Check-Back Report on Regional Registration of Public Varieties

December 2022

This check-back report is part of a series of research and policy publications co-authored by the Syngenta Foundation for Sustainable Agriculture (SFSA) and New Markets Lab (NML) on regional seed policy harmonisation in Africa. The series is part of the Syngenta Foundation's Seeds2B initiative and Partnership for Seed Technology Transfer in Africa (PASTTA) and is designed to assess the process for implementing seed regulatory systems that can better deliver improved seed varieties to farmers. This work is made possible by the generous support of the American people through the United States Agency for International Development (USAID) and the U.S. Feed the Future initiative. The contents are the responsibility of the NML and SFSA under the Seeds2B initiative and do not necessarily reflect the views of USAID or the United States Government.

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Acronyms

AATF	African Agricultural Technology Foundation
AfCFTA	African Continental Free Trade Area
AFSTA	African Seed Trade Association
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Centre for Topical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
COMESA	COMESA Seed Harmonisation Implementation Plan
COMESA	Common Market for Eastern and Southern Africa
CORAF	Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles
DUS	Distinctness, uniformity, and stability
EAC	East African Community
ECAPAPA	Eastern and Central Africa Programme for Agricultural Policy
ECOWAS	Economic Community of West African States
HSRS	Harmonised Seed Regulatory System
KEPHIS	Kenya Health Inspectorate Service
NACCRI	National Crop Resources Research Institute
NARS	National Agricultural Research Institute
NASECO	Nalweyo Seed Company Limited
NML	New Markets Lab
NPT	National performance trials
NSA	National Seed Authority
OAPI	African Intellectual Property Organization
PASTTA	Partnership for Seed Technology Transfer in Africa
REC	Regional Economic Community
SADC	Southern African Development Community
UPOV	Union for the Protection of New Varieties
VCU	Value for cultivation and use
VIN	Variety Identification Number

WASC	West African Seed Committee
WECARD	West and Central African Council for Agricultural Research and Development

Executive Summary

This check-back report on regional registration of public varieties was developed by the New Markets Lab (NML) in collaboration with the Syngenta Foundation for Sustainable Agriculture (SFSA) under SFSA's Seeds2B initiative and the Partnership for Seed Technology Transfer in Africa (PASTTA). In line with PASTTA objectives, the check-back process was designed to evaluate the implementation of regional seed registration in a way that can better deliver improved seed varieties to farmers. The report builds on previous assessments of regional seed systems done by NML and SFSA under PASTTA, including the 2021 Check-Back Mechanism for Regionally-Registered Varieties, the 2020 Manual on Regional Seed Regulations in the Common Market for Eastern and Southern Africa (COMESA) (COMESA Manual), and the 2019 Manual on Regional Seed Regulations in the Southern Africa Development Community (SADC) (SADC Manual).

The report was developed based on stakeholder consultations and assessment of progress in regional registration of publicly-bred varieties under harmonized seed laws of different regional trade blocks, namely, the COMESA, the Southern Africa Development Community (SADC), the East African Community (EAC), and the Economic Community of West African States (ECOWAS). Stakeholder consultations were used to evaluate the prevailing laws and regulations as well as experiences of public sector stakeholders and seed companies in registering and trading public varieties at the regional level within different Regional Economic Communities (RECs). The report focuses on the practical challenges within seed regulatory frameworks at the national and regional levels related to the registration of public varieties, with recommendations to streamline the regional seed registration process for public varieties, which are summarized in the table below.

Table 1: Summary Findings on Registration of Varieties in the Regional Catalogues, Including Recommendations

Issues	Considerations and Possible Approaches
Differences in Testing Seasons Mandated by RECs	In general, most RECs require two seasons of Distinctness, Uniformity, and Stability (DUS) testing and two seasons of Value for Cultivation and Use (VCU) testing to qualify for regional registration, although this process can be fast-tracked if a variety has already been registered in one country in the REC. There are notable exceptions, such as SADC, which requires only one season of DUS testing, and ECOWAS, where registration is required in one member country only and where

	vegetables are exempt from VCU testing. In ECOWAS this currently applies to tomato and onion, which are among the 11 recognized priority crops. Although the priority crop list has been expanded to include nine new crops, DUS protocols are not in place for these crops (this would need to be addressed through changes to the ECOWAS Procedure Manual for Variety Registration in the National Catalogue for Crop Species and Varieties in West African Countries of 2008 (ECOWAS Procedure Manual)). These differences are already affecting outcomes. ECOWAS has far more public varieties registered in its regional catalogue than the other regions, for example, due in part to the relative ease of entry. SADC may be a more desirable choice of market for some grain crops due to the streamlined DUS testing, and ECOWAS is unique in recognizing that vegetables have different properties and should not be subject to VCU testing. Over time, these good practices may become the norm across regions.
Differences in Fees Across Regions	Currently, COMESA is the only REC that requires fees for entries in the regional seed catalogue (there is a one-time registration fee of $350, followed by an annual fee of $200). Over time, this may be a deterrent to entry, particularly of public varieties; ECOWAS is the best point of comparison and is far ahead of the other RECs in terms of regional catalogue entries.
Significant Variation in Ratio of Public Varieties Registered out of Total Varieties	In ECOWAS, not only are there far more varieties in the regional catalogue overall (1,807), a significant number of these (1,698), or 94 percent, are public varieties. In contrast, in COMESA, of the 90 total varieties registered in the regional catalogue, 7, or 8 percent, are public varieties. In SADC, the percentage is even smaller; out of 91 total varieties, only 1 is a public variety (1 percent). Since the regional catalogue is not yet operational in the EAC, it cannot be used as an additional basis of comparison.
Inconsistent Access to Catalogues	The ECOWAS catalogue does not exist in a single version, nor can it be found in one place. All the three versions of the catalogue are in French without English copies for the Anglophone countries, which limits the catalogue's usability.

