



Strathmore University

Law School

**Kenya's Seed Legislation and Its Role in Shaping Farmers' Rights and
National Food Sovereignty in Kenya**

Submitted in partial fulfilment of the requirements of the Bachelor of Laws Degree, Strathmore

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DEDICATION

To the smallholder farmers of Kenya, whose resilience, traditions, and wisdom nourish the nation.
This work is for you and the generations that follow, that your seeds may continue to grow freely.



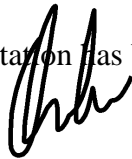
DECLARATION

I, **KRISTY WENDO KAMAU**, do hereby declare that this research is my original work and that to the best of my knowledge and belief, it has not been previously, in its entirety or in part, been submitted to any other university for a degree or diploma. Other works cited or referred to are accordingly acknowledged.

Signed: 

Date: 13 April 2025

This dissertation has been submitted for examination with my approval as University Supervisor.


Signed:

Mr. Andrew Ngurumi

Date: 05.05.2025



ABSTRACT

Food security in Kenya remains a critical concern, with over 70% of the country's food produced by smallholder farmers. These farmers rely heavily on informal seed systems through practices such as seed saving, exchange, and bartering all which have sustained communities for generations. However, the 2012 amendments to Kenya's Seeds and Plant Varieties Act (SPVA), aligning closely with the UPOV 1991 framework, impose restrictions that undermine these traditional practices. The Act criminalizes the use and sharing of protected seeds without breeder authorization, posing threats to food sovereignty, biodiversity, and the livelihoods of small-scale farmers. This study critically analyzes the SPVA within the broader international and national legal context to determine its impact on indigenous seed practices and food security. It draws on the food sovereignty theory to frame the analysis, emphasizing farmers' rights to determine their own agricultural systems. The research highlights key legal conflicts between Kenya's obligations under international treaties and the constitutional protections for indigenous knowledge and food rights. A comparative study of India's Protection of Plant Varieties and Farmers' Rights Act, 2001, reveals a more balanced approach that upholds both breeders' and farmers' rights. India's integrated seed system model offers vital lessons for Kenya, showcasing how legal recognition of farmer-saved seed can support agricultural sustainability and national food security. The dissertation concludes that Kenya's current legal framework disproportionately favors commercial interests over local farming traditions. It recommends legislative reforms that recognize the value of informal seed systems and calls for an integrated seed sector approach that harmonizes formal regulation with traditional practices. Such reforms are essential for safeguarding food sovereignty and achieving long-term food security in Kenya.

LIST OF ABBREVIATIONS

AML African Model Law

CBD Convention on Biological Diversity

IPR Intellectual Property Rights

IT/ITPGRFA International Treaty on Plant Genetic Resources for Food and Agriculture

ICESCR The International Covenant on Economic, Social and Cultural Rights

KALR Kenya Agricultural and Livestock Research Act

NUS Neglected and Underutilized Species

NSP National Seed Policy

PPVFR Act Protection of Plant Varieties and Farmers' Rights Act

PBRs Plant Breeders' Rights

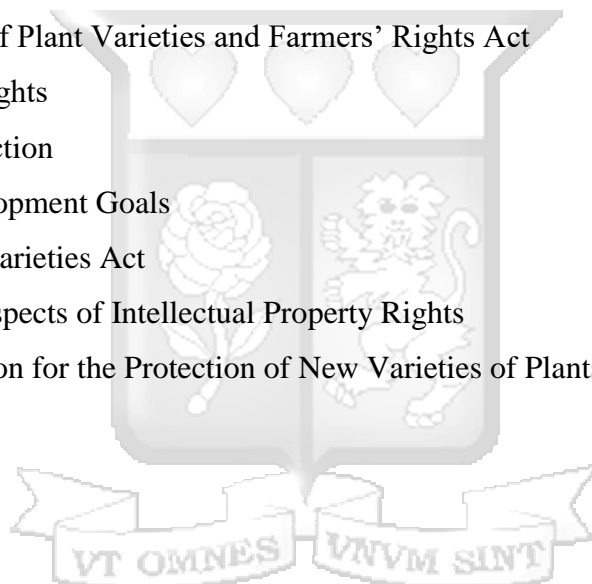
PVP Plant Variety Protection

SDGs Sustainable Development Goals

SPVA Seeds and Plant Varieties Act

TRIPS Trade-Related Aspects of Intellectual Property Rights

UPOV International Union for the Protection of New Varieties of Plants



LIST OF LEGAL INSTRUMENTS

International Instruments:

African Model Law – African Model Legislation for the Protection of the Rights of Local Communities, Farmers, and Breeders and for the Regulation of Access to Biological Resources (2001)

CBD – Convention on Biological Diversity

ICESCR - The International Covenant on Economic, Social and Cultural Rights

ITPGRFA / IT – International Treaty on Plant Genetic Resources for Food and Agriculture

SDGs – Sustainable Development Goals

TRIPS – Agreement on Trade-Related Aspects of Intellectual Property Rights

UPOV 1978 – International Union for the Protection of New Varieties of Plants (1978)

UPOV 1991 – International Union for the Protection of New Varieties of Plants (1991)

Regional Instruments:

Arusha Protocol – Arusha Protocol for the Protection of New Varieties of Plants

National Instruments (Kenya):

Big Four Agenda

Constitution of Kenya, 2010

Crops Act, 2013

Kenya Agricultural and Livestock Research (KALR) Act, 2013

Kenya Vision 2030

National Seed Policy (NSP), 2010

Seeds and Plant Varieties Act, Cap. 326 (including 2012 Amendment)

CHAPTER 1: INTRODUCTION

1.1 Background

Food insecurity remains a critical issue in Kenya, with approximately 12% of the population acutely food insecure as of March 2024.¹ Food security is said to have been reached when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”² The worsening economic conditions in the country exacerbate this challenge, underscoring the need for food security to be prioritized as a cornerstone of Kenya's national agenda. The government has acknowledged this necessity through strategic initiatives such as the Big Four Agenda and Vision 2030, alongside constitutional provisions such as article 43 which establishes the right to be free from hunger.³

However, despite these efforts, the role of small-holder farmers, who produce over 70% of the nation's food, has been undermined by the stringent regulations of the Seeds and Plant Varieties Act Cap 326.⁴ These regulations disproportionately affect informal seed systems, which include the exchange, bartering, storing, and even selling of the seeds.⁵ This traditional practice, which has been passed down through generations, differs from a formalized seed system that establishes a centralized approach and grants proprietary rights to individuals who breed, discover, or develop

¹ Integrated Food Security Phase Classification, *IPC Acute Food Insecurity and Acute Malnutrition Analysis*, 29 March 2024, 3

² Republic of Kenya, National Food and Nutrition Security Policy, 2011, 2

³ The National Treasury and Planning, *Big Four Agenda Implementation Status Report 2018/2019*, April 2020, 12; Kenya *Vision 2030 Flagship Programmes And Projects Progress Report (FY 2020/2021)*, August 2022, 106; Article 43, Constitution of Kenya (2010)

⁴ Munyi, P ‘Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya’ *World Intellectual Property*, 2015, 66 <https://doi.org/10.1111/jwip.12031> on 18 November 2024

⁵ Munyi, P ‘Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya’ 66

new plant varieties.⁶ Despite the longstanding reliance on traditional seed practices among smallholder farmers in Kenya, recent amendments to the Seeds and Plant Varieties Act Cap 326 (SPVA) have introduced stringent regulations that challenge these methods, bringing about serious concerns within Kenya's farming communities.⁷

The SPVA is the main statute governing seed law within Kenya as it deals with regulating seed transactions, including testing, certification, importation, variety registration, and breeders' rights, while also establishing a Tribunal for appeals and related matters.⁸ In 2012, the SPVA was amended to include several measures that have proved to bring serious concerns amongst the smallholder farmers in Kenya.⁹ Their main concern being that the amendment has introduced punitive measures that target their traditional farming practices, which have been passed down through generations.¹⁰ Section 20(1) of the 2012 amendment of SPVA prohibits farmers from reproducing, storing, or selling seeds of a protected plant variety without the permission of the plant breeder, except for limited research or breeding purposes within the breeder's own nursery.¹¹ Selling, as per Section 2 of SPVA 2012, reads to include “barter, exchange, and offering or exposing for sale.”¹² Failure to comply with the provisions in the SPVA can be taken as an offense and, if found guilty, can result in “a fine up to one million shillings, imprisonment up to two years, or both.”¹³ Researchers along with the smallholder farmers within Kenya believe that the emphasis on a more formal seed system will stifle traditional methods, which could have detrimental

⁶Munyi, P ‘Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya’ 66

⁷Munyi, P ‘Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya’ 66

⁸Preamble, Seeds and Plant Varieties Act (No. 53 of 2012)

⁹Nasike, Claire “Whose interest does the Kenyan seeds law protect?” Greenpeace, 15 July 2022

<[¹⁰Nasike, Claire “Whose interest does the Kenyan seeds law protect?”](https://www.greenpeace.org/africa/en/publications/51807/whose-interest-does-the-kenyan-seeds-law-protect/#:~:text=In%202012%2C%20the%20Kenyan%20government,or%20a%20fine%20of%20Kshs.> on September 28 2024</p></div><div data-bbox=)

¹¹Section 20, Seeds and Plant Varieties Act (No. 53 of 2012)

¹²Section 2, Seeds and Plant Varieties Act (No. 53 of 2012)

¹³Section 10, Seeds and Plant Varieties Act (No. 53 of 2012)

effects.¹⁴ Among these effects, food sovereignty is one of the most pressing concerns raised, and being that the informal seed system encapsulates the majority of the food production in Kenya, it should therefore be addressed.

