, increasing local private sector participation in regional and global value chains and strengthening regional integration and trade facilitation. Concerning seed trade, the Alliance for Commodity Trade in East and Southern Africa (ACTESA), a specialized Agency of COMESA, developed harmonized seed trade regulations to resolve seed and food insecurity in the region and published these in 2014. They further developed a COMESA Seed Harmonization Implementation Plan (COMSHIP) to support the implementation of the COMESA harmonized seed trade regulations.

To enhance the objectives of COMESA, the Alliance for a Green Revolution in Africa (AGRA) granted the following partner organizations with resources to implement a project which was geared towards improving regional seed trade in the Common Market of East and Southern Africa (COMESA) and East African Community (EAC) regions. The partners included:

- i. Africa Seed Trade Association (AFSTA) – convening stakeholders training and awareness creation in the harmonization of domestic and regional seed regulations and standards.
- ii. Emerge Centre for Innovations–Africa (ECI-Africa) – providing technical assistance in supporting the harmonization of seed certification, auditing of border operations, provision of information (through an electronic platform and info-guide),
- iii. COMESA – facilitating the adoption of harmonized standards at the regional level.
- iv. Cellsoft – designing an electronic platform (Seed-Assure) to capture border information on agricultural imports of inputs,
- v. AgCuity–spearheading and promoting the adoption of the Seed-Assure system,
- vi. New Markets Lab (NML) – analysing legislative aspects of achieving outcomes central to regional seed harmonization and improved regional seed trade within COMESA and EAC regions.

Overall, AGRA support sought to catalyse a sustainable enabling environment for seed trade in the region and ultimately for farmers

by strengthening the regulatory agencies as well as supporting strong private sector development. In that spirit, the COMESA Seed Trade Grant sought to expand cross-border trade of seed, through trade facilitation mechanisms and tools that could be widely adopted in the region. As the project concludes, the consortia partners needed an opportunity to convene and reflect on the extent to which their various activities, results and outcomes contributed to the collective goal of the project. It is important to collectively reflect on lessons learnt, gaps, and opportunities to broaden and deepen the success of the project. In the new strategy, AGRA seeks to draw on this work, incorporate key lessons, and pressure-test thinking, and sharpen the approach in advancing the goal of increasing regional trade.

1.2. Context

Within the Common Market in Eastern and Southern Africa (COMESA) region, only 20% of the total 80 million COMESA small-scale farmers have access to quality and improved seeds. This has affected crop productivity with about 130 million people out of a total 610 million COMESA population remaining food insecure, experiencing chronic poverty and hunger. This has also affected regional integration and agricultural production contracted between 2.6% and up to 7% due to the impact of COVID-19 in 2020 and 2021. The potential of the total seed market in the COMESA region is 2 million MT of quality and improved seed; however, the region is currently producing and accessing less than 500,000 MT of quality and improved seed, with most seed available on the market of unknown and poor quality. The COMESA improved and quality seed is only equivalent to 2% of the global quality seed production and value.

The above challenge is attributed to the fact that the regional seed market is still fragmented into small national markets, and each country operates its seed policies and regulations differently from other COMESA Member States. Seed companies therefore enter each of the national seed markets separately and individually. This is not only costly for the seed companies but also results in prolonged delays before the seed of good quality can find its way to the small-scale farmers. COMESA through its Specialized Agency the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), has in place the COMESA Seed Trade Harmonization Implementation Plan (COMSHIP) approved by the COMESA Council of Ministers in 2015. The overall goal of COMSHIP is to implement the COMESA Seed Trade Harmonization Regulations to enhance seed production, reliability, and seed trade including increasing the competitiveness of the seed industry in the Southern and Eastern African (ESA) region.

COMSHIP has been officially launched in 19 COMESA Member States between 2014 and 2021, namely Burundi, Comoros, Djibouti, DR Congo,



Egypt, Eritrea, Ethiopia, Eswatini, Kenya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Tunisia, Uganda, Zambia, Zimbabwe and now remaining to launch COMSHIP in Libya and Somalia. As of December 2022, the status of COMSHIP shows eight COMESA Member States of Burundi, Egypt, Malawi, Rwanda, Kenya, Uganda, Zambia and Zimbabwe have completely aligned their national seed laws to the COMESA Seed System with the official gazette. This means that seed companies in these countries can trade their seed consignment using the COMESA Seed Trade Harmonization Regulations in line with the COMESA Variety Catalogue available online. DR Congo has drafted national seed regulations awaiting parliament approval while Ethiopia gazetted only Seed Certifications Standards in December 2016 with the aligned Plant Quarantine Proclamation of the Federal Democratic Republic of Ethiopia of 2022 and the Ethiopian Seed Regulation 375/2016 still to be gazetted currently with parliament. The Member States with draft COMESA-aligned laws/regulations include DR Congo, Eswatini, Djibouti and Eritrea. The rest Member States of Comoros, Sudan, Madagascar, Seychelles, Mauritius, Tunisia, Libya, and Somalia are yet to start the process of developing and aligning their seed laws/regulations to the COMESA Seed System.

1.3 Objectives

1.3.1 Overall Objective

The overall goal of the project was to Improve regional seed trade in staple food crops of maize, rice, cotton, and soya beans in the COMESA region as well as catalyse and sustain an inclusive agricultural transformation leading to increased seed production, reliability, trade and enhance quality, improved seed availability to small-holder farmers in a sustained, affordable, timely and reliable manner.

1.3.2 Specific Objective

The project was implemented in close collaboration with five COMSHIP Consortium members, namely:

- **The Africa Seed Trade Association (AFSTA)** who convened stakeholders training and awareness creation in the harmonization of domestic and regional seed regulations and standards,
- **Emerge Centre for Innovations– Africa (ECI-Africa)** provided technical assistance in harmonization of seed certification, auditing of border operations, provision of information (through an electronic platform and info-guide),
- **Cellsoft Technologies**, an ICT firm (software developers) that is designed an electronic platform (Seed-Assure) to capture border information on agricultural imports of inputs.

- **AgCuity**, a consulting firm tasked to spearhead/promote the adoption of the Seed-Assure system,
- **New Markets Lab (NML)**, a legal entity that focused on achieving outcomes central to regional seed harmonization through the support of Ethiopia in the domestication of the COMESA Seed Trade Harmonization Regulations. NML also the introduction of the Variety Identification Numbers (VIN) on the COMESA Variety catalogue for varieties with different names in more than one COMESA Member State.

Below are some of the specific achievements of the COMSHIP Consortium Members:

1.3.2.1. *Emerge Centre for Innovations – Africa (ECI-Africa)*

The specific objective of ECI-Africa was to enhance the awareness of the cross-border seed trade requirement and the areas for improvement through the development of the Online Regional Seed Trade Information Guide – The task culminated in the development of the online tool COMSHIP info-guide. The info guide increased stakeholder awareness of cross-border seed trade requirements and the need for symmetrical access to information along the seed supply chain. Info Guide Regional Seed Trade Info Guide can be found on the AFSTA website, www.afsta.org

Developed the COMSHIP Seed System Audit Output where the following were achieved:

- Developed an Audit Checklist
- Identified an initial list of seed system auditors.
- Developed a guide on how to conduct the audit.
- Collaboratively conducted a regional audit, focused on Ethiopia, Uganda, Kenya, Tanzania, and Zambia. The reports are available for reference.
- Held a recommendation and learning session with heads of the seed authorities to discuss the identified gaps.
- Developed Maize Standard Operating Procedures (SOPs to enable the production of COMESA Maize Seed Consignment in a consistent and harmonized manner.

1.3.2.2. *New Markets Lab (NML)*

New Market Lab provided guidance on regulatory options for the alignment of Ethiopia's seed laws and regulations (specifically Ethiopia's Draft Seed Proclamation and new subsidiary measures that will be developed) with COMESA Harmonized Seed Trade Regulations of 2014.



Provisions relating to Ethiopia's variety registration and release process could be clarified to ensure alignment with the COMESA Seed Trade Harmonization Regulations (for example, defining ambiguous terms used in the Draft Seed Proclamation that establish exemptions to testing, such as varieties that contribute to the "successful implementation of prioritized development goals. In addition to Ethiopia, Varieties that have been registered in at least two COMESA Member States should be exempt from both DUS and VCU testing unless a specific exception is raised. Ethiopia's certification process has been substantially changed to align with COMESA; however, minor additional changes could be addressed through subsidiary regulations to help complete alignment. In particular, specific references could be incorporated into regulations to the COMESA Seed labels and Certificates of Seed Quality. Ethiopia should further align its import and export rules, including quarantine and phytosanitary measures for seed import and export, with those under the COMESA Seed Trade Harmonization Regulations.

- Supported the development and implementation of the common Variety Identification Number (VIN) to facilitate registration of qualified varieties into the COMESA Variety Catalogue that is the same but has different trade names in more than two COMESA Member States.
- In this regard, NML developed a draft agreement between One CGIAR and COMESA on the Use of VIN with a Draft Model Agreement developed and customized. It was recommended that COMESA work with NSAs to support the incorporation of the VIN in the national variety registers, either as the variety name or alongside the official variety name, by national seed rules.

1.3.2.3. African Seed Trade Association (AFSTA)

- Undertook National consultative meetings with seed companies and key stakeholders in moving COMSHIP forward.
- In close collaboration with ECI, developed an information guide to facilitate seed movement in the COMESA Region found at <https://afsta.org/tradeguide/> and developed COMSHIP helpline information for seed companies found on the AFSTA website.
- Carried out targeted surveys to identify challenges and concerns regarding the placement of varieties on the COMESA Variety Catalogue.

1.3.2.4. Cellsoft Technologies

- Operationalised the SeedAssure digital platform with the most successful country in terms of seed volumes

within COMESA by way of the volume of seed and inspections in Zambia.

- The SeedAssure platform shall impact the digitizing of the seed field inspection process by reducing the cost of administration, increasing the inspection efficiency end to end by 50 % and enabling the burden within the seed supply chain to be removed.
- In addition, real-time data coming from seed inspection is revolutionary, saves time and money and is transformational.
- However, interventions or revenue to pay for development will be needed to ensure new language packs can be added, standards can be updated, support is available, and the product remains useful and navigable to the users. There is a support requirement, many of the inspectors themselves will need to receive training or have access to training for the same and maybe training to some level of accreditation.
- Through the COMESA SeedAssure Digital Platform, seed movement across the region will best be tracked or managed by way of inspections at borders – these will need to become digital and supported through a process of digital dispatches made by seed companies before dispatch. SeedAssure can provide the inspection procedures for this to happen. COMESA will provide access to the technology and as a direct consequence will get trade data off the back of the service.

1.3.2.5. AgCuity Consulting

- To date, AgCuity Consulting has supported 21 seed companies, and 96 seed inspectors are using the SeedAssure system. Progress has been contingent on effective outreach efforts to build trust and comprehension of the SeedAssure system. Regular engagement, numerous presentations and effective communication were required in a sustained way for this to be achieved.
- After implementation, the National Seed Authority of Zambia, the Seed Control and Certification Institute (SCCI) has been willing to lead this initiative and has tremendous credibility even beyond Zambia for its technical proficiency and professionalism.
- Zambia being the key seed production hub for East and Southern Africa, a successful pilot of SeedAssure will provide a catalytic trigger for the adoption of digital seed inspection within the region. Continued investment is therefore recommended for a targeted pilot in Zambia led by a subgroup of the consortia members of this project.
- COMESA shared that digitization was a key method to actualize regulatory harmonization because if all inspectors in the COMESA region utilized a common digital platform that embedded COMESA standards, then harmonization would de



facto have taken place. He shared his hope and ambition that SCCI would embrace the system and continue to be the pioneer and leader in seed systems in Africa.

A subsequent conversation held with Bayer at a regional level indicates they will consider using SeedAssure based on the response given by SCCI following their technical pilot and the feedback from ZASTA. For Bayer, of particular interest, is to ensure seed companies utilize a common harmonized protocol for producing quality seed in support of their TELA program and QBS service of EGS provision for SSA seed companies

Table 1: Consortia partners, their objectives, responsibilities, and achievements

| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|---------------|---|---|--|
| COMESA | <ul style="list-style-type: none"> Facilitate the adoption of harmonized standards at regional level | <ul style="list-style-type: none"> Co-Chair of the Coordination, Management, Strategy Integration and Planning (COMSHIP) Quarterly Review Meetings Test piloting COMESA Seed Labels (in Malawi, Kenya, Uganda and Zimbabwe) with seed companies handling seed varieties registered on the COMESA variety catalogue. | <ul style="list-style-type: none"> Agreement to administer COMESA Seed Labels There was an ACTESA-COMESA-SCCI agreement which included: <ul style="list-style-type: none"> The establishment of the ACTESA-COMESA Seed Office/Unit as an issuing authority for COMESA Seed labels to service the pilot countries, The appointment of SCCI as the administrator of the online database and the authorizing agency for the COMESA seed labels. A draft MoU between COMESA and OneCGIAR <ul style="list-style-type: none"> With technical support from New Markets Lab (NML), an MoU was drafted to harmonize the nomenclature and the inclusion of the Variety Identification Number (VIN) on the COMESA variety catalogue with the OneCGIAR VIN. Lessons Learnt <ul style="list-style-type: none"> There is need for a greater dedicated effort to track the seed system at both national and regional levels for the purposes of quality control, determining surplus or deficit situations to rebalance supply and demand, and to monitor growth trends. The region needs to develop regulatory provisions that specifically cater to the category of seed traders that deal with importation of nearly certified seed, for certification and re-export. |



| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|--|---|--|---|
| Africa Seed Trade Association (AFSTA) | <ul style="list-style-type: none"> Convening stakeholders training and awareness creation in the harmonization of domestic and regional seed regulations and standards | <ul style="list-style-type: none"> Establish and popularize a help helpdesk facility, and sensitization of seed traders, border operators, regulators, and other actors. Conduct annual reviews and update information requirements, Assessment of variety listing systems or processes at country level to identify inconsistencies with COMESA requirement and prioritize options for placement of varieties on regional catalogue. | <ul style="list-style-type: none"> Development of online helpdesk platform Border operator engagements <ul style="list-style-type: none"> There were extensive engagements with Border Operators at border points with active cross-border seed trade, and these included: <ul style="list-style-type: none"> Six (6) border points in Kenya Three (3) border points in Uganda Four (4) borders in Rwanda (these were identified but not completed) Six (6) border points for Zambia There were consultations with TOSCI and TASTA on border visits for Tanzania Seed Companies Engagements <ul style="list-style-type: none"> AFSTA convened seed companies' dialogues to inform the design and functionality of the help desk. Some 110 seed companies provided inputs for the helpline in Kenya Additional engagements with private sector companies were done in Uganda, Zambia, Zimbabwe, and Tanzania Outstanding engagements included regional consultations to discuss and deliberate on national outcomes from border meetings and seed companies' meetings are yet to be done. Sensitization of seed companies and other stakeholders on the utilization did not take place. Lessons Learnt <ul style="list-style-type: none"> Border visits Over 7 Ministries have seed clearing authorities in almost all borders visited Despite existent one stop border points (OSBP), there is no coordination resulting in duplication of work for customs staff at border points. There was a low awareness of regional seed regulations There was no application of regional regulations at border points Countries continue to apply national laws to clear seed cargo at the border Seed Companies <ul style="list-style-type: none"> They embraced the helpline initiative (transparency and openness was critical) Urged reduction of duplication of seed cargo clearance roles at the border Urged intensive consultation on helpline development to enable effective usability |



| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|----------|---|--|--|
| Cellsoft | <ul style="list-style-type: none"> Contribute to the goal of digitalizing the COMESA regional seed sector, including seed field inspection and quality seed assurance. | <ul style="list-style-type: none"> Designing and improve an electronic platform (Seed-Assure) to conduct seed inspections and quality assessments, piloting three countries (i.e., Kenya, Tanzania and Zambia). Sensitize the SeedAssure tool targeting 16 Seed Companies and National Seed Authorities (NSAs) across various countries (i.e., Uganda, Ethiopia, Kenya, Tanzania, and Zambia) to support the harmonization of the seed inspection standards and inclusion of these new standards into the SeedAssure tool. | <ul style="list-style-type: none"> On-boarding of companies and training of users <ul style="list-style-type: none"> Some 16 seed companies that have subscribed to the SeedAssure platform. The first 8 came at the beginning of the project, and the other 8 came during project implementation. The second 8 came but that was challenging due to COVID-19 containment measures that restricted travel and face-to-face engagements to showcase in-field demonstration of the software. Targeted reaching 90 officials/users on-boarded onto the SeedAssure system, and reached 60 officials – this is somewhat connected to the fact that COVID-19 took the bulk of the attention and the SeedAssure platform became secondary. Engagement with ASSCI-Zambia <ul style="list-style-type: none"> CellSoft had an engagement with SCCI – Zambia, to identify scope for integration of SeedLab and SeedAssure. This engagement was part of a trial-run to get seed companies to use the system more aggressively. All seed companies have a good understanding of the tool, but there is scope for more use of the analytics that come out of the SeedAssure tool The ASSCI delegates were encouraged by the harmonization of the audit checklist with Dr Kadera. Lessons learnt <ul style="list-style-type: none"> In the absence of sufficient budget to facilitate the Cellsoft-ASCCI engagement, the project leveraged existing resources from AFSTA to unlock additional convening budget that helped to drive critical engagements for Zambia’s potential adoption of SeedAssure Deeper and more structured joint planning of activities between consortia partners to ensure more fluid implementation of the investments. |



| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|-------------------------------------|---|---|--|
| <p>New Markets Lab (NML)</p> | <ul style="list-style-type: none"> • Provide technical review of legal provisions that ensure the harmonization and improved regional seed trade within COMESA and EAC regions | <ul style="list-style-type: none"> • Conduct an analysis and review of the current law (Seed Regulation (2016) – which include SPS issues, and Seed Proclamation) – and assessed if these laws/legal instruments fall in line with COMESA harmonized laws. | <ul style="list-style-type: none"> ■ High Level Meeting <ul style="list-style-type: none"> • The high-level meeting in Ethiopia allowed NML to interact and present to key stakeholders – including seed companies, Ministries of Agriculture – all of whom are critical stakeholders. • Findings from the analysis of Seed Regulation and Seed Proclamation law showed that there were gaps and misalignment between Ethiopia’s national seed laws and the regional COMESA seed laws. The regional seed laws establish a recognition of the COMESA Variety Catalogue – but the only seed varieties that are recognized are those that are registered in at least two countries. All others would require further testing. • These gaps in the seed laws were summarized and presented to Ethiopia’s Ministry of Agriculture as well, and NML provided recommendations on how these could be covered in the revisions of the Seed Proclamation. • NML worked with the Ministry on the revisions that would align with COMESA – and these were submitted to the Legal Office in the Ministry of Agriculture, which were in turn, submitted to the Council of Ministers. • Analysis of the application of the Variety Identification Number (VIN) • There were two main activities under this work include: ■ Progress report of implementation of VIN ■ CGIAR applications for the VIN <ul style="list-style-type: none"> • Private sector companies were consulted in the drafting of a final report and provided some technical input. • NML drafted a proposed Memorandum of Understanding (MoU) between COMESA and OneCGIAR to facilitate engagement between seed research recommendations and integration into regulations ■ Lessons Learnt <ul style="list-style-type: none"> • The collaborative effort of the work was critical in delivering the legal analysis. More specifically, COMESA connected NML to seed sector officials in Ethiopia and used the high-level meetings for the validation of the reports. COMESA’s coordination efforts were critical. • NML worked closely with AFTSA in drafting the progress implementation of the VIN. AFSTA connected NML with stakeholders at the AFSTA Annual Congress, which was critical in leveraging efforts of other consortium partners. |



| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|--|---|---|---|
| Emerge Centre for Innovations – Africa (ECI Africa) | <ul style="list-style-type: none"> • Provide technical assistance in supporting the harmonization of seed certification, auditing of border operations, provision of information (through an electronic platform and info-guide) | <ul style="list-style-type: none"> • Develop a Cross Border Seed Trade Requirement Information Guide (Import and Export) (i.e., The Info Guide) • Conduct a Pilot Seed System Audit for Maize Value Chain in Kenya, Tanzania, and Zambia. | <ul style="list-style-type: none"> ■ Audit System <ul style="list-style-type: none"> • Audit system requires openness and transparency in both its design and execution. • To undertake the Audit System, the auditors have to sufficiently prepare for engagements with seed inspectors. • The audit process established a community of practice which enabled peer-learning and mentorship. • Audits were a sound way to create awareness on updated SoPs harmonized seed standards. ■ SoPs and standards <ul style="list-style-type: none"> • In applying COMSHIP, harmonization of standards was difficult to apply in a more practical way, given the required operations, number of required inspectors, and other institutional infrastructure to make it function optimally. • Public sector awareness of standards and SoPs is key, but it is also important to ensure adequate private sector participation in designing and implementing the system. ■ Info-Guide <ul style="list-style-type: none"> • The development of the Info-guide was meant to provide traders and other stakeholder access to information on steps and procedures that enable seeds to comply and cross-national borders. • In testing the info-guide, and in feedback meant to refine its implementation, traders and other stakeholders persistently enquired how to use the info guide. This was a demonstration of lack of awareness of the use of the Info-Guide as a tool to facilitate cross-border trade. It presented questions regarding how to operationalize the info guide and make it more useful is important. • For traders who had learned of the Info-Guide, they it became a reference document that they wanted to keep using, which means there is a demand for it, even among smaller traders. • The challenge, however, is that the Info-guide – as presently designed – seems to be more inclined to serve big traders. This is because smaller traders could not supply the level of information required for them to access it. • Stakeholder engagement during data collection during info guide development requires an integrated approach – with multiple stakeholders providing different levels of technical and operational support. • The relevance of the info guide was hampered by the fact that countries were still applying their national laws, and not the harmonized regional laws. The incongruent seed laws meant that some information would make the manual somewhat complicated • Wider engagement of private sector is still required to ensure that end-users understand what is required of them. ■ Lessons Learnt <ul style="list-style-type: none"> • Capacity building in the application and socialization of COMESA SOPs is critical – many traders seemed to be unaware of them, and there is need for further training and awareness creation for SOPs. • More work still needs to be done with regards to the domestication of regional SOPs and domestication of regional seed laws. • It will be critical to extend the body of work around standards, SOPs, Audit Systems etc to other value chains beyond maize and grains. |



| Partner | Role & Contribution to consortia | Activities | Outputs/Achievements |
|----------------|---|---|---|
| AgCuity | <ul style="list-style-type: none"> Promote the adoption and uptake of the Seed-Assure system | <ul style="list-style-type: none"> Conducted Regional engagements in the socialization of the SeedAssure system Agreement between Government of Zambia to do a pilot of the SeedAssure system and ensure that it complements rather than compete with the SeedLab system. Seed Inspectors, government officials and industries were trained. Meetings to do feedback from industry – value and contribution to their business | <p>AgCuity’s role was to popularize and build capacity among end-users for the adoption of digitalization tools such as SeedAssure</p> <ul style="list-style-type: none"> Value proposition for SeedAssure <ul style="list-style-type: none"> There are two issues of value that industry sees of value with SeedAssure and these are: <ul style="list-style-type: none"> Compliance in standards and practice, processes, and procedures, and Operational efficiencies in seed production from a private sector perspective, and harmonization of seed laws and regulations from a public policy point of view. Key recommendations <ul style="list-style-type: none"> The timelines of engagement between AgCuity, Cellsoft, SCCI and Zambia government officials fell outside the project timelines, and it will be critical to re-engage stakeholders if new investments are made in upscaling SeedAssure. Lessons learnt <ul style="list-style-type: none"> There are data ownership and data privacy concerns from the public sector, which amount to a lack of trust in outsourcing some of the data functions that have traditionally been performed by government. These concerns can be addressed, but there is also a need to cultivate the trust required to adopt digital systems. COMESA’s intervention was critical to create a rapport between NSAs and CellSoft. Coordination and alignment in activity scheduling and planning is essential and should be a priority in the future. AGRA and funding partners should coordinate new future investment opportunities with the view of building on and integrating with current and on-going efforts. |



1.4 Summary and outline of the report

The purpose of this Chapter was to give a brief overview of the effort that was undertaken to improve regional seed trade in the COMESA region by harmonizing policies and practices, under a consortia investment that was funded by the USAID and AGRA. The Chapter started by giving a background and context of the project, followed by the project's overarching objective. A set of specific objectives were set out to unpack the role of the consortia partners. This was followed by a table that outlined consortia partners' activities and achievements. The rest of the book is outlined as follows:

Chapter Two delves deeper into how New Markets Lab (NML) extended legal technical support in aligning national and regional seed trade policies and regulations. The Chapter discusses two ways in which the NML provided this legal technical support, and it included (a) a comprehensive legal review of seed laws in Ethiopia, which guided regulatory options for COMESA-Aligned Seed Laws and Regulations in Ethiopia, and (b) legal review and research that supported the Implementation of the Common Variety Identification Number (VIN) in various COMESA Member States.

Chapter Three discusses the development of two key seed trade facilitation tools, namely, (a) the Information Guide for Trade Requirements, and (b) the Seed Systems Audit. This effort was led by ECI-Africa. The purpose of the Information Guide was to create an accessible source of user-friendly information (both electronic and hardcopy) for traders, particularly MSMEs, to know the requirements and steps to take within and beyond the border environment. The development of the Seed System Audit is discussed within the context of its mechanism and components. These include the Standard Operating Procedures and Audit Checklist, and the appointment of seed auditors.

Chapter Four discusses the harmonization of seed systems through another tool – digitalization platforms – with SeedAssure as a test case of how rolling out this type of service can facilitate the implementation of a regional seed inspection standard across COMESA. The Chapter outlines the key benefits of digitalizing seed systems. These include the collection, storage and processing of seed sector data (i.e., numbers on seed varieties, seed production volumes; pathogen incidence; tracking of seed movement within countries and across national borders etc.) which can provide valuable market metrics that can be used to develop more targeted and efficient policies from a public sector perspective, and valuable business intelligence, management and operations planning from a private sector point of view.

Chapter 5 provides a summary of the book and presents a set of key messages that are harnessed from the experiences and lessons

learnt from the project. Such lessons include insights drawn from the alignment of seed regulations, implementation of COMESA Seed Labels, the potential to expand the COMESA Variety Catalogue, and a set of interventions that are needed to consolidate the regional seed market, to build on the momentum that has set by on-going efforts.





Chapter 2

For countries to fully benefit from the regionally harmonized seed rules, they will have to align their national legal and regulatory frameworks on seed with regional rules and procedures. While some countries have advanced in this process, others remain either partially aligned or not aligned at all.



Harmonization of National to Regional COMESA-aligned Seed Trade Policies and Regulations

2.1 Background

One expected outcome of this project was the alignment of national seed laws and regulations with regional seed laws and regulations that are benchmarked against regional and international good practices. To that end, NML was responsible for two main components critical to achieving this outcome, which include the alignment of Ethiopia's seed laws and regulations (specifically Ethiopia's Draft Seed Proclamation and any new subsidiary measures, including regulations, that will be developed) with COMESA Seed Trade Harmonization Regulations of 2014¹ and the development and implementation of the common variety identification number (VIN), including the facilitation of registration of qualified varieties into the COMESA Variety Catalogue. The following section provides background information on each of these components.

Component One: Guidance on Regulatory Options for COMESA-Aligned Seed Laws and Regulations in Ethiopia

Within sub-Saharan Africa, several regional economic communities (RECs), including COMESA, the EAC,² the Southern African Development Community (SADC),³ and the Economic Community of Western African States (ECOWAS),⁴ have or are in the process of developing regionally harmonized seed rules to guide processes on seed variety release and registration, quality assurance and certification, sanitary and phytosanitary (SPS) measures, and cross border trade within the respective regions. Except for the EAC, RECs have regional seed catalogues in which

qualifying seed varieties can be registered to be eligible for trade within the respective regions. For countries to fully benefit from the regionally harmonized seed rules, they will have to align their national legal and regulatory frameworks on seed with regional rules and procedures. While some countries have advanced in this process, others remain either partially aligned or not aligned at all. Throughout sub-Saharan Africa, regional seed harmonization holds great promise for linking markets and achieving economies of scale, creating opportunities along seed sector value chains and improving livelihoods.⁵ Regional seed harmonization is particularly critical for building Africa's seed market, ensuring an adequate supply of high-quality seed, linking supply with demand, and generating long-term investment viability and productivity gains through access to broader markets.⁶

The benefits of regional harmonization have been widely discussed⁷ and include, for example, the potential to lower barriers to the movement of seeds across borders, simplification and increased transparency of procedures in critical areas like export/import licenses, streamlined certificates of origins, reduced regulatory costs, and improved SPS controls.⁸ Regional harmonization efforts also streamline and shorten procedures for evaluating and releasing new seed varieties; make rules on quality assurance and certification more uniform across countries; strengthen the design and application of SPS systems; address plant variety protection for breeders; and improve rules and regulations that directly impact the participation of the private seed industry in seed variety registration, release, certification, and trade.⁹ Harmonizing national legal and regulatory frameworks on seed at the regional level is critical for facilitating investment, increasing the availability of high-quality seed, and improving trade across borders.¹⁰

Within Ethiopia, which is the country of focus under the first component of this assignment, the Seed Proclamation No. 782 of 2013, Seed Regulations No. 365 of 2016, Rates of Fees for Seed

1 COMESA Seed Trade Harmonisation Regulations, 2014. Available at: <https://www.aatf-africa.org/wp-content/uploads/2020/01/COMESA-Seed-Trade-Harmonisation-Regulations-English.pdf>.

2 Within the EAC, the EAC Seed and Plant Varieties Bill is still in draft form. The EAC Partner States instead follow the ASARECA/ECAPAPA agreement.

3 Within SADC, the Memorandum of Understanding on the Harmonization of Seed Regulations in the Southern African Development Community (MoU) of 2008 applies to seed.

4 The Regulation C/Reg.4/05/2008 On Harmonization of the Rules Governing Quality Control, Certification and Marketing of Plant Seeds and Seedlings in ECOWAS Region; and Procedure Manual for Variety Registration in the National Catalogue for Crop Species and Varieties in West African Countries developed in 2008 apply to seed.

5 Kuhlmann, Katrin, *Harmonizing Regional Seed Regulations in Sub-Saharan Africa: A Comparative Assessment*, Syngenta Foundation Seeds2B Initiative, September 2015.

6 New Markets Lab, *Economic Impact Assessment and Legal Review and Analysis of the East African Community Seed and Fertilizer Legislation*, Study Commissioned by the East African Community and Alliance for Green Revolution in Africa, 2019.

7 Isaac Minde, *Harmonizing Seed Policies and Regulations in Eastern and Central Africa*, International Food Policy Research Institute, (2006); Gisselquist, David. *Harmonization of seed legislation and regulation in CEEC, CIS and Other Countries in Transition*. Food and Agriculture Organization of the United Nations (2001).

8 Kuhlmann, Katrin, *Harmonizing Regional Seed Regulations in Sub-Saharan Africa: A Comparative Assessment*, Syngenta Foundation Seeds2B Initiative, September 2015.

9 Kuhlmann, Katrin, *Harmonizing Regional Seed Regulations in Sub-Saharan Africa: A Comparative Assessment*, Syngenta Foundation Seeds2B Initiative, September 2015.

10 New Markets Lab, *Economic Impact Assessment and Legal Review and Analysis of the East African Community Seed and Fertilizer Legislation*, Study Commissioned by the East African Community and Alliance for Green Revolution in Africa, 2019.



Competency and Related Services Regulation No. 361 of 2015, and the Plant Quarantine Regulations No. 4 of 2002 currently regulate the seed sector. While Ethiopia's system is not aligned with the COMESA Harmonized Seed Trade Regulations under these instruments, Ethiopia's system was under revision at the time, with a new Seed Policy in place as of June 2020 and a new Seed Proclamation in draft form.¹¹ The specific focus of this project was on the Draft Seed Proclamation that will replace Seed Proclamation No. 782 of 2013. Given the need to harmonize Ethiopia's national seed framework with the COMESA Seed Trade Harmonization Regulations, NML applied its methodology (see diagram below in Legal Methodology of Legal Analysis section) to review the draft seed law, applying a comparative approach to understand models used by other countries for harmonizing national law with COMESA rules (as well as the rules of other RECs) and make recommendations on how Ethiopia could better align with the COMESA seed regulations, while also successfully addressing the unique needs of the Ethiopian seed market.

Component Two: Supporting the Implementation of the Common Variety Identification Number (VIN) in Selected COMESA Member Countries

The public sector is the main breeder of plant varieties in most African countries, as represented by the national agricultural research systems (NARS), public universities, and the International Agricultural Research Centres of the Consultative Group for International Agricultural Research (CGIAR Centres). CGIAR Centres tend to develop parent variety material and share it with the NARS, although NARS also develop parent material of their own. The CGIAR Centres transfer improved germplasm under Material Transfer Agreements (MTAs) following the Standard Material Transfer Agreement (SMTA) model. Once the improved germplasm is transferred, the NARS or seed companies may use it to derive combinations of varieties and then release and register those varieties by the national seed laws and regulations. Although the germplasm is transferred, the ownership of the parental inbred lines remains with the CGIAR Centre, as they are considered international public goods.

When the parent variety material is transferred by the CGIAR Centre to more than one NARS or seed company, variety identification and naming become very important aspects, especially about varieties that are intended for registration in regional seed catalogues such as the COMESA Variety Catalogue. The NARS or seed companies to which the parent variety is transferred use it to develop other varieties, which the NARS or seed companies then name by relevant

national demand and national laws and regulations or institutional rules where applicable. In this way, varieties developed from the same parent variety material could have different names in different countries in cases where the material was transferred to different NARS and seed companies. It follows that a similar variety could be registered under more than one national system and might appear more than once in the regional seed catalogue.

See Figure 1 below.

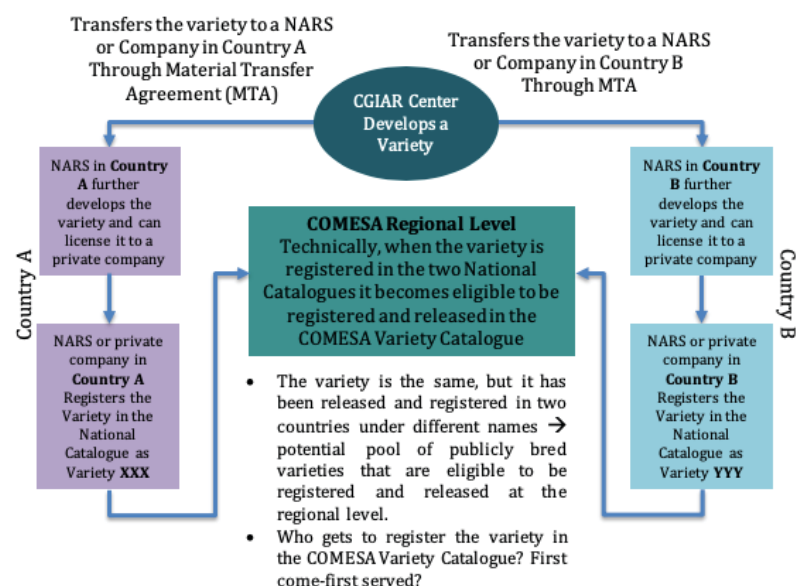


Figure 1: New Markets Lab Systems Map on the Transfer of Parent Variety Material by CGIAR Centres

Source: New Markets Lab (2020)

Adopted from Making the COMESA Catalogue a Working Platform: Legal Implications of Implementing the VIN, Presentation before the COMESA Seed Committee on November 6th, 2019, Kigali, Rwanda

While this has not happened yet, multiple registrations of the same varieties in a regional seed catalogue would confuse the market and raise challenges regarding the significance of the catalogue to regional trade. The solution to multiple entries of the same variety could be the use of a plant variety identification number (VIN). A VIN is a unique number that identifies a particular variety based on distinctness, uniformity, and stability (DUS) or molecular markers.¹² Use of a VIN could ensure clear identification and naming of a variety, which is relevant in giving credit to the developer or breeder of that variety. The challenge here would be that

¹¹ Mohammed Hassena, Joep van den Broek and Gareth Borman, *Institutional Mapping and Needs Assessment of Ethiopia's Public Seed Sector Services*, Wageningen Centre for Development Innovation Wageningen, February 2020.