	The three versions of the regional catalogue should be merged into one catalogue, with French and English versions and a digital copy made easily accessible and consistently available. The SADC Seed Variety Catalogue is sometimes unavailable online, which affects its usability. The SADC catalogue should be made consistently available for use by stakeholders.
Capacity Gaps Among NSAs, Including Regarding Licensing and Regional Rules and International Standards	National Seed Authorities (NSAs) continue to have capacity gaps with regard to licensing varieties and knowledge of regional rules, including on evaluation of varieties in accordance with international standards, such as DUS testing under the International Union for the Protection of New Varieties of Plants (UPOV). NSAs also lack the capacity to trace whether an identical variety has been registered in a second country, which is relevant with regard to registration of varieties at the regional level within COMESA and SADC and could perhaps be addressed on a regional level. NARS could explore licensing their varieties to seed companies interested in commercializing a variety at the regional level. The interested seed company would pay the relevant fees associated with the variety registration, but regional registration would allow NSAs to expand the geographical area for their varieties, potentially raising more funds that could be fueled back to research. Capacity building workshops could also be used to enhance knowledge on licensing and international standards, as could dissemination of legal tools, such as those previously developed by NML and SFSA on regional variety registration.
Weak Coordination Among NSAs and Regional Institutions	There are often significant delays, expense, and bureaucracy in the process of transmission of evaluation data results from NSAs to regional seed authorities for registration of candidate varieties, which is associated with limited institutional resources and capacities in some countries. Improved communication between NSAs and regional bodies would help facilitate regional trade, and creation of regional data bases for evaluation of test results in SADC and COMESA could

	be undertaken and aligned with country databases, so that once an application is filed regionally, it can be processed without requiring significant action by the NSAs.
Issues Related to CGIAR Varieties	As the ECOWAS catalogue highlights, there is a place for public varieties in the regional variety catalogues. Some CGIAR Centers, however, have so many varieties that choosing which to register at the regional level is not an easy decision, especially in COMESA where registration and maintenance fees are involved. Public research institutions could consider registering varieties that already have a market, have been licensed, or are already registered in at least two REC member countries. CGIAR-sourced varieties also appear under different names in different regions, and some CGIAR Centers have expressed concern that registration of public varieties at the regional level would make the variety freely available to everyone and would limit the geographic limitations contained in licensing agreements. To facilitate traceability, CGIAR Centers could explore attaching variety identification numbers (VINs) to the varieties they share with national research programmes and seed companies to be used alongside a product brand name. In order to address this at a regional level, COMESA is considering including an annotated comment in its regional catalogue alongside the registered publicly-bred variety stating that a variety holding the same VIN is allowed to be traded within in the region based on the terms of the licensing agreement or MTA that exists between the public research institution and the recipient of the variety. This could be expanded to other catalogues as well. Finally, some national research bodies were unsure whether they had the right to register a variety from the CGIAR Center at the regional level. Collaboration could be facilitated between interested NARS and CGIAR Centers aimed at obtaining the relevant authorization to register CGIAR-originating varieties at the regional level.

I. Background

Under the Seeds2B initiative, SFSA and NML have been monitoring the progress of regional seed catalogues since their inception, with the ultimate goal of better understanding legal and regulatory approaches that could better deliver improved public seed varieties to farmers. This check-back mechanism was created to evaluate progress and setbacks related to regional registration of public varieties, after a previous check-back report highlighted disparities with respect to incorporation of public varieties in different regional catalogues. This report is the second in this series of check-back assessments to evaluate progress with regional rules and will be updated periodically in order to better capture trends and pressing challenges.

The report is based on in-person stakeholder consultations to analyze public research institutions' experiences in registering and trading registered varieties at the regional level within different regional trade blocks in the relevant seed catalogues, namely, COMESA, SADC, and ECOWAS. The report contains an assessment of the practical implications of national and regional seed regulatory frameworks with respect to registration of public varieties and their commercialization in national and regional seed markets, along with recommendations to streamline the regional public variety registration process. Consultations were conducted with national and international public research institutions and regional seed authorities, including the COMESA Secretariat and Conseil Ouest et Centre Africain pour la Recherche et le Dévelopement Agricoles (CORAF). A number of stakeholder consultations were conducted in person during the African Seed Trade Association (AFSTA) Congress in March, 2022 in Djerba, Tunisia. NML also leveraged other projects with partners like COMESA to monitor progress with the regional seed catalogues, registration of public varieties, and seed regulatory harmonization more broadly.

Consultations were based on a set of two questionnaires, one for the public sector and another for private sector stakeholders, structured around stakeholder experiences with public variety registration in regional seed catalogues and impact on regional trade. The public sector questionnaire focused on public research institutions' interest and experience in tracing public varieties, approaches to licensing, registration at the national and regional levels, and general control over commercialization of public varieties in national and regional markets. The private sector questionnaire examined seed company interests, challenges, and general experiences in the process of obtaining rights to commercialize and use over public varieties, including registration in national and regional variety catalogues trading such varieties in the respective regional blocks.

II. Overview of Public Variety Registration in Regional Catalogues

Within sub-Saharan Africa, only COMESA, SADC, and ECOWAS currently have regional variety catalogues, supported by harmonized regional seed rules:

- The 2014 COMESA Seed Trade Harmonisation Regulations ("COMESA Seed Regulations")[1] in COMESA;
- The 2008 SADC Harmonized Seed Regulatory System ("SADC HSRS")[2] in SADC; and
- The Harmonized Rules Governing Quality Control, Certification and Marketing of Plant Seeds and Seedlings in ECOWAS Region ("ECOWAS Seed Regulation")[3] and the Procedure Manual for Variety Registration in the National Catalogue for Crop Species and Varieties in West African Countries of 2008 (ECOWAS Procedure Manual) in ECOWAS.

These rules describe the process of regional variety registration, including for publicly-bred varieties, focusing on specific priority crops. Common to all the RECs, all varieties are subject to VCU tests/NPTs and DUS tests (in accordance UPOV guidelines), with the exception of the ECOWAS Seed Regulation, which exempts tomato and onion from mandatory VCU/NPT tests. Although this exemption is an international good practice, it is not common across the African continent. The process, length, and cost of regional variety registration depends upon the REC and applicable harmonized seed rules, and their effective implementation depends upon implementation and mutual recognition at the national level. Once the public variety meets prescribed criteria and the application for its registration is accepted, it can be included in the respective regional seed catalogue.

In principle, the outcome of regional registration is to make a variety freely tradeable and more widely available throughout the respective region. When the registered variety is a public variety, it should be available to everyone within the region without limitation, since public varieties are public material, which can enhance the public good dimension of public material. Some NARS have not used the regional system, however, stressing that their mandate of public research is limited to their national territories and does not extend to entire regions. They also prefer that the NARS would retain control over how a variety is commercialized at the regional level. This opinion is similar to that of some CGIAR Centers, which mentioned that with regard to maintenance of some of their varieties,

[1] Official Gazette of the Common Market for Eastern and Southern Africa (COMESA), Vol. 20 No. 1, March 31, 2015, 29, available at http://www.comesa.int/wp-content/uploads/2016/06/Vol-20-No.1-March-2015.pdf.

[2] Memorandum of Understanding on the Harmonization of Seed Regulations in the Southern African Development Community (SADC) (SADC HSRS MoU), 2008.

[3] 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. May 2008.

especially hybrids, it is important that the CGIAR oversee regional variety commercialization through limitations on geographic market approval. Moreover, some varieties are sometimes already exclusively licensed to particular seed companies in certain jurisdictions, and regional registration would complicate that exclusivity.

