



Seeds2B

Case Study on Regulation of Vegetable Crops in Kenya

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Acronyms

AFSTA	African Seed Trade Association
CIP	International Potato Center
DUS	Distinctness, Uniformity, and Stability
EAC	East African Community
ISF	International Seed Federation
ISTA	International Seed Testing Authority
KALRO	Kenya Agriculture and Livestock Research Organization
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspectorate Service
KRA	Kenya Revenue Authority
NML	New Markets Lab
NPPO	National Plant Protection Organization
NPT	National Performance Trial
NPT-C	National Performance Trials Committee
NVRC	National Variety Release Committee
OECD	Organization for Economic Cooperation and Development
OIC	Orange International Seed Testing Authority certificate
PASTTA	Partnership for Seed Technology Transfer in Africa
PBR	Plant Breeders' Rights
PRA	Pest risk analysis
PVP	Plant Variety Protection
SFSA	Syngenta Foundation for Sustainable Agriculture
SPS	Sanitary and phytosanitary
STAK	Seed Trade Association of Kenya
UPOV	Union for Protection of New Varieties of Plant
VAT	Value added tax
VCU	Value for cultivation and use
WVC	World Vegetable Center

Executive Summary

This case study on the regulation of vegetable crops in Kenya was developed by the New Markets Lab (NML), in collaboration with Syngenta Foundation for Sustainable Agriculture (SFSA) under SFSA’s Seeds2B initiative and Partnership for Seed Technology Transfer in Africa (PASTTA), with the objective of assessing the process for implementing seed regulatory systems that can better deliver improved seed varieties to farmers. This case study builds on previous work, including the 2020 Case Study on Regional Harmonization for Vegetable Crop Varieties under PASTTA that specifically focused on the vegetable seed industry in four countries, namely Kenya, Malawi, Nigeria, and Senegal and highlighted national regulatory approaches and flexibilities, challenges, and elements that may make the case for (or against) regional harmonization for vegetable seed. One of the recommendations under the 2020 Case Study on Regional Harmonization for Vegetable Crop Varieties was to do a deep-dive analysis into Kenya’s legal and regulatory framework for vegetable seed, considering that it was the only one among the focus countries that had legal flexibilities in the regulation of vegetable seed. This case study also builds upon a comparative study that NML developed on vegetable seed regulation with the World Vegetable Center (WVC), which is a significant partner in vegetable seed systems across countries.¹

This case study was developed through a combination of analysis of Kenya’s legal and regulatory framework on seed and consultations with key vegetable seed industry stakeholders including the Kenya Plant Health Inspectorate Service (KEPHIS), public vegetable research institutions, local and multinational seed companies, the Seed Trade Association of Kenya (STAK), and others. It reviews and analyzes the national approach to regulation of vegetable seed in Kenya, focusing on key dimensions along the vegetable seed value chain, namely, varietal breeding, variety registration and release, plant breeders’ rights, seed certification and quality assurance, and import and export. The case study focuses on legal flexibilities or exemptions made specifically for vegetable seed, presenting key stakeholder experiences in navigating the Kenyan vegetable seed industry, and concludes with recommendations to address key challenges in Kenya’s vegetable industry, based on alternative vegetable seed regulatory approaches and good practices adopted by other countries.

¹ Katrin Kuhlmann, Tara Francis, Induleka Thomas, and Pepijn Shreinemachers “Seed Laws and Regulations Affecting the Development of the Private Vegetable Seed Sector in Sub-Saharan Africa”, Shanhua, TAIWAN: World Vegetable Center (WVC), Publication No. 21-1036, 2021. Available at <https://worldveg.tind.io/record/74189> [hereinafter Kuhlmann et al. WVC].

Notably, Kenya's legal and regulatory framework on seed includes certain flexibilities related to vegetable seed variety registration and release, certification, and importation. For instance, vegetable seed is exempted from, a) mandatory national performance evaluation trials (NPTs), b) mandatory certification, and c) production of an Orange International Seed Testing Authority (ISTA) certificate (OIC) prior to vegetable seed importation. Vegetable crops have different properties than grain crops, and adoption of different legal and regulatory approaches by Kenya is a commendable approach.

As analyzed under this case study and revealed from the stakeholder consultations, implementation challenges and legal gaps continue to exist. For instance, domestic vegetable seed breeding is still very minimal, with the market relying highly on imported varieties. Moreover, consultations revealed that public research institutions, which are the dominant local vegetable seed breeders, focus mostly on traditional varieties which are not highly demanded by the commercial market. While vegetable seed is exempted from NPTs, consistent with good global practices, stakeholder consultations revealed that, in practice, such flexibility does not exist, and NPT trials are mandated. Moreover, the seed rules do not include any flexibilities on distinctness, uniformity, and stability (DUS) tests for vegetable seed, yet varieties developed by the informal sector constitute the largest percentage of vegetable varieties consumed on the market. Stakeholders were concerned that this excluded informal vegetable varieties from getting formally released and registered, certified, and protected under plant variety protection (PVP) rules. This in general constrains innovation and research focused on vegetable seed, curtailing investment in the industry by extension.

Quality assurance approaches aimed at minimizing vegetable seed certification processing time and alleviating public sector capacity constraints, including authorization of private seed inspectors and recognition of standard seed as a seed class for vegetable seed, are yet to be effectively applied in practice. Stakeholders also mentioned challenges complying with sanitary and phytosanitary (SPS) measures during vegetable seed importation. Some companies noted that while SPS tests are generally scientific-based, in a few cases tests are conducted for diseases that are not or are no longer a threat in Kenya or that testing for the same pests present in field crops are applied to vegetables, resulting in costly and time-consuming testing. Some seed companies also reported that when there is a new disease outbreak, there is short notice for compliance with new SPS measures, which often results in waste and financial loss with regard to consignments already in transit. Companies noted that for importation of new vegetable varieties, the process of conducting a pest risk analysis (PRA) can be long, bureaucratic, and tedious. As of September 2021, KEPHIS had only one staff person responsible for PRA, highlighting a significant capacity gap. KEPHIS reported though that it had plans to create a separate division on PRA.

There were also reports of some challenges with using the online platform for applying for an import permit. Some seed companies noted that certain vegetables are not among the dropdown options for importation from some countries. Companies also reported high taxes on vegetable seed, which, when coupled with the importation costs, make vegetable seed very expensive, since these costs are transferred to the farmer. Some vegetables like coriander are also miscategorized under the harmonized tariff system of the East African Community (EAC) of which Kenya is a Partner State, resulting in an even higher tariff.

Consultations revealed a knowledge gap regarding existence of the legal flexibilities pertaining to vegetable crops, as well as practical approaches to their enforcement which is not consistent either as written or as applied. Stakeholders signaled that these inconsistencies give rise to the uncertain treatment of vegetable crops, highlighting the need for consistency in enforcing the flexible approaches for vegetable crops in order to drive national and regional trade in vegetable seed. To address some of these challenges, a new Seed and Plant Varieties (Vegetatively Propagated Seeds) Regulation is being developed in Kenya to streamline regulation of vegetable seed value chain activities. Table 1 below summarizes the Case Study’s recommendations to address challenges under each key regulatory dimension in Kenya’s vegetable seed industry.

Table 1: Summary of Key Recommendations to Address Legal and Practical Challenges in Kenya’s Vegetable Seed Industry

No.	Key Regulatory Dimension	Summary of Recommended Intervention
1.	Vegetable Seed Breeding and Production	<ul style="list-style-type: none"> • Prioritize vegetable seed breeding in the National Seed Policy, which would need to be updated from the 2010 version, and develop a strategy on implementation to encourage investment in the vegetable seed industry. • Expand vegetable seed breeding programs through public-private partnerships to leverage the strength of different partners and harness the competitive advantages of diverse stakeholders.
2.	Variety Release and Registration	<ul style="list-style-type: none"> • Enforce flexibilities for testing of vegetable crops to enable fast-tracked registration of vegetable varieties and fuel investment and growth of the vegetable industry. • Adopt a flexible approach to registration of vegetable varieties developed in the informal sector to enable availability of a wider range of varieties to farmers and empower smallholder farmers. • Raise awareness about the flexibilities in vegetable seed testing through information workshops in partnership with STAK and KEPHIS, so that stakeholders can work with regulators to implement these flexibilities.