¹² PS Setimela and BM Prasanna, *Variety Identification Number (VIN)*, Presentation to the SADC Technical Committee Meeting of Directors of Crops, National Seed Authorities and National Plant Organizations. Available at: <https://repository.cimmyt.org/bitstream/handle/10883/19860/59924.pdf?sequence=1&isAllowed=y>.

the NARS or seed companies may also wish to gain recognition for the varieties they develop using the parent variety. In response to this issue, the International Maize and Wheat Improvement Centre (CIMMYT) proposed that the VIN be used in the regional seed catalogue in addition to the variety's commercial or brand name.

The use of the VIN would also allow the market to trace the seed throughout the region, which is relevant in terms of lineage, seed quality assurance, trade facilitation, and anti-counterfeiting.¹³ Where rules on plant variety protection exist, proper identification of a plant variety would also provide the breeder with an added layer of legal certainty and security concerning that variety. In addition to variety registration, nationally and/or regionally, a breeder could seek Plant Breeders' Rights (PBR) protection and license the use of the variety for commercialization throughout the region with an added layer of security (although a breeder can also license the use of a variety registration for commercialization without PBR).¹⁴ Since the national catalogues link with the COMESA Variety Catalogue,¹⁵ the VIN should be assigned in the early stages of varietal development to ensure traceability.¹⁶ The VIN should be assigned by the relevant CGIAR Centre so that the variety is identifiable through the national variety registration and release processes up to the regional level. The legality of the relationship between the CGIAR Centres and the NARS or seed company, established by the MTA, is relevant to the naming of the variety. The NARS or seed company must agree to the use of the VIN, especially to the extent that commercial or brand names given to the varieties derived by the NARS or seed companies are only registered in the national and regional seed catalogues with the use of the VIN. Throughout the assignment, NML will hold discussions with key stakeholders, including NARS, seed companies, CGIAR Centres, and regulators to understand their relationship, priorities, interests, and likely challenges related to the use of the VIN.

Notably, there are rules at the national, regional, and international levels that impact the description and naming of a new variety intended for registration in the national or regional seed catalogues.

While at the regional level, COMESA Seed Trade Harmonization Regulations do not include rules on the naming of plant varieties, most countries' national seed laws and regulations, including laws and regulations on plant breeder's rights, contain provisions on the identification and naming of new seed varieties. In Tanzania for instance, the Seed Regulations provide that a plant variety name can include a word, a number, or a letter (or a combination of a number and letter). In Uganda, the 2007 Seed Act simply refers to a variety name as any name the breeder gives to a variety. Depending upon the national seed regulatory framework, flexibilities may exist that allow the naming of the variety using the VIN and registration using the same on the national seed catalogue.

At the international level, the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)¹⁷ provides for the rules on fair and equitable sharing of plant genetic resources. Under the treaty, an SMTA was developed and adopted in 2006¹⁸ to facilitate access to publicly bred genetic material. CGIAR Centres like CIMMYT have used the MTAs based on the SMTA when transferring genetic material, with relevant additions or changes.¹⁹ The International Convention for the Protection of New Varieties of Plants (UPOV Convention)²⁰ is another international treaty relevant to the description and naming of plant varieties. The UPOV Convention provides for *sui generis* protection of plant varieties, consistent with the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and includes rules on the naming of a new variety before it can qualify for protection. These rules have been adopted by some countries and apply to a variety of descriptions and names at the national level. NML followed its methodology (see diagram below in the Legal Methodology of Legal Analysis section) to apply a systems approach to evaluate the applicability of multi-layered legal and regulatory measures on the use of the VIN in variety identification and naming while focusing specifically on the implementation of such an approach.

13 New Markets Lab, *Making the COMESA Catalogue a Working Platform: Legal Implications of Implementing the VIN*, Presentation before the COMESA Seed Committee on November 6th, 2019, Kigali, Rwanda.

14 New Markets Lab, *Making the COMESA Catalogue a Working Platform: Legal Implications of Implementing the VIN*, Presentation before the COMESA Seed Committee on November 6th, 2019, Kigali, Rwanda.

15 Under the COMESA Harmonized Seed Trade Regulations, a variety can be registered on the regional seed catalogue if it is registered in two national Catalogues.

16 New Markets Lab, *Making the COMESA Catalogue a Working Platform: Legal Implications of Implementing the VIN*, Presentation before the COMESA Seed Committee on November 6th, 2019, Kigali, Rwanda.

17 Adopted by the Thirty-first session of the FAO Conference on 3 November 2001 and entered into force on 29 June 2004.

18 Resolution 1/2006 of 16 June 2006. Available at: <http://www.fao.org/3/a-bc083e.pdf>.

19 Peter Setimela, et al, *Variety Release and Registration of Public Bred Varieties and Land Races*, Presentation to the SADC Technical Meeting on 13th-17th November 2017.

20 *The International Convention for the Protection of New Varieties of Plants*, available at <https://www.upov.int/portal/index.html.en>.



2.2. Approach

The project's three overall objectives included (1) strengthening the dialogue at the national and regional levels; (2) supporting the implementation of regionally harmonized seed laws and regulations; and (3) developing an information guide to facilitate seed movement including the digitization of COMESA/EAC seed certification procedures. NML's scope for this assignment was focused on the second objective, divided into the following components:

- Provide guidance on regulatory options for the alignment of Ethiopia's seed laws and regulations (specifically Ethiopia's Draft Seed Proclamation and new subsidiary measures that will be developed) with COMESA Harmonized Seed Trade Regulations of 2014;²¹ and
- Support the development and implementation of the common VIN and facilitate registration of qualified varieties into the COMESA Variety Catalogue.

NML drew from its comparative expertise and previous work in regional seed harmonization in sub-Saharan Africa (specifically in Ethiopia, Kenya, Uganda, Zambia, and Tanzania) to analyse Ethiopia's Draft Seed Proclamation and deliver annotated comments and recommendations for legal and regulatory options that are aligned with the COMESA Seed Trade Harmonization Regulations and global good practices as well as deliver a legal analysis on the use and implementation of the common VIN in the key focus countries and develop and facilitate an agreement between COMESA and key CGIAR Centres on the use and implementation of the VIN. NML applied a holistic approach to this assignment, considering the implications that national legal and regulatory frameworks may have on the implementation of regionally harmonized seed rules and the effective use of the common VIN at the national, regional, and international levels. NML applied national, regional, and international instruments relevant to the alignment of national laws to regional seed regulations and the use and implementation of the common VIN. Throughout this assignment, stakeholder engagement was critical to successful delivery. NML consulted with key stakeholders to inform the legal review and analysis to develop annotated comments and recommendations under Ethiopia's Draft Seed Proclamation, assess the legal implications of the use of common VIN, and facilitate engagement between COMESA and CGIAR Centres to develop an agreement on the use of the common VIN.

2.2.1. Guidance on Regulatory Options for COMESA-Aligned Seed Laws and Regulations in Ethiopia

As described above, the first component under this assignment was to support the alignment of Ethiopian Seed Laws and Regulations (specifically Ethiopia's Draft Seed Proclamation and new subsidiary measures, including regulations, that will be developed) with COMESA Harmonized Seed Trade Regulations of 2014. The output initially took the form of annotated comments and guidance on regulatory options (with draft provisions optional if requested) that could apply within the context of Ethiopia's legal and regulatory framework. NML undertook the following activities:

- Conducted preliminary research and assessment of legal and regulatory frameworks, including proposed legal and regulatory changes,
- Analysed existing legal frameworks and draft legislation related to the seed sector in Ethiopia and made initial recommendations on existing frameworks focused on alignment with COMESA Harmonized Seed Trade Regulations,
- Established relevant points of contact within the national regulatory agencies (Ministry of Trade, national seed authorities, Ethiopian Agricultural Research Organization, national plant protection offices), private sector stakeholders (seed companies and seed trade associations), working with AGRA and COMESA, and conduct consultations, in particular with government officials involved in developing decrees related to variety release, phytosanitary measures, and other relevant areas (these will be conducted virtually due to COVID-19 restrictions),
- Provided draft annotated comments and recommendations on draft seed laws and regulations to provide options and guidance based on COMESA Harmonized Seed Trade Regulations and international good practices,
- Shared draft annotated comments and recommendations during a validation meeting organized by COMESA in Ethiopia (pending removal of travel restrictions due to the COVID-19 pandemic) to gather feedback and comments,
- At the request of the government in Ethiopia, draft additional legal instruments/provisions would have been developed to align with the COMESA Harmonized Seed Trade Regulations and international standards (these were not requested), and
- Finalized annotated comments, recommendations, and draft legal provisions incorporating feedback from the validation meeting.

²¹ COMESA Seed Trade Harmonization Regulations, 2014. Available at: <https://www.oatf-africa.org/wp-content/uploads/2020/01/COMESA-Seed-Trade-Harmonisation-Regulations-English.pdf>.



These specific activities were integrated into four deliverables:

- Inception Report with Engagement Strategy,
- Draft Annotated Comments and Recommendations on Ethiopian Seed Laws/Regulations,
- Validation Meeting,
- Final Annotated Comments and Recommendations on Ethiopian Seed Law/Regulations, and
- Draft additional legal instruments/provisions, as requested, that align with the COMESA Harmonized Seed Trade Regulations and international standards.

2.2.2. Supporting the Implementation of the

Common Variety Identification Number (VIN) in Selected COMESA Member Countries

The second component of this assignment was to support the development and implementation of the common VIN and facilitate the registration of qualified varieties in the COMESA Variety Catalogue. The outputs include a report on the analysis of legal aspects of implementation of the common VIN and registration of seed varieties not in the COMESA Variety Catalogue as well as agreements between COMESA and key CGIAR Centres on the implementation of the common VIN. NML undertook the following activities:

- Conducted preliminary background research on legal and regulatory implications of the VIN,
- Assessed the legal and regulatory implications at the national and regional levels on the use and implementation of VIN in key focus countries,
- Developed draft analysis on the use and implementation of the VIN at the national level, including an assessment of regulatory implications and country positions,
- Identified key stakeholders (with the assistance of AGRA and COMESA) in key focus countries (Zambia, Kenya, Uganda, Ethiopia, and Tanzania), and collected relevant sources for background materials on VIN,
- Conducted virtual²² stakeholder consultations, with a particular focus on the NARS in Kenya, Ethiopia, Zambia, Uganda, and Tanzania, to assess national positions regarding the use of VIN on seed varieties developed by CGIAR Centres
- Finalized analysis on the use and implementation of the VIN at the national level,

- Conducted outreach with key CGIAR Centre representatives, including legal officers,
- Facilitated engagement between COMESA and key CGIAR Centres on using the VIN to identify the CGIAR Centre's positions on agreeing with COMESA authorizing the use of the VIN,
- Developed a draft model agreement followed by customized draft agreements between key CGIAR Centres and COMESA on the use of the VIN,
- Vetted drafts with key CGIAR Centres and COMESA and integrated feedback, and
- Finalized draft agreements between CG Centres and COMESA, working closely with the NARS as well.

These specific activities were integrated into six deliverables, some with sub-components:

- An Inception Report with Engagement Strategy,
- Draft Analysis Report on the Use and Implementation of the VIN at the National Level,
- Consultation Meeting Notes,
- Draft Agreements Between CG Centres and COMESA on the Use of VIN (with Draft Model Agreement developed and customized),
- Final Analysis Report on the Use and Implementation of VIN at the National Level, and
- Final Agreements Between Key CG Centres and COMESA on the Use of VIN.

²² Due to the COVID-19 pandemic, it is assumed that virtual stakeholder consultations will need to replace field visits at least through year one or until travel restrictions have been lifted.



2.3. Achievements

NML completed all outputs under Component One (*Guidance on Regulatory Options for COMESA-Aligned Seed Laws and Regulations in Ethiopia*) which included submitting annotated comments and guidance on regulatory options for Ethiopia seed laws and regulations, conducting a validation workshop, and advising the Ethiopian government on additional provisions that align with the COMESA Harmonized Seed Trade Regulations and international standards. NML also completed the fourth output, i.e., submission of the final draft annotated comments and recommendations on Ethiopia's Draft Seed Proclamation.

In October 2021, the NML team travelled to Ethiopia to present its findings under Component One before a high-level stakeholder meeting organized by COMESA. The meeting took place from October 13-14, 2021, and was attended by dignitaries in the Ethiopian government, including the Minister responsible for agriculture, department heads from the Ministry of Agriculture, heads and breeders from the Ethiopian Institute of Agricultural Research, and local and multinational seed companies. NML developed a presentation for this meeting, which it has shared with COMESA. Based on the feedback from this meeting, NML revised the Draft Annotated Comments and Recommendations and submitted the Final Report by the end of January. With the submission of this Final Report, NML achieved the outputs and targets set out under Component One.

Under Component Two (*Supporting the Implementation of The Common VIN in Selected COMESA Member Countries*), the NML team has completed all the above-mentioned activities. NML completed preliminary background research on relevant regional regulations (COMESA Seed Harmonization Regulations, 2014) and the Standard Material Transfer Agreement (SMTA) relevant to the implementation of the VIN. NML also completed background research on the regulatory frameworks of Kenya, Tanzania, Uganda, Zambia, and Ethiopia which has informed its analysis of the use and implementation of the common VIN in these countries. Further, NML completed substantial outreach activities, having consulted stakeholders including COMESA, the CGIAR Centres, NARS, and seed companies to assess positions on the use of the common VIN and initiate engagement on relevant agreements to facilitate its use.

In September 2021, the NML team travelled to the African Seed Trade Association (AFSTA) Congress to consult with stakeholders with whom remote contact could not readily be established. NML consulted with Kibo Seed Tanzania, AATF, Seed Co. Kenya, Kenya Agriculture Livestock and Research Organization, IITA, and Zambia Seed. Consulted stakeholders were generally receptive to using

the VIN and mentioned that some international research centres like CIMMYT had already started using the VIN. Some stakeholders, however, foresaw challenges in implementation, including the application of both the VIN and variety commercial name on the national variety list, which is dependent upon the national laws on variety naming.

NML completed the draft analysis on the use and implementation of the VIN at the national level, including an assessment of regulatory implications and country positions. NML has submitted the report to AGRA and COMESA, which is now pending review and finalization. Further, NML also spoke with stakeholders from COMESA and key CGIAR Centres to develop a Template MOU and customized agreements/MOUs to implement the VIN. This quarter, NML facilitated engagement between COMESA and key CGIAR Centres to develop final draft agreements/MOUs between CG Centres and COMESA on the use of the VIN. NML developed a Template VIN Memorandum of Understanding (MOU) which was shared with key CGIAR Centres, namely CIMMYT and ICRISAT, who reviewed and commented on the MOU. These customized MOUs will now go through a further internal process within the CG centres. In terms of the next steps, it would be advisable to weigh in on aspects of the implementation of the VIN through the MOU and other instruments at the regional and national levels, which have been highlighted in the report. Table 2 outlines some interventions that are meant to achieve the harmonization of seed laws, regulations, and the VIN.



Table 2: Achievements contributing to the harmonization of seed laws, regulations and the Variety Identification Number (VIN) system

| Objective | Activity | Output | Outcome |
|---|--|--|---|
| Development and implementation of regionally aligned seed laws and regulations. | <p>Conduct preliminary research and assessment of legal and regulatory frameworks, including proposed legal and regulatory changes.</p> <p><i>Inception Report/Engagement Strategy developed.</i> <i>Background documents and sources identified and gathered for preliminary research.</i> <i>Assessment of Ethiopian legal and regulatory framework, including proposed legal and regulatory changes completed.</i></p> | 1. Initial draft provisions, annotated comments, and guidance on regulatory options for national seed laws and regulations that align with regional regulations and are benchmarked against regional and international good practices. | National seed laws and regulations are aligned with regional seed laws and regulations and are benchmarked against regional and international good practices. |
| | <p>Analyse existing legal frameworks and draft legislation related to the seed sector in Ethiopia and make initial recommendations on existing frameworks focused on alignment with COMESA Harmonized Seed Trade Regulations.</p> <p><i>Analysis of existing frameworks and Ethiopian Draft Seed Proclamation completed.</i></p> | | |
| | <p>Establish points of contact within the national regulatory agencies (Ministry of Trade, national seed authorities, Ethiopian Agricultural Research Organization, national plant protection offices), private sector stakeholders (seed companies and seed trade associations), working with AGRA and COMESA, and conduct consultations with government officials involved in developing decrees related to variety release and phytosanitary measures (these will be conducted virtually due to COVID-19 restrictions).</p> <p><i>Points of contact established with the Ethiopian Customs Authority, Ethiopia Seed Trade Association, the Plant Health & Regulatory Directorate General, and other stakeholders, with the assistance of AGRA and COMESA.</i> <i>Consultations with relevant government officials conducted.</i></p> | | |
| | <p>Provide draft annotated comments and recommendations on draft seed laws and regulations in order to provide options and guidance based on COMESA Harmonized Seed Trade Regulations and international good practices.</p> <p><i>Draft Annotated Comments and Recommendations finalized in preparation for vetting by stakeholders.</i></p> | | |
| | <p>Share draft annotated comments and recommendations during a validation meeting organized by COMESA in Ethiopia (pending removal of travel restrictions due to COVID-19 pandemic) to gather feedback and comments</p> <p><i>NML team presented findings before Ethiopian government officials in the high-level stakeholder consultation meeting in Ethiopia from October 13 – 14, 2021</i></p> | | |



| Objective | Activity | Output | Outcome |
|--|--|--|---------|
| | <p>At the request of the government of Ethiopia, draft additional legal instruments/provisions that align with the COMESA Harmonized Seed Trade Regulations and international standards</p> <p><i>In connection with the High-level meeting in Ethiopia, NML provided advice to the Ministry of Agriculture on provisions that could be revised under the Draft Seed Proclamation in order to align it with COMESA Harmonized Seed Trade Regulations and International Seed Standards.</i></p> | | |
| | <p>Finalize annotated comments, recommendations, and draft legal provisions incorporating feedback from the validation meeting.</p> <p><i>NML submitted final annotated comments and recommendations incorporating feedback from the validation meeting by end of January 2022.</i></p> | | |
| The Implementation of The Common Variety Identification Number (VIN) in Selected COMESA Member Countries | <p>Conduct preliminary background research on legal and regulatory implications of the VIN.</p> <p><i>Inception Report/Engagement Strategy developed (same as above). Identification of background documents and sources for preliminary research completed.</i></p> | 2. Report on the analysis of legal aspects of implementation of common VIN and registration of qualified varieties not in COMESA Variety Catalogue produced. | |
| | <p>Assess the legal and regulatory implications at the national and regional levels on the use and implementation of VIN in key focus countries.</p> <p><i>Preliminary research on legal aspects of the implementation of the VIN and legal and regulatory frameworks in Kenya, Tanzania, Uganda, Zambia, and Ethiopia ongoing.</i></p> | | |
| | <p>Develop draft analysis on the use and implementation of the VIN at the national level, including an assessment of regulatory implications and country positions.</p> <p><i>Draft analysis on the use and implementation of the VIN at the national level conducted.</i></p> | | |
| | <p>Identify key stakeholders (with the assistance of AGRA and COMESA) in key focus countries (Zambia, Kenya, Uganda, Ethiopia, and Tanzania), and collect relevant sources for background materials on VIN.</p> <p><i>Key stakeholders in focus countries identified and consulted.</i></p> | | |
| | <p>Conduct virtual (or in person) stakeholder consultations, with a particular focus on the NARS in Kenya, Ethiopia, Zambia, Uganda, and Tanzania, to assess national positions regarding the use of VIN on seed varieties developed by CGIAR Centres</p> <p><i>NML completed stakeholder consultations by Q1 2022.</i></p> | | |
| | <p>Finalize analysis on the use and implementation of the VIN at the national level</p> <p><i>Report on analysis on the use and implementation of the VIN at the national level submitted.</i></p> | | |



2.4. Challenges

Extensive preparatory time was required to develop a framework for the implementation of a common VIN; implementation itself will require additional steps at the CG and national levels (as will registration of qualified varieties in the COMESA Variety Catalogue, although VIN activities helped facilitate this).