In the three RECs with regional catalogues, the sub-sections that follow include the processes for public variety registration and an overview of current practices.

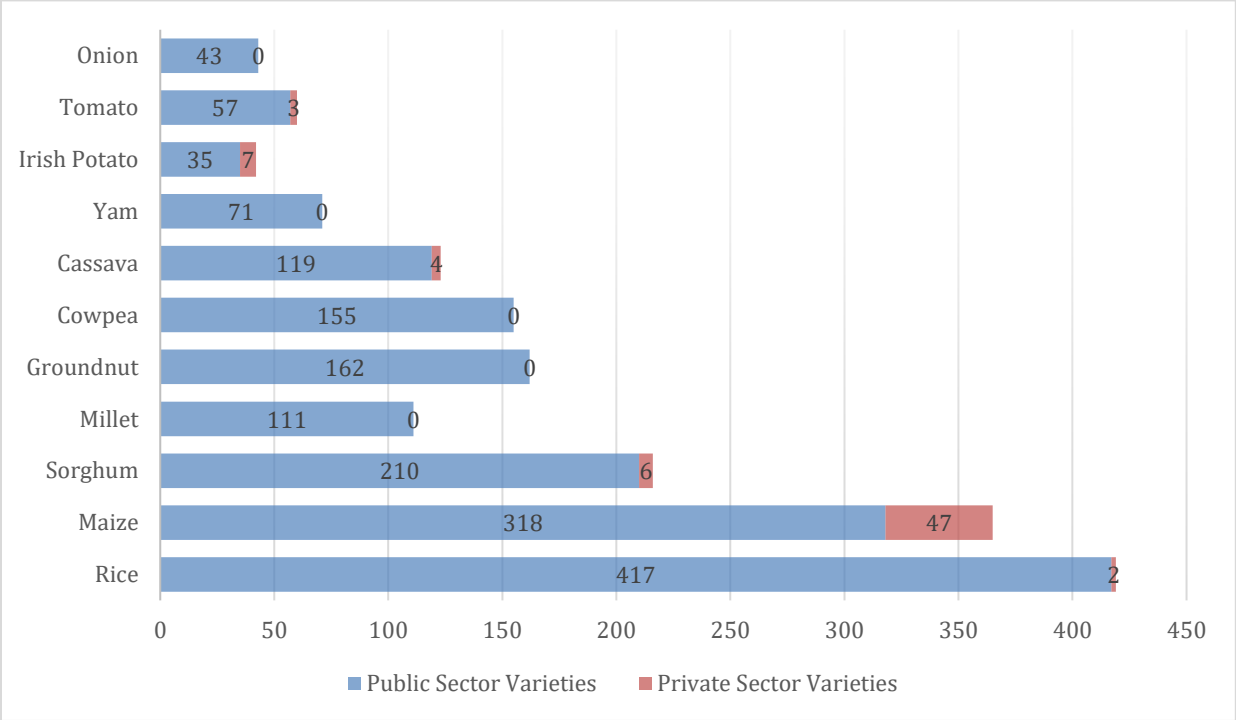
A. Public Variety Registration in the ECOWAS West African Catalog of Plant Species and Varieties

Within ECOWAS, public varieties are evaluated for DUS and VCU at the national level in accordance with the ECOWAS Procedure Manual. Depending upon the crop, the ECOWAS Procedure Manual requires that a variety be subject to VCU (in multiple agro-ecological zones) and DUS in tandem with international standards and for two seasons. Exemption is made for vegetables, which are not mandatorily subject to VCU; currently tomato and onion are included among the 11 priority crops in ECOWAS, with more added in 2021 (see Figure 1; although this is yet to be implemented). Once the criteria for variety registration have been met and the variety is registered in the national variety list, it qualifies for registration in the West African Regional Catalog of Plant Species and Varieties (hereinafter West African Catalogue) in accordance with the ECOWAS Seed Regulation. The NSA transmits the variety application to the West African Regional Seed and Seedling Committee under CORAF, ECOWAS' technical arm in charge of implementing ECOWAS agricultural policies, to register the variety in the West African Catalogue.

ECOWAS differs from other RECs in sub-Saharan Africa in that it has the most focus crops. Previously, there were eleven priority crops: groundnut, sorghum, pearl millet, rice, maize, cassava, Irish potato, yam, onion, tomato, and cowpea.[4] These have been increased to twenty in 2021, with the addition of wheat, sesame, soybean, sunflower, cotton, sweet potato, okra, pepper, and local eggplant. This will allow more public breeding institutions at the national and international levels to include their varieties in the next version of the West African Catalogue to be traded in the region.

[4] Id.

Figure 1: Representation of Public Varieties and Total Registration Per Crop Variety in the West African Regional Catalog of Plant Species and Varieties



In all of the West African countries, public research programmes dominate variety development. As a result, public varieties dominate the national lists and, by extension, the West African Catalogue. This is due to the nature of the ECOWAS Seed Regulations that allow regional registration of varieties that are listed at the national level and require no fees or additional trials. Table 1 below includes a comparison between public and private sector varieties registered in the three versions of the West African Catalogue.

Table 1: Comparison of Public and Private Sector Varieties Registered in the Three Versions of the West African Catalogue

Crop	2016		2018		2021	
	Public	Private	Public	Private	Public	Private
Rice	413	00	20	02	24	00
Maize	264	15	14	15	40	17
Sorghum	166	05	20	01	21	00
Millet	96	00	06	00	09	00
Groundnut	110	00	33	00	19	00
Cowpea	132	00	05	00	18	00
Cassava	98	04	10	00	11	00
Yam	54	00	07	00	10	00

Irish Potato	33	03	00	02	02	02
Tomato	57	03	00	00	00	00
Onion	43	00	00	00	00	00

As Table 1 shows, 1,698 out of 1,807 varieties on the West African Catalogue are publicly-bred varieties, with 36 public institutions appearing as registrants, including NARS and CGIAR Centers, compared with 11 seed companies (see Figure 1 below on the representation of public varieties and total registration per crop variety in the West African Regional Catalog of Plant Species and Varieties).

B. Public Variety Registration in the COMESA Variety Catalogue

Public variety registration in COMESA is regulated under the COMESA Seed Trade Harmonisation Regulations, which set out the registration criteria, application process, and fees.[5] Regional registration is limited to twelve priority crops: common bean, maize, rice, groundnut, cotton, wheat, sunflower, sorghum, soybean, pearl millet, cassava, and Irish potato. A variety qualifies for regional registration in the COMESA Variety Catalogue once subjected to DUS and VCU/NPT for two seasons in at least two COMESA Member States. The application process is publicly available on the COMESA Variety Catalogue website,[6] and it is reportedly relatively straightforward, although there is a fee involved. The applicant, which must be located in a COMESA country or operate through an agent, must pay a prescribed registration fee of USD 350 and annual maintenance fee of USD 250.