		<ul style="list-style-type: none"> • Better publicize instruments such as the national variety catalogue, and consider development of a separate catalogue for vegetable seed. • Include vegetable seed experts in technical committees and sub-committees related to the testing of vegetable seed.
3.	Vegetable Seed Quality Assurance	<ul style="list-style-type: none"> • Remove the mandatory requirement for vegetable seed certification and apply consistently in practice, since the seed law did not intend for vegetable seed to be subject to mandatory certification. • Raise awareness about optional vegetable seed certification flexibilities through information workshops in partnership with STAK and KEPHIS, so that stakeholders can work with regulators to implement them. • Support private sector capacity building aimed at enabling private vegetable seed certification initiatives, through public-private partnerships for instance, to facilitate equipment of laboratory facilities that meet international standards.
4.	Plant Breeders' Rights/PVP	<ul style="list-style-type: none"> • Strengthen and enforce the implementation of the legal framework for plant breeders' rights (PBR) and PVP for vegetable varieties through revision of the PVP rules to include protection of more than 15 years in line with the Union for Protection of New Varieties of Plant (UPOV) Convention, of which Kenya is a member, and establish more effective penalties for PVP violations. • Consider adoption of flexible PVP/PBR criteria for farmer-bred varieties to bridge the gap between the formal and informal vegetable seed systems and motivate more innovation in vegetable variety breeding that could result in more options available for farmers.
5.	Cross Border Trade	<ul style="list-style-type: none"> • Develop SPS measures that are risk-based and tailored to the vegetable seed sector to prevent redundant and costly border control procedures. Pest lists should be prepared by informed experts and periodically updated. • Fast-track creation of a separate PRA division within KEPHIS and fully equip it to enable it to operate efficiently. • Streamline the online platform for import permit applications to address reported inefficiencies. • Review tariffs classifications for vegetable seed imports in order to encourage investment in the vegetable industry, and enable availability of quality seed to farmers.

I. Introduction

Vegetable crops make a significant contribution to economic, nutrient, and food security.² In Kenya, the vegetable industry employs a considerable number of people, due to the short production seasons unique to vegetable crops and large market, which, when combined, provide a steady and more readily available source of income.³ However, while there is both public and private sector involvement in vegetable seed breeding and development in Kenya, which is notable among sub-Saharan African countries, the majority of the focus is still significantly on field crops instead vegetable crops.⁴ Considering the unique nature of vegetable crops, national seed policies and legal and regulatory frameworks tailored to vegetable crops would serve to promote agricultural productivity and food security through improved access, availability, and affordability of quality vegetable varieties to smallholder farmers. Such a specialized regulatory framework is relevant for creating an enabling environment for growing and sustaining vegetable seed markets, encouraging investment in the vegetable sector, and streamlining rules under which supply chain actors can pursue their business interests.

A. Overview of Kenya's Vegetable Seed System

The vegetable industry employs a large percentage of Kenya's population, because vegetable production is associated with more income per hectare of land cultivated as compared with staple crops. This is because vegetables take less time to mature, and market demand is readily available because of the large population.⁵ In Kenya, production of vegetable assures the producer a profit of over 75 percent.⁶

Major vegetables grown in Kenya include kale, tomatoes, onions, carrots, cabbage, French beans, and traditional vegetables (amaranth, aubergines, courgettes, pumpkin leaves, black nightshade, sun hemp, jute plant, pigweed, and spider plant). The export market for

² Kuhlmann et al. WVC, at 7.

³ Katrin Kuhlmann, "The Human Face of Trade and Food Security: Lessons on the Enabling Environment from Kenya and India," Centre for Strategic and International Studies, 2017. Available at: https://csis-prod.s3.amazonaws.com/s3fs-public/publication/171206_Kuhlmann_HumanFaceFoodSecurity_Web.pdf?UIIn_uS4Z6IoUMSi727Q8QrUyHfGnehl.

⁴ NML, Stakeholder Consultations, September/October 2021. See also, Kuhlmann et al. WVC, at 7.

⁵ Katrin Kuhlmann, "The Human Face of Trade and Food Security: Lessons on the Enabling Environment from Kenya and India," Centre for Strategic and International Studies, 2017. Available at: https://csis-prod.s3.amazonaws.com/s3fs-public/publication/171206_Kuhlmann_HumanFaceFoodSecurity_Web.pdf?UIIn_uS4Z6IoUMSi727Q8QrUyHfGnehl.

⁶ P. Nekesa and B. Meso, "Traditional African Vegetables in Kenya: Production, Marketing and Utilization, Organic Matter Management Network, Kenya". Available at: https://www.biodiversityinternational.org/fileadmin/biodiversity/publications/Web_version/500/ch14.htm.

vegetables in Kenya is also progressing steadily, and the value of vegetable exports has increased by 11.2 percent from US 182 million in 2014 to USD 203 million in 2015.⁷ Variety development and formal seed production of these crops remain to a large extent in the hands of the public sector, while the informal sector, which is comprised of farmer-saved and community-based seed systems, continues to be the main source of vegetable seed. Farmer-saved seed remains important for many traditional vegetable crops for which the formal sector offers few alternatives and also for home gardens and semi-commercial farms.⁸ It is, therefore, important that the regulatory environment does not restrict the rights of farmers to develop their own vegetable varieties and produce and exchange seed. Farmer-saved seed does not limit the development of the formal seed sector, because most commercial vegetable farmers will find it more profitable to purchase seed than to produce their own.

B. Vegetable Seed Legal and Regulatory Framework

Under the Kenya Plant Health Inspectorate Service (KEPHIS) Act No. 54 of 2012, KEPHIS is mandated with regulating the seed industry, which includes all value chain activities relating to vegetable crops. Vegetable seed breeding, variety registration and release, certification, PVP, and cross-border trade are regulated under the Seed and Plant Varieties Act, Cap 326, and its regulations, including the Seeds and Plant Varieties (Seeds) Regulations of 1991, the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016, the Seeds and Plant Varieties (National Performance Trials) Regulations, 2009, and the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001. Seed and Plants (Vegetatively Propagated Seed) Regulations are currently being developed, recognizing the unique nature of vegetable seed, and the need for special rules to regulate it separately from other crops.

Sanitary and phytosanitary issues are governed under the Plant Protection Act Cap 324 and the Plant Protection (Importation of Plants, Plant Products and Regulated Articles) Rules, Legal Notice 108 of 2009. The Plant Protection Act and its regulations are currently under review to strengthen the regulatory framework for prevention and management of plant pests and diseases in Kenya.

⁷ "Horticulture Study: Mapping of Production of Fruits and Vegetables in Kenya", *Match Maker Associates for the Kind of Netherlands*, 2017. Available at: <https://www.agroberichtenbuitenland.nl/binaries/agroberichtenbuitenland/documenten/rapporten/2017/03/01/mapping-of-production-of-fruits-and-vegetables-in-kenya/Scoping-horticultural-study-Kenya-2017.pdf>.

⁸ Kuhlmann et al. WVC, at 7.

II. Key Findings from Stakeholder Consultations and Challenges in Vegetable Seed Regulatory Framework

Challenges in the vegetable seed regulatory framework exist along the value chain either as gaps in the legal framework or in its implementation. In the sections below, legal analysis is combined with key findings from stakeholder consultations on their experiences navigating the vegetable seed industry to highlight the regulatory procedures and challenges or gaps in implementation of rules relevant to vegetable seed.