Therefore, this study will seek to analyze existing literature and legal frameworks to understand the implications of the Seeds and Plant Varieties Act Cap 326 on the informal seed practices of smallholder farmers in Kenya. By focusing on how these regulations intersect with traditional farming methods and food sovereignty, the study aims to provide insights and recommendations for supporting smallholder farmers and enhancing Kenya's food security.

1.2 Problem Statement

The amendments to the Seeds and Plant Varieties Act Cap 326 have introduced stringent restrictions on informal seed practices, such as reproduction, storage, and sale of seeds without breeder permission, imposing severe penalties on non-compliance. These measures disproportionately affect smallholder farmers, who produce over 70% of Kenya's food and rely on traditional seed systems that have been practiced for generations. As such, the right to freedom from hunger enshrined under Article 43 of the Constitution is infringed upon. Furthermore, the amendments undermine the goals of the Big Four Agenda, Vision 2030, on food security, elimination of hunger and eradication of poverty. The amendments also violate international obligations such as the International Covenant on Economic, Social and Cultural Rights (ICESCR) and defeats the spirit of food sovereignty.¹⁵ This will have dire implications and will only exacerbate food insecurity as the smallholder farmers will not have enough access to diverse and locally adapted seeds, which will infringe on the right to food and, by extension, the right to life. Therefore, this study seeks to examine the effects of the amendments of the Seed and Plants Varieties Act on the informal seed system that has in turn threatened Kenya's food security.

¹⁴Munyiri, Tabitha 'Seeds and Farmers' Rights as Drivers of Change on Food Systems' African Journal of Food Agriculture, Nutrition and Development, 2024, 24843 - <https://doi.org/10.18697/ajfand.135.25410> on November 18 2024

¹⁵ Article 11, *The International Covenant on Economic, Social and Cultural Rights*, 16 December 1966, 993 UNTS

1.3 Research Objectives

1. To examine the current legal framework governing seed practices in Kenya, with a focus on identifying gaps that may conflict with the principles of food security.
2. To identify the role of informal seed systems in ensuring food security, as well as to examine the best practices of farmer-saved seed in food security in India.
3. To identify lessons from India's practices and the integrated seed systems approach to inform the improvement of Kenya's seed systems.
4. To propose recommendations and draw conclusions for strengthening Kenya's seed systems, aligning them with food security and sovereignty principles.

1.4 Research Questions

1. What gaps exist in Kenya's legal framework governing seed practices, and how do these gaps conflict with the principles of food sovereignty?
2. What is the role of informal seed systems in ensuring food security, and what are the best practices of farmer-saved seed in food security in India?
3. What lessons can be drawn from India's practices and the integrated seed systems approach to inform the improvement of Kenya's seed systems?
4. What recommendations can be proposed to strengthen Kenya's seed systems, and how can they align with the principles of food security and sovereignty?

1.5 Hypothesis

The application of the 2012 Amendments to the Seed and Plant Varieties Act, Cap. 326, will stifle indigenous seed practices. This will then have a negative impact on smallholder farmers in Kenya and therefore have a negative impact on food sovereignty.

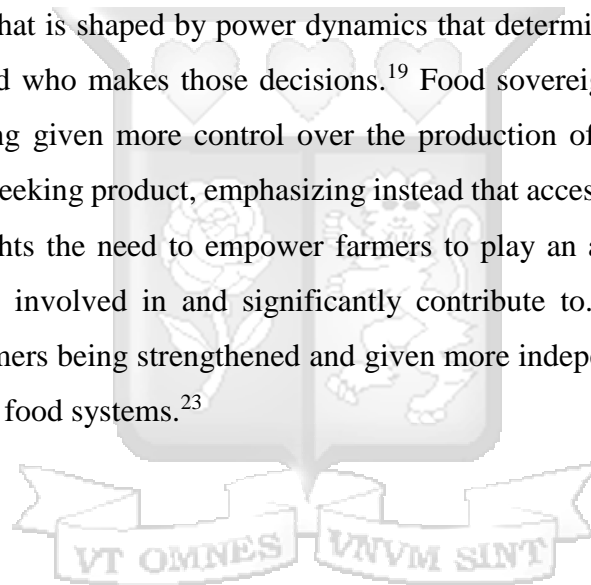
1.6 Justification

This becomes an important study as it addresses the critical gaps in understanding the effects of the Seeds and Plant Varieties Act Cap 326 on smallholder farmers and food security in Kenya. Thus, this study adds quite a deal to the existing body of knowledge with the shedding of light into the possible implications of the Act, which could be beneficial to policymakers as well as local farming communities. This will provide the needed insights into how the Act has affected

traditional seed practices and will, therefore, help in guiding policy discussions and reforms that will ensure that a balanced approach is given to regulating seeds.

1.7 Theoretical Framework

This paper seeks to test the above-mentioned hypothesis using the food sovereignty theory. Food sovereignty is a concept that was coined by *La Via Campesina* in 1996, which is an international peasant movement.¹⁶ It is described as the ‘right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems’.¹⁷ Food sovereignty delves deeper into the underlying frameworks that govern food production and distribution.¹⁸ It draws attention to the fact that food is a political discussion that is shaped by power dynamics that determine how food is produced, where it is produced, and who makes those decisions.¹⁹ Food sovereignty puts an emphasis on smallholder farmers being given more control over the production of their food.²⁰ The theory opposes food as a profit seeking product, emphasizing instead that access to food is a fundamental human right.²¹ It highlights the need to empower farmers to play an active role in shaping the systems they are deeply involved in and significantly contribute to.²² It draws a connection between smallholder farmers being strengthened and given more independence with the building and maintenance of local food systems.²³



¹⁶Bini V, ‘Food security and food sovereignty in West Africa’ *African Geographical Review*, 2016, 2 - <https://doi.org/10.1080/19376812.2016.1140586> on 25 November 2024.

¹⁷Bini V, ‘Food security and food sovereignty in West Africa’ 2

¹⁸Carlile, R., Kessler, M., & Garnett, T ‘What is food sovereignty?’ TABLE, University of Oxford, Swedish University of Agricultural Sciences and Wageningen University & Research., May 2021, 7, <https://www.doi.org/10.56661/f07b52cc>, Accessed 1 December 2024.

¹⁹Carlil R et al, .’What is food sovereignty?’, 7

²⁰Carlil R et al, .’What is food sovereignty?’, 5

²¹Carlil R et al, .’What is food sovereignty?’, 7

²²Carlil R et al, .’What is food sovereignty?’, 7

²³Carlil R et al, .’What is food sovereignty?’, 7

This theory aligns closely with the research focus, as it provides a lens through which to examine the impact of Kenya's seed regulations on smallholder farmers and their traditional practice. By applying the food sovereignty theory, the study will explore how these legal frameworks either support or undermine the ability of farmers to freely plant, save, sell, and exchange seeds, which are critical elements of a sustainable and self-determined food system. This connection allows for an in-depth analysis of how the legal framework intersects with the principles of food sovereignty and its implications for food security and the livelihoods of smallholder farmers in Kenya.

1.8 Literature Review

In Peter Munyi's article, *Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya* he states how the majority of the food in Kenya is produced by smallholder farmers.²⁴ He goes on further to state that farmers mostly do not participate in the formal seed system which can be understood as "certified seeds or seeds protected with some form of IPR."²⁵ The formal system, also known as the plant variety protection (PVP) was designed by international instruments that were then localized into Kenya. One of the most prominent ones is the International Union for Protection of New Varieties of Plants (UPOV) 1991 which introduced the aspect of farmers privileges as opposed to farmers rights.²⁶ Farmers' rights refers to the freedom to use, sell, exchange, and barter farm-saved seeds, while farmers' privilege pertains to the right to use the farm-saved seed only on your own land.²⁷ Kenya is also a part of the International Treaty on Plant Genetic Resources for Food Agriculture (IT). Munyi highlights one of the main criticisms of this treaty which is that farmers' rights are not as well-

²⁴ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' World Intellectual Property, 2015, 66 <https://doi.org/10.1111/jwip.12031> on 18 November 2024

²⁵ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁶ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁷ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

recognized or protected as PVP rights.²⁸ This is because though the IT does mention farmers' rights, they are not given as absolute rights, rather they are still subject to national law.²⁹ This is especially a concern since, as Munyi points out, the SPVA, which is the main legislation governing seed practices in Kenya, was amended to fit the objectives of the UPOV which does not recognize farmers' rights.³⁰

In Tom Kabau and Faith Cheruiyot's article, *The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa*, they touch on the history of plant variety protection. They state that the established idea of plant genetic resources (PGRs) before the formalization of plant breeders is that PGRs were considered a shared resource for all humanity, meant to be freely used, propagated, and exchanged without restrictions.³¹ They state that the UPOV 1991 treaty was constructed in Europe for the purpose of commercial farmers in developed nations.³² This however, is not the reality in developing nations like Kenya who mainly rely on smallholder, subsistence farmers.³³ Therefore, the application of treaties such as the UPOV 1991 would be inappropriate for developing nations as it is unable to strike a balance where farmers' rights are recognized and protected.³⁴

²⁸ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁹ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

³⁰ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 69

³¹ Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' *Queen Mary Journal of Intellectual Property*, 2019, 1, Accessed on 30 November 2024.

³² Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' 3

³³ Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' 3

³⁴ Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' 3

In a paper done by Niels P. Louwaars and Walter Simon De Boef titled, *Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies*, the authors advocate for an integrated approach stating that formal laws also have their place within the food policy frameworks. It highlights how traditional public and private sector approaches to seed system development have often been linear, failing to address the diverse realities of agriculture and seed practices across the continent.³⁵ The ISSD framework emphasizes a pluralistic approach that integrates both formal systems and informal systems.³⁶ They critique the existing seed sector policies for overlooking the needs of smallholder farmers, who rely heavily on informal seed systems, and outline principles for bridging gaps between formal and informal systems.³⁷ ISSD advocates for tailored solutions that consider varying agricultural contexts, seed value chains, and stakeholder roles. By emphasizing inclusivity and adaptability, the ISSD framework seeks to strengthen seed systems in ways that are more equitable, sustainable, and responsive to local needs, thereby contributing to broader food security goals in sub-Saharan Africa.

1.9 Methodology

This study will use doctrinal legal research methodology so as to be able to investigate the implications of the Seeds and Plant Varieties Act Cap 326 on smallholder farmers' traditional practices and food security in Kenya. The Primary sources used include the Constitution of Kenya, International Conventions and other related statutes. The research will be further supported by secondary sources such as scholarly articles and journals, newspaper articles, and other credible publications on the topic.

³⁵ Louwaars N et al. 'Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies', *Journal of Crop Improvement*, 17 January 2012, 41, Accessed on October 15 2024

³⁶ Louwaars N et al. 'Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies' 48

³⁷ Louwaars N et al. 'Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies' 48

1.10 Limitations

To begin with, the researcher may face time constraints given the complexity of legal analysis and the intricate nature of the Seeds and Plant Varieties Act Cap 326. The need for a focused examination within a specific time frame might impact the study's comprehensiveness, potentially limiting the depth of analysis.

Moreover, there is a possibility of bias arising from the researcher's personal connection to the topic. Having familial ties to agriculture through parents who are farmers could unintentionally influence certain perspectives. The researcher recognizes the potential impact of personal connections on their interpretation of the information.

1.11 Chapter Breakdown

Chapter 1: This chapter sets the context for the research by presenting the background, problem statement, objectives, research questions, hypothesis, and methodology. It introduces the challenges posed by Kenya's seed regulation framework, particularly the impact of the 2012 amendments to the Seeds and Plant Varieties Act Cap 326 on smallholder farmers and food security.

Chapter 2: This chapter evaluates the existing legal framework, including national and international provisions, with a focus on identifying gaps that conflict with the principles of food sovereignty and food security. It provides a foundation for understanding the regulatory challenges faced by smallholder farmers.

Chapter 3: This chapter examines the importance of farmer-saved seed in ensuring food security, preserving biodiversity, and promoting agricultural sustainability. It includes the lessons learned in India's approach towards farmer's rights so as to identify their policies and practices which support farmer-saved seed systems.

Chapter 4: This chapter identifies the lessons that can be learned from India's approach towards farmer's rights in regards to seeds. It will also describe an integrated seed systems approach and assess its applicability within Kenya.

Chapter 5: The final chapter synthesizes the findings from the research, including lessons from India and the integrated seed systems approach. It provides actionable recommendations to strengthen Kenya's seed systems, aligning reforms with principles of food security and

sovereignty. The chapter concludes with a summary of the study's contributions and suggestions for future research.



CHAPTER 2: GAPS IN THE LEGAL FRAMEWORK GOVERNING SEED SYSTEMS IN KENYA

2.1 Introduction

This chapter evaluates the legal framework governing seed systems in Kenya, focusing on both international and national instruments. It explores the extent to which these frameworks support smallholder farmers and align with principles of food sovereignty and food security. By assessing key texts, such as UPOV 1991, TRIPS, and Kenya's constitutional provisions, the chapter highlights gaps and challenges within the current legal regime.

2.2 International Instruments Governing Seed Systems in Kenya

There are several international treaties and conventions that Kenya has ratified, though amongst them the most notable ones are the International Convention for the Protection of New Varieties (UPOV), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), amongst others. Article 2(6) of the Constitution of Kenya makes ratified treaties and conventions to form part of the law of Kenya.³⁸ It is, therefore, important to understand the global seed regime framework as it continues to have an impact on the domestic legal framework, influencing Kenya's seed laws and the balance between breeders' rights and smallholder farmers' needs. Below is an overview of these instruments, highlighting their main purpose and key provisions.

2.2.1 TRIPS

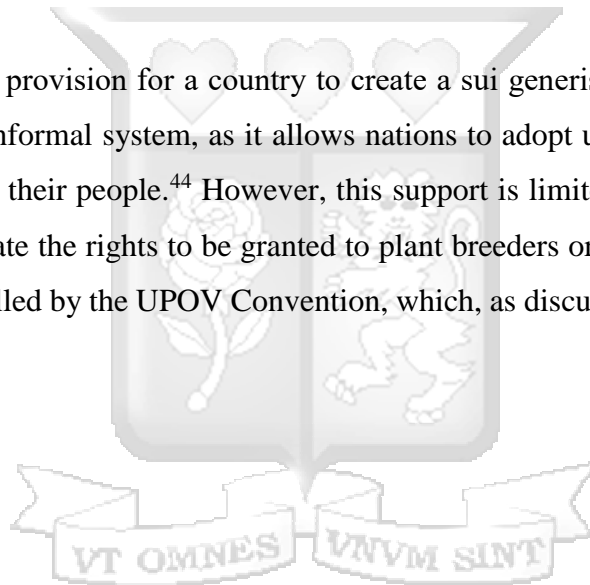
The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) which was adopted in 1994, was created to establish basic rules for protecting and enforcing intellectual property rights among World Trade Organization (WTO) members.³⁹ In regards to PVP, article 27(3)(b) of the agreement stipulates that WTO members should safeguard plant breeders rights

³⁸ Article 2, Constitution of Kenya (2010)

³⁹ Yu Peter, 'The Objectives and Principles of the Trips Agreement' *Houston Law Review*, 2009, 980 - https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1398746 on December 6 2024.

(PBRs), “either by patents or by an effective *sui generis* system or by a combination thereof.”⁴⁰ Irrespective of how a country chooses to exercise article 27(3)(b), at the minimum they need to ensure the system’s effectiveness by establishing IPR as well as aligning with the TRIPS principles of national treatment and most-favored nation.⁴¹ The TRIPS agreement allows each country to define what a *sui generis* system entails, as it does not provide a specific template such as the UPOV which has come to be cited as the de facto system in regards to IP protection to plant varieties.⁴² The scope of the obligations that fall on the member states is then wide in matters where the rights of plant breeders and that of farmer’s need to be balanced when creating domestic laws. This as well applies to the ratification of international treaties or conventions on matters pertaining to PVP.⁴³

The TRIPS Agreement’s provision for a country to create a *sui generis* system can be seen as a form of support for the informal system, as it allows nations to adopt unique systems tailored to the needs and realities of their people.⁴⁴ However, this support is limited because the agreement does not explicitly stipulate the rights to be granted to plant breeders or farmers.⁴⁵ This omission creates a vacuum often filled by the UPOV Convention, which, as discussed below, tends to grant



⁴⁰ Article 27(3)(b), Agreement on Trade-Related Aspects of Intellectual Property Rights, 15 April 1994, 1869 UNTS 299.

⁴¹South Centre, 'The TRIPS and WTO Negotiations: Stakes for Africa', South Centre Analytical Note SC/DIIP/AN/TRIPS/1, March 2017, 5— <https://www.southcentre.int/analytical-note-march-2017/#more-9574>, on 11 April 2025.

⁴² South Centre, 'The TRIPS and WTO Negotiations: Stakes for Africa' 11.

⁴³ Kabau T, Mutema A 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' Vol. 26 *African Journal of International and Comparative Law* No. 4, 2018, 620.