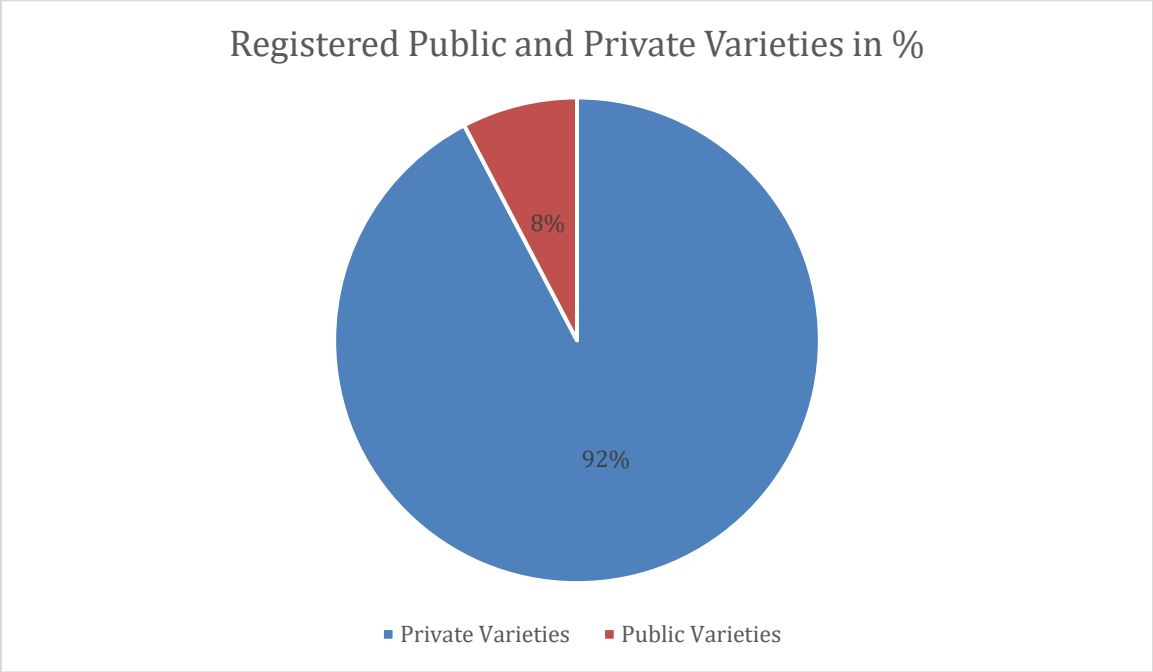
Currently, there are only seven public varieties out of the 90 varieties registered on the COMESA Variety Catalogue. Five of the seven are three-way hybrid maize varieties bred by the International Maize and Wheat Improvement Center (CIMMYT) in partnership with the African Agricultural Technology Foundation (AATF) under the Water Efficient Maize for Africa (WEMA) project. These were registered in the COMESA Variety Catalogue in March and April 2022, and they are maintained by CIMMYT, Kenya Agricultural and Livestock Research Organization (KALRO), and Uganda's National Agricultural Research Organization (NARO). The other two varieties are simple hybrid varieties bred by the National Crop Resources Research Institute (NaCRRI) in Uganda, registered in 2019 and maintained on the catalogue by the National Seed Company (NASECO) (1997) Limited.

[5] New Markets Lab (NML) and Syngenta Foundation for Sustainable Agriculture (SFSA), Manual on Regional Seed Regulations in the COMESA, February 2019. (hereinafter, COMESA Manual 2019), available at: https://www.syngentafoundation.org/sites/g/files/kgtney976/files/migration/f/manual_on_comesa_regional_seed_regulations_final_19_february_2019.pdf.

[6] COMESA Variety Catalogue, Filing an Application, December 2021. Available at: https://varietycatalogue.comesa.int/web/fillinghelp.

Out of the 17 registrants, 15 are seed companies, with only one CGIAR Center and one NARS. See Figure 2 below on the representation of public varieties and total registration per crop variety in the COMESA Variety Catalogue.

Figure 2: Representation of Public Varieties and Total Registration Per Crop Variety in the COMESA Variety Catalogue



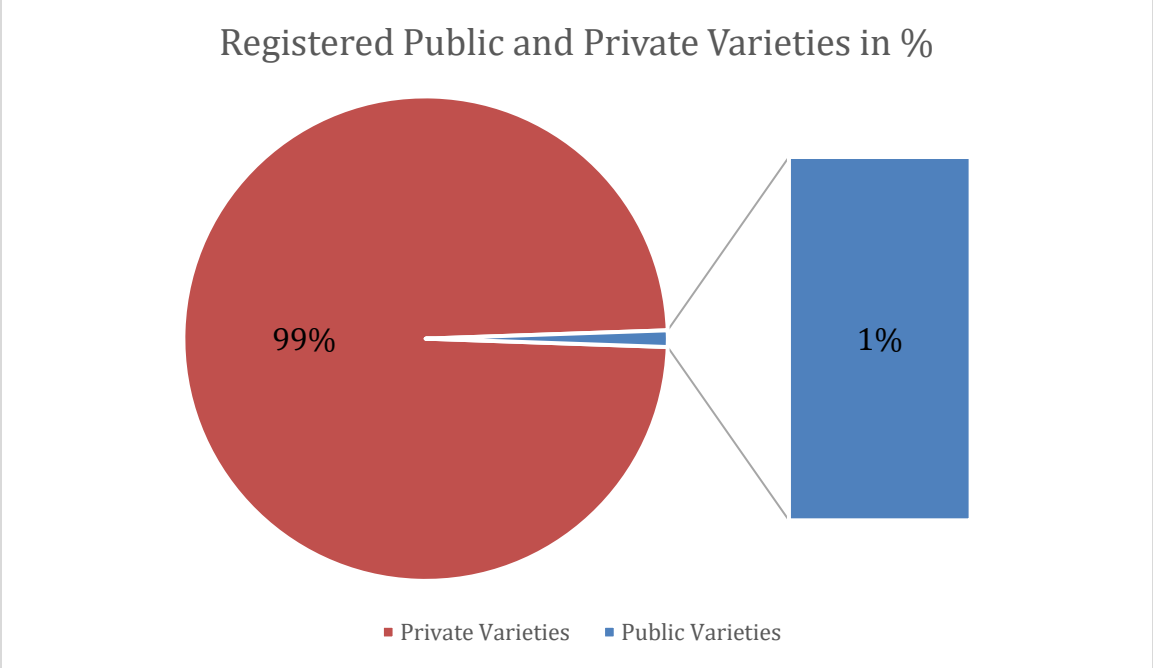
C. Public Variety Registration in the SADC Seed Variety Catalogue