A. Approach to Consultations

Questionnaires were used as tools for gathering information to guide the consultations and were structured around several questions related to the key vegetable regulatory dimensions. Two sets of questionnaires were developed, one for the public sector and another for private sector respondents, and respondents' consent was obtained. The questionnaires included opinion and Likert scale questions to help qualitatively and quantitatively gauge private and public sector understanding of regulations relating to vegetable crops and any related challenges navigating the enabling environment. Substantively, the questionnaires included questions related to key issue areas of vegetable crop regulation, namely, vegetable seed breeding, variety registration and release, certification, plant variety protection, and cross-border trade.

Due to COVID-19, some consultations were conducted virtually, and others were conducted in-person during the 2021 African Seed Trade Association (AFSTA) Congress in Mombasa as well as in Nairobi. Stakeholders consulted included the seed sector regulator, KEPHIS, public vegetable breeders in the Kenya Agriculture and Livestock Research Organization (KALRO), STAK, and local and multinational seed companies.

B. Vegetable Seed Breeding and Production

Stakeholder consultations revealed that, while vegetable seed breeding is conducted by both public research institutions and the private sector in Kenya, it is still significantly low in comparison with other crops, particularly field crops. Public research institutions and seed companies are mostly focused on research on cereals, grains, legumes, and vegetatively propagated crops, with minimal concentration of vegetable crops. Most vegetable seed is still imported from outside the continent, while local companies continue to produce seed of open-pollinated varieties.⁹ Public research institutions reportedly mostly

⁹ Marcia M. Croft, Maria I. Marshall, Martins Odendo, Christine Ndinya, Naman N. Ondego, Pamela Obura and Steven G. Hallett "Formal and Informal Seed Systems in Kenya: Supporting Indigenous

focus on breeding traditional varieties, which are not very attractive to the formal market. Smallholder farmers that dominate the domestic vegetable production sector often rely on their own saved seed or seed secured through informal networks. Moreover, while there is proof that varieties developed in the informal sector are of high quality, sometimes even higher than similar vegetable seed in the formal sector,¹⁰ bureaucratic procedures associated with variety release and registration, which is required for official trading authorization, has hindered local seed breeding and production and encouraged importation, re-packing, and selling of less-well adapted seed.¹¹

Promoting breeding efforts in both the formal and informal sectors could improve access to diverse germplasm and strengthen resilience to future stresses. Higher quality in the formal seed sector could also be encouraged by more companies entering the market, which would create competition and raise quality standards in the vegetable seed industry. There is also a need to strengthen the technical capacity of seed companies to allow them to develop varieties that are well-adapted to local conditions and consumer preferences. Moreover, seed regulations, which were originally designed with grains in mind, should be reviewed and revised to facilitate domestic vegetable breeding research and seed production. This explains the recent efforts to develop Seed and Plants (Vegetatively Propagated Seed) Regulations to regulate vegetable seed separately from other crops. Stakeholders noted, however, that this process has been stalled due to COVID-19.

C. Variety Registration and Release of Vegetable Crops

Under Kenya's Seed and Plants (Variety Evaluation and Release) Regulations, vegetable seed is mandatorily subject to only DUS testing prior to registration and release, while NPT trials are optional.¹² This flexibility treats vegetable seed differently from other crops, which is a commendable good practice. NPT or value for cultivation and use (VCU) testing is not well suited to vegetables, because they tend to span a large range of traits, have shorter growing seasons, and be particular to consumer preference (such as, shape, color, and flavor).¹³ However, consultations revealed that, in practice, vegetable seed is subject to both DUS and NPT testing prior to registration and release and that the results from the

Vegetable Seed Quality", *Journal of Development Studies* (2018) 54:4, 758-775, p.3 DOI: 10.1080/00220388.2017.1308487.

¹⁰ *Id.*

¹¹ Victor Afari-Sefa, et al., "Vegetable Breeding in Africa: Constraints, Complexity, and Contributions Toward Achieving Food and Nutritional Security", *Food Security Journal* (2011) DOI 10.1007/s12571-011-0158-8. Available at: file:///C:/Users/user/Downloads/Afarisefaetal.2011.pdf.

¹² Regulation 6(2) of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, 2016,

¹³ "Module 3: Seed Quality Assurance", in *Seeds Toolkit, Food and Agricultural Organization*, 34 (2018), <http://www.fao.org/3/CA1492EN/ca1492en.pdf>.

DUS and VCU tests are required by the National Variety Release Committee (NVRC) during evaluation of the variety. Most stakeholders interviewed, including those in the public sector, were unaware of the exemption of vegetable seed from NPT. Seed companies also showed limited knowledge and understanding of processes for vegetable seed variety registration and release, which partly explains why there are so few vegetable varieties listed in the Kenyan national seed catalogue. Moreover, quality varieties developed in the informal sector do not meet the uniformity and stability tests and thus cannot be registered and released on the national variety list since they vary through a natural process.¹⁴

Kenya's regulatory framework could also be revised to include flexible evaluation requirements that would allow for the registration and commercialization of traditional vegetable varieties, which is one example of a flexibility that could help bridge the informal and formal seed sectors.¹⁵ The knowledge gap concerning the flexibility that exists for vegetable seed registration and release should be addressed at the national level, for instance through information workshops in partnership with the STAK and KEPHIS, and perhaps at the regional level as well.

Under the Seed Regulations, after conducting trials in tandem with UPOV rules, KEPHIS sends a draft report of the DUS results to the NVRC.¹⁶ A vegetable variety may be exempted from DUS testing if a variety is registered and released in two countries within the Regional Economic Communities (RECs) of which Kenya is a member. Consultations with KEPHIS also revealed that DUS testing may not be conducted by KEPHIS where the breeder submits a DUS report from another officially recognized institution in another country. In practice, vegetable varieties are also subject to NPT trials, which means that the National Performance Trials Committee (NPT-C) evaluates the NPT results and submits a report with recommendations to KEPHIS. KEPHIS forwards this report to the NVRC together with the DUS results. This adds a layer of bureaucracy that is not required under the legal framework. The NVRC considers the report from KEPHIS¹⁷ and approves and releases qualifying varieties.¹⁸ Figure 1 below contains a Regulatory Systems Map (RSM) for the Vegetable Variety Registration and Release Process in Kenya. Most notably, the shaded areas associated with steps 6 and 7 show where stakeholder experience differs from the rules in practice and where the practice departs from the legal system (shaded area off of step 6), highlighting important implementation gaps

¹⁴ Katrin Kuhlmann and Bhramar Dey, "Using Regulatory Flexibility to Address Market Informality in Seed Systems: A Global Study", *Agronomy* 2021, 11, 377. <https://doi.org/10.3390/agron-omy11020377> [hereinafter Kuhlmann and Dey].