2.5. Lessons Learned

Under objective two, one of the key findings of our assessment is the limited knowledge regarding the VIN and its benefits at the regional level. Further, stakeholders also displayed unfamiliarity with regional registration rules, and some were sceptical about registering public varieties in the COMESA Variety Catalogue. At the national level, NSAs are key to implementation of the VIN so they will need to be more fully engaged during subsequent implementation phases. Finally, while the activities were designed to facilitate the entry of new varieties in the COMESA seed catalogue, this will also require additional effort once the VIN agreements are in place with CG Centres (CG partners have warned that this will take some time, as the agreements will need to go through internal legal review, which may be affected by the OneCG initiative



Chapter 3

ECI-Africa drafted the Standard Operational Procedures (SOPs) based on the COMESA Harmonized seed regulations (2014) to help implement the regional agreement for maize seed (as a pilot to guide similar processes for other commodities).



Developing Trade Facilitation Systems for Seed: A Trade Requirement Information Guide and Pilot Seed System Audit

3.1. Background

ECI-Africa, as a member of the consortium, had two main components to deliver, that is, developing an information guide on the cross-border seed trade requirements and establishing a seed sector audit mechanism. Additionally, ECI-Africa supported COMESA in coordinating the consortium, including documentation of consortium engagement processes. ECI-Africa delivered on two main components through a highly consultative approach, which built on the relationship established with the Seed Work Advancement Team (SWAT), the heads of the National Seed Authorities, inspectors and customs officials through engagements made in a previous project – the Africa Lead ‘Seed Activity’. Despite the challenges of COVID-19, ECI-Africa set up hybrid meeting formats that enabled engagement with key stakeholders. The process relied on the national team’s support in coordinating the in-country planning to bring stakeholders (e.g., the seed auditors) together while observing the COVID-19 protocols. This included close collaboration with One Acre Fund and AFSTA in the development of the Info Guide and with COMESA in delivering the audit process.

Through consultation and collaboration, ECI-Africa collected and verified the information detailing import, export, cost, documents and duration required to move seed across the border to compile it into an online Info Guide ([Link- *Regional Seed Trade Info Guide – All you need to know about seed trade \(afsta.org\)*](#)). Regarding the seed system audit, as a first step, ECI-Africa drafted the Standard Operational Procedures (SOPs) based on the COMESA Harmonized seed regulations (2014) to help implement the regional agreement for maize seed (as a pilot to guide similar processes for other commodities). Based on these SOPs, an Audit Checklist was drafted. Both the draft SOPs and Audit Checklist were subjected to review by the members of SWAT, COMESA secretariat and national seed authorities. The draft audit checklist and SOPs (*detailed documents are in annexes 1 and 2 of this report*), covered the following:

- Variety Release - National Performance Trials, Distinctness Uniformity and Stability, Release procedures and registration.

- Seed Certification – Field inspection, seed sampling, testing and labelling.
- Importation and exportation procedures (Border controls)- Quarantine and Phytosanitary Measures for Seed.

The validated SOPs and Audit checklist were used to conduct an online audit, with the reports identifying the gaps shared with the national teams as well as the corrective measures that need to be taken. This was done during a learning and sharing session with the Heads of the National Seed Authority. The Info Guide and Audit processes provided an opportunity for the stakeholders to learn/ update their awareness of the set procedures, guidelines and requirements for variety release, seed certification, import and export.

It was evident during the implementation process that the key bottleneck to regional seed trade was that countries still largely operate within national laws, as opposed to the regional COMSHIP harmonized guidelines. This is captured in the import and export procedures as outlined in the Info Guide and the country audit reports. The lack of harmonization seems to be arising from the lack of implementation tools, differences in infrastructural capacities and limited/infrequent dialogue among the stakeholders. Consequently, there is limited trust and good faith amongst the stakeholders. It is strongly recommended that regular stakeholder meetings conducted in a participatory manner be established as seed industry practice and that this should bring together private, public and civil society sectors.

The project provided a learning opportunity among participants from different countries in the region, whose experiences contributed to rich knowledge sharing. In essence, regional seed system audit convenings created a Community of Practice (CoP). The process of including the stakeholders and updating them on the progress of developing the info guide and drafting the SOPs, especially the involvement of the heads of the designated seed authorities, enhanced ownership of the process and outcome. The audit process, if extended and done regularly, will create awareness of COMESA harmonized standards and SOPs among the people on the ground, enabling them to learn more about the set procedures and standards to uphold.

The work done in this project is a modest contribution to what is a significant trade facilitation imperative. More will need to be done at a much grander scale to realize the desired change of meaningfully increasing cross-border trade in seeds. The project and lessons learnt provide an opportunity to invest more in extending the audit, to be modelled on the pilot, to other countries and other



commodities (beyond maize). The gaps identified in the audit report indicate a need for training and coaching for inspectors on COMSHIP SOPs. A missing component in the certification process and the development of the SOPs was the limited involvement of the private sector, which should be represented to hold the national seed authority accountable for implementing the recommended actions. The beta testing of the info guide is also an investment area, which will enable the public and the private sectors to be more familiar with the tool. There is a need to continually support dialogue both nationally and regionally, which will be required to deal with some of the soft, yet hard-pressing issues of mistrust and working in silos.

3.2. Approach

The methodology deployed by ECI-Africa was a highly consultative and collaborative approach with the key stakeholders. We aimed to capitalize on the momentum gained by the Africa Lead Pilot Seed Activity in 2019. This meant maintaining the relationship with the stakeholders i.e., Regional Economic Community (RECs) officials, inspectors, seed traders, border and customs officials and the designated heads of the national seed authority. In each country, we work through the members of the Seed Work Advancement Team (SWAT), a group formed by the stakeholders to ensure the recommendations from the 2019 project were implemented. These key contacts were crucial in identifying and mobilizing the right person who would facilitate the development of the information guide and the preparation and conducting of the pilot seed system audit. The highly consultative process was to ensure ownership and to obtain goodwill in implementing the project during the Coronavirus pandemic (COVID-19). Due to the pandemic and the ensuing closing of borders, the process had to be done in a hybrid setup. ECI-Africa also worked in close collaboration with One Acre Fund, AFSTA, COMESA and Cellsoft who played various roles in the implementation of the two components.

3.3. Trade Facilitation Tools

3.3.1. The Seed Trade Requirement Information Guide Component (i.e., Info Guide)

3.1.1.1. The Purpose of the Info Guide

The Info Guide sought to create accountability by addressing the current information asymmetry between regulatory agencies at borders and other security officials on trade routes on the one hand, and traders - importers and exporters - concerning import and export requirements for seed. The asymmetry particularly

affects small and medium traders who are often at a disadvantage due to lack of or limited information. It was envisaged that the information, including user-friendly information guide or seed information checklists, would be in hard copy and electronic formats, and should be made available and accessible online, updated and maintained regularly by AFSTA. The intended outcome of the Info Guide was to have the information requirements for cross-border movement made available and accessible and stakeholders empowered with information to enhance cross-border seed trade in the COMESA/EAC region.

3.1.1.2. The Info Guide Development Process

Development of the info guide data collection template: ECI-Africa, in collaboration with One Acre Fund and AFSTA, developed the info guide data collection tool, which captured the import and export steps, the body in charge, documentation required, the cost, the time the step takes and verification box for the stakeholders to verify that the information was in line with their experience or the set regulations.

Identification of a list of seed trade requirements- We engaged the country contact person- *the SWAT representative* - who identified the regulators, seed traders, customs officials and clearing agents who provided and counter-checked their country's general seed import and export requirements. The information collected was compiled in an Excel sheet, essentially forming the draft/framework for the info guide.

Wider stakeholder verification of the steps and requirements outlined- The draft Info Guide was shared with wider stakeholders in the respective countries and feedback was received, upon which, the feedback received was verified again by inspectors and customs officials and then incorporated into the draft.

Development of the Online Info Guide- Through 5-year financial support provided by One Acre Fund to support the availability of the info guide online, we engaged a website developer, who in collaboration with the team, developed the online Info Guide based on the draft guide.

Stakeholder orientation and socialization of the Info Guide - To familiarize a wider list of stakeholders with the Info Guide, we convened three border-focused meetings at Namanga on December 14th 2020, Malaba on 18 March 2021 and Tunduma-Nakonde on 31st May 2021. These were hybrid meetings targeting participants from customs and other border officials, NGOs, seed companies, clearing agents and RECs. The objective of the meetings was to increase stakeholder awareness of cross-border seed trade requirements and the need for symmetrical access to information along the seed supply chain, introduce the online guide and obtain their feedback to inform the refinement of the tool and the rollout plan. The meetings reached approximately 178 stakeholders.

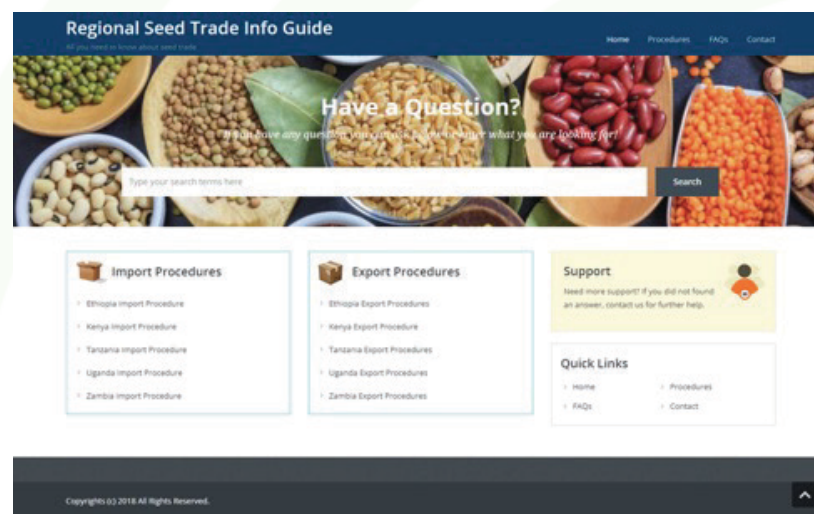


- **Updating and finalizing the online Info Guide-** ECI-Africa compiled all the feedback from the 3 border meetings and shared them with the National Plant Protection Organizations (NPPO) to respond and provide guidance on the comments and suggestions. We collated their responses and used the information to update the Info Guide. The final feedback was shared with AFSTA and the web designer for an update. The resulting Info Guide is a live document which will be edited as laws and regulations are updated. Due to the outbreak of COVID-19, it was deemed unnecessary to develop a hard copy, but rather explore the possibility of Unstructured Supplementary Service Data (USSD).

3.1.1.3. The Info Guide Output

- **Enhanced awareness of the cross-border seed trade requirement and the areas for improvement-** The info guide increased stakeholder awareness of cross-border seed trade requirements and the need for symmetrical access to information along the seed supply chain. During the convenings, stakeholders pointed out that:
 - Due to the various regular changes in regulations, the online guide would be a useful portal for the changes in regulations to be quickly updated.
 - It also provided stakeholders with an overview of the requirements e.g., the number of documents such as 17 export documents in Kenya. This seemed to have created interest in how the process could be shortened/ further streamlined.
 - The participants also noted awareness campaigns on seed movement barely focus on the smallholder and requested their inclusion.
 - Another glaring outcome was the limited uptake of harmonization. The processes as outlined were still governed nationally and there were still some differences. Hence, we need to make more effort to support the RECs towards facilitating regional harmonization.
- **The Online Regional Seed Trade Information Guide-** The task culminated in the development of the online tool. Below are the screenshots of the "Finalized Guide" Here's the link to the updated Info Guide [Regional Seed Trade Info Guide – All you need to know about seed trade \(afsta.org\)](#).

Figure 2: Regional Seed Trade Info Guide



3.3.2. The Pilot Seed System Audit Mechanism Component

3.1.1.1. The Purpose of the Pilot Seed System Audit Mechanism

Seed stakeholders identified mistrust in the certification process as a major bottleneck to cross-border seed trade. To enhance trust and build faith in the certification system and harmonization of standards, it was proposed in the 2019 Pilot Seed Activity to establish and operationalize a mutually recognized regional mechanism that provides audit and support (not policing) to countries to move towards the achievement of regionally agreed standards. The trust would only be achieved by regularly auditing country systems and processes which underpin quality seed production and certification including border controls. Working with the countries, the audit identifies gaps and actions towards achievement and consistent application of regionally agreed (at a minimum) standards.

The mechanism had to be technically competent and independent. It aimed to engender 'positive challenge' and inspire action rather than defensiveness to lead to change without compromising – indeed by strengthening – trust.

Due to budget limitations, the comprehensive audit proposed by stakeholders could not be carried out and the target countries were reduced to Kenya, Zambia and Tanzania. However, the pandemic allowed us to conduct the process online, which enabled us to engage all the active project countries hence Uganda and Ethiopia were added. ECI-Africa, in close collaboration with COMESA and the national seed authority thereby conducted a Pilot Seed



System Audit, which could be used as a template for other audits to follow. To fully realize the benefit of the audit, it needs to be an ongoing process, done annually or as deemed appropriate by the stakeholders. The pilot could be used as learning and a starting point towards learning and improving our systems.

3.1.1.2. The Process of Establishing and Conducting the Pilot Seed System Audit Mechanism

- **Drafting and development of Standard Operating Procedures and Audit Checklist**
 - The Standard Operational Procedures (SOPs) were developed based on the COMESA Harmonized Seed Regulations (2014) to help implement regional agreements for maize seed. Based on these SOPs, an Audit Checklist was then drafted. Both the drafted SOPs and Audit Checklist were subjected to validation by the members of the SWAT and COMESA secretariat. The Audit Checklist and SOPs (*Annex 1 and 2 to this report*), covered the following:
 - Variety Release - National Performance Trials, Distinctness Uniformity and Stability, Release procedures and registration.
 - Seed Certification - Field inspection, seed sampling, testing and labelling.
 - Importation and exportation procedures (Border controls)- Quarantine and Phytosanitary Measures for Seed.
- **Validation of the SOPs, Audit Checklist and Nomination of Seed Auditors**
 - The SOPs and Audit Checklist were shared with the heads of the National Seed Authorities in the target countries, who reviewed, provided feedback and endorsed the SOPs. They also nominated seed experts (two per country) to serve as “auditors” to support the audit process. To make the process transparent, these auditors were subsequently assigned as auditors for a country but not their own and the two auditors from one country were not assigned to the same country as indicated below.

Table 3: List of the National Seed System Auditors and their Assigned Countries in 2021

| Country | Appointed Officers |
|----------|--|
| Kenya | Dr. Francisco Miti, SCCI, Zambia |
| | Medemedemiyaw Nekenkie Debaleke ,MoA, Ethiopia |
| | Mr. Siraj Nyende, NSCS, Uganda |
| Tanzania | Dr. Nathan Phiri, SCCI, Zambia |
| | Fisseha Abebe, MoA, Ethiopia |
| Zambia | Ephraim Wachira, KEPHIS, Kenya |
| | Mr. Erongu Moses Edward, NSCS, Uganda |
| Uganda | Chelagat Tonui, KEPHIS, Kenya |
| | Mr Peter Nassari, TOSCI, Tanzania |
| Ethiopia | Mr. Isaac Muyonga Wamatsembe -NSCS Uganda |
| | Dr. Munguatosha Ngumuo TOSCI Tanzania |

- **Orientation of the Appointed Auditors**
 - The appointed auditors were invited to an orientation and planning meetings to:
 - Meeting held 18th February 2021 – Introduce the project, and objective of the audit system, provide feedback on the SOPs and audit checklist as well as to acquittance the team.
 - Meetings held on 9th and 11th March 2021- These were audit planning meetings to explain the audit process using the audit checklist as well as go over the reporting using the Audit Reporting Template. The audit logistic note, reporting templates, draft SOPs, draft Audit Checklist, and the guide to conducting (Table 3.2) the audit were shared with the auditors.

The meetings included question-and-answer sessions on any area of uncertainty. To facilitate and enable effective communication amongst themselves and for ease of follow-up, the auditors proposed the creation of a WhatsApp group.