The Technical Agreements on Harmonization of Seed Regulations in the SADC Region require that all varieties, including public varieties, be subject to one season of DUS and two seasons of VCU/NPT in at least two SADC member countries prior to registration in the SADC Seed Variety Catalogue.[7] Applications are initiated at the country level with the NSAs, which then transmits applications with relevant evaluation data to the SADC Seed Center. The SADC Seed Center processes applications, and, if a variety qualifies, it is entered in the Catalogue. Unlike COMESA, no fee is currently associated with registration or maintenance of varieties on the SADC Seed Variety Catalogue, which makes it easier to register varieties. The SADC Seed Center has announced, however, that fees will be charged at a later stage.

[7] NML and SFSA, Manual on Regional Seed Regulations in the SADC, February 2020, (hereinafter, SADC Manual 2020).

As of April 2022, of the 91 varieties registered in the SADC Seed Variety Catalogue,[8] only one variety had been bred by a public research institution and registered by a seed company, namely a bean variety bred by the International Centre for Topical Agriculture (CIAT) and registered by Zimbabwe Super Seeds Cooperative Company. See Figure 3 below on the representation of public varieties and total registration per crop variety in the SADC Seed Variety Catalogue. One of the challenges of navigating the SADC Seed Variety Catalogue is that it is not consistently available online. For instance, the Catalogue could not be accessed between November 2021 and March 2022, and, while it was reinstated between April and May 2022, it was again unavailable in July 2022.

Figure 3: Representation of Public Varieties and Total Registration Per Crop Variety in the SADC Seed Variety Catalogue



D. Comparison of Public Variety Registration in Regional Catalogues

A comparative analysis of public variety registration in regional catalogues allows for assessment of the effectiveness of implementation of regional seed rules in the different RECs and highlights good practices that could be adopted. Among the three RECs with regional catalogues, the rules on the criteria and process of regional variety registration

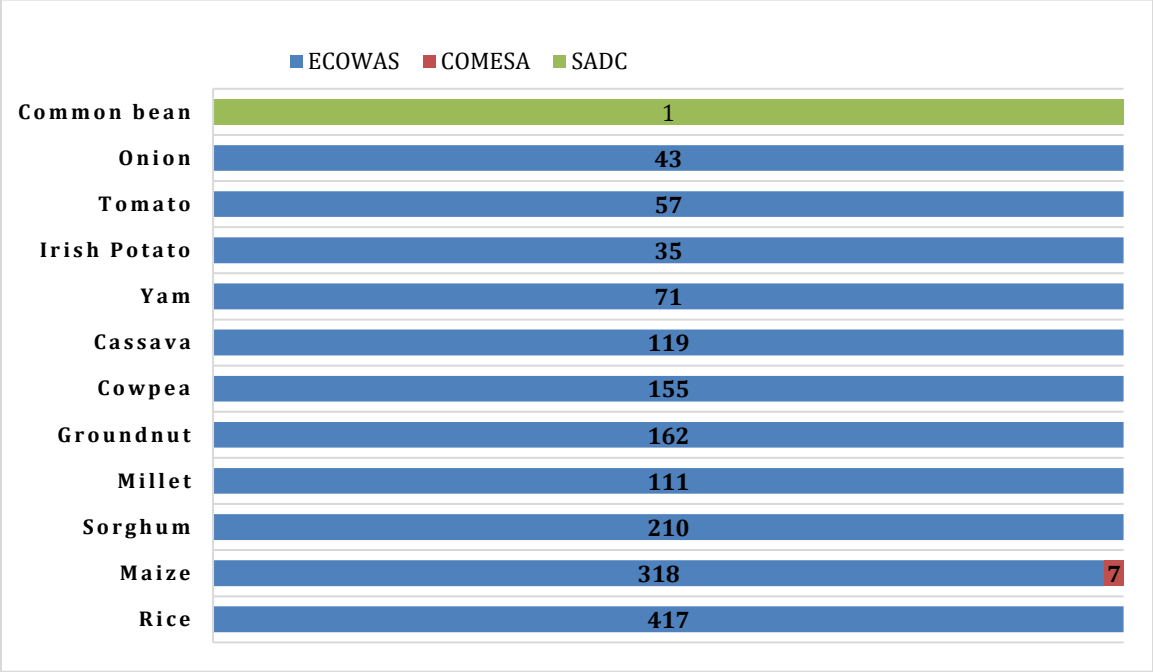
[8] SADC Seed Center, SADC Seed Variety Catalogue, available at: https://www.sadcseedcentre.com/sadc-seed-varieties/sadc-seed-variety-catalogue/.

have had different implications for public variety registration and have resulted in significantly different totals of registered public varieties within the different RECs. The public variety registration and release criteria and application process in ECOWAS was reported to be the shortest and best understood by stakeholders. This partly explains why the West African Catalogue has the most public registered varieties as compared with SADC and COMESA. Figure 4 below shows a comparison by crop, number, and total varieties registered in the COMESA, SADC, and ECOWAS catalogues.

ECOWAS' combined three versions of the West African Catalogue show a total of 1,698 public varieties out of the 1,807 varieties registered. In the SADC Seed Variety Catalogue, there is one public bean variety developed by the CIAT and registered by Zimbabwe Super Seeds Cooperative Company out of the 91 registered varieties. In the COMESA Variety Catalogue, there are seven public varieties out of the 90 registered varieties (as of June 2022), five of which were registered by the CIMMYT and AATF and maintained by CIMMYT, KALRO, and NARO, and two of which were registered by NACCRI in Uganda and maintained NASECO Ltd. While COMESA's public variety registration and release system was reported to generally be user-friendly,[9] stakeholders noted significant delays with NSAs' submission of evaluation data results to COMESA. One stakeholder mentioned, for instance, that it took close to six months to have relevant data for registration of some public varieties submitted to the COMESA Secretariat.

[9] COMESA Manual, *supra note* 5.

Figure 4: Comparison of Crop Type, Number and Total Varieties Registered in COMESA, SADC, and ECOWAS



Public sector registrants in the West African Catalogue outnumber private sector registrants, which is a notable difference from the SADC and COMESA catalogues, where seed companies are the majority of current registrants. Out of the 47 total registrants in the West African Catalogue, 36 are public research institutions, compared with 1 public research institution out of 11 registrants in the SADC Seed Variety Catalogue and 2 public research institutions out of 17 registrants in the COMESA Variety Catalogue. Stakeholder consultations revealed that registration by public research institutions in the West African Catalogue is a lot easier than under COMESA or SADC. This is largely because of differences in regional rules, whereby within ECOWAS, a variety automatically qualifies for registration at the regional level once registered in the national variety list of one ECOWAS country.