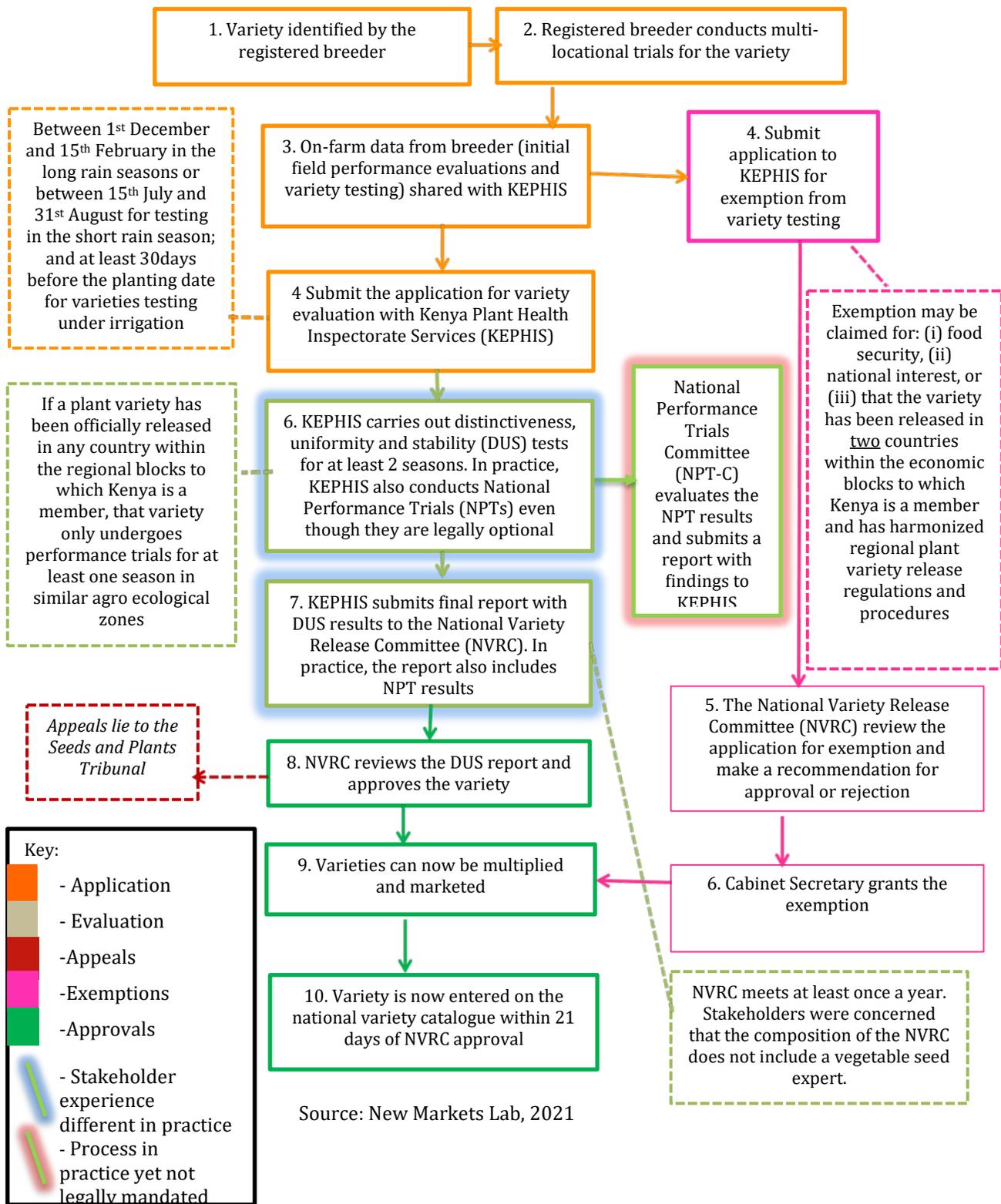
¹⁵ *Id.*

¹⁶ Regulation 13(1) of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016.

¹⁷ Regulation 15 of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016.

¹⁸ Regulation 15 of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016.

Figure 1: New Markets Lab Regulatory Systems Map for the Vegetable Variety Registration and Release Process in Kenya



Some of the consulted seed companies were concerned about the absence of a vegetable seed expert on the NVRC,¹⁹ an issue KEPHIS mentioned it would address. Stakeholders noted that applicants can request ad hoc NVRC committee meetings if they cover the expenses of the meeting. This could be helpful for vegetable varieties, which may have to be released into the market more quickly.

After release by the NVRC, KEPHIS publishes the varieties that can be commercialized;²⁰ the KEPHIS director must ensure that the names of the released varieties are published in the national gazette within 21 days of the NVRC meeting.²¹

D. Vegetable Seed Quality Assurance

Kenya maintains mandatory seed certification as a quality assurance system under the purview of KEPHIS. It involves seed quality assurance through field inspection of registered seed varieties during production and laboratory testing to assess compliance with minimum purity and germination standards before commercialization of a variety. Seed certification quality standards in Kenya are based on international seed testing standards set by the ISTA. Kenya also recognizes international vegetable seed schemes set by the Organization for Economic Cooperation and Development (OECD).

For vegetable crops, formal certification is not relevant in the same way it is used to assure quality for field crops. If certification is mandated, for instance, vegetable seed must go through the time consuming and costly certification process to be eligible for formal commercial distribution. This is problematic, considering that vegetable crops are not listed as a priority crops in Kenya's National Seed Policy,²² and capacity constraints are likely to exacerbate the costs and delays in the process. Recognizing the uniqueness of vegetable crops, Kenya's Seed and Plants Act²³ does exempt vegetable seed from mandatory certification, which could be helpful in reducing the costs inherent in the formal process. Kenya also recognizes standard seed as a seed class,²⁴ which is consistent with the OECD

¹⁹ Kuhlmann et al. WVC, at 37.

²⁰ Regulation 19(2) of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016.

²¹ Regulation 19(1) of the Seed and Plant Varieties (Variety Evaluation and Release) Regulations, Legal Notice No. 215 of 2016.

²² *National Seed Policy*, Ministry of Agriculture, June 2020. Available at: <http://extwprlegs1.fao.org/docs/pdf/ken185713.pdf>.

²³ Seed and Plant Varieties (Seeds) Regulations, sch. 2 (Kenya).

²⁴ List of countries participating in the Organization for Economic Cooperation and Development (OECD) Seed Schemes / Liste des pays participant aux Systèmes des semences de l'OCDE,

Seed Scheme for vegetable crops.²⁵ In the production of standard class vegetable seed, the seed producer has the primary responsibility of ensuring that the seed meets the minimum purity and quality standards, with the oversight of KEPHIS. The recognition of standard seed as a seed class can create more flexible opportunity for smallholder farmers operating in informal seed systems, while still ensuring quality seed in the market.²⁶ Standard seed is, however, not suited to larger seed companies, which still have to undergo long and costly vegetable seed certification processes.

Although certification of vegetable seed is not mandated in Kenya, stakeholders noted that in practice all seed, including vegetable seed, is required to be certified prior to commercialization. Seed companies added that the certification process for vegetable seed is generally costly and often subject to considerable delays. For instance, the cost of field inspection, sampling, and sealing is significantly higher for vegetable seeds compared with other crop varieties.²⁷ Certified seed lots which meet the stipulated minimum requirements are packed into containers or bags with an official certification label that contains a serial number recorded by KEPHIS.²⁸ KEPHIS issues scratch-off labels with codes that the consumer can use to verify the genuineness of the seed. Stakeholders noted that the labels are expensive and that the cost is ultimately transferred to the farmer, which makes vegetable seed very expensive. Seed companies agreed, however, that the scratch-off labels are a worthy anti-counterfeiting measure.

As another good regulatory practice aimed at reducing the capacity burden to conduct certification tests, Kenya involves the private sector in the seed certification process through authorization of the private sector to provide certification services with the supervision of KEPHIS, including field inspection and laboratory testing, in accordance with internationally recognized seed testing standards under ISTA.²⁹ However, while private seed inspectors have been authorized and gazetted by KEPHIS, seed companies noted that besides a handful in the big seed companies, most of them had actually not done any official field inspections. KEPHIS mentioned that this has been because most seed companies do not have laboratories that meet the prescribed standards. The full process for mandatory certification is depicted in the RSM on seed certification in Figure 2.

<https://www.oecd.org/agriculture/seeds/documents/list-of-countries-participating-in-the-oecd-seed-schemes.pdf>. See also, Kuhlmann et al. WVC, at 43.

²⁵ OECD Schemes for the Varietal Certification or the Control of Seed Moving in International Trade, OECD, 153, 2020, <https://www.oecd.org/agriculture/seeds/documents/oecd-seed-schemes-rules-and-regulations.pdf>.