⁴⁴ Prip C, 'Farmers' Rights in the Plant Treaty: interrelations and recent interactions with other international regimes and processes', 11 *Development Studies Research*, 1, 2024, 7.

⁴⁵ Prip C, 'Farmers' Rights in the Plant Treaty: interrelations and recent interactions with other international regimes and processes', 7

broader rights to plant breeders.⁴⁶ Consequently, the TRIPS Agreement does not adequately support the informal system due to its failure to explicitly grant rights that protect it.⁴⁷

2.2.2 UPOV

The purpose of creating the International Union for Protection of New Varieties of Plants (UPOV) convention was to establish IPR for those involved in the creation and cultivation of new plant varieties.⁴⁸ This was done by an association of Western European states.⁴⁹ The purpose for the Convention, according to its mission statement posted on its website, is to encourage the creation of new plant varieties that serve society's needs by implementing a strong framework for their protection.⁵⁰ There are two operative revised versions of the UPOV which are in effect; UPOV 1978 and UPOV 1991.⁵¹ Though for new members, they can only join the UPOV 1991, which is also what Kenya has ratified.⁵² Through the various revisions the Convention has gone through leading up to the UPOV 1991 revision, the key difference is in the interpretation of farmers' rights.⁵³ UPOV 1991 explicitly states that a farmer is allowed to save the protected seeds that they harvest from their farm, they just cannot freely sell or exchange those seeds with anyone else.⁵⁴

⁴⁶ Prip C, 'Farmers' Rights in the Plant Treaty: interrelations and recent interactions with other international regimes and processes', 7

⁴⁷ Prip C, 'Farmers' Rights in the Plant Treaty: interrelations and recent interactions with other international regimes and processes', 7

⁴⁸ Kabau T, Mutema A 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 620

⁴⁹ Kabau T, Mutema A 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 620

⁵⁰ Dufeld G "The role of the international Union for the Protection of New Varieties of Plants (UPOV)" *Intellectual property issue paper* 9, 2011, 5, https://quino.org/sites/default/files/resources/UPOV%2Bstudy%2Bby%2BQUNO_English.pdf - on 6 December 2024

⁵¹ Peschard K, 'Searching for Flexibility: Why parties to the 1978 Act of the UPOV Convention have not acceded to the 1991 Act', *Association for Plant Breeding for the Benefit of Society (APBREBES)*, October 2021, 5- <https://www.apbrebes.org/news/searching-flexibility>, accessed on 12 April 2025.

⁵² Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁵³ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁵⁴ Omulama B, 'Navigating Between Breeders' and Farmers' Rights in Plant Variety Protection in Kenya', *ResearchGate*, 2017, 3 - <https://www.researchgate.net/publication/319242199>, accessed on 13 April 2025.

This contrasts with the UPOV 1978, which preceded the UPOV 1991, where there was a more vague mention in regards to what a farmer can and cannot do with those seeds. By omitting to comment plainly on the issue of the farmers' rights to the seeds harvested from their land, the UPOV 1978 is said to be protecting the farmer since there is no language expressly barring them from freely circulating the seeds within the informal seed system.⁵⁵

2.2.3 IT

The International Treaty on Plant Genetic Resources for Food and Agriculture (IT) was introduced under the Food and Agriculture Organization (FAO) in 2001.⁵⁶ The central aim of the IT is to balance a nation's sovereignty over its biological resources with the global goal of achieving food security.⁵⁷ The IT became legally binding in Kenya in 2003 when the country joined the treaty.⁵⁸ The preamble of the IT recognizes farmers' rights to sell, save, use, and exchange farm-saved seeds.⁵⁹ It also states that farmers' rights include their participation in decision-making and sharing in the benefits derived from the use of plant genetic resources.⁶⁰ The preamble emphasizes that recognizing these aspects of farmers' rights is crucial for achieving the goals of farmers' rights protection and promotion at both national and international levels.⁶¹

The spirit of the preamble can be identified in Article 9 of the IT, which emphasizes the crucial role that farmers play in conserving and developing plant genetic resources that underpin global

⁵⁵ Ncube C., 'Food Security and Plant Variety Protection: Seeding Hope for the African Continental Free Trade Area?', *IIC - International Review of Intellectual Property and Competition Law*, 2025, 75,- <https://doi.org/10.1007/s40319-024-01556-3>, accessed on 13 April 2025.

⁵⁶ Gullotta G, Engels J, Halewood M, 'What Plant Genetic Resources for Food and Agriculture Are Available under the Plant Treaty and Where Is This Information?', *Plants*, 2023, 1 - <https://doi.org/10.3390/plants12233944>, on 13 April 2025.

⁵⁷Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 626

⁵⁸Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 626

⁵⁹ Preamble, *International Treaty on Plant Genetic Resources for Food and Agriculture*, 2001, 2400 UNTS 303.

⁶⁰ Preamble, *International Treaty on Plant Genetic Resources for Food and Agriculture*.

⁶¹ Preamble, *International Treaty on Plant Genetic Resources for Food and Agriculture*.

food production.⁶² It outlines farmers' rights, including saving, using, exchanging, and selling seeds, and places the responsibility for protecting these rights on individual countries.⁶³ However, these rights are subject to national laws, meaning that depending on the legal framework a country adopts, it could take either a progressive or restrictive stance on farmers' rights.⁶⁴ This is particularly relevant given that Kenya is a member of the more restrictive UPOV 1991, which explicitly limits farmers' rights, as mentioned above.⁶⁵ Despite these challenges, Kenya's membership in the treaty is viewed as a positive step toward supporting smallholder farmers.⁶⁶

2.2.4 CBD

The 1992 Convention on Biological Diversity (CBD), as well as the IT convention, was the result of the debate in the 1980s and 1990s that surrounded the discourse brought out of the implementation of the TRIPS and UPOV conventions which were said to be restricting farmers' traditional farming practices surrounding what they could do with the seeds harvested from their land.⁶⁷ Plant variety protections (PVP), which is what the TRIPS and UPOV convention sought to achieve, is championed by some as supporting industrial growth by encouraging innovation and offering farmers a wider range of crop varieties which will produce a better yield and quality.⁶⁸ However, other scholars have argued that PVP has numerous negative effects such as fostering economic monopolies, jeopardizing traditional farming practices and food security, limiting the

⁶² Article 9, *International Treaty on Plant Genetic Resources for Food and Agriculture*.

⁶³ Article 9, *International Treaty on Plant Genetic Resources for Food and Agriculture*.

⁶⁴ Article 9, *International Treaty on Plant Genetic Resources for Food and Agriculture*.

⁶⁵Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 626

⁶⁶Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 626

⁶⁷Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 65

⁶⁸Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 65

free sharing of seeds, contributing to the loss of genetic diversity, endangering biodiversity, and facilitating the privatization of plant resources that ought to remain a shared heritage of humanity.⁶⁹

In response to the concerns surrounding the PVP frameworks, the CBD emphasizes the right a country has to manage and regulate their natural resources through their own national laws.⁷⁰ At the same time, it also acknowledges the importance of protecting IPR in order to foster the sustainable use of biodiversity.⁷¹ The crucial distinction between the CBD and the UPOV 1991 is that the CBD does not explicitly restrict farmers' rights or privileges to save, use, or exchange seeds.⁷²

2.2.6 African Model Law

The African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (African Model Legislation) was generated as an African regional initiative by the Organization of African Unity (OAU), now African Union (AU), in order to establish a legal regime that will manage and control the use, access, and conservation of natural biological resources.⁷³ Its central objective was to make sure farmers' rights would not be curtailed by plant breeders rights (PBRs) which are protected under PVP.⁷⁴ The Preamble of the African Model Law emphasizes that all forms of life are essential for human survival and argues that patenting or exclusively claiming ownership over

⁶⁹Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 65

⁷⁰Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 625

⁷¹Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 625

⁷²Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 625

⁷³Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

⁷⁴Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

any form of life or its derivatives undermines the fundamental human right to life.⁷⁵ The objective is further seen in key provisions especially seen in article 24, 26, 31, and 32 of the African Model Law.

Article 24(1) of the African Model Law defends farmers' rights by recognizing their contributions in conserving, developing, and sustainably using genetic resources which are foundational to food and agriculture.⁷⁶ Article 24(2) goes on to state that these invaluable contributions can only continue on if the farmers' rights have been recognized and protected.⁷⁷ Article 26(1) of the African Model Law provides for the rights of farmers to save, use, and exchange and sell farm-saved seed or propagating material of farmers' varieties.⁷⁸ Article 26(2), however, puts a caveat that the entitlements provided for under Article 26(1) are prohibited if the intention is to do them under commercial interests.⁷⁹ A farmer is allowed to sell products from a protected variety as long as the items sold are not seeds for propagating materials, such as cabbages, carrots, or kale, and the sale is intended to help provide food to others and earn some income.⁸⁰ Even if those products could potentially be used as seeds, it is still allowed provided the sale is for consumption and not for planting on a commercial scale.⁸¹ This framework seeks to balance the rights of breeders with the traditional practices of farmers, aiming to support food security and the livelihoods of small-

⁷⁵Preamble, African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity.