Table 4: The Step-by-Step Guide on How to Conduct an Audit as Outlined in the COMESA Auditor's Guide

| HOW TO PERFORM VIRTUAL AUDIT DURING THE COVID 19 PANDEMIC PERIOD |
|---|
| COMESA SEED MAIZE AUDIT 2021 |
| <p>Scope</p> <p>The audit scope is as per the provided Standard Operating Procedures and the audit checklist.</p> <p>Requirements:</p> <ol style="list-style-type: none"> 1. The audit needs to be performed by online video or similar tools like smartphones or tablets. 2. The official online connection is provided using the Zoom platform. If Zoom is not available in the country of audit, use an applicable platform. 3. Always have a backup connection in the form of e.g., WhatsApp or email in case there is a network failure to communicate with the auditee. <p>Process Description</p> <p>A. Pre-audit</p> <ol style="list-style-type: none"> 1. The auditee will be notified in advance of the impending audit by the assigned auditors. An audit timetable should also be prepared and sent in advance. The auditors and auditees may need to agree on the timetable because it must be aligned with the auditee's work schedule and office working hours. Agree when to start and adjourn within the audit cycle period. (The assigned auditors will organize with the host country representatives within their teams to ensure a smooth audit process). 2. The video and audio connection between the auditors and the auditee can be checked in advance and adjusted when necessary. <p>B. Evaluation</p> <ol style="list-style-type: none"> 1. The audit will start with an opening meeting that includes a detailed explanation of the audit process as outlined on the audit timetable. 2. Assessment and evaluation will be done according to the audit timetable. 3. Sources used to collect information are interviews with the assigned staff. Other sources include documents, records, reports, and computerized data. 4. The auditors are expected to use the provided audit checklist and the Standard operating procedures when carrying out the interviews and recording their 'findings/recommendations' on the audit reporting template. Evidence gathered is recorded under 'reference' on the template. When giving recommendations if applicable, refer to the specific Standard operating procedure and not to one's practice in country of origin. 5. Auditors must always avoid reporting that focuses on individuals and culture but should focus on a reporting format that is objective, professional and system-focused. The reporting must be specific to the problem and precise and must be written in simple English. 6. Depending on the audit Programme, the audits may be programmed to take place within certain hours of the day as agreed between auditors and auditee and end in adjournment. 7. At the end of the audit cycle period have a closing meeting with the auditees and thank them for their time and cooperation. Assure them of the confidentiality of the report. 8. Send the report to the secretariat in electronic format. <p>NOTE: The official language for the audit will be English however due to differences in accents, patience should be considered to understand one another.</p> |



- **Conducting and Initial Reporting of the Country Audit**

Acting as the point of contact in their respective countries, the auditors helped to ensure their teams were ready for the audit. They invited the key personnel and helped set the dates for the audit. Upon agreeing on when to conduct the audit, ECI-Africa supported the team to set up various Zoom meetings to go through the three areas of the seed system as outlined in the draft SOPs. The auditing process took nearly a month. The country audit reports (*Annexes 3 to 7 of this report*) were compiled and presented before the auditors on Tuesday, 6th April 2021 to share the preliminary findings. The feedback received during the meeting was used to edit the reports which were shared with the head of the heads of the National Seed Authority.

- **Held the Audit Report Learning and Sharing Session**

Upon receiving the audit report, the heads of the National Seed Authority were invited to a learning and sharing session on 10 May 2021. This meeting was in line with the spirit of the audit to provide support to the countries and learn the best practices from each other. The importance of peer learning was particularly highlighted during the actual audit when personnel were provided with the right procedures on instances where they were not aware they were not fully compliant with the set COMESA/ISTA process. The findings and recommendations for improvement, as per the gaps identified were presented with the comments from the heads of the national seed authority captured as highlighted below in tables 3.3-3.7.

Table 5: Zambia Seed System Gaps, Recommendations and the Way Forward by SCCI

| Audit Checklist Area | Gaps identified | Recommendation from the auditors | Comments from the National Seed Authority (NSA) Team |
|---|--|---|--|
| Authorization of private seed inspectors and entities (licensing and registration of seed inspectors, samplers, and analysts) | <p>The audit team observed that there was no strong regulation of the private seed inspectors due to:</p> <ul style="list-style-type: none"> Private inspectors are not gazetted. The authorized persons are not required to sign letters of indemnity or be issued with letters of independence from their companies. | <p>The acknowledgment of the inspector through licensing and monitoring by SCCI was satisfactory to the auditors.</p> | <p>The team agreed with the auditor's findings and highlighted the measures they have put in place to address this gap as follows:</p> <ul style="list-style-type: none"> Since SCCI is an official government body, the list of authorized inspectors can be accessed through SCCI as licensed auditors. The work of the private seed inspectors is monitored by SCCI as evidence by a sample of a warning letter issued to one of the inspectors. All incidences are filed by SCCI |



Table 6: Tanzania Seed System Gaps, Recommendation and Way Forward by TOSCI

- Tanzania is a member of UPOV, OECD and ISTA, therefore most of its processes are guided by these guidelines. The overall report card rating was that Tanzania is compliant with the regional harmonization agreements with a few areas recommended for improvement as follows:

| Audit Checklist Area | Gaps identified | Recommendation from the auditors | Comments from the National Seed Authority (NSA) Team |
|---|--|--|---|
| a. Authorization of private seed inspectors and entities (licensing and registration of seed inspectors, samplers and analysts) | Tanzania does not currently have a system of authorising private entities as seed inspectors, samplers or seed analysts. | There is an opportunity for Tanzania to institutionalize refresher trainings every 2-3 years. | <p>The team accepted the findings of the auditors:</p> <ul style="list-style-type: none"> The Director General of TOSCI reiterated that Tanzania national laboratory is ISTA accredited, as well as compliant with EAC guideline and consequently COMESA. The recommendation to institutionalize training is noted. Tanzania is working on developing training manuals. |
| b. Seed field inspection | There is no schedule for training seed inspectors implying refresher trainings are as and when an opportunity arises. There is need to formalise and have regular refresher trainings for seed inspectors. | Same as above | Same as above |
| c. Seed intake verification, inspection, and sampling | This is not done by TOSCI but delegated to seed companies. There is need for TOSCI to monitor this process more especially that Tanzania does not license company staff | TOSCI need to undertake verification at the processing point | Seed intake (Delegation to the private sector)- Seed Act recognizes possibility of delegating, but seed companies have not applied to do the verification. The government is currently working on providing <u>guidance and implementation</u> |
| d. Seed Sampling | Tanzania is a member of ISTA. They follow ISTA rules for sampling seed and seed sampling procedures which were found to be satisfactory. However, sampling of seed for certification is done before seed is packaged in final containers which does not conform to ISTA rules which demand that seed should be sampled in final containers as further handling of the seed during repackaging may result into further deterioration and wrong declaration of seed quality. | It is recommended that TOSCI adopt the ISTA procedures fully and sample seed in final containers as required under the COMESA seed system. | The Director General of TOSCI will make a follow up on the issue of containers as the ISTA audits have never highlighted this gap. |



| Audit Checklist Area | Gaps identified | Recommendation from the auditors | Comments from the National Seed Authority (NSA) Team |
|---------------------------|---|----------------------------------|--|
| e. Seed Import and Export | The phytosanitary procedures could not be established, and it was indicated that this was done by another department and would be difficult to bring them on board. TOSCI was requested to provide written import and export procedures which have not been availed for verification and confirmation | | Phyto processes is handled under Plant Protection Act administered directly by the Ministry of Agriculture and the minister can delegate. Currently Tropical Pesticide Research Institute (TPRI) have been delegated to undertake phytosanitary issue while the ministry still handles some of the issue. The institution is easily accessible, and auditors can visit the Ministry and the institution. |

Table 7: Ethiopia Seed System Gaps, Recommendation and Way Forward by Ministry of Agriculture

- Ethiopia is working towards strengthening its seed system.

| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority & Team |
|----------------------|---|----------------------------------|---|
| a. DUS | DUS tests are not conducted in Ethiopia by the Regulatory Authority though it is clearly indicated in their mandate i.e., Ethiopia Institute of Agriculture. The breeders use DUS test guidelines to describe the varieties. There are no DUS testing sites. DUS report from other countries are accepted. They regulations have been amended to have independent authority to conduct DUS. | | The report was accepted by Ethiopian team. The Ethiopia Seed Proclamation has provided mandate for the regulatory bodies to conduct DUS, VCU which the Ministry is working on operationalizing |



| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority & Team |
|---------------------------|--|--|--|
| b. VCU | <p>It is also not conducted by independent regulatory body. But there is proclamation in the seed act for this to be conducted by regulatory body. The breeders who are mainly from government organizations conduct the VCU and submit the data to the authority for approval. The data submitted are from different established testing sites. SOPs for conducting VCU was shared with us which explain in detail how these trials are conducted. Two years by three locations are data submitted by breeders as well as quality data from other organizations if required.</p> <p>VVT These are variety evaluation trials; breeders will submit application for VVT after finishing NPT. These are conducted by the breeders but evaluated by the authority. There are designated sites for conducting VVT, a total of nine sites is required. There are guidelines for conducting VVT which was also shared as well.</p> | | Same as above |
| c. Seed Import and Export | <p>Seed import and export are under the custody of the Plant health and quality control directorate in the Ministry of Agriculture. Seed import is exclusive to only those companies that are registered and for only those varieties that are registered in Ethiopia. The only exception is for the research institutions that are importing materials for purposes of research and evidence has to be provided to show that the individual importing such materials is from a research institution. Export of seed is exclusive to companies that hold an investment license, and such seed must not be traded in Ethiopia but only exported. Research is still exempted from such a requirement once such proof is provided. For seed exports, however, an orange ISTA certificate is not a requirement and to date no seed exports are being done, the Phytosanitary certificate shared is for other plant materials.</p> | Ethiopia as a country should work towards getting ISTA accreditation especially when it comes to export of seed to countries that require orange ISTA certificates in future | |



| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority & Team |
|---|--|--|--|
| d. Handling Quarantine pests | Ethiopia as a country has a list of quarantine pests which was shared with the auditors, and it is on this basis that the conditions in the plant import permit are come up with. However, there was no evidence of pest risk analysis (PRA) being done from the interaction with the auditees. There is no special clearance for materials to be held in quarantine but rather those materials brought in the country without the necessary documentation and those that are suspected to carry harmful organisms are the ones that re held at the post-entry station. The post-entry quarantine station is managed by the Plant Quarantine and pesticide research directorate in the institute of Agricultural research. The audit team didn't have the opportunity to interact with colleagues from the research institute to get a true picture of what is exactly done. | There is need for the Ethiopia to consider reverting the function of plant quarantine fully to the Ministry of Agriculture, the regulator because this is currently being done by the research institute who in one way or the other are also being regulated which becomes a conflict of interest | |
| e. Authorization of private seed inspectors and entities (licensing and registration of seed inspectors, samplers and analysts) | This is supported by the ministry directives, but it is not institutionalized or practiced in Ethiopia. The qualification of the authorized inspector is at least a university degree with a minimum experience of five years. He/she must be registered with entity recognized by the government. He inspector must show evidence of a formal training on seeds. As for entities the organization must be registered within Ethiopia and have investment letter from the ministry of trade. Physical infrastructure of the entity is also assessed as well as personnel. | | |
| f. Seed intake verification, inspection and sampling | Seed crop intake verification is not often done but rather sampling after the cleaning of seed is done when it has been lotted and is sampled at that point for laboratory seed testing. The recommendation is that the team should try and do this verification in line with the harmonised guidelines | | |
| g. Equipment Calibration & Maintenance | No records of equipment calibration and maintenance. | | |



Table 8: Kenya Seed System Gaps, Recommendation and Way Forward by KEPHIS

- Kenya was found to be compliant with COMESA standards except for one area as highlighted below.

| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the Head of the National Seed Authority and Team |
|-----------------------------|---|---|---|
| Seed Import and Export | The process is satisfactory for processes of seed importation and exportation. However, not fully ok with clearance for sale of imported seed lots labelled with COMESA labels. Contrary to COMESA seed trade regulations, imported seed lots labelled with COMESA labels are subjected to test & re-certification if they meet Kenya standards | Kenya must domesticate the COMESA provision that such imported certified seed lots under the COMESA seed system should be cleared for marketing without subjecting them to the same quality tests conducted by the exporting country) | Agreed with the findings of the audit. This is done because during transit, some issues tend to arise with the consignment. The retesting is to ensure the viability of the seed. remains as the same as it was tested. This is done in the fastest time possible. |

Table 9: Uganda Seed System Gaps, Recommendations and Way Forward by NSCS

- Uganda is a member of the OECD and follows UPOV guidelines as well. Uganda generally conforms to COMESA SOPs except for the areas highlighted below.

| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority and Team |
|-----------------------------|--|--|---|
| a. DUS | The DUS process meets most of the requirements of the COMESA SOP for DUS The test is carried out as per the UPOV test guidelines although the country is not yet a member of UPOV | 1. Have a clear method of ascertaining soil fertility of the selected sites to assure uniformity of soil in terms of nutrients This should be done through soil analysis or a clearly documented crop rotation plan 2. Have the same examiners/ operators collect data during the trial for consistency | The recommendation was acknowledged |



| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority and Team |
|---|---|--|--|
| b. VCU | <p>VCU testing is done by National Agricultural Research Organization (NARO) on behalf of Uganda's NSA as stipulated in the law (Agricultural seeds and Plant Act of Uganda (Cap 28))</p> <p>The process meets most of the requirements of the COMESA SOP for VCU</p> <p>However,</p> <ol style="list-style-type: none"> 1. There is no clear method of ascertaining soil 2. fertility of the sites selected for the test <p>Population/ stand count after thinning is not done</p> | <ol style="list-style-type: none"> 1. There is need to have a clear way of ascertaining soil fertility of the selected site to assure uniformity of soil in terms of nutrients and to guide on type of fertilizer to be used. This should be done through soil analysis or a clearly documented crop rotation plan 2. Take data at thinning (stand count at thinning) to ensure the required plant population during data collection | <p>This is a mandate of NSCS, to conduct DUS and VCU, but the law provides stipulation for delegation, probably due to limited human resource and infrastructure capacity. The team indicated they occasionally audit this process. This is acknowledged and NSCS is working towards taking back the mandate</p> |
| c. Authorization of private seed inspectors and entities (licensing and registration of seed inspectors, samplers and analysts) | <p>The process is not currently implemented</p> | | |
| d. Variety release and Catalogue | <ol style="list-style-type: none"> 1. Variety release and updating of National variety release is handled by National Variety Release Committee (NVRC) as stipulated in the Agricultural seeds and Plant Act of Uganda (Cap 28) 2. Varieties already released in 2 COMESA countries will be entered in the catalogue where an application is submitted with the necessary information on DUS and VCU data | <p>The variety evaluation is done by NARO and Makerere University who conduct the development. It is noted that this is in the law, which contradicts EAC agreements. The recommendation is to work to separate and provide the power of evaluation to the seed authorities for independent testing.</p> | <p>As mentioned above, this is acknowledged and NSCS is working towards taking back the mandate</p> |



| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority and Team |
|--|--|--|--|
| e. Post-control testing of seed lots | <p>The process meets most of the requirements of the COMESA SOP for Post control testing of seed lots</p> <p>However,</p> <ul style="list-style-type: none"> -There is no elaborate data for previous tests done -Not all varieties are covered in the test. | <p>Post control test is an important aspect of checking both the seed inspection process and seed merchants of handling seed during certification process. This will help in correcting any anomalies hence save the farmers in the region, from using poor quality seeds. Therefore, there is need to;</p> <ol style="list-style-type: none"> 1. Maintain data for tests carried out for traceability and reference purposes 2. Include all the certified varieties that are traded in the region | |
| f. Seed Sampling | <p>The process meets the SOP requirements in most of the steps however;</p> <ol style="list-style-type: none"> 1. There is no procedure for monitoring of samplers. Instead, the same is done through; <ul style="list-style-type: none"> a) Rotation of samplers b) Having at least two samplers per sampling points c) Annual trainings (although not consistent due to occasional challenges of funds) 2. No clear differentiation of lots, especially large fields with more than one crop per field. 3. Samples are submitted to the laboratory in sealed bags without security seals. | <ol style="list-style-type: none"> 1. There is need to have a monitoring procedure for samplers (to include blind tests) to ensure consistency and accuracy in sampling. 2. Have a clear method of differentiating lots based on the crops harvested 3. There is need to introduce serialized seal tags to assure integrity of samples to the laboratory. | |
| g. Seed sample Reception, Storage and Disposal | <p>The process meets most of the requirements of the COMESA SOP for Seed sample Reception, Storage and Disposal however;</p> <ol style="list-style-type: none"> 1. List of gazetted samplers is not maintained in the laboratory which poses a risk of receiving samples from unverified sources. | <ol style="list-style-type: none"> 1. There is need to have an updated list of gazetted samplers for use during verification of samples to ensure only samples from gazetted samplers are received. | <p>All samplers are appointed by the public service commission. All inspectors and samplers are gazetted</p> |



| Audit Checklist Area | Gaps Identified | Recommendation from the auditors | Comments from the head of the National Seed Authority and Team |
|--|--|--|--|
| h. Germination analysis | The process meets most of the requirements of the COMESA SOP for Germination Analysis however, germination rooms/ incubators temperature is not monitored posing the risk of inaccurate and inconsistent results | There is need for monitoring temperature in the germination rooms/ incubators (by use of thermograph or any other suitable equipment) for accurate and consistent results | This is noted for corrective action |
| i. Equipment Calibration & Maintenance | The process meets some of the requirements of the COMESA SOP for Germination Equipment Calibration & Maintenance 1. Calibration is only done annually by an external body. 2. There is no routine equipment calibration. This poses risk of capturing inaccurate results and /or the records may not satisfy the set operating system. | 1. Implement the procedure for general equipment maintenance outlined in the COMESA SOP. (see 3.1-3.10) 2. Maintain schedules for all equipment in use (COMESA SOP see 4.0) 3. Internal calibration to be done for all equipment requiring calibration before use (COMESA SOP see 5.1) | |

3.1.1.3. Output of the Seed System Audit

- Developed SOPs to enable the implementation of COMSHIP, which is outlined in Annexure 3.
- Developed an Audit Checklist, which is outlined in Annexure 1.
- Identified an initial list of seed system auditors – there were 11 auditors from five countries (namely, Kenya, Tanzania, Zambia, Uganda and Ethiopia) which are outlined in Table 3.
- Developed a guide on how to conduct the audit, which is outlined in Annexure 2.
- Collaboratively conducted a regional audit, focused on Ethiopia, Uganda, Kenya, Tanzania, and Zambia.
- Held a recommendation and learning session with heads of the seed authorities to discuss the identified gaps.

3.4. Challenges

- **Countries still largely operate within national laws** as seen in the Info Guide and the audit reports. What is needed to stimulate the use of the COMESA system for seed moving in the region?