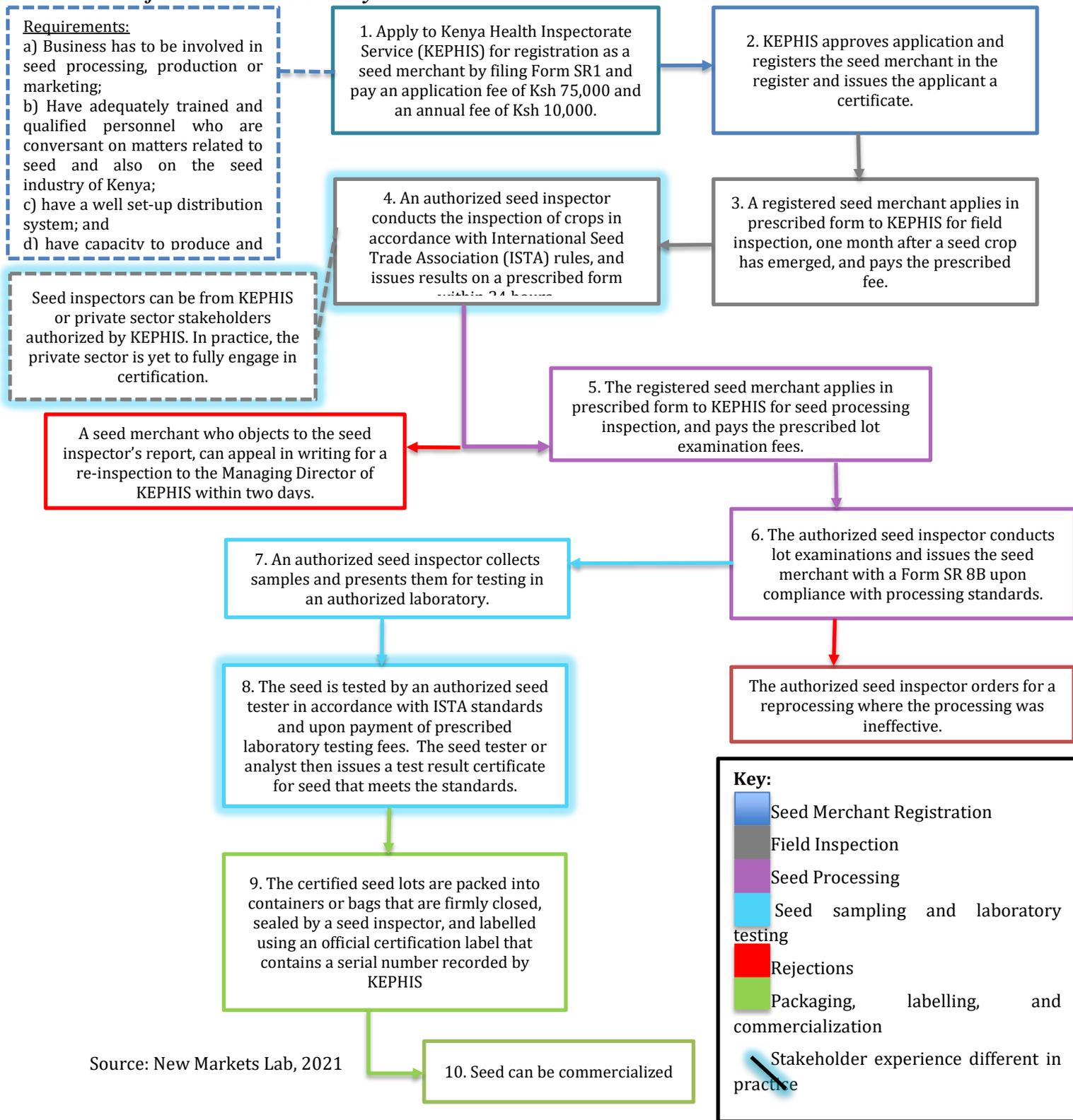
²⁶ Kuhlmann and Dey, at 16.

²⁷ Seeds and Plant Varieties (Seeds) Regulations, sch. 5 (Kenya).

²⁸ Regulation 17 (3) Seeds and Plant Varieties Act (Seeds) Regulations.

²⁹ Kuhlmann and Dey, at 18.

Figure 2: New Markets Lab Regulatory Systems Map for the Vegetable Variety Certification Process in Kenya



Source: New Markets Lab, 2021

The highlighted areas in Figure 2, in particular those associated with steps 4 and 8, note where the certification practice for vegetable crops differs from the rules on paper. Implementing the exemption for vegetables from mandatory certification, which is a notable good practice, could have a considerable impact on growth of the sector.

E. Plant Variety Protection (PVP)/Plant Breeders' Rights (PBR)

PVP/PBR regulatory frameworks for vegetable seed exist in Kenya under the Seeds and Plants Act and the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001. The PVP framework is based on the Union for Protection of New Varieties of Plant (UPOV) Convention, protecting varieties that are new or novel and comply with DUS requirements.³⁰

Under the Seed and Plant Varieties Act, once PBR is granted, the holder can produce reproductive material of the variety, commercialize, export, or stock it for any of these purposes, or authorize another person to do any or all of these activities³¹ for up to fifteen years.³² Only one exemption to PBR exists in Kenya, that is, where the protected variety is used solely for research purposes or for developing new varieties in the breeder's own nursery.³³

While the existence of a legal framework on PVP is important, ultimately its design and implementation are most relevant. In Kenya, the regulatory framework on PVP for vegetable crops is quite weak. For instance, vegetable crops are only afforded only 15 years of PBR protection,³⁴ which is inconsistent with the international standard of 20 years for vegetable crops established under UPOV. Since Kenya is a UPOV member, this inconsistency directly contradicts Kenya's international obligations. Moreover, the penalty for violation of PVP for vegetable seed amounts to less than USD 30.³⁵ Stakeholders noted that even though PBR protection is provided for under relevant laws, it is not strictly enforced for vegetable seed. Stakeholders also revealed that, as a result, once a vegetable variety has been released, it essentially becomes part of the public domain, which discourages investment in the industry.³⁶

³⁰ Part II of the fourth Schedule of the Seeds and Plant Act.

³¹ Section 20(1)a) of the Seed and Plant Varieties Act.

³² Schedule to the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001.

³³ Section 20(1)b) of the Seed and Plant Varieties Act.

³⁴ Schedule to the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001.

³⁵ Regulation 7 and the Schedule to the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001.

³⁶ NML Consultations with Stakeholders, September/October 2021.

Moreover, as highlighted above, most of the vegetable seed developed in Kenya is for traditional varieties that exist within the informal sector. These varieties do not qualify for protection under the current PVP law, as they do not meet the stringent DUS and novelty requirements. This exclusion of vegetable varieties bred in the informal sector from PVP discourages investment and development of quality varieties in the vegetable seed industry. Again, flexibilities do exist in other countries' practices that could be relevant in Kenya's context, such as application of an "identifiability" test to address the challenges with meeting DUS standards and create more opportunity for smaller farmers and local communities.³⁷

F. Cross-border Trade

KEPHIS is the National Plant Protection Organization (NPPO) and authority that regulates the importation and exportation of vegetables. An importer of seed is required to have an import permit issued by KEPHIS and a phytosanitary certificate issued the NPPO in the country of origin complying with the conditions in the import permit. While the OIC is legally not required for vegetable seed imports, some companies reported inconsistencies in application, noting that it would sometimes be requested for by KEPHIS. For vegetable seed exports, the exporter must have an export permit and a phytosanitary certificate issued by KEPHIS in accordance with the Plant Protection Act, Cap 324 and regulations.³⁸

To apply for an import permit, a registered seed merchant submits a notice of intention to import, which can be submitted to KEPHIS online.³⁹ Once KEPHIS approves the notice of intention to import, it issues the applicant an import permit,⁴⁰ which specifies the requirements which are supposed to be met by the importer.⁴¹ The online import permitting portal contains a dropdown list for the applicant to select the desired crop intended for import and country from which the import originates, and detailed SPS requirements are

³⁷ Kuhlmann and Dey, at 15.

³⁸ Plant Protection Rules, Plant Protection (Fines) Rules, 1948, Plant Protection (Potatoes) Rules, 1968, Plant Protection (Importation) Order, Plant Protection (Prohibition of Importation) Order, Plant Protection (Fees and Charges) Rules, 2009, Plant Protection (Importation of Plants, Plant Products and Regulated Articles) Rules, 2009, among others. All available at: http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/PlantProtectionAct_Cap324.pdf.