⁷⁶ Article 24(1), African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity.

⁷⁷ Article 24(2), African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity.

⁷⁸ Article 26(1), African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity.

⁷⁹ Article 26(2), African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity.

⁸⁰Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

⁸¹Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

scale farmers, especially in developing countries.⁸² However, Kenya has not adopted this progressive approach, instead aligning with the stricter UPOV 1991 framework, which prioritizes breeders' rights.⁸³

2.2.7 Assessing International Instruments' Support for Informal Seed Systems

Now that the general legal framework concerning seed systems has been outlined above, it is imperative to assess whether they create suitable conditions for informal seed systems to survive and thrive. The TRIPS agreement, to begin with, gives a nationwide discrepancies as to how they want to provide for plant breeders' rights.⁸⁴ This *sui generis* provision was put in place so that the PVP system is molded to the various and unique needs of each country.⁸⁵ This provision does not explicitly come at the detriment of the informal seed system as a *sui generis* system means a country can be creative in how they navigate their national seed system. However, in regards to plant breeder's rights, *sui generis* creates a clear pathway straight for the UPOV 1991 convention which is clearly more in support for the formal seed system at the expense of the informal.⁸⁶ Due to this, the TRIPS agreement cannot be said to be in support of the informal seed system as its approach towards plant variety protection does not safeguard informal seed practices.

Under the context of seed systems, it's difficult to discuss TRIPS without roping in the UPOV convention as they usually go hand-in-hand.⁸⁷ UPOV 1991, with its reinforced pro-breeder stance, significantly restricts the traditional seed-sharing practices vital to small-scale and subsistence

⁸²Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628

⁸³Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628

⁸⁴Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁸⁵ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁸⁶ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁸⁷ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

farmers.⁸⁸ The Convention's stringent provisions, especially as outlined in Article 14, mandate the breeder's prior consent for virtually all forms of propagation, sale, and distribution of protected varieties.⁸⁹ While Article 15 introduces exceptions, such as those for private and non-commercial purposes, it does not extend to cover the broader, informal seed systems that operate on the principles of sharing and exchanging seeds among farmers.⁹⁰ This limitation is further emphasized in the 2009 UPOV Council Explanatory Notes, which clarify that the farmer's privilege to use the product of the harvest for propagating purposes on their own holdings (Article 15(2)) does not permit the sharing or selling of seeds among neighboring farmers or within local communities.⁹¹ This effectively prohibits small-scale sales crucial for many farmers' livelihoods, undermining the very fabric of traditional farming communities and their resilience.⁹² Thus, even with its limited exceptions, UPOV 1991 heavily favors commercial breeding interests over the customary rights of farmers, aligning more closely with a patent-like system that emphasizes breeder's rights at the expense of agricultural biodiversity and local food sovereignty.

In regards to effectiveness, both the IT treaty and the CBD convention fall along the same line of general ineffectiveness. This is due to both instruments being subject to national law as had been stated above. While the IT outlines farmers' rights in Article 9, these rights remain subordinate to national legislation.⁹³ Similarly in the CBD, it states in Article 15(1) that a country's 'authority to determine access to genetic resources rests with the national governments and is subject to national legislation.'⁹⁴ Both the IT treaty and the CBD convention then demonstrate limited effectiveness due to their reliance on national legislation, which enables significant variation in implementation.

⁸⁸Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

⁸⁹Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 621

⁹⁰Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 622

⁹¹Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 622

⁹²Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 622

⁹³ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 626

⁹⁴ Art. 15(1), *Convention on Biological Diversity*, 1992, 1760 UNTS 79

This national discretion often results in restrictive frameworks, as seen in Kenya, ultimately undermining the intended global harmonization of farmers' rights and access to genetic resources.

The African Model Law (AML) holds significant theoretical potential for protecting the informal seed systems in Kenya by advocating for farmers' rights to save, use, exchange, and sell farm-saved seeds under certain conditions, as well as emphasizing equitable access to biological resources.⁹⁵ However, its practical significance in Kenya is minimal due to the country's adherence to international seed instruments like UPOV 1991, which prioritize plant breeders' rights over farmers' traditional practices.⁹⁶ By domesticating UPOV 1991 through the 2012 amendments to the Seeds and Plant Varieties Act and acceding to the convention in 2016, Kenya has effectively sidelined the AML's principles.⁹⁷ As a result, the informal seed system, which heavily relies on practices such as seed sharing and exchange, remains insufficiently protected under Kenya's current legal framework, limiting the AML's influence on fostering seed sovereignty and food security for small-scale farmers.

2.3 National Provisions Governing Seed Systems in Kenya

This section examines Kenya's national legal and policy frameworks governing seed systems and assesses their impact on informal seed systems and food sovereignty. It explores constitutional provisions, policies, and legislative instruments such as the National Seed Policy (NSP), the Crops Act 2013, the Kenya Agricultural and Livestock Research Act 2013, and the 2012 amendment to the Seeds and Plant Varieties Act (SPVA). The analysis focuses on whether these instruments support or undermine informal seed systems, which are critical for preserving biodiversity, empowering smallholder farmers, and achieving food security.

⁹⁵ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

⁹⁶ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628

⁹⁷ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628

2.3.1 Constitution of Kenya

The Constitution of Kenya provides several provisions relevant to seed systems, particularly in relation to indigenous seeds, biodiversity, intellectual property, and sustainable resource management. The only direct mention of seeds is found in Article 11(3)(b), which requires Parliament to enact legislation recognizing and protecting "the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics, and their use by the communities of Kenya."⁹⁸ Similarly, Article 69(1)(c) mandates the state to "protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities,"⁹⁹ while Article 69(1)(a) obligates the state to ensure the "sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits."¹⁰⁰ These provisions emphasize the protection of indigenous knowledge, genetic resources, and the equitable sharing of benefits derived from their use. Additionally, Article 40(5) requires the state to "support, promote, and protect the intellectual property rights of the people of Kenya," a provision that indirectly connects to plant breeders' rights, as they are a form of intellectual property.¹⁰¹ Collectively, these provisions establish a constitutional framework that touches on various aspects of seed systems, from indigenous rights to intellectual property and environmental sustainability.

2.3.2 2010 National Seed Policy

The National Seed Policy (NSP) was created to address problems in the seed sector and boost farming productivity.¹⁰² The NSP categorizes seed systems into formal and informal and structures its approach based on this distinction.¹⁰³ Government-led research programs primarily back the

⁹⁸ Article 11(3)(b), *Constitution of Kenya*, 2010

⁹⁹ Article 69(1)(c), *Constitution of Kenya*, 2010

¹⁰⁰ Article 69(1)(a), *Constitution of Kenya*, 2010

¹⁰¹ Article 40(5), *Constitution of Kenya*, 2010

¹⁰² Munyi P., Jonge B. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' Vol. 8, *Journal of Sustainable Development*, No. 2, 2015, 164.

¹⁰³ Ayieko M, Odame H and Olwande J, 'Strengthening seed systems and market development in Kenya: Perspectives on political economy and policy processes' Tegemeo Institute of Agricultural Policy and Development, Working Paper Number 71/2021, 2021, 14 <http://www.tegemeo.org> on 13 April 2025.

formal seed system, focusing on particular food and cash crops.¹⁰⁴ In contrast, the informal seed system encompasses practices like farmers saving seeds, exchanging them locally, sharing amongst themselves, sourcing them from civil society groups or unregistered seed sellers, and humanitarian organizations.¹⁰⁵

The NSP were concerned about seeds obtained through the informal system as they believe that these seeds were of poor quality and would, therefore, stifle food productivity.¹⁰⁶ According to the NSP, the main contributor of the poor quality seeds was due to a weakened seed certification system.¹⁰⁷ The proposed solution by the NSP was to strengthen certification by making it mandatory for everyone involved in the seed production and distribution process to be officially registered.¹⁰⁸ In order to deter non-compliance with this stipulation, the NSP proposes strict punishments.¹⁰⁹ The policy advocates for sustained support of public breeding institutions to preserve and supply seeds for crop varieties that are not profitable for private companies.¹¹⁰ It also proposes integrating informal seed systems into the formal sector through advisory services, although the specifics of these services are not detailed.¹¹¹ By enhancing farmer education and

¹⁰⁴ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹⁰⁵ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹⁰⁶ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹⁰⁷ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹⁰⁸ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹⁰⁹ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹¹⁰ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

¹¹¹ Munyi P. et al ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’, 164.

extension services, the policy aims to help farmers understand the advantages of high-quality seeds, facilitating this transition to formal systems.¹¹²

2.3.3 Seeds and Plant Varieties Act, 2012 Amendment

The main reason the 1972 SPVA was amended was to align more closely with the more restrictive principles outlined in UPOV 1991, rather than those of UPOV 1978, which had previously served as Kenya's plant breeder framework.¹¹³ This amendment resulted in the 2012 SPVA.¹¹⁴ By adopting the UPOV 1991, the 2012 SPVA amendment aims to incentivize breeding activities as well as to facilitate the introduction of foreign plant varieties to Kenya.¹¹⁵ The main provision pertaining to the 2012 amendment of the SPVA is section 20 which outlines the nature of rights afforded to the plant breeder at the expense of the farmer's rights.¹¹⁶ Section 20(e) allows for farmers to have farm-saved seed that they can reuse, but only on their own land.¹¹⁷ It is worth noting that that provision reads similarly to section 15(2) of the UPOV 1991.¹¹⁸ SPVA 2012 completely does away with the broader farmers' rights that are emphasized in various international instruments such as the IT and the African Model Law.¹¹⁹

¹¹²Munyi P. et al 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach', 164.