- **Differences in infrastructure, resources and human resources** limit the implementation of COMSHIP. Capacity building for seed certification including training on the SOPs among the inspectors.
- **Inadequate dialogue among stakeholders at the borders to enhance the efficiency of the one-stop border post.** Identification of drivers to stimulate the need for dialogue among stakeholders, including inspectors between COMESA countries.
- **COVID-19 limited stakeholders' interaction-** Aside from the technical and capacity challenges, the operational challenges we faced, implementation under COVID-19 also limited the interaction among participants. The use of online tools, and hybrid meetings as well as building on the relationship established with stakeholders in the 2019 project, helped in ensuring the successful implementation of the initiative.
- **Unsuccessful engagement of Rwanda-** In year 1, the team with support from COMESA tried repeatedly to engage and involve Rwandese stakeholders to no avail. We held various meetings with the Ministry of Agriculture & Animal Resources' (MINAGRI) senior officials and, the AGRA Country Manager with the EAC



Secretariat producing an introduction letter but we were not able to initiate and implement the project in Rwanda.

- **Consortium coordination at the start-** Due to the confusion arising from the COVID-19 lockdown, the project did not hold an inception meeting and launch. This was a missed opportunity to introduce the project to the countries, and for the consortium members to be able to start the implementation together. The lack of a coordinated start created some confusion among the stakeholders.

3.5. Lessons Learnt

Openness and collegiality with which audit reports have been presented and received. This is in significant part a result of the way the whole process was designed and executed: We created a team before we assigned who would cover which country – at which point they were very comfortable with each other the mission was collective, and the intention was learn/discover how we are doing in the region (against clear measures/standards), and not to find out who was making mistakes!

Creation of ownership: As part of the design/execution approach, the fact that auditors were themselves preparing their countries for audit had an amazing positive (and self-reinforcing) effect on the process itself as well as on the acceptance of the audit feedback! This itself created great harmony within a country between and among the staff in the national seed authority.

Creating a regional Community of Practice (CoP): One of the outcomes of the process is an emerging Community of Practice – Practitioners across the region who are getting to know and trust each other and expressing the desire to learn from each other. The intentional pairing of auditors from different countries has worked as a mentoring process. During the reporting, it was impressive how individuals were deferring to colleagues in ways that reflected they considered the other as leader/mentor in the process! A very important lesson that we can build on! Importantly, this whole process will leave behind several individuals who will be able to reach out to each other to get information, collaborate, open and create channels of communication, etc.

Setting a framework for a broader audit: This was a pilot/demo focusing on maize. But the stage is now set. Putting in place a process for more/all countries and more crops is now easier and within reach! Just to note the question was raised as to “why didn’t the process involve more countries and more value chains as it would have solved

a critical problem with regards to seed movement in one go in the region”.

Creating awareness of COMESA harmonized standards and SOPs among the people on the ground: Aside from being a learning and communication platform among the regulators, the audit process is also a chance for the officials on the ground, the implementers, to be familiarized and made aware of the regional standards and agreement. The SOPs were welcomed and their circulation was requested in the various offices.

3.6. Recommendations for Future Investments

- **Training and coaching for inspectors on COMESA SOPs–** The project provided training to inspectors through the Seed Assure component but to enhance the capacity of the countries, inspectors will need continuous training, especially on the domestication of COMESA SOPs.
- **Extending the audit and SOPs development** beyond maize to all the key commodities and countries that are covered under COMESA as a deliberate effort towards harmonization.
- **Socialization of the SOPs and Audit checklist among the private and public sector actors** – ensure a common understanding and approach.
- **Beta Testing of the Info-Guide** to facilitate its operationalization.
- **Supporting more regional dialogues/forums** to address both current and emerging bottlenecks.





Chapter 4

A redesign of the national and regional supply chains, based on a quality assurance system and process that is widely accepted and available across the industry, will be essential in bolstering competition, improving access to good quality seed, and ultimately, improving farm yields.



Digitalization of seed systems in sub-Saharan Africa: Evidence from Kenya, Tanzania, and Zambia

4.1. Introduction

Most of sub-Saharan Africa does not have systems that can effectively enforce quality control measures on seed, and as a result, seed markets are typically plagued with copious volumes of fraudulent uncertified seed.²³ To counter this problem, it is for the seed industry to address and ensure that there are enough trained personnel available to conduct inspections. While corporates have internal private quality control processes that effectively address the issue of counterfeits in their supply chains²⁴, the importance of public quality assurance systems at both country and regional (COMESA) levels is a strategic necessity that can transform the entire market. To that end, a redesign of the national and regional supply chains, based on a quality assurance system and process that is widely accepted and available across the industry, will be essential in bolstering competition, improving access to good quality seed, and ultimately, improving farm yields. To improve seed and commodities trade in the COMESA & EAC region it was necessary to design and implement a scheme that would be:

- Digital, and therefore efficient in facilitating the harmonization of the seed inspection and trading processes for private and public sectors,
- Work across all COMESA and EAC member states and countries, and therefore regionally scalable,
- Easy to download and register, and therefore accessible to regulators and traders, and
- Establish a functional system that follows international seed standards such as OECD or equivalent.

In this COMESA Seed Trade initiative, catalytic second-round funding from AGRA and its PIATA partner – USAID – allowed a

²³ For example, fraudulent seed is reportedly 30% of the Ugandan seed market, according to the Uganda National Bureau of Standards. The Ugandan case is a microcosm of a wider phenomenon across the COMESA region, and indeed, across sub-Saharan Africa: <https://www.the-star.co.ke/counties/rift-valley/2022-06-10-kenya-seed-kephis-scale-up-war-on-fake-seed/>

²⁴ <https://www.bayer.com/en/agriculture/counterfeits-in-agriculture>

qualified group of organizations, consultants, and businesses to address these requirements and demonstrate:

- How the digital seed inspection management scheme would work,
- How it would be rolled out and
- How it would operate efficiently and effectively with all countries in the program, including any other country within the region that would want to take on board the technology.

Underpinning the seed supply chain with key values would be central to being able to trade quickly, easily and effectively between members within COMESA and EAC. Having near or real-time seed inspection data available in a format that is clear and concise and based on a process that is consistent with the processes in every other member state is the natural starting point. Equally, offering a system that is flexible, robust, and secure enough to meet the stringent requirements of national governments is also critical and a point that would

need to be demonstrated in the work that was completed. The project included many partners who looked at the seed supply chains in the region holistically and differently and engaged experts who have a deep understanding of their part of the seed supply chain, all this in the hopes that the solution being offered can be demonstrated as effective.

4.2. Why is the system required and what purpose will it serve once deployed?

The global seed market is projected to grow by 6.6% per year over the next five years – from US\$66.85 billion in 2023 to US\$92.02 billion in 2028 (Mordor Intelligence, 2023). In Africa, seed markets are also expected to grow, albeit at half the pace of the global growth rate – at 3.21% per annum (Mordor Intelligence, 2023). Reasons for this low growth forecast are centred around ease of movement from one member state to another and the excessive cost of business. From an intra-regional trade perspective, Member States have well-placed concerns which require urgent redress, and these include:

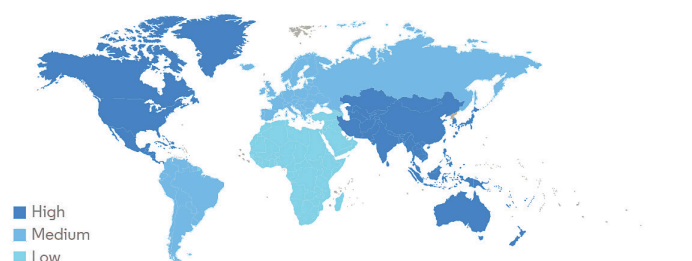
- The need to ensure that traded seed is certified,
- The need for a traceability system that can establish the origin or heritage of the seed,
- The quality of the seed (e.g., seed hygiene) can be verified etc., all of which are critical to facilitating import processes.

With COMESA's mandate to work with 21 Member States, it provides an expansive geographic footprint from which to develop and



scale out a system that is consistent, effective, and proven across all the Member States in one regional platform. In this sense, COMESA would review the data in real-time and on real terms to help coordinate and harmonize the protocols that can facilitate the growth of intra-regional trade in seed across the Eastern and Southern African States.

Seed Market : Growth Rate in %, Region, 2022-2027



Source: Mordor Intelligence



Figure 3: Growth rate in the seed market, by region, 2022-2027

Source: Mordor Intelligence (2022)

To start this process, the SeedAssure consortia secured initial funding to support product demonstration and configuration of the SeedAssure tool and following the Alliance for a Green Revolution in Africa (AGRA) Regional COMESA Seed pilot project, ACTESA has interacted closely with the SeedAssure Alliance (i.e., Cellsoft, AgCuity and Emerge Centre for Innovation Africa (ECI-Africa), among others) what deploys the SeedAssure Digital Seed Field Inspection System and endorses it as an accurate, secure, robust digital system that complies with COMESA seed policies and regulations. Additionally, ACTESA is pleased that the SeedAssure digital system is compatible and complementary to existing national digital seed systems that Member States are investing in.

SeedAssure capabilities are confined to Seed Inspections exclusively, and this mobile, hand-held technology and platform integrate seamlessly with parent national digital seed systems currently in use or development. The system is already available in Android, iOS and Windows and the apps are being updated all the time to work with the latest versions of these technologies giving seed inspectors, their managers, companies, and National Seed Authorities (NSAs) the best possible chance to change and go digital in a sustainable collaborative way. For COMESA trying to work with lots of different systems would not be effective because growing trade across all the members requires uniformity and a proven technology that is being benchmarked against paper – that 3000-year-old well-proven but cumbersome system. Each NSA will get the chance to ‘validate’ the tool with their seed companies and inspectors.

As part of the seed certification digitization initiative, ACTESA has appointed the SeedAssure Consortium as a key implementing partner on COMSHIP and strongly recommends that Member States extend their cooperation for the testing and deployment of the COMESA SeedAssure Seed Inspection System to complement national digitization efforts. This will both contribute significantly to improving the quality, quantity, traceability, and authentication of seeds produced and also be strategic in providing valuable traded seed data from its members back to COMESA, thereby actualizing a critical aspect of COMESA’s seed policy harmonization efforts, in concert with COMESA Council of Ministers directives.

Given the above and with the leadership and support of the Seed Control and Certification Institute (SCCI), Zambia’s National Seed Authority, will become an active user of the technology in 2022 where work is underway to initiate an initial deployment of the COMESA Seed Inspection System that will specifically target the field inspection processes in the coming 2022/3 season. The system is immediately available to all other COMESA Member States, through their National Seed Authorities, so that they can migrate to a digital seed field inspection system domestically.

4.3. Purpose

It is envisaged that by 2025, all COMESA Member States will have deployed this COMESA regional seed digitization for all their seed field inspection, and quality seed will be assured within the region in line with ACTESA Regional Strategic Plan 2021-2031. The support and cooperation towards the realization of the important agenda would require the full cooperation and support of a COMESA digitized regional seed certification system.

In three countries namely Kenya, Tanzania, and Zambia the objective was to sensitize the tool with 16 Seed Companies. This was done with an additional three being sensitized. In addition to this one company is now commercial and using the tool in three countries and fourteen seed companies in Zambia all unanimously support SCCI testing and validating the tool after 2 days of sensitization and use in the field.

KEPHIS indicated that the tool can be used in Kenya for seed management, but they have not gone as far as companies would otherwise want – which is to use the tool for inspection and to share the data directly with KEPHIS. **KEPHIS has attended the SeedAssure training and capacity-building meetings and continues to extend its support for the wider adoption of the digital platform. In that spirit, KEPHIS has also agreed to work with COMESA** as a way of facilitating the harmonization of regional standards.



4.4. Benefits and Achievements

In addition to widely demonstrating the tool to both the NSA and private seed companies and their inspectors, the major outcome has been the nomination by COMESA in 2022 to continue working with the consortia and the alliance on the same. This is a major milestone towards the digitalization of seed systems in the region. Equally, it is possible to roll out the technology in a form that will be easy to use for every inspector across the region. This initiative has allowed the industry to see and appreciate the opportunity but also to make clear that to move forward with this the NSA needs to work with the industry in tandem while also coordinating with COMESA in a way that they too can promote the service across all member states.

Table 10: Benefits of SeedAssure to various stakeholders

| Farmers | Seed Companies |
|---|---|
| <ul style="list-style-type: none"> Assured of planting good quality and genuine seed. Full traceability from the bag to determine seed production history. More seed choices as cross border trade is easier More competitively priced seed due to more efficient seed production | <ul style="list-style-type: none"> Increased productivity, fewer losses & better prepared for Regulatory Inspections Greater Compliance - Less rejection notices meaning more seed to market More professional inspection and field management Increased accountability, consistent accurate measurement, and records |
| National Seed Authority | Inspectors |
| <ul style="list-style-type: none"> Efficient management of field operations Real-time pest & disease surveillance Data insights, reports and dashboards for decision making Integrates with existing systems to enable composite national data | <ul style="list-style-type: none"> NSA checks & Certification report templates are built in. Inspectors can work paperless from anywhere. Can digitally manage inspection requests Online pest & disease identification references Automatically generated inspection reports, saving time and hassle free |
| Country | COMESA |
| <ul style="list-style-type: none"> Improved national food production as farmers access high quality genuine seeds. Simpler and more efficient way to certify seed and enhancing existing capacity. National seed data for decision making easily accessible Increased seed exports and national trade balance improvement | <ul style="list-style-type: none"> Actualization of harmonised protocols via shared data platforms across agencies & countries. Boosts One-Stop-Border posts and Customs procedures. Generates aggregated data of seed production and trade in the region. Labelling systems with VIN's, anti-counterfeit capability can be added |



Table II: Summary of objectives, outputs, and outcomes of the digital systems pilot

| Objective | Milestones reached by the end of the project | % Output Achieved |
|---|---|---|
| 3.1.9.: On-board 16 seed companies and register the contracted seed grower productions using SeedAssure to measure the performance of the seed production in terms of management, inspection, and compliance according to COMESA harmonized seed regulations and standards. | Deploy 8 SeedAssure Business Licenses by December 2020, and reached 16 seed companies by April 2022. | 16 seed companies with Signed Contracts (200%) |
| Ensure SeedAssure is available to seed companies for digital dispatch in 2020 | Deployed 8 SeedAssure Business Licenses | Fully achieved with all seed companies signing contracts. (100%) |
| To enable seed companies to dispatch digitally and meet the min regulatory requirements consistently | Configure SeedAssure Digital Dispatch | Digital Assessments available online and fully achieved (100%) |
| 3.1.10.: Train and on-board to SeedAssure 90 public and private seed inspections for field and factory seed inspection and management to enable certification | Deploy SAAS SeedAssure License: Multi Inspector License for use in Zambia, Kenya, Tanzania, 90 Inspectors (50 and 40) | Licenses and training sessions were conducted – working with COMESA and NSA and Private Sector (100% achieved) |
| To demonstrate the SeedAssure System will add value and solve basic performance issues that have been raised by SCCI. To show the technology has the capacity and capability to meet the min requirements. | Integrate SeedAssure to SeedLab to support a unified inspection certification management approach | Integration Scoping was done in collaboration with SCCI (Zambia). 50% complete by the end of the project, and more time and resources were required to complete follow-up activities. |
| Ensure SeedAssure has been licensed and is available to seed inspectors in 2020. | Deploy SAAS SeedAssure License: Multi Inspector License for use in Zambia, Kenya, Tanzania, 50 Inspectors | Deployment of SeedAssure software license to 50 inspectors was completed (100% complete). |
| Ensure SeedAssure has been licensed and is available to seed inspectors in 2021 | Deploy SAAS SeedAssure License: Multi Inspector License for use in Zambia, Kenya, Tanzania, 40 Inspectors | Deployment of SeedAssure software license to 40 inspectors was completed (100% complete). |
| To enable seed inspectors to have access to the right assessments for digital dispatch. | Configure SeedAssure Inspector Licenses | Seed Inspectors have access to the SeedAssure System to enable them to utilize the functionalities of the system for inspection, quality control and assessments. |
| Purchase a minimum of devices to ensure that all users can have access to the right technology if required. | 110 Mobile Devices minimum to be Procured and Configured and SeedAssure System Deployed | Seed inspectors are using devices that are configured to use the SeedAssure system, to ensure they have access to the right technology |
| Ensure the users and companies are training and sensitized on the SeedAssure technology | Trainings and Installations for Software Services completed in Pilot Countries | Seed inspectors are sufficiently trained to make proficient use the SeedAssure System |



4.5. Overall Implementation Challenges

SeedAssure is a critical digital tool that can be used to harmonize inspection or audit checks in real-time, and the rich data that it captures can be stored, anonymized, and analysed by seed companies and NSAs to make operational and strategic management decisions. More importantly, COMESA reviewed the SeedAssure tool and viewed it as a tool that can be used across the region, thus making it an ideal tool to facilitate the harmonization of regional policies. Despite the enormous potential for SeedAssure to support the efficient and effective harmonization of policies across the region, several challenges have hampered efforts to achieve scale through widespread adoption. These include:

- **Earlier efforts to promote adoption of SeedAssure were hampered by the COVID-19 pandemic**, the containment measures of which, limited the ability to demonstrate the utility of the tool through in-field trials. The project was improvised by sensitizing the tool online directly with end-users.
- **There's a general reluctance by NSAs to adopt the digital platform**, largely emanating from a lack of incentive to shift from the status quo.
 - Some NSAs are receiving considerable financial support from other donors to maintain the existing archaic paper-based infrastructure, which is fundamentally at variance with the approach of transitioning towards digitalized systems. The different and competing interests and objectives of donor support extinguish the appetite for NSAs to adopt innovations.
 - SeedAssure creates a higher standard of transparency and initiates a higher level of efficiency that seems to minimize and eliminate rent-seeking behaviour that typically comes with subjective, time-consuming, and sometimes opaque processes of a paper-based system. Therefore, a reluctance to adopt SeedAssure is also due to a perceived loss of income. In that sense, it is apparent that the transition from paper-based to digital systems creates winners and losers.
 - Asking NSAs to consider using the tool from the perspective of facilitating cross-border regional harmonization of practices and policies seemed to trigger questions and concerns, such as:
 - If COMESA supports the approach of digitalizing systems through the SeedAssure tool, and Long-term sustainability of using the tool, adoption cost, and resource requirements.
 - Regarding the latter, there is a sense that outsourcing parts of the seed inspection functions to an external party or service created some discomfort over the NSAs' perceived loss of control over parts of the seed inspection process.
 - There are legitimate concerns regarding data ownership and privacy security. These fears were dispelled in the sensitization and socialization convenings where risk mitigation measures and data safeguards of the SeedAssure system were demonstrated.