³⁹ Regulation 23 (1) (b-c) Seeds and Plant Varieties Act (Seeds) Regulations. The application is made via www.infotradekenya.go.ke.

⁴⁰ Regulation 23 (1) (c) Seeds and Plant Varieties Act (Seeds) Regulations, 2016, http://kenyalaw.org/kl/fileadmin/pdfdownloads/LegalNotices/2016/LN220_2016.pdf

⁴¹ Sikinyi Evans, *Seed Certification, Import and Export for Kenya*, Seed Trade Association of Kenya (STAK), 33 (September 2012) <http://erepository.uonbi.ac.ke/bitstream/handle/11295/106884/Sikinyi%20E-%20Seed%20Certification%2C%20Import%20%26%20Export%20For%20Kenya.pdf?sequence=1&isAllowed=y>.

listed by crop. The phytosanitary certificate issued by the importing country must comply with these conditions. Where the associated risk is unknown or not on KEPHIS' record, the importer applies to KEPHIS for a PRA.⁴² KEPHIS can issue an import permit once it conducts the PRA and finds that there is no associated pest risk or that the risk is very minimal.⁴³ If the risk is significant, the importer must comply with SPS measures, such as quarantine procedures, before KEPHIS will issue the import permit.⁴⁴ KEPHIS may deny issuance of an import permit where it finds the risk to be very high, except where the import is for research, experimentation, or educational purposes.⁴⁵ Upon arrival of the vegetable seed at the port of entry, official seed testers collect samples and have it tested in an authorized laboratory in accordance with ISTA standards, to assess its quality.

Stakeholders revealed that compliance with SPS measures is one of the biggest challenges in importing vegetable seed. Some seed companies noted that while SPS tests are generally scientific-based, as called for by international rules, in a few cases tests are conducted for diseases that are not relevant or are no longer a threat in Kenya, also noting that vegetable crops may be tested for the same pests tested for field crops, resulting in costly and time-wasting testing. For instance, one seed company reported that when importing cucumber, among the diseases KEPHIS tests for is *choanephora cucurbitarum*, which the International Seed Federation (ISF) shows should not be tested for in cucumber because it is not scientifically-based. The company noted that because the disease is not tested for in export markets like Europe, the seed cannot be authorized for export because a phytosanitary certificate cannot be issued.

Some seed companies also reported that when there is a new disease outbreak, there is short notice for complying with new SPS measures, which often results in waste and financial loss with regard to consignments already in transit. Companies noted that for importation of new vegetable varieties, the process of conducting a PRA can be long, bureaucratic, and tedious. One seed company revealed, for instance, that it had taken it six weeks for KEPHIS to conduct a PRA for a vegetable variety it was interested in importing. As of September 2021, when consultations were conducted, KEPHIS had only one staff member responsible for PRA and was deeply under capacitated. KEPHIS reported that it had plans to create a separate division on PRA, but this does not appear to have been implemented to date.

There were also a few reports of challenges with using the online platform for applying for an import permit. Some seed companies noted that some vegetables are not among the dropdown options for importation from some countries, which makes it impossible to

⁴² Plant Protection Act (Importation of Plants, Plant Products and Regulated Articles) Rules, s11, 2009. See also, Kuhlmann et al. WVC, at 47.

⁴³ Importation of Plants, Plant Products and Regulated Articles Rules, s12, 2009.

⁴⁴ Importation of Plants, Plant Products and Regulated Articles Rules, s12, 2009

⁴⁵ Importation of Plants, Plant Products and Regulated Articles Rules, s12, 2009.

obtain an import permit. For instance, there is cucumber production in Tanzania, but Tanzania is not among the countries in the dropdown list from which cucumber can be imported. China is also not included among the countries in the dropdown list from which hot pepper can be imported, yet it is a significant producer of pepper. One company also mentioned that, due to a system-wide error where requirements are copied and pasted without regard to the particular crop, issues have arisen with respect to broccoli and lettuce import permits, making it impossible to comply with the requirements for an import permit. KEPHIS mentioned that once notified about challenges with the online platform, it makes changes to the dropdown list. Another seed company noted that it complained to KEPHIS about a disease that was not relevant to cauliflower and broccoli, and it was removed, but only after a great deal of effort.

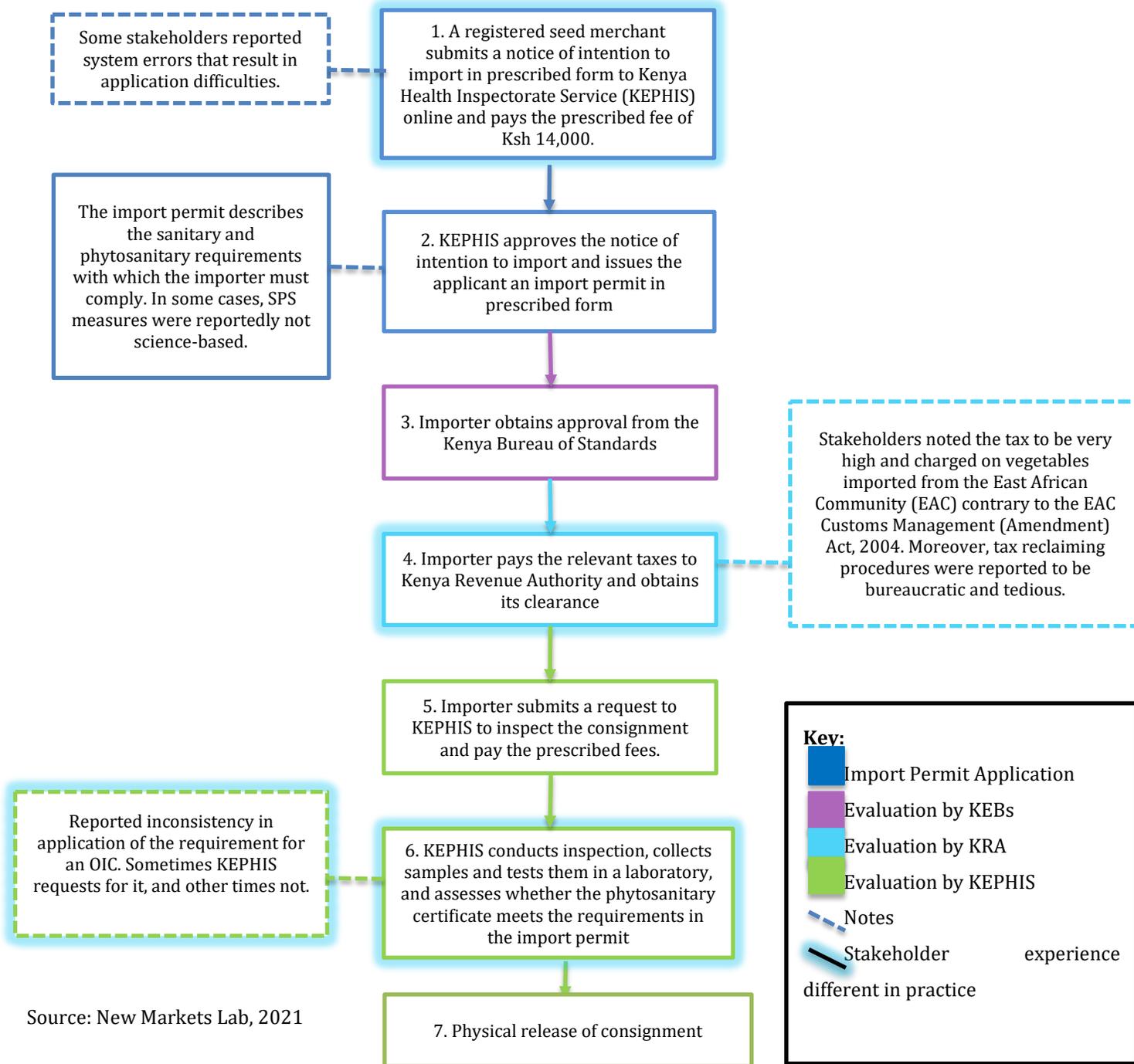
Seed companies were also concerned about the inconsistency in application of the requirement for an OIC. While some companies reported that they did not need to accompany their vegetable seed consignments with the OIC, others reported that they were required to do so. Even when an OIC was obtained, companies were concerned about laboratory testing of seed at the port of entry. This practice was found to be time and cost consuming and unnecessary, since the OIC already speaks to the germination and physical purity traits of the seed. KEPHIS responded, however, that the testing at arrival is necessary to assess whether the seed has maintained its qualities, since sometimes seed consignments take a long time in transit and are exposed to various conditions that could affect and alter seed quality.