¹¹³Munyi P. et al 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach', 164.

¹¹⁴Munyi P. et al 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach', 164.

¹¹⁵ Munyi P. et al 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach', 164.

¹¹⁶ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 632

¹¹⁷ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 632

¹¹⁸ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 632

¹¹⁹ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 632

2.3.4 2013 The Crop Act

In regards to seeds, the Crops Act 2013 categorizes crops into two labels which are scheduled and non-scheduled.¹²⁰ There are just over 100 scheduled crops ranging from cash crops, food crops, vegetable crops and even fruit trees.¹²¹ The main distinction between the two categories is that the government is only required to assist the crops which are scheduled.¹²² This assistance entails various activities from development of the crop to promoting it within the market.¹²³ As well as the activities laid out below, section 8 of the Act also includes ‘establishing experimental stations and seed farms for suitable varieties, facilitating marketing and distribution of the produce of these crops, and devising strategies for value addition for export crops.’¹²⁴ The reasoning behind why there are the two categories has not been made known, considering most of Kenya’s crops fall under the scheduled category.¹²⁵ Experts suggest that the rationale behind the government’s decision is to actively regulate the entire crop value chain, including seed quality, input costs, and market access.¹²⁶ This reflects the government’s intent to formalize and standardize the seed sector, potentially improving productivity while also shaping market dynamics and limiting farmer autonomy.¹²⁷

¹²⁰Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²¹Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²²Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²³Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²⁴Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²⁵Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²⁶Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

¹²⁷Munyi P *et al.* ‘Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach’ 165.

2.3.5 2013 Kenya Agricultural and Livestock Research Act

The Kenya Agricultural Livestock Research Act 2013 (KALR) merges the various agricultural research institutions into one body focused on regulation and coordination.¹²⁸ These institutions covered areas such as cash and food crops as well as sectors that involve livestock.¹²⁹ Under KALR, public institutions such as the Kenya Agriculture Reforms & Innovations (KARI) are only limited now to research.¹³⁰ This is in contrast to their previously wider scope which included activities such as plant breeding, seed multiplication and distribution.¹³¹ The results of the conducted research has been constituted to training and building capacity of users, and activities for demonstration purposes.¹³² Researchers have noted that this could have negative consequences for smallholder farmers, who are the majority, as agricultural institutes like KARI are no longer able to contribute to the later stages of the seed production and distribution process. This is vital for providing support to improved crop varieties that the private sector may not prioritize.¹³³

2.3.6 Assessing National Instruments' Support for Informal Seed Systems

The Constitution of Kenya, if read holistically, does protect the informal seed system by embedding provisions that safeguard indigenous seeds, biodiversity, and community knowledge. Articles 11(3)(b) and 69(1)(c) explicitly recognize the ownership, use, and conservation of indigenous seeds and genetic resources, while also emphasizing equitable benefit-sharing. These provisions align with the principles of informal seed systems, which rely on farmers' ability to

¹²⁸ Oluoch O W and Ndede F W S, 'Synergistic Effects and Financial Performance of Kenya Agricultural and Livestock Research Organization' 8 *International Journal of Research and Innovation in Social Science* 5, 2024, 2213.

¹²⁹ Munyi P *et al.* 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 165.

¹³⁰ Munyi P *et al.* 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 165.

¹³¹ Munyi P *et al.* 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 165.

¹³² Munyi P *et al.* 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 165.

¹³³ Munyi P *et al.* 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 165.

save, share, and exchange seeds freely, ensuring agricultural biodiversity and resilience. Additionally, the constitutional guarantee of the right to food under Article 43(1)(c), coupled with the obligation under Article 21(2) to take legislative measures to realize food security, reinforces the protection of farmers' traditional seed practices. By promoting sustainable agriculture and food sovereignty, the Constitution provides a strong legal foundation that supports informal seed systems as an integral part of Kenya's efforts to achieve food security and environmental sustainability.

The National Seed Policy (NSP), the Crops Act 2013, and KALR collectively prioritize formal seed systems while undermining the informal seed system that supports smallholder farmers and food sovereignty. The NSP seeks to address quality concerns in the informal system by enforcing mandatory seed certification and strict penalties, which marginalizes traditional practices like seed saving and local exchange. While the policy supports public breeding institutions, its emphasis on transitioning farmers to formal systems demonstrates limited regard for preserving informal seed networks. Similarly, the Crops Act 2013 reinforces formalization by prioritizing government support for scheduled crops, leaving non-scheduled crops, which are crucial to local food systems, without adequate assistance. This focus on market regulation and productivity shapes a seed sector that sidelines small-scale farmers. Additionally, the KALR restricts public research institutions like KARI to regulatory roles, removing their involvement in seed multiplication and distribution, a critical support system for informal seed practices. These measures cumulatively reduce the autonomy and adaptability of informal systems, threatening biodiversity and food sovereignty.

The 2012 amendment to the Seeds and Plant Varieties Act (SPVA) further entrenches this trend by aligning with UPOV 1991, which prioritizes breeder rights over farmers' rights. While section 20(e) permits farmers to reuse farm-saved seeds, this right is strictly limited to their own land, constricting broader community practices of sharing and exchange that are vital to the informal seed system. By narrowing farmers' rights and focusing on introducing foreign plant varieties, the SPVA undermines indigenous practices that enhance biodiversity and resilience. These legislative frameworks collectively fail to support the informal seed system, thereby weakening food security through the erosion of food sovereignty.

2.4 Conclusion

While Kenya's legal framework includes provisions aimed at fostering agricultural productivity, its emphasis on formal seed systems often undermines the informal networks vital to smallholder farmers. The limitations imposed by instruments like UPOV 1991 and the 2012 SPVA amendments restrict practices central to food sovereignty and biodiversity preservation. To address these challenges, the next chapter will present a case study on India, showcasing its best practices for advancing farmers' rights.



CHAPTER 3: THE ROLE OF INFORMAL SEED SYSTEMS IN FOOD SECURITY WITH LESSONS FROM INDIA

3.1 Introduction

This chapter explores the vital role of informal seed systems in enhancing food security, particularly focusing on smallholder farming communities in developing countries. These systems, deeply embedded in traditional agricultural practices, are crucial for the management and exchange of seeds that support agricultural biodiversity and food sovereignty. Three main aspects will be discussed: the accessibility of seeds which ensures that farmers have the necessary resources for food production; the promotion of dietary diversity through the cultivation of various crop varieties; and the expansion of genetic diversity with crops adapted to local environmental conditions. This examination not only highlights the importance of these systems in sustaining food security but also sets the stage for a discussion on India's legislative framework, particularly the Protection of Plant Varieties and Farmers' Rights Act, 2001, which aims to protect these traditional practices legally.

3.2 Informal Seed Systems' Role in Safeguarding Food Security

Informal seed systems play a pivotal role in ensuring food security, particularly in developing countries where smallholder farmers dominate food production.¹³⁴ These systems, rooted in traditional practices of seed saving, sharing, and exchange, are not only the main source of seeds for most staple and nutrient-rich crops but also support resilience, dietary diversity, and adaptation to local conditions.¹³⁵ This section explores how access to seeds, promotion of dietary diversity, and preservation of genetic resources through informal seed systems contribute significantly to sustainable agriculture and the right to food.

¹³⁴ Wattnem T, 'Seed laws, certification and standardization: outlawing informal seed systems in the Global South', 43 *The Journal of Peasant Studies* 4, 2016, 852.

¹³⁵ SI Hlatshwayo et al., 'Usefulness of Seed Systems for Reviving Smallholder Agriculture: A South African Perspective' 21 *African Journal of Food, Agriculture, Nutrition and Development* 2, 2021, 2–5.