Despite the significant benefits that SeedAssure brings to the seed market in terms of delivering efficiency gains, harmonization of policies and practices, and consistency of seed quality across the region, the adoption of the digital tool was only always viewed as an opportunity, but a risk. The reluctance of NSAs to digitalize seed inspections means that the benefits of using SeedAssure cannot be fully realized if private sector companies that are ready and willing to adopt digital systems are still required to do paper-based inspections. Entering the same seed inspection information twice, (a) on a digital platform, and then (b) on a paper-based system defeats the purpose. It is therefore critical to get NSA buy-in to ensure that digitalized systems are fully adopted to facilitate regional harmonization.

To overcome the existing constraints above-mentioned, most of which are generally trust- and perception-based among key NSAs, the next phase of the effort would primarily need to focus on confidence-building:

- **Expand SeedAssure to NSAs that are ready to adopt and test it at scale.** For example, Zambia's SCCI has shown intent and appetite to roll out SeedAssure in the market, and it can be used by at least 130 seed inspectors that can cover a significant proportion of the country's 250,000 annual seed inspections. Using Zambia as a demonstrable case example of attaining efficiency gains can encourage other NSAs to learn, emulate and adopt SeedAssure for their markets.
- **Supporting NSAs to develop business plans** as part of an incentive package that assists strategic decision-making around capitalizing the long-term benefits of digitalizing seed inspections. These business plans will involve revising



and clarifying NSA revenue models and allowing NSAs to charge additional fees for using SeedAssure to de-risk the adoption of the technology.

- **Continue to promote institutional and technical awareness** of digitalization systems as the future of seed inspections, in a world where big data is fast becoming a critical tool for operational management and strategic decision-making. Many multinational seed companies are already investing significantly in the digitalization of their systems, and encouraging NSAs to digitalize is a means of aligning with the global trend of modernizing systems. This effort would ideally be led by COMESA, whose influence and strategic role as regional convener would lend the ear of NSAs, who are the ultimate target audience.
- **Supporting NSAs to further rationalize legal framework to align and harmonize processes at an operational level.** For instance, information generated from NMLs work regarding rules, laws and regulations, COMESA’s VIN Catalogue and regulatory maps can all be strategically used to ensure that regional administration processes are aligned to seed inspection activities in the field.

The above efforts require a more holistic and integrated approach, with all stakeholders working together, underpinned by an alignment of purpose from the donor community.

4.6. Lessons Learnt

During the project, we learned that each country is at a different stage and has different relationships (existing) that are being prioritized. So, to move the digitization agenda forward it is especially important to bring people (decision makers) on board while also accepting that views will be different from some but that the objective does not change – i.e., to increase trade amongst member states.

COMESA/ACTESA has been given the mandates by members to implement a digital system. Following the Gazette of the Common Market for Eastern and Southern Africa (COMESA) Harmonised Seed Regulations No.19 by its Council of Ministers on 28th February 2014, in Kinshasa, Democratic Republic of Congo and the consequent adoption of the COMSHIP Seed Harmonization Implementation Plan (COMSHIP) in Addis Ababa, April 2014, the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA), a Specialized Agency of COMESA is pleased to inform you of a new initiative to support Member States in their ongoing efforts towards the full implementation of digital harmonized seed systems across the 21 COMESA Member States.

The most successful country in terms of seed volumes within COMESA by way of volume of seed and inspections is Zambia. SCCI is pro-active and as an NSA actively works to apply and ensure that global seed standards are met and applied effectively and with the ‘working’ consent of the seed companies and private inspectors. Digitizing the seed field Inspection process will impact the industry positively by reducing the cost of administration, increasing the inspection efficiency end to end by 50 % and enabling the burden within the seed supply chain to be removed.

Seed Companies and Inspectors want to use the tool. The overwhelming majority said that they need their NSA to agree that is OK to use the SeedAssure platform. Realtime data coming from seed inspection is revolutionary, saves time, and cost and is transformational. Video and images can be attached. Inspectors want to know the location where their seed was inspected, by whom and what standard was applied (i.e., at the border for example). With this industry demand for digital tools, what needs to be in place for digitalization to be optimized and unlock the full potential of the seed industry? There are at least four critical preconditions, and these include: (a) Policy enactment, implementation, and operationalization, (b) publishing maps that show legal status and provisions governing seed systems across the COMESA region, (c) COMESA seed standards and audits, and (d) accelerating the process of regulatory alignment and harmonization.

| Pillars | Description |
|---|--|
| Policy enactment, implementation, and operationalization | <ul style="list-style-type: none"> • A system or repository of copies of all the policies, essentially showing the status of policies, sign off dates, and competent authorities or mandated institutions that are responsible for implementing them. • This can enable the system to track and when and a synopsis of what should have been the outcome of the policy and by when |
| Maps how legal status and provisions governing seed systems across the COMESA region | <ul style="list-style-type: none"> • A map that outlines the status of legal provisions and readiness to harmonize seed systems across the COMESA region. • This will outline and show what’s allowed in each country and what is not allowed and where do people find this information and what do they do about it if they believe their seed sector needs to be improved |



| Pillars | Description |
|--|---|
| <p>COMESA seed standards and audits</p> | <ul style="list-style-type: none"> • An assessment of seed systems through audits that establish compliance requirements, steps required to attain requisite standards, and assessing loopholes that are used by unscrupulous traders and other stakeholders to evade accountability, deceive, and commit fraud. • The purpose of the audits would be to inform responsible authorities on how to support and assist seed companies to become compliant. |
| <p>Accelerating the process of regulatory alignment and harmonization</p> | <ul style="list-style-type: none"> • The general view is that some COMESA Member States have made more progress towards harmonizing seed systems than others. • Only a few COMESA Member States had engaged fully with the seed industry in their countries to agree a way forward with regards to faster more accurate processes. Meanwhile, other Member States have lagged, leaving them with a significant amount of work needed to catch up. • As a result, COMESA has taken too long to get the harmonized standards and best practices that can be agreed by all Member States. • Digitalizing systems can speed up the process by running a digital COMESA based harmonized seed inspection standard in each geography by simply engaging with the service. |

4.7. Conclusion and Recommendations

The digitalization initiative, as part of a broader concept of harmonizing seed trade, brought together industry experts, seed authorities/regulators, and the seed sector fraternity across COMESA to have access to the first version of a harmonized seed standard. This is a major milestone and achievement as it allows member states to start aligning themselves with each other from a standards perspective. SeedAssure platform works and meets all the requirements stated by the industry and has been supported by those who have managed to interface with the system. There are several recommendations and future interventions which emerged from the pilot that was tested among NSAs and the private sector in Kenya, Zambia and Tanzania, and these are as follows:

- An invitation has been made by COMESA/ACTESA to the consortia and SeedAssure alliance to provide products and services that allow/enable member states and their seed supply chain partners (organisations, seed companies, seed inspectors, donors, grantees) to be able to access the digital seed inspection platform.
- To fast track the vision is for seed inspection processes & services to be digitised and work in harmony in every country within COMESA. This incorporates every type of seed inspector, inspection and organisation and will require a wide cross-section of support, from industry to government, from donor to recipient – the challenge is to avail the system initially through support by industry and donors but ultimately to encourage it to be run on a sustainable basis based on charges for services, revenue from subscriptions, growth and opportunity from data analytics and insights. The tool will be valuable to young graduate inspectors wanting to make a difference in their geography, this is possible by simply subscribing to the service.
- Interventions or revenue to pay for development will be needed to ensure new language packs can be added, standards can be updated, support is available, and the product remains useful and navigable to the users. There is a support requirement, many of the inspectors themselves will need to receive training or have access to training for the same and maybe training to some level of accreditation.
- Challenges around scaling this technology will need to be managed properly and sufficient and specific resources available to meet COMESA's timeline.



- Integrating and connecting or extending the existing service to allow key parallel technologies to benefit from aspects such as smart labelling, barcoding, and scanning, to reduce, prevent or control fraud or loss will be important. This must be available at a cost per bag or per gram that the industry can afford.

The performance of seed inspection itself is an important aspect of the next phase, some countries are better geared to provide inspection services than others, but if COMESA is to work effectively and to standard, then seed companies will need to be able to conduct inspections faster, more effectively and at a cost that make sense to most.

Supporting inspectors who are working but cannot afford the technology will need serious consideration – providing an app with a platform for inspection might require qualification but it must promote inclusion. Every registered and qualified seed inspector must be allowed to subscribe to the system to support those who are working in very rural areas, where seed produced locally needs to be prioritized but also needs to be quality.

Seed movement across the region will best be tracked or managed by way of inspections at borders – these will need to become digital and supported through a process of digital dispatches made by seed companies before dispatch. SeedAssure can provide the inspection procedures for this to happen. COMESA will provide access to the technology and as a direct consequence will get trade data off the back of the service.

To roll out to twenty-one-member states in a brief period will require a team to market and socialize the tool hand in hand with COMESA, this is a full-time job. Deploying the technology is easy, but there may be issues around internet access, mobile internet access, devices and so on all happening at the same time.

In expanding the reach of the digital platform, it would be important to bring country trade data together and work with the big four (i.e., Zambia, Zimbabwe, Malawi, and Mozambique) in Phase 1 and move significant volumes, then extend the services and support to the balance of countries in the next phase (i.e., Kenya, Uganda, Tanzania, and Rwanda). Critical to this rollout is employing experienced and capable people who have existing project experience.

A sustainable model needs to be agreed on over an extended period. The benefit of a system that is 50 % faster and more accurate comes to everyone and so those who can pay should contribute to the system to be run on a sustainable basis.

The seed marketing organisations such as members of AFSTA

may want to begin promoting the digitizing of seed inspection in their respective markets and begin appointing SeedAssure champions to support their members switch over.



Chapter 5



Summary and Conclusion

5.1. Key Messages

The COMESA Seed Trade Harmonization Implementation Plan (COMSHIP) has achieved several milestones over the recent past. These include:

- a) COMESA Seed Trade Harmonization Regulations have been gazetted in 8 COMESA Member States namely, Burundi, Egypt, Malawi, Rwanda, Kenya, Uganda, Zambia and Zimbabwe.
 - b) COMSHIP awareness and launched in 21 COMESA Member States to trigger implementation at the national level in the period 2013 and 2021 with the last Launch of COMSHIP conducted between 1st and 2nd December 2021 in Tunis, Tunisia.
 - c) 200 Seed inspectors, analysts and plant quarantine inspectors were trained, and awareness was created on the operations of the COMESA Seed System in 13 COMESA Member States, namely Burundi, Djibouti, D.R Congo, Egypt, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Eswatini, Uganda, Zambia and Zimbabwe in the period 2016 and 2017,
 - d) COMESA Variety Catalogue developed in 2015, currently has 74 active varieties registered by different seed companies, found on this link <https://varietycatalogue.comesa.int/login>.
 - e) The COMESA Seed Labels and Regional Certificates were designed and developed in 2018, produced in 2019 and are available at the Secretariat for purchase by seed companies. Procurement of these labels can be done through this link <https://login.goldkeys.net/>.
 - f) COMSHIP Standard Operating Procedures for maize finalized through the support of AGRA.
- AFSTA conducted national and regional COMSHIP consultative meetings on the COMESA Seed System, COMESA Variety Catalogue challenges and concerns of placing varieties on it, private seed sector sensitization and assisted with the development of COMSHIP helpdesk facilities.
 - ECI-Africa developed COMSHIP information tools, trained customs officials and border operators developed COMSHIP audit mechanism and standard Operating Procedures, and conducted awareness creation on COMESA quality seed assurance.
 - NML conducted analytical reviews of COMESA Member States in their alignment to the COMESA Seed Trade Harmonization Regulations, the development and implementation of the Variety Identification Number (VIN);
 - Cell-soft Technologies developed the SeedAssure Integrated Digital Inspection Certification and Management Scheme for use in Kenya and Zambia with 90 seed inspectors trained from 16 commercial seed companies.
 - AgCuity Consulting popularized the Seed Assure through the training of 50 inspectors in Kenya and Zambia in close collaboration with CellSoft and ECI-Africa to ensure buy-in to seed stakeholders and sensitization to 40 seed companies.

In view of the above and to make progress on COMSHIP, COMESA through ACTESA partnered with AGRA within PIATA on the project Improved Regional Seed Trade in the COMESA Region. The project aimed at improving regional seed trade in staple crops of maize, namely rice, cotton, soya beans and rice in the process of catalysing inclusive sustainable agricultural transformation. The project was implemented in close collaboration with five COMSHIP Consortium members, namely, the African Seed Trade Association (AFSTA), Cell-soft Technologies, New Markets Lab (NML), Emerge Centre for Innovations – Africa (ECI-Africa) and AgCuity Consulting. The following specific Consortium Members’ interventions were undertaken between June 2020 and 4th April 2022:

The collaborative work of the above-mentioned partners led to several achievements, and these are as follows:

Alignment of Seed Regulations

- High-level consultations on finalization of the Ethiopia COMESA – Aligned National Seed Regulations, resulting in the Ethiopia COMESA – Aligned National Seed Regulations submitted to parliament awaiting gazette.
- After the wider seed stakeholders meeting held between 13th and 14th October 2021 and high-level meeting follow-up, the draft COMESA-aligned National Seed Regulations / Laws were submitted to parliament and are awaiting gazette in 2022.

Implementation of COMESA Seed Labels

- Setting out the modalities on the activation, use, ordering, and trading using COMESA Seed Labels and Regional Certificates, which are now in place, having been concluded after extensive engagements with seed companies and NSAs.
- The initiation of the COMESA Seed Labels, which led to four seed companies (i.e., Seedco, Corteva, Western Seeds



and Synergy Agri-Business Ltd.) using 2.95 million labels that translated to 3,000 tons of seed collected and distributed.

- The most preferred seed class by the four (4) seed companies was 1st generation certified seed class with a total of 1,320,000 COMESA Seed Labels distributed, followed by 2nd generation generation-certified seed class with 900,000 COMESA Seed Labels, Pre-basic seed Class with 390,000 COMESA Seed Labels and Basic Seed Class with 340,000 COMESA Seed Labels.
- The routing of the test-piloting was agreed with SCCI to be exported to Kenya, Malawi, Zimbabwe, and Uganda with a total tonnage consignment of regional crossing the borders estimated by SCCI, Zambia at 3,000 MT
- The total cost of 2,950 COMESA Seed Labels supported by AGRA was at a cost of a total cost of USD 103,250.

Increasing the COMESA Variety Catalogue

Varieties registered by seed companies on the COMESA Variety Catalogue increased from 59 to 93 representing an increase of 63% since April 2020.

5.2. Future Interventions

With the above progress, the following is recommended to make sure COMSHIP succeeds and supports private sector seed growth in the COMESA Region to grow from the current USD1.5 billion to USD5 billion by 2031:

- ACTESA/COMESA Secretariat undertakes engagement with seed companies on trading using the COMESA Harmonised Seed Platform to enhance awareness creation of the COMESA Seed System and in the process trigger regional seed trade.
- Socialization of the COMSHIP SOPs and COMESA Seed Audit Checklist to make sure NSAs and seed companies comply with the COMESA Seed Harmonization Regulations. Training and coaching for inspectors on COMESA Maize Standard Operating Procedures (SOPs) as the project provided training to inspectors through the Seed Assure component but to enhance the capacity of the countries, inspectors will need continuous training, especially on the domestication of COMESA SOPs.
- Extending the audit and SOPs development beyond maize to all the key commodities and countries that are covered under COMESA as a deliberate effort towards harmonization. This includes socialization of the SOPs and Audit checklist among the private and public sector actors – to ensure a common understanding and approach.
- Support the full operation of the AFSTA-COMSHIP online desk

help and info guide.

- Support online tracing system of the Seedassure® electronic seed certification starting with piloting of the system in Zambia and then later linking it to the COMESA Variety Catalogue and COMESA Seed Labels and Certificates to track seed from production in the field to the seed crossing COMESA Borders.
- Finalise the Variety Identification Number (VIN) in close collaboration with one CG group and incorporate it into the COMESA Variety Catalogue software. This will enable public-bred varieties that are high-yielding, nutrient and climate-smart to be registered on the COMESA Variety Catalogue and the public-bred varieties licensed to small, and medium seed companies. ACTESA / COMESA to integrate the annotated comment for the VIN, clarifying that “Any entity that has a variety with this variety identification number is subject to terms of a corresponding licensing agreement or other arrangement entered into between that entity and relevant CGIAR Centre, including limitations on the geographic scope of the license. Conduct capacity-building workshops with stakeholders at the national level to increase awareness of the VIN and the benefits of regional registration of public varieties. Work with seed companies to integrate the VIN into seed labelling and packaging.
- Support annual meetings of the COMESA Seed Committee (mandated to deal with challenges as they arise) in making sure the overall COMSHIP is operational.
- Develop Mutual Recognition Agreements (MRA) and equivalence frameworks for systems audit between countries.
- Support national seed authorities to establish a co-regulation mechanism/framework to support the development of private-sector certification schemes that can enhance compliance.
- Strengthen national and regional laboratory and testing capacity.
- Strengthen seed quality assurance through private sector seed inspection under the supervision of seed authorities, which will build the capacity of seed companies and businesses to meet standards.
- ACTESA support of Eswatini, DR Congo, Tunisia and Eritrea finalise domestication of the COMESA Seed Harmonization Regulations.
- Participate in the outscaling of the COMESA Seed Labels / Regional Certificates at the AFCFTA level.