Companies also reported high taxes and tariffs on vegetable seed, which, when coupled with the importation costs, make vegetable seed very expensive since these costs are transferred to the farmer. For instance, capsicums and coriander carry an import duty of 25 percent. All vegetable crops are subject to a value added tax (VAT) of 14 percent. Although the VAT was reduced from 16 percent at the beginning of 2021, companies were still concerned that this tax is too high. On top of these, there are cess fees charged each time goods move from one state to another. Some vegetables like coriander are also mis-categorized under the EAC harmonized tariff system, resulting in an even higher tariff. Even though there is zero import duty on vegetables imported from the EAC under the EAC Customs Management (Amendment) Act, 2004, tariffs are actually imposed. KEPHIS mentioned that the tariff paid can be reclaimed from the Kenya Revenue Authority (KRA), but the seed companies noted that the process for doing so is lengthy and bureaucratic.

The full process for vegetable seed importation is depicted in the RSM in Figure 3 below. The highlighted areas note where the seed sector stakeholder experience differs from the

rules on paper. Particular issues arise with respect to steps 1, 4, and 6, and addressing these inconsistencies would facilitate imports needed to meet local demand.

Figure 3: New Markets Lab Regulatory Systems Map for the Vegetable Variety Importation Process in Kenya



Source: New Markets Lab, 2021

III. Recommendations to Address Legal and Practical Challenges for Vegetable Crops

The following recommendations have been developed based on legal and regulatory analysis and stakeholder consultations. All recommendations are designed to improve the design and implementation of the legal and regulatory system related to vegetable crops.

A. Options on Vegetable Crop Breeding and Production

Considering Kenya's focus on vegetable crops, vegetable crop breeding and production should be given greater priority and focus. The recommendations below highlight several ways in which this could be accomplished, including through changes to Kenya's National Seed Policy and through breeding programs themselves.

1. Prioritization of Vegetable Breeding

The National Seed Policy (2010) should be revised to prioritize vegetable breeding, along with a strategy on implementation. This could advance development of the seed sector. Countries like Malawi and Zambia emphasize the vegetable sector in their seed policies, making this a regional good practice that Kenya could adopt.

2. Expansion of Breeding Programs

KALRO and other public research institutions could focus on expanding breeding programs for new and improved varieties of traditional vegetable varieties. This could partly be done through public-private partnerships to leverage the strength of different partners and harness the competitive advantages of diverse stakeholders. For instance, more partnerships could be developed between international vegetable research institutions and the local public and private sector, which could provide examples for the vegetable seed sector. Stakeholders from Simlaw Seeds and KALRO mentioned, for instance, that they had bred various varieties in partnership with the WVC and International Potato Center (CIP). Further, practices to expand local productive capacity for traditional vegetable varieties could also be used to encourage development of traditional varieties.

B. Options for Variety Registration and Release

Kenya's legal and regulatory system does contain notable flexibilities with respect to registration and release of vegetable varieties, although consultations conducted under the case study highlighted that these are not implemented in practice and are not widely known.

As the RSM in Figure 1 shows, application of these flexibilities could significantly impact the variety registration and release process for vegetable crops. In addition, other countries’ legal and regulatory systems contain additional flexibilities with respect to vegetable crops, such as flexibilities tailored to small farmers and variety lists for vegetable crops, that could further strengthen the system if adopted in Kenya.

1. Enforce and Expand Vegetable Variety Evaluation Flexibilities

KEPHIS could consider enforcing the flexibilities related to testing vegetable crops (i.e., the exemption from NPT) to enable fast-tracked registration of vegetable varieties and fuel investment and growth of the vegetable industry. While it is a commendable regulatory approach to exempt vegetable seed from NPT, which are not well-suited for vegetable crops, stakeholders reported that this flexibility is not implemented in practice.

Most vegetable breeding and trade of vegetable varieties in Kenya happens in the informal sector, with focus on traditional vegetable varieties or landraces. The formal regulatory process for vegetable variety registration and release can inhibit registration of varieties developed in the informal sector due to the regulatory complexity, time consuming tests, and related economic investment.⁴⁶ Moreover, since traditional vegetable varieties have variable traits, they are most likely to be unable to meet the DUS requirements of uniformity and stability.⁴⁷ Adoption of flexible approaches to registration of vegetable varieties developed in the informal sector would ensure that a wider range of varieties is available to the market and empower smallholder farmers. Flexible approaches like these exist in several countries, as shown in Table 2 below. As Table 2 highlights, other flexibilities could be considered in Kenya, such as creation of alternative variety lists for farmers’ varieties and/or vegetables.

Table 2: Countries’ Flexible Regulatory Approaches to Seed Variety Registration (Kuhlmann & Dey)⁴⁸

Country	Flexible Approach
Ethiopia	No variety registration required of smallholder farmers when exchanging and selling farm-saved seed.
Vietnam	Farmers and farmers’ associations may be authorized for rice breeding, selection, and production by the Ministry of Agriculture and Rural Development under Decision 35/2008/QD-BNN to breed and produce rice.

⁴⁶ Kuhlmann & Dey, at 12.

⁴⁷ “Regulatory Aspects of Local Seed Collection”, NML and SFSA (2018). See also, Kuhlmann & Dey.

⁴⁸ Information in the table is adapted from Kuhlmann & Dey, at 11.

Malaysia	For varieties developed and bred by farmers, local or indigenous communities, the uniformity and stability components of the DUS requirement are replaced with the “identifiability” test that is based on a combination of qualities that are more heterogenous.
Peru	Native varieties “that can be exploited economically” are exempt from evaluation trial fees and taxes, and a separate National Registry for Native Potatoes exists.
France, Italy, Costa Rica, Nepal, Switzerland, Republic of Korea, Ecuador	There is an alternative seed variety list for registration of farmers’ varieties.
Brazil	An alternative register exists for local and traditional varieties with flexible variety registration criteria based on length of use of the variety in the community and process of varietal development.
Benin	List C of the National Variety List includes landraces and new varieties developed through participatory plant breeding practices that only have to undergo VCU testing in order to be registered and released.

2. Conduct Capacity Building to Address Gaps in Knowledge of Regulatory Flexibilities Related to Vegetable Crops

Although regulatory flexibilities exist for vegetable crops, many stakeholders were unaware of these flexibilities. Steps should be taken to raise awareness about such flexibilities so that stakeholders can work with regulators to implement them. This could, for instance, be done through information workshops in partnership with STAK and KEPHIS. Further, instruments such as the national variety catalogue must be made publicly available in an easily accessible manner, with the catalogue available online and updated when new varieties are added. Stakeholders reported that there were difficulties accessing an updated national variety list online.

3. Inclusion of Vegetable Seed Experts in the NPT-C and NVRC

Vegetable seed experts should be included in technical committees and sub-committees related to the testing of vegetable seeds. Vegetable crops have different traits from other crops, and these bodies would benefit from this particular expertise. Inclusion of vegetable seed experts on technical committees responsible for making decisions on assessment of a

variety would enable consideration of the unique properties of vegetable crops and draw in expertise on vegetable crops that are being evaluated for registration and release into the market. To make the process of testing more efficient for vegetable varieties, experts could speak to the technicalities of vegetable seed, which presents important considerations throughout the regulatory process.