In contrast to COMESA, where maize varieties are the only publicly-bred varieties in the COMESA Variety Catalogue, public varieties registered in the West African Catalogue cover many ECOWAS priority crops (see Figure 4). Maize varieties represent a significant number of public varieties registered in ECOWAS as well, second to only rice, consistent with maize's role as a staple crop in many countries within sub-Saharan Africa, its commercial and food security significance, and the central focus on maize of many national public research programmes. The SADC Seed Variety Catalogue contains only one publicly-bred bean variety, as previously noted.

III. Challenges in Regional Registration of Public Varieties: Stakeholder Experiences

Stakeholder consultations revealed challenges regarding regional registration of public varieties, as well as issues related to navigating the regional variety catalogues. Challenges are classified below into constraints at the national and regional levels and general gaps.

A. Constraints Faced by NARS

1. Limited NSA and NARS Institutional Capacity

In COMESA and SADC, a variety qualifies for registration in the regional catalogue once registered in at least two member countries. It has been hard for most NARS to fulfill this requirement, since NARS tend to focus mainly on their geographic area, yet there would be a benefit to extending the reach of NARS varieties. One option for addressing the gap would be for the NARS to facilitate the registration of a variety in the country in which it is located as well as a second country. However, most public research programmes are often under-resourced in terms of finance, human capacity, and equipment, and variety release and registration is often a long and costly process. In addition, in cases in which the NARS obtain a variety from a CGIAR Center, stakeholder consultations revealed that NARS often do not have the authorization from the CGIAR Center to register the variety in a second country, let alone at the regional level, as the MTAs apply only at the national level. Some NARS like the Tanzania Agricultural Research Institute (TARI) have initiated discussions to have varieties registered in the SADC Seed Variety Catalogue, but no practical progress has been made yet due to these challenges.

Some countries also have limited capacity to conduct DUS tests that meet international standards under UPOV as required under the RECs. This affects registration of public varieties in the regional catalogues. In ECOWAS, for instance, although a variety registered at the national level qualifies for entry in the regional catalogue, stakeholders noted that the majority of varieties that are not registered regionally do not get pulled through due to failure to meet DUS standards. In Ethiopia, stakeholders have also noted the absence of DUS protocols, which has effectively kept DUS tests from being conducted in practice even though they are required by law.

Stakeholder consultations further revealed that a number of national systems are yet to fully align their seed legal and regulatory frameworks with the regional seed rules. Even where national seed rules are aligned with regional systems on paper, implementation tends to be complicated in practice, which affects registration of public varieties in regional seed catalogues.

2. Difficulty Tracing Varieties from CGIAR Centers

Stakeholder consultations revealed that most public research institutions obtain their genetic material or varieties from CGIAR Centers. These CGIAR centers often share the varieties or genetic material with different NARS in different countries. The national recipients then often register the variety in the national variety register or catalogue under different names. Where a variety was obtained from a CGIAR Center that has shared it with multiple NARS or seed companies in different countries, it is hard for the NARS to determine where a variety might be registered in a second country under a different name. Further complicating this aspect, the geographic restrictions on use of a variety or germplasm (defined in the MTA between the NARS and the CG Center) may prohibit NARS from seeking regional registration, absent approval from the relevant CG Center, as noted below.

3. Registration and Annual Maintenance Fees

Another challenge for NARS is payment of fees under some regional systems, such as COMESA, considering that most are already financially constrained. Applicants must pay a prescribed registration fee of USD 350 and annual maintenance fee of USD 250. Stakeholders mentioned, for instance, that the five CIMMYT/AATF registered varieties in the COMESA Variety Catalogue are being maintained by CIMMYT, KALRO, and NARO with funds under the WEMA project. The two NACRRI varieties on the COMESA catalogue are maintained by NASECO Ltd., a seed company to which the varieties were licensed.

4. National Research and Development Mandate

Some NARS, especially in COMESA and SADC, noted that they were not interested in registering varieties at the regional level, questioning which benefits would arise from such registration and asserting that their mandate was geographically restricted to national public research. Consultations with some NARS stakeholders in the SADC region mentioned that their focus and mandate was on varietal development for national stakeholders and not the entire region. However, the ECOWAS experience seems to suggest that a streamlined process for regional catalogue entry would overcome some of this hesitation on the part of the NARS.

5. Requirement of Authorization from CGIAR Centers

Some stakeholders noted that since they obtain most of their varieties from CGIAR Centers, they would need authorization to have such varieties registered at the regional level. All the NARS consulted had never engaged CGIAR Centers on obtaining such authorization and did not know of a process for obtaining it.

B. Constraints Faced by CGIAR Centres

1. Structure of Regional Rules

CGIAR Center stakeholders noted various reasons why they would be hesitant to register varieties regionally, particularly in the COMESA Catalogue which carries a cost. First, some stakeholders stressed that the regional seed rules were primarily tailored to facilitate seed companies' trade of varieties in the region, with limited focus on the uniqueness of public research systems. Considering that public research institutions are different from seed companies in their mandate, structure, and mode of operation, most stakeholders noted that they hoped that regional rules could be adapted to reflect the realities of public institutions, especially regarding tracing varieties and rules on trading registered public varieties within the region.

CGIAR Center stakeholders also noted that it is hard to put together applications for regional registration of varieties in SADC and COMESA, since applications for SADC are initiated at the national level, and COMESA requires proof of an applicant's registration of a variety at the national level, yet CGIAR Centers do not tend to register varieties in the national variety lists. This, along with limited knowledge on the process and requirements for regional varietal registration, have inhibited CGIAR Centers from registering varieties in the SADC Seed Variety Catalogue and COMESA Variety Catalogue.

2. Varietal Choice and Cost of Registration

CGIAR Centers have multiple high-quality varieties, and most stakeholders were conflicted about the choice of which varieties to register at the regional level. This was more challenging with respect to the COMESA Variety Catalogue, considering that it would be costly to register and maintain a large number of varieties in the COMESA regional catalogue.