3.2.2 Access to Seeds

Majority of the crops cultivated in developing nations are grown from seeds sourced from the informal seed system, which is primarily managed by smallholder farmers.¹³⁶ While some farmers have access to widely cultivated crops like rice, the majority of crops grown in these regions rely heavily on seeds circulating within the informal seed system.¹³⁷ These figures highlight the inadequacy of the formal seed system in ensuring access to sufficient food in developing countries.¹³⁸ This underscores the critical role of the informal seed sector in maintaining food security as it serves as the primary source of seeds for most food crops grown in smallholder farming communities.¹³⁹

The importance of access to seeds extends beyond agriculture; it is fundamentally linked to the right to food and the elimination of hunger. As demonstrated above, seeds are the foundation of food production, and without them, food security cannot be achieved. This connection is reinforced by legal frameworks at both national and international levels. For instance, Article 43(1)(c) of the Constitution guarantees the right “to be free from hunger and to have adequate food of acceptable quality.”¹⁴⁰ Similarly, Article 9 of the IT treaty supports farmers' rights to save, use, exchange, and sell farm-saved seeds, ensuring their continued access to this vital resource.¹⁴¹ Additionally, the United Nations' Sustainable Development Goals (SDGs), particularly SDG 2, explicitly aim to “end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.”¹⁴² Together, these legal instruments emphasize the significance of seed access as a cornerstone of food security, hunger eradication, and sustainable development.

¹³⁶ Coomes O, et al. ‘Farmer seed networks make a limited contribution to agriculture? Four common misconception’ 56 *Food Policy*, 2015, 43.

¹³⁷ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹³⁸ Westegen O, Dalle S, Teshome M, ‘Navigating toward resilient and inclusive seed systems’ 120 *Proceedings of the National Academy of Sciences* 14, 2023, 2.

¹³⁹ SI Hlatshwayo et al., ‘Usefulness of Seed Systems for Reviving Smallholder Agriculture: A South African Perspective, 13.

¹⁴⁰ Article 43(1)(c), *Constitution of Kenya*, 2010

¹⁴¹ Article 9, African Model Law on the Protection of the Rights of Local Communities, Farmers, and Breeders (2000)

¹⁴² Goal 2, The 2030 Agenda for Sustainable Development (2015) UNGA Res 70/1

3.2.3 Promotion of Dietary diversity in smallholder communities

Informal seed systems are important in sustaining a variety of foods which address nutritional needs in smallholder communities.¹⁴³ These systems are the main source of seeds for a variety of crops that provide both macronutrients and micronutrients which are crucial for the health of the communities which cultivate and consume them.¹⁴⁴ For most of these type crops, which are also known as neglected and underutilized species (NUS), they can only be obtained through the informal seed system.¹⁴⁵ NUS, are able to contribute to reducing the widespread problem of hidden hunger that is caused by essential nutrient deficiencies.¹⁴⁶ In addition to the importance they play in the local communities, informal seed systems have the potential to impact regional and global food systems.¹⁴⁷ These systems are able to counter the increasing uniformity of global agriculture, where a small number of crops dominate food production.¹⁴⁸ By integrating these species into broader agricultural practices, informal seed systems can diversify the global food base and enhance nutritional outcomes worldwide.¹⁴⁹

The critical role of informal seed systems in sustaining agricultural diversity and addressing nutritional needs is supported by international legal frameworks. Article 6 of the IT treaty reinforces the sustainable use of plant genetic resources by “promoting, as appropriate, the expanded use of local and locally adapted crops, varieties, and underutilized species.”¹⁵⁰ This aligns directly with the function of informal seed systems, which facilitate access to a diverse range

¹⁴³ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁴⁴ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁴⁵ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁴⁶ Bhattacharjee B, Ali A, ‘Nutrition Security, Constraints, and Agro-Diversification Strategies of Neglected and Underutilized Crops to Fight Global Hidden Hunger’ *Frontiers in Nutrition*, 2023, 1 - <https://doi.org/10.3389/fnut.2023.1144439> – on 13 April 2025.

¹⁴⁷ Bhattacharjee B et al. ‘Nutrition Security, Constraints, and Agro-Diversification Strategies of Neglected and Underutilized Crops to Fight Global Hidden Hunger’ 8.

¹⁴⁸ Bhattacharjee B et al. ‘Nutrition Security, Constraints, and Agro-Diversification Strategies of Neglected and Underutilized Crops to Fight Global Hidden Hunger’ 8.

¹⁴⁹ Mabhaudhi T, et al. ‘Underutilised Crops: Diversifying the agrifood system by mainstreaming underutilised crops’ *The Water Wheel*, 2024, 22 - [10.13140/RG.2.2.24827.53285](https://doi.org/10.13140/RG.2.2.24827.53285) on 13 April 2025.

¹⁵⁰ Article 6, *International Treaty on Plant Genetic Resources for Food and Agriculture* (2001) UNTS 2400:303.

of nutrient-rich crops, including NUS. Similarly, Article 12 of the African Model Law affirms farmers' rights to “save, use, exchange, and sell farm-saved seed”, a practice that underpins informal seed systems and ensures the continued availability of a wide variety of crops.¹⁵¹ By safeguarding these traditional practices, these legal instruments not only support local food security but also contribute to countering the increasing uniformity of global agriculture.¹⁵² As farmers maintain and distribute diverse crop varieties, they help combat hidden hunger by preserving essential sources of macronutrients and micronutrients, reinforcing both community resilience and global food security.¹⁵³ Additionally, the rights afforded to farmers as recognized in Article 12 of the African Model Law is fundamental to the functioning of informal seed systems which serve as the primary source of seeds for many nutrient-rich crops, particularly NUS.¹⁵⁴ These systems not only sustain agricultural diversity at the local level but also contribute to regional food security by countering the increasing uniformity of agricultural production.¹⁵⁵ By protecting farmers’ rights to freely share and exchange seeds, this provision ensures that communities retain access to a wide variety of crops that address malnutrition, thereby helping combat hidden hunger.¹⁵⁶

3.2.3 Expanding Genetic Diversity with Crops Adapted to Local Systems

Informal seed systems enhance agricultural diversity by providing a wide range of seeds for multiple crop species and varieties.¹⁵⁷ These seeds are specifically adapted to the unique conditions

¹⁵¹ Article 12, African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (2001), Organization of African Unity

¹⁵² Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁵³ Auma C, et al, ‘Underutilised Food Crops for Improving Food Security and Nutrition Health in Nigeria and Uganda—A Review’ *Frontiers in Sustainable Food Systems*, 2023, 2 - <https://doi.org/10.3389/fsufs.2023.1126020> on 13 April 2025.

¹⁵⁴ Ndlovu M, et al. ‘Underutilized Crops for Diverse, Resilient and Healthy Agri-Food Systems: A Systematic Review of Sub-Saharan Africa’ *Frontiers in Sustainable Food Systems*, 2024, 6 - <https://doi.org/10.3389/fsufs.2023.1126020> on 13 April 2025.

¹⁵⁵ Ndlovu M, et al. ‘Underutilized Crops for Diverse, Resilient and Healthy Agri-Food Systems: A Systematic Review of Sub-Saharan Africa’ *Frontiers in Sustainable Food Systems*, 2024, 6.

¹⁵⁶ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁵⁷ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

of various environments and farming systems.¹⁵⁸ By preserving and cultivating these locally adapted seeds within their original ecosystems, farmers can reduce the risks associated with agriculture such as, “pest and disease pressure, low soil fertility, and severe weather conditions.”¹⁵⁹ Additionally, the broader genetic diversity supported by these seed systems helps mitigate the impacts of larger-scale threats, such as climate change and natural disasters, by fostering resilience and adaptability in farming practices.¹⁶⁰

The resilience of informal seed systems is reinforced by international legal principles that emphasize genetic diversity and in situ conservation. Article 6(2)(d) of the IT treaty highlights the need to “broaden the genetic base of crops and expand the diversity accessible to farmers,” as this will ensure the adaptability towards shifting environmental conditions.¹⁶¹ Similarly, Article 5(1)(d) promotes the “conservation of wild crop relatives and food plants within their natural ecosystems,” which recognizes the role of local communities in maintaining biodiversity.¹⁶² These provisions align with the way informal seed systems sustain a wide array of crops, equipping farmers with the genetic resources needed to withstand pests, soil degradation, and extreme climate events.¹⁶³

3.3 India’s Approach to Protecting Farmers’ Rights

Building on the discussion from above on the critical role of informal seed systems in sustaining agricultural diversity and food security, this section transitions to examine India’s legislative response to these issues. This section explores how India has recognized and institutionalized the protection of farmers’ rights through the innovative Protection of Plant Varieties and Farmers’ Rights Act (PPVFR), 2001. By framing these protections within the broader context of international agreements and local challenges, this discussion will delve into how India’s legal framework not only supports but also enhances the traditional agricultural practices highlighted

¹⁵⁸ Mastretta-Yanes A, et al. ‘Human management of ongoing evolutionary processes in agroecosystems’ 6 *Plants People Planet* 6, 2024, 1190.

¹⁵⁹ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 141

¹⁶⁰ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 142

¹⁶¹ Article 6, *International Treaty on Plant Genetic Resources for Food and Agriculture* (2001) UNTS 2400:303.

¹⁶² Article 6, *International Treaty on Plant Genetic Resources for Food and Agriculture* (2001) UNTS 2400:303.

¹⁶³ Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” 142.

previously, ensuring that farmers' contributions to biodiversity and food sovereignty are legally safeguarded and promoted.