C. Options for Vegetable Seed Quality Assurance

Seed quality assurance processes should also be tailored to vegetable crops, and important flexibilities exist here, such as exemption of vegetable crops from mandatory seed certification. However, although Kenya's legal and regulatory system contains flexibilities, they are reportedly not implemented in practice, as highlighted above and in the RSM in Figure 2. The following recommendations could address these gaps and shift focus to a seed quality assurance system that would facilitate development of Kenya's vegetable seed sector.

1. Enforce Vegetable Variety Certification Flexibilities

While vegetable seed certification is optional under the Seed and Plants Act,⁴⁹ stakeholders noted that, in practice, it is mandated by KEPHIS. If implemented, this flexibility could enable prompt availability of quality vegetable varieties to farmers and eliminate the time-consuming and costly certification process for vegetable crops, which could encourage investment in Kenya's vegetable seed industry. Moving forward, KEPHIS could apply the flexible requirement in practice as was intended by the Seed Act.

⁴⁹ Seed and Plant Varieties (Seeds) Regulations, sch. 2 (Kenya).

2. Conduct Capacity Building to Address Gaps in Knowledge of Regulatory Flexibilities Related to Vegetable Crops

Although regulatory flexibilities exist with respect to certification of vegetable crops, most stakeholders consulted were unaware of these. Raising awareness about the optional certification of vegetable seed could enable stakeholders to work with regulators to implement these flexibilities. This could, for instance, be done through information workshops in partnership with STAK and KEPHIS.

In addition, while private sector seed certification has been authorized by KEPHIS, with training and transparency measures (such as publication of authorized private sector inspectors in the gazette), stakeholder consultations revealed that inspections have been few. Involvement of the private sector in additional capacity building could allow for more efficient and affordable services, especially in the vegetable seed industry where public sector capacity is already limited. Private sector capacity could be improved through more public-private partnerships to equip laboratory facilities that meet international standards and address other gaps.

D. Options for PBR/PVP

PBR systems can also be designed to incorporate legal and regulatory flexibility tailored to vegetable crops, including through more flexible approaches to DUS testing that also have relevance in the context of variety registration. Vegetable seed should also be afforded a greater term of PBR protection, consistent with international law, and more effective penalties for violating PBR should be applied.

1. Strengthen the Legal Framework for PBR and PVP for Vegetable Varieties

Effective legal and regulatory systems for PBR are key in facilitating investment in the vegetable industry, since they ensure that private sector innovations are protected from unauthorized infringement. Stakeholders noted that the legal framework for vegetable seed PVP in Kenya is quite weak, with vegetable seed only afforded 15 years of protection, in contrast to the longer term for other crops, with ineffective penalties for violation of vegetable crop PBR amounting to less than USD 30.⁵⁰ Moreover, stakeholders added that the PVP legal framework it is not strictly enforced for vegetable seed. Kenya's legal and regulatory framework could be revised to include longer protection of 20 years in line with

⁵⁰ Regulation 7 and the Schedule to the Seeds and Plant Varieties (Plant Breeder's Rights) (Vegetables Scheme) Regulations of 2001.

the UPOV Convention,⁵¹ and more stringent penalties on PVP violations should be established.

2. Consider Adoption of Flexible PVP/PBR Criteria for Farmer-Bred Varieties

Farmer and farmer communities usually breed traditional vegetable varieties or landraces that most likely do not meet the novelty and DUS requirements in the formal legal system. More flexible legal approaches for farmers' varieties could bridge the gap between the formal and informal vegetable seed systems and encourage greater innovation and vegetable variety breeding, ultimately resulting in more options for farmers and a stronger vegetable sector in Kenya. Such flexible approaches have been adopted in countries such as Ethiopia, which has a more flexible DUS requirement for protection of farmer varieties, and Malaysia, which applies an "identifiability" test in place of the uniformity and stability requirements components of the DUS test.⁵²

E. Options for Cross-Border Trade

Cross-border trade is central to Kenya's vegetable sector, making the rules and their implementation in this dimension particularly important. Although Kenya's system does contain some flexibilities with regard to cross-border trade of vegetable seed, these are not consistently applied in practice. The recommendations below address particular gaps related to the legal and regulatory system for cross-border trade of vegetable seed and its implementation.

1. Develop SPS Measures that are Risk-Based and Tailored to the Vegetable Seed Sector

Stakeholders mentioned that SPS measures are often not adequately designed to address the particular nature of the vegetable seed sector, such as application of testing requirements for pests/diseases that are not threats in Kenya or are not scientifically relevant to the vegetable crops in question. Developing procedures that take into account the specific characteristics and requirements of the vegetable sector will be important, particularly given the high reliance on vegetable seed imports. To prevent redundant border control procedures, pest lists should be prepared by informed experts and periodically updated.

2. Fast-Track Creation of PRA Division within KEPHIS

⁵¹ Accession of Kenya to the 1991 Act of the UPOV Convention, UPOV Press Release No. 105. Available at: https://www.upov.int/news/en/2016/news_0005.html

⁵² Kuhlmann & Dey, at 15.

Seed companies noted that the PRA can take a very long time, due to understaffing within KEPHIS, with only one staff member responsible for conducting PRA tests. This can cause importation delays, financial losses to the companies, and delayed availability of quality seed to farmers. KEPHIS has announced a notable change that would address this gap: the creation of a PRA Division. Fast-tracking the implementation of this commitment and fully equipping KEPHIS in order to enable it to operate efficiently could have a significant positive impact on Kenya's growing vegetable sector.

3. Streamline the Online Platform for Import Permit Applications

While stakeholders reported that it was generally easy to navigate the online platform in order to obtain an import permit, there were a few reported cases of system issues. These included the absence of dropdown options to import certain vegetables from some countries, spelling errors, and a mismatch of requirements and crops, which sometimes make it impossible to obtain an import permit. While KEPHIS will act to rectify these mistakes once informed, this can sometimes take a long time and could be better streamlined. Stakeholders did note that the response rate is better when communication goes through STAK instead of an individual seed company, highlighting an important function for the seed trade association.

4. Review Policies on Taxes and Tariffs on Vegetable Seed Imports

The high taxes and tariffs on vegetable seed imports were reported by stakeholders as one of the major impediments to the vegetable industry. This has resulted in higher cost for vegetable seed, as the taxes are transferred to the final consumer. Moreover, the black market for vegetable seed has reportedly grown due to the high taxes, as farmers are looking for cheaper vegetable seed options from nearby countries that can be traded informally through porous borders. Kenya could consider revising its tax policies for vegetable seed imports and working with the EAC to correct regional tariff classification issues in order to encourage investment in the vegetable industry and enable availability of quality seed to farmers.

IV. Conclusion

Vegetable seed is inherently unique, and rules that apply to other field crops are not necessarily effective or efficient in regulating the vegetable industry. Kenya's legal and regulatory framework includes notable flexible approaches for vegetable crops, including flexibility in variety registration and release, certification, and cross-border trade. These legal and regulatory flexibilities are aimed at fostering an effective enabling environment for breeding and commercialization of vegetable crops, as well as improving the

availability of affordable quality vegetable seed to farmers. However, consultations highlighted important reported inconsistencies in practice regarding the implementation of the regulatory flexibilities, including lack of recognition of these flexibilities in practice despite their inclusion in rules and regulations. Part of the challenge is the lack of regulatory enforcement and the knowledge gap within the industry, affecting the ability of stakeholders to benefit from the flexibilities that exist within the legal and regulatory framework. The legal and regulatory framework for some aspects, like PVP for vegetable seed, is also weak, and implementation is reportedly inconsistent. Private sector capacity is also weak in areas like vegetable seed certification. Good regulatory approaches could be adopted and strengthened to address many of these challenges, as highlighted in the case study's recommendations.