Annexure 1

The Audit Checklist

| CHECKLIST FOR AUDITING THE PROCESS OF AUTHORIZATION OF PRIVATE SEED INSPECTORS AND ENTITIES (LICENSING AND REGISTRATION OF SEED INSPECTORS, SAMPLERS AND ANALYSTS) | | |
|--|---|--|
| | AUDIT AREA | AUDIT QUESTIONS |
| A. | Eligibility | <ul style="list-style-type: none"> i. For persons, are they attached to registered entities? ii. For entities, are they registered by registrar of companies? |
| B. | Requirements for Authorization of Private Inspectors / Samplers / Analysts | <ul style="list-style-type: none"> i. Academic qualification? ii. Technical and professional qualifications? iii. Evidence on training on <ul style="list-style-type: none"> o Seed inspections? o Seed sampling? o Seed Testing? iv. Examined/assessed and achieve overall pass mark of 60%? v. Evidence of attachment (<i>within 9 months after completing examination</i>)? vi. Experience in seed inspections, sampling or testing |
| C. | Requirements for Authorization of entities | <ul style="list-style-type: none"> i. Evidence of registration? ii. Demonstration of impartiality, confidentiality and independence iii. Adequate infrastructure and facilities as follow; <ul style="list-style-type: none"> a) Reliable means of transport b) Inspection/labelling/sealing tools & equipment c) Seed testing laboratory d) Seed testing laboratory tools and equipment e) Documentation capacity iv. Personnel? <ul style="list-style-type: none"> a) Gazetted inspectors/ samplers/analyst. b) Gazettement of the entity by the NDSA c) Adequate personnel? |
| D. | Authorization/ Licensing | <ul style="list-style-type: none"> i. Was gazettement done? ii. Was the Certificate of authorization issued? |
| E. | Maintenance of Knowledge and Skills | <ul style="list-style-type: none"> i. Evidence of regular inspection/sampling/testing activities? <ul style="list-style-type: none"> o (with not more than one-year break) ii. Evidence of refresher trainings on applicable seed inspection/Sampling/testing standards, rules, regulations and procedures |
| F. | Surveillance and Audit Procedures | <ul style="list-style-type: none"> i. Check records of the following activities; <ul style="list-style-type: none"> o Documentation check (<i>check for errors</i>) o Check inspections (<i>check for deviations</i>) o Check Sampling (<i>check for deviations</i>) o Check testing (<i>check for deviations</i>) o Proficiency laboratory test (<i>check for trends</i>) o Pre and Post control (<i>check for reports and corrective actions</i>) o Audits (<i>check for past reports either internal or externa, or both and corrective actions</i>) |



CHECKLIST FOR AUDITING REQUIREMENTS AND PROCESS OF SEED CROP FIELD INSPECTION

| | AUDIT AREA | AUDIT QUESTIONS |
|-----------|--|--|
| A. | General requirements; Inspection tools | i. Check availability of the following? <ul style="list-style-type: none"> • Tape measure or measuring wheel • One-meter ruler • Hand lens (X10 and X20) • Tally counter • Inspection kit (e.g., Knife, gloves, blade, poly- bags) • Sampling bags and cooler boxes where applicable • Quick diagnostic test kits for pathogens |
| | documents required | ii. Check availability of the following? <ul style="list-style-type: none"> • Crop registration form • Variety descriptors • Field map and or contact of field guide • Relevant Disease compendium • Any other relevant reference materials |
| | Others | iii. Check availability of the following? <ul style="list-style-type: none"> • Stationery • Appropriate protective clothing • Appropriate disinfectant (where applicable) |
| B. | Process | i. Verify the following? <ul style="list-style-type: none"> • The application for inspection/registration of seed crops <ul style="list-style-type: none"> • Duly filled and signed/stamped? • Variety is officially released? • Official valid seed labels are available (proof of origin)? • Quantity on attached seed labels match quantity of seed planted? • Size of area planted • Map or GPS coordinates of seed farm included? • Cropping history? • Seed class? |
| C. | Inspection procedure | i. Check isolation distance? ii. Is stage of field inspection correct? <ul style="list-style-type: none"> • 1st Inspection – 1% Silking stage • 2nd Inspection – after 7 days from 1st inspection (before 60% Silking) • 3rd Inspection – when silks no longer receptive • Preliminary & pre-harvest inspections should be done. |
| D. | Assessment of Varietal Purity | i. How is decision to approve/reject seed crop made in relation to off types and doubtful plants? ii. Was rejection made in case of; <ul style="list-style-type: none"> • <i>off types >0.1% or 2% of doubtful plants shedding pollen on male rows</i> • <i>at final inspection female rows have - >1% off type or 2% doubtful plants</i> |
| E. | Assessment of Seed Borne Diseases | i. Which diseases are assessed? <i>0 at final inspection</i> <ul style="list-style-type: none"> • Head smut (<i>Sphacelotheca reiliana</i>). • Common smut (<i>Ustilago maydis</i>). • Loose smut (<i>Sporisrium cruentum</i>) |



| | | |
|-----------|--|--|
| F. | Assessment of effective detasseling | <ul style="list-style-type: none"> i. Auditee to demonstrate process <ul style="list-style-type: none"> • Check if starting from random position in the field in the row next to the male parents? • Were 20 plants counted? • Was one row omitted and another count made on 3rd row/5th row etc.? • Did auditee proceed to female rows? • What decision is made on portions of broken tassels (sucker tassels)? |
| G. | Assessment of weeds and pests | <ul style="list-style-type: none"> i. What decision is made on weeds? |
| H. | Assessing Off-types/ Doubtful Types in Male Rows | <ul style="list-style-type: none"> i. Auditee to demonstrate process <ul style="list-style-type: none"> o Check the travel pattern? o Check counts of off-types? |
| I. | Assessing Off-types/ Doubtful Types in Female Rows Align tolerances with COMESA | <ul style="list-style-type: none"> i. Auditee to demonstrate process <ul style="list-style-type: none"> o Check the travel pattern? o Check counts of off types? o Check Rejection figures if applicable? – |
| J. | Assessing Off-types in Open Pollinated Maize Crop | <ul style="list-style-type: none"> i. Auditee to demonstrate process <ul style="list-style-type: none"> o Check the travel pattern? o Check counts? ii. Is stage of field inspection correct? <ul style="list-style-type: none"> o 1st Inspection – 50% anthesis o Final Inspection – when silks no longer receptive |
| K. | Pre-harvest inspection | <ul style="list-style-type: none"> i. Has crop reached physiological maturity? ii. Is there a clear separation of both male and female plants before harvest? |
| L. | Machine harvesting | <ul style="list-style-type: none"> i. Was the NDSA notified before harvesting? ii. What was the status of the crop prior to approval of machine harvest, |
| M. | Cob inspection and sampling | <ul style="list-style-type: none"> i. Does the auditee have the relevant crop descriptor? ii. Is sampling of the cobs done in accordance with ISTA protocol? |
| N. | Clearance of seed for processing | <ul style="list-style-type: none"> i. Check the following; <ul style="list-style-type: none"> o Dully filled request form from the seed company. o Verify details on form with list of approved fields. o Is there proper marking of the seed lot? o Accessibility of the seed consignment. o Verify species/variety/no. of containers/seed class against approved field reports. o Check insect damage. o Check homogeneity. |
| O. | Lot examination | <ul style="list-style-type: none"> i. Auditee to demonstrate process. |
| P. | Labelling and sealing | <ul style="list-style-type: none"> i. Is the seed lot to be labelled clearly identified (stencilled or printed bags/containers)? ii. Is there a seed laboratory report before labelling? |



Annexure 2

A Guide on How to Perform an Audit

HOW TO PERFORM VIRTUAL AUDIT DURING THE COVID 19 PANDEMIC PERIOD

COMESA SEED MAIZE AUDIT 2021

Scope

The audit scope is as per the provided Standard Operating Procedures and the audit checklist.

Requirements:

- The audit needs to be performed by on-line video or similar tools like smart phones or tablets.
- The official on-line connection is provided using Zoom platform. If zoom is not available in the country of audit, use an applicable platform.
- Always have a backup connection inform of e.g. WhatsApp or email in case there is a network failure to communicate with the auditee.

Process Description

Pre-audit

- The auditee will be notified in advance of the impending audit by the assigned auditors. An audit timetable should also be prepared and send in advance. The auditors and auditees may need to agree on the timetable because it must be aligned to the auditee's work schedule and office working hours. Agree when to start and adjourn within the audit cycle period. (The assigned auditors will organize with the host country representatives within their teams to ensure smooth audit process).
- The video and audio connection between the auditors and the auditee can be checked in advance and adjusted when necessary.

A. Evaluation

- The audit will start with an opening meeting that includes a detailed explanation about the audit process as outlined on the audit timetable.
- Assessment and evaluation will be done according to the audit timetable.
- Sources used to collect information are interviews with the assigned staff. Other sources include documents, records, reports, and computerized data.
- The auditors are expected to use the provided audit checklist and the Standard operating procedures when carrying out the interviews and recording their 'findings/recommendations' on the audit reporting template. Evidence gathered are recorded under 'reference' on the template. When giving recommendations if applicable, refer to the specific Standard operating procedure and not on one's own practice in country of origin.
- Auditors must always avoid a reporting that focuses on individuals and culture but should focus on a reporting format that is objective, professional and system focused. The reporting must be specific to the problem and precise and must be written in simple English.
- Depending on the audit program, the audits may be programmed to take place within certain hours of the day as agreed between auditors and auditee and end in adjournment.
- At the end of the audit cycle period have a closing meeting with the auditees and thank them for their time and cooperation. Assure them of confidentiality of the report.
- Send the report to the secretariat in electronic format.

NOTE: The official language for the audit will be English however due to difference in accents, patience should be considered to understand one another.



Annexure 3

Standard Operating Procedures (SoPs) Reporting Template



| Area as per the COMESA Audit Checklist | Findings and Recommendations | References |
|--|------------------------------|------------|
| DUS | | |
| VCU | | |
| Variety maintenance/Check plot observation | | |
| Variety release and Catalogue | | |
| Authorization of private seed inspectors and entities (licensing and registration of seed inspectors, samplers and analysts) | | |
| Seed field inspection | | |
| Seed intake verification, inspection and sampling | | |
| Post control testing of seed lots | | |
| Seed Import and Export | | |
| Handling Quarantine pests | | |
| Seed Sampling | | |
| Seed sample Reception, Storage and Disposal | | |
| Purity and Other seed determination | | |
| Moisture Determination | | |
| Germination analysis | | |
| Tetrazolium analysis | | |
| Equipment Calibration & Maintenance | | |
| Seed test reports | | |



Annexure 4

Seed Assure Platform

12:29 Seed Assure Check

| Header | Assessment | Attachments | Comment |
|-----------------------------------|---|-------------|---------|
| Date of Inspection | | | |
| Country | Zambia | | |
| Farm Name | Demo Farm 1 (001) | | |
| Grower Seed Registration Number | 001 | | |
| External Officer/Internal Officer | External officer | | |
| Growing Region | Lusaka | | |
| Name of Seed Inspector | Stephen Ng'anga | | |
| Name of Inspection Authority | Seed Control and Certification Institute (SCCI) | | |

Select assessment

12:30 Seed Assure Check

| Header | Assessment | Attachments | Comment |
|-----------------------------------|---|-------------|---------|
| Date of Inspection | 10/06/2020 | | |
| Country | Zambia | | |
| Farm Name | Demo Farm 1 (001) | | |
| Grower Seed Registration Number | 001 | | |
| External Officer/Internal Officer | External officer | | |
| Growing Region | Lusaka | | |
| Name of Seed Inspector | Stephen Ng'anga | | |
| Name of Inspection Authority | Seed Control and Certification Institute (SCCI) | | |

Select assessment

12:30 Seed Assure Check

| Header | Assessment | Attachments | Comment |
|-----------------------------------|---|-------------|---------|
| Date of Inspection | 10/06/2020 | | |
| Country | Zambia | | |
| Farm Name | Demo Farm 1 (001) | | |
| Grower Seed Registration Number | 001 | | |
| External Officer/Internal Officer | External officer | | |
| Growing Region | Lusaka | | |
| Name of Seed Inspector | Stephen Ng'anga | | |
| Name of Inspection Authority | Seed Control and Certification Institute (SCCI) | | |

Select assessment

12:30 H. Field Inspection - SCCI V1.0

| Header | Assessment | Attachments | Comment |
|--|------------|-------------|---------|
| Area registered (Ha.) | | | 0 |
| Area planted (Ha.) | | | 0 |
| Crop rotation (species) | | | 0 |
| Previous species | | | 0 |
| Species before previous one | | | 0 |
| Seed crop growth stage | | | 0 |
| For hybrids | | | |
| Male Parent | | | |
| Were there off-types in the male parent rows | Yes | No | N/A |
| Female parent | | | |
| Green Amber Red Complete | | | |

Total score: 100

12:30 H. Field Inspection - SCCI V1.0

| Header | Assessment | Attachments | Comment |
|--|------------|-------------|---------|
| Were there off-types in the female parent rows | | | |
| Yes | No | N/A | 0 |
| Were there pollinating females | | | |
| Yes | No | N/A | 0 |
| Synchronization | | | |
| Was there good synchronization | | | |
| Yes | No | N/A | 0 |
| For non-hybrids | | | |
| Cultivar Purity | | | |
| Were there off-types in the seed crop | | | |
| Yes | No | N/A | 0 |
| % off-types | | | |
| GENERAL | | | |
| Type of Isolation | | | |
| Green Amber Red Complete | | | |

Total score: 100

12:31 H. Field Inspection - SCCI V1.0

| Header | Assessment | Attachments | Comment |
|--------------------------|------------|-------------|---------|
| Type of isolation | | | |
| Other | Distance | Time | 0 |
| Actual isolation | | | |
| Min. standard | | | |
| Infestation of: | | | |
| Disease | | | |
| Incidence | | | |
| high | mid | low | 0 |
| Severity | | | |
| Pest | | | |
| Incidence | | | |
| high | mid | low | 0 |
| Severity | | | |
| Green Amber Red Complete | | | |

Total score: 100



12:31 H. Field Inspection - SCCI V1.0

Header Assessment Attachments Comment

Disease 0

Incidence high mid low 0

Severity 0

Pest 0

Incidence high mid low 0

Severity 0

Weeds 0

Incidence high mid low 0

Severity 0

Green Amber Red Complete

Total score: 100

12:33 H. Field Inspection - SCCI V1.0

Header Assessment Attachments Comment

Were there off-types in the male parent rows
Yes No N/A 0

Female parent

Were there off-types in the female parent rows
Yes No N/A 0

Were there pollinating females
Yes No N/A 0

Synchronization

Was there good synchronization
Yes No N/A 0

For non-hybrids

Cultivar Purity

Were there off-types in the seed crop
Yes No N/A 21

% off-types
Green Amber Red Complete

Total score: 79

12:33 H. Field Inspection - SCCI V1.0

Header Assessment Attachments Comment

Were there off-types in the male parent rows
Yes No N/A 0

Female parent

Were there off-types in the female parent rows
Yes No N/A 0

Were there pollinating females
Yes No N/A 10

No. of pollinating females 0

% of pollinating females 0

No. of current inspection (in flowering stage) 0

Synchronization

Was there good synchronization
Yes No N/A 21

Green Amber Red Complete

Total score: 48



Annexure 5

Digital Report Card

Report - Digital Form 3



REPUBLIC OF ZAMBIA
The Plant Variety and Seeds Act
(Laws, Volume XIV, Cap. 216)
The Plant Variety and Seeds Regulations, 2017
FIELD INSPECTION - GENERAL SEEDS
Report No.

Form 3
(Regulation 12)
(To be completed in duplicate)



SCCI MOBILE CHECK REPORT

| | | | |
|--|---------------------------------|--|---|
| Overall QA score | 74 | | |
| Date of Inspection | 6/9/2020 | Country | Zambia |
| Farm Name | Demo Farm 1 (001) | Grower Seed Registration Number | 001 |
| External Officer/Internal Officer | External officer | Growing Region | Lusaka |
| Name of Seed Inspector | Stephen Ng'ang'a | Name of Inspection Authority | Seed Control and Certification Institute (SCCI) |
| Check no | 1346 | Assessment type | Seed Assure Check |
| Date assessed | 09/06/2020 | | |
| Assessed by | Stephen Nganga | | |
| Assessment name | H. Field Inspection - SCCI v1.0 | | |

| No. | Question | Response | Score |
|-----|-----------------------------|--------------|-------|
| 1 | Contracting Organization | Demo | |
| 2 | Grower Name | Grower 1 | |
| 3 | Farm physical address | Mkushi | |
| 4 | Species registered | Zea mays | |
| 5 | Species planted | Zea mays | |
| 6 | Seed class | Hybrid | 0 |
| 7 | Grower Number | 001 | |
| 8 | Field name | A1 | |
| 9 | Variety registered | ZM01 | |
| 10 | Variety planted | ZM01 | |
| 11 | Area registered (Ha.) | 200 | 0 |
| 12 | Area planted (Ha.) | 200 | 0 |
| 13 | Crop rotation (species) | Avena sativa | |
| 14 | Previous species | Glycine max | |
| 15 | Species before previous one | Hellanthus | |
| 16 | Seed crop growth stage | Flowering | 0 |
| 17 | For hybrids | | |

| | | | |
|------|--|-------------|----|
| 18 | Male Parent | | |
| 19 | Were there off types in the male parent row? | No | 0 |
| 19.1 | Sample size | | |
| 19.2 | % off types | | |
| 19.3 | No. of plants | | |
| 19.4 | % min. standard | | |
| 19.5 | No. of counts | | |
| 19.6 | No. of off types | | |
| 20 | Female parent | | |
| 21 | Were there off types in the female parent row? | No | 0 |
| 21.1 | Sample size | | |
| 21.2 | % off types | | |
| 21.3 | No. of plants | | |
| 21.4 | % min. standard | | |
| 21.5 | No. of counts | | |
| 21.6 | No. of off types | | |
| 22 | Were there pollinating females? | No | 0 |
| 22.1 | No. of pollinating females | | |
| 22.2 | % of pollinating females | | |
| 22.3 | No. of current inspection (in flowering stage) | | |
| 23 | Synchronization | | |
| 24 | Was there good synchronization? | Yes | 0 |
| 25 | For non-hybrids | | |
| 26 | Culture Purity | | |
| 27 | Were there off types in the seed crop? | No | 0 |
| 27.1 | Sample size | | |
| 27.2 | % off types | 1 | 0 |
| 27.3 | No. of plants/rows | | |
| 27.4 | % min or no standard | | |
| 27.5 | No. of counts | | |
| 27.6 | No. of off types | | |
| 28 | CONTAMINATION | | |
| 29 | Type of isolation | Distance | 0 |
| 30 | Actual isolation | 100 | 0 |
| 30.1 | Min. standard | 400 | |
| 31 | Infestation of | | |
| 32 | Disease | Common rust | |
| 32.1 | Incidence | low | 5 |
| 32.2 | Severity | 0 | 0 |
| 33 | Pest | Aphids | |
| 33.1 | Incidence | high | 21 |
| 33.2 | Severity | 0 | 0 |
| 34 | Weeds | | |
| 34.1 | Incidence | | |
| 34.2 | Severity | | |

Comments: Approved ngangastive





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Africa's Food Systems

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