3. Loss of Control Over Registered Public Varieties

Another significant issue related to the commercialization of registered public varieties at the regional level is traceability and control. Stakeholders in CGIAR Centers expressed concern that the regional registration of their varieties would result in free use by everyone regionally. While it is the mandate of public research institutions to develop varieties for public use, CGIAR Center stakeholders noted that they needed to control the way their varieties are used, since caution has to be taken to maintain quality. In doing so, CGIAR Centers have well designed institutional vetting processes to determine which varieties are sent to national research breeding programmes and which seed companies have the

capacity for licensing commitments in specific geographies. Moreover, since regional registration makes the variety available within a larger geographic area, prior licensing agreements and MTAs that limit geographic reach could be breached. Especially for hybrid varieties, some CGIAR Centers tend to prefer to maintain control over which recipients of their varieties get to commercialize a variety and in which geography. Here there is concern that registration of public varieties at the regional level would undermine these existing practices.

Some stakeholders also noted that most of the genetic material obtained from CGIAR Centers is usually modified or used in research to develop other varieties, especially hybrid varieties. Essentially, under the SMTA, CGIAR Centers do not lay claim over developed material even with if the possibility to trace such varieties exists.

C. General Gaps

1. Multiple Registration of Similar Varieties

Some stakeholders expressed concern with the registration of varieties with the same or similar genetic or parent material but with different variety names. This is the case when a CGIAR Center shares the same genetic material with NARS or seed companies in different countries. Varieties developed from such parent material would have similar traits yet carry different names, making it hard to trace their genetic background. A number of issues can arise when varieties with common genetic composition but different names end up being registered in the regional catalogues.

Stakeholders in ECOWAS mentioned, for instance, that since varieties registered at the national level qualify for registration at the regional level, a number of the same publicly-bred varieties have ended up on the West African Regional Catalog of Plant Species and Varieties under different names and with connection to different NARS. This was noted to be a challenge, not only because farmers have fewer varietal options than it would seem but also because confusion could arise from regional trade of identical varieties under different names. CORAF, the technical arm in charge of implementing ECOWAS' agricultural policies, maintains that registration of the same varieties with different names does not present a challenge to regional trade, since, in most countries, varieties are given names that have significant meaning to farmers. In other words, although the same variety may exist in the market, it would not be used if farmers do not recognize its name. CORAF added that if a breeder is interested in having regional ownership of the variety, he or she could apply for plant breeders' rights (PBR)/plant variety protection (PVP) under the regional system of African Intellectual Property Organization (OAPI), although this would have to be approved by the CG Center for a CG variety.

2. Limited Knowledge of Regional Variety Registration Processes

Among public sector stakeholders, many expressed a greater interest in registering their varieties in the regional variety catalogues; however, many were unfamiliar with regional variety registration rules in other regions, especially in SADC and COMESA where the rules are more complex. One CGIAR Center mentioned, for instance, that it was interested in registering its varieties in the COMESA and SADC catalogues but was unaware of the process for doing so. Currently, only the ECOWAS catalogue contains a number of public varieties.

3. Delay in NSAs' Transmission of Evaluation Data Reports to Regional Seed Authorities

Stakeholders reported significant delays by some NSAs in transmitting evaluation data reports to the regional seed authorities, especially in SADC and COMESA. In COMESA, once a registrant lodges an application, COMESA reaches out to the respective NSA to request the relevant data. For most NSAs, however, sharing data is not their priority, and lack of resources and capacity exacerbate the challenge.

Obtaining data from most governments was reported to be tedious, expensive, and bureaucratic. During registration of some of the public varieties on the COMESA Variety Catalogue, one applicant mentioned facing considerable challenges when Uganda's NSA was requested to submit data, with referral to different officers who either claimed they were not responsible or did not respond at all. Delays at the national level for pending registrations under COMESA were reported to last from seven to eight months. There were also complaints regarding requirements to pay for submission of data at the regional level, even though money was already paid for the evaluation tests.

4. Limited Coordination Between National and Regional Institutions

Stakeholders noted that in most cases the national and regional institutions do not cooperate closely during the regional variety registration process. This delays the sharing of relevant evaluation data and information, and regional registration of varieties by extension.

5. Limited Access and Availability of Some Regional Catalogues

Access to and use of some regional catalogues is a challenge, specifically in ECOWAS and SADC. The ECOWAS catalogue does not exist in a single version, and it cannot be found in one place. All the three versions of the catalogue are in French, without English copies for the Anglophone ECOWAS countries. While the ECOWAS priority crops have been increased from 11 to 20, the ECOWAS Procedure Manual does not include the VCU and DUS protocols for the additional crops. In SADC, the Seed Variety Catalogue is sometimes unavailable online, often for months. These issues affect the usability of these catalogues.

IV. Recommendations

The recommendations below are designed to address gaps and implementation challenges presented in the report. Implementation of the proposed recommendations will highly depend on coordination among national and regional level institutions, as well as the support of international institutions and development partners.

In addition to these recommendations, public research centers unsure about which varieties to register at the regional level could consider registering varieties that already have a market, have been licensed, or are already registered in at least two REC member countries.

A. Explore Obtaining PBR/PVP for Public Varieties

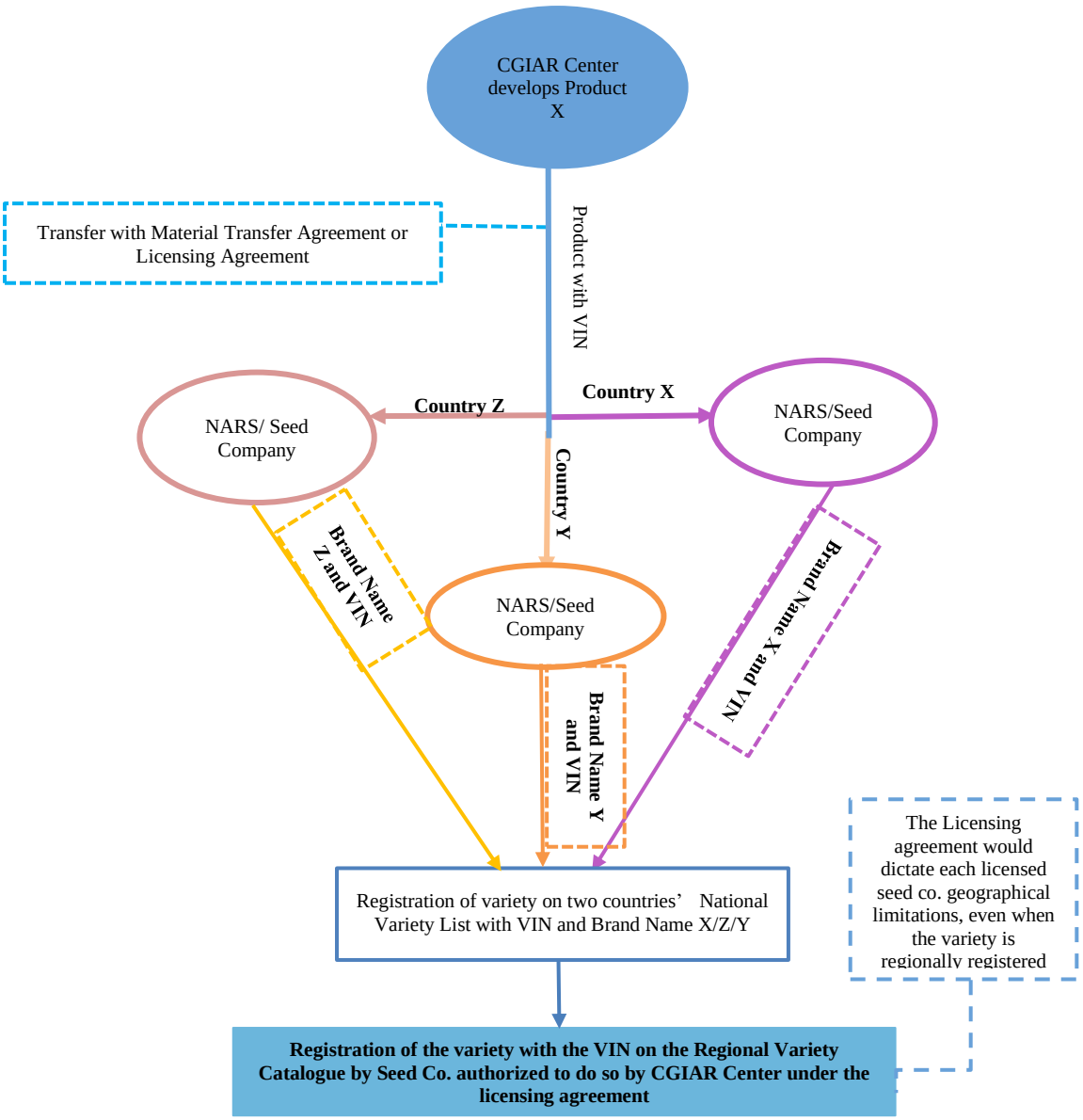
Public research institutions could authorize private entities to obtain PBR/PVP for the varieties licensed to them. This could especially be done where the licensing agreements are for a long period of time, say 15 to 20 years, which would match the timeframe for PVP protection in a number of countries. This way, a seed company could cover the cost of PVP registration, and the public research institution could maintain control over the commercialization of the variety through the licensing agreement.

CGIAR and NARS could also explore obtaining PBR/PVP at the regional level under OAPI or ARIPO (although this works differently in Eastern and Southern Africa) or at the national level, which would give them greater control in determining how their varieties are commercialized at the national and regional levels.

B. Use Licensing Agreements to Facilitate Regional Public Variety Registration

Within COMESA, where both NARS and CGIAR Centers have expressed reservations towards regional registration because of high registration and maintenance fees, public institutions could explore licensing their varieties to private seed companies interested in commercializing a variety at the regional level. Licensing agreements could be used between CGIAR Centers and a private seed company or between NARS and a private seed company. An interested private seed company could pay the relevant fees associated with the variety registration and ensure that it reaches farmers instead of remaining on the shelves, uncommercialized. See Figure 5 below with a Regulatory Systems Map on the effect of licensing agreements on regional registration of NARS and CGIAR Center Varieties.

Figure 5: Regulatory Systems Map on the Effect of Licensing Agreements on Regional Registration of NARS and CGIAR Center Varieties



Source: New Markets Lab, Legal Review and Analysis of the Implementation of the Variety Identification Number at the National and Regional Levels, 2022, developed in collaboration with the Alliance for a Green Revolution in Africa (AGRA).

C. Adopt a Variety Identification Numbers to Trace CGIAR Varieties

With respect to registration of similar varieties with different names, CGIAR Centers could explore attaching a variety identification number (VIN) to the varieties and material they share with national research programmes and seed companies. In the instruments used to share varieties, including licensing agreements and MTAs, the CGIAR Centers could mandate that recipients use the VIN in registration at the national level alongside the NARS or seed company brand name. This would ease traceability of the variety for regional registration, even where the variety brand names are different in the countries it is registered (see Figure 5 above).

D. Include an Annotated Comment in Regional Catalogues to Enable NARS and CGIAR Centers Maintain Control of Regional Use of the Variety

To enable public research institutions to continue current practices and maintain control over how their public material is commercialized and in which geographies, regional seed authorities could include an annotated comment in the relevant regional catalogue alongside the registered publicly-bred variety. The comment could state that the variety holding a VIN may be commercialized in the region in accordance with the licensing agreement or MTA between the public research institution and the recipient of the variety. This approach has been developed by NML under an AGRA project with COMESA and other partners.

E. Create Flexibility in CGIAR Regional Variety Applications in SADC and COMESA

Consulted stakeholders within CGIAR centers noted concern with the application process in SADC and COMESA, which requires CGIAR Center involvement in the national level variety registration process, which CGIAR Centers currently do not do. In SADC, applications for regional variety registration are initiated at the national level, while COMESA requires proof of an applicant's variety registration at the national level. Considering that CGIAR Centers are not involved at in variety registration at the national level, greater flexibility would be helpful, for example by allowing CGIAR Centers to initiate variety applications directly to the SADC Seed Center. Under both SADC and COMESA, greater flexibility for the CGIAR to use the VIN to show registration at the national level as proof of variety origin, even if the variety is not registered in the CGIAR name, would also facilitate regional adoption of public varieties.

F. Build Knowledge and Capacity Around Regional Registration

To build knowledge around regional registration of public varieties, capacity building workshops involving key public sector stakeholders could be conducted to build familiarity with relevant criteria and processes on regional registration. This could be done through dissemination of legal tools previously developed by NML and SFSA on regional variety registration, including the 2021 Check-Back Report for Regionally-Registered Varieties and the COMESA and SADC Manuals. These training sessions could be followed up by an evaluation of progress and additional capacity building efforts, and they could also be enhanced through the development of digital tools.

G. Improve Access and Usability of Regional Catalogues

Within ECOWAS, the three versions of the regional catalogue should be merged into one catalogue with an English translation also made available. A digital copy could be more easily accessible and consistently available. In SADC, The catalogue should be made consistently available online for use by stakeholders.

H. Other General Recommendations

Other recommendations applicable to the streamlining of regional registration of varieties include:

- Build capacity and political willingness among NSAs to align their national systems with regional seed rules, including conducting evaluation testing in accordance with international standards;
- Improve communication between NSAs and regional bodies to facilitate regional registration and trade; and
- Encourage creation of regional data bases for evaluation test results in SADC and COMESA, which could be aligned with country databases so that once an application is filed regionally, it could be processed without requiring significant action by the NSAs.