3.3.1 Historical Context of the PPVFR Act

When India joined the WTO, like all other member states, it became subject to the provisions of the TRIPS Agreement.¹⁶⁴ As discussed in Chapter 2, the TRIPS Agreement required member nations to incorporate PVP within their domestic laws under the sui generis provision. As earlier mentioned in chapter 2 as well, the UPOV Convention serves as the standard framework for implementing plant variety protection within TRIPS, and this was initially the path the Indian government intended to follow.¹⁶⁵ However, after resistance from farmers and community advocacy groups, the government reconsidered its approach.¹⁶⁶ As a result, farmers' rights were explicitly recognized and incorporated into India's plant variety protection legislation, culminating in the enactment of the PPVFR Act¹⁶⁷

The PPVFR Act introduced intellectual property protection for plant varieties, which had not existed before, as India's Patent Act of 1970 explicitly excluded agriculture-related intellectual property.¹⁶⁸ Widely regarded as one of the most progressive PVP frameworks, the PPVFR Act is notable for integrating farmers' rights alongside breeders' rights, ensuring that small-scale farmers and indigenous cultivators receive legal recognition and protection within the intellectual property landscape.¹⁶⁹

3.3.2 Key Provisions of the PPVFR Act

There are numerous provisions within the PPVFR Act that distinguish it from various other PVP frameworks globally, striking a unique balance between the rights of breeders and farmers,

¹⁶⁴ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' *Journal of Peasant Studies*, 2014, 1086 - <https://doi.org/10.1080/03066150.2014.937338> on 20 January 2025.

¹⁶⁵ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

¹⁶⁶ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

¹⁶⁷ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

¹⁶⁸ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1090

¹⁶⁹ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

ensuring that both parties' interests are acknowledged and provided for. To begin with, one key provision within the Act is that it recognizes that a farmer can also be a breeder, allowing them to register IPR over any plant variety that was traditionally cultivated by them, as well as claim rights accruing from those contributions.¹⁷⁰ Within the Act, a farmer is not just narrowly defined as one who cultivates crops; instead, this definition is broadened to include a person who conserves and improves traditional plant varieties.¹⁷¹ This can be found in section 2(k) of the Act.¹⁷² This recognition is important as it enables a farmer to obtain PVP over their traditional varieties under section 39(1)(iii), which ensures that any contributions by the farmer towards plant breeding receive legal protection.¹⁷³

Farmers' rights under the PPVFR Act are broadly provided for under Chapter VI, which guarantees the right to save, use, exchange, and sell farm-saved seeds, even for protected varieties.¹⁷⁴ This right is explicitly provided under section 39(1)(iv).¹⁷⁵ The only caveat to this provision, which is quite unique within the PVP framework, is that while farmers can sell and exchange seeds, they cannot sell branded seeds under a brand name.¹⁷⁶ Additionally, section 42 protects farmers who unknowingly infringe on breeders' rights, ensuring that if they were unaware that the seed was protected, they are exempt from liability.¹⁷⁷ Section 39(2) further strengthens farmers' rights by requiring seed companies to disclose the expected performance of the seed, including anticipated yield.¹⁷⁸ This transparency ensures that farmers are aware of the seed's capabilities before purchase.¹⁷⁹

¹⁷⁰ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1091

¹⁷¹ Section 2(k), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷² Section 2(k), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷³ Section 39(1)(iii), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁴ Chapter VI, The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁵ Section 39(1)(iv), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁶ Section 39(1)(iv), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁷ Section 42, The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁸ Section 39(2), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁷⁹ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1091

There is also the benefit-sharing mechanism, provided for under Article 26, which acknowledges the role of farmers and communities in conserving genetic resources when those resources contribute to the development of a new plant variety.¹⁸⁰ This provision mandates that breeders disclose whether they have used traditional knowledge or genetic resources from a farming community.¹⁸¹ Article 45 then establishes the National Gene Fund, which ensures that farmers and farming communities receive fair compensation for their contributions, as outlined in Article 26.¹⁸²

3.3.3 Institutional Framework

The main institution that implements the PPVFR Act's provisions is the PPVFR Authority.¹⁸³ It facilitates the registration of plant varieties and oversees mechanisms for benefit-sharing.¹⁸⁴ The Authority handles complaints through a dispute resolution mechanism, such as a farmer seeking redress for a registered variety that did not perform as stated or for the unauthorized use of traditional knowledge.¹⁸⁵

Additionally, the National Gene Fund, as stipulated under section 45 of the PPVFR Act, ensures that farmers and communities are rewarded for their conservation efforts and contributions to plant variety development.¹⁸⁶ Access to the National Gene Fund is first established by determining eligibility for benefit-sharing as outlined in Section 26 of the PPVFR Act.¹⁸⁷ The process for claiming compensation can be initiated by an individual, a community, or even a third party acting on behalf of farming groups.¹⁸⁸ By establishing these institutional mechanisms, the framework aims to empower farmers, uphold their rights, and ensure equitable recognition of their role in agricultural biodiversity conservation.

¹⁸⁰ Section 26, The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁸¹ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1092

¹⁸² Section 45, The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁸³ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' *Journal of Peasant Studies*, 2014, 151 - <https://doi.org/10.1080/03066150.2016.1191471> on 20 January 2016

¹⁸⁴ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 153

¹⁸⁵ Section 39(2)(iv), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁸⁶ Section 45, The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁸⁷ Section 26(2), The Protection of Plant Varieties and Farmers' Rights Act (India)

¹⁸⁸ Section 26(2), The Protection of Plant Varieties and Farmers' Rights Act (India)

3.3.4 Alignment with International Treaties

The PPVFR Act actively reflects the principles of two major international treaties, the CBD and the IT Treaty, both of which India has ratified.¹⁸⁹ These agreements play a crucial role in shaping the Act, as they affirm sovereign rights over genetic resources and prioritize conservation, sustainable use, and fair benefit-sharing, all core tenets embedded within the PPVFR framework.¹⁹⁰ Unlike agreements such as UPOV, which primarily protect plant breeders' rights, the CBD and IT treaty recognizes the role of traditional farming practices and farmers' contributions to maintaining genetic diversity, making them the most appropriate international instruments to evaluate India's legislative approach.¹⁹¹ The CBD affirms a country's authority over its biological resources and calls for fair distribution of benefits derived from their use.¹⁹² The PPVFR Act embodies these values by acknowledging farmers as custodians of biodiversity, safeguarding their rights to save, use, exchange, and sell seeds, and ensuring they are fairly compensated for their role in plant breeding through mechanisms such as the National Gene Fund.¹⁹³ Additionally, the PPVFR Act aligns with Article 9 of the IT Treaty, which protects farmers' rights to seed access, usage, and knowledge-sharing, reinforcing India's dedication to a legal framework that harmonizes biodiversity conservation with advancements in agriculture.¹⁹⁴

3.3.5 Outcomes and Impacts

The Protection of Plant Varieties and Farmers' Rights (PPVFR) Act, 2001 has been widely regarded as an innovative legal framework for protecting farmers' seed rights, but it has also faced significant criticism.¹⁹⁵ One of the main concerns is the lack of widespread implementation, with many farmers remaining unaware of their rights under the law.¹⁹⁶ The registration of farmers'

¹⁸⁹ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 147

¹⁹⁰ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1090

¹⁹¹ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1090

¹⁹² Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

¹⁹³ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 152

¹⁹⁴ Article 9, *International Treaty on Plant Genetic Resources for Food and Agriculture* (2001) UNTS 2400:303.

¹⁹⁵ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

¹⁹⁶ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1093

varieties remains low, and the process is often seen as bureaucratic and inaccessible.¹⁹⁷ Additionally, critics argue that while the PPVFR Act aims to balance plant breeders' rights with farmers' rights, corporate interests and intellectual property loopholes have sometimes undermined this intent.¹⁹⁸ Nonetheless, the Act has proven to be a powerful legal tool in landmark cases that have reinforced farmers' rights against corporate encroachment. One of the critical cases of *Nuziveedu Seeds Pvt. Ltd v. Plant Varieties and Farmers' Rights Authority* (2023) (Nuziveedu Seeds) as well as the Odisha case demonstrates this.

In the case of *Nuziveedu Seeds*, the Delhi High Court reinforced a critical safeguard under the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act: DUS (Distinctness, Uniformity, and Stability) testing must be completed before a plant variety application is advertised.¹⁹⁹ The Court ruled that advertising an application before DUS test results undermines the law's purpose, to protect farmers and ensure only genuine, stable varieties enter the seed market.²⁰⁰ By emphasizing that DUS testing is an essential part of the Registrar's inquiry under the Act, the judgment upholds transparency and accountability in the registration process.²⁰¹ This directly benefits farmers by preventing premature or wrongful registrations that could allow seed companies to assert rights over unstable or indistinct varieties.²⁰² The Court also noted that advertising applications prematurely denies farmers a fair opportunity to raise objections, thus defeating the Act's aim of empowering farmers and acknowledging their stake in the plant variety ecosystem.²⁰³ Ultimately, the decision strengthens procedural rigor and ensures that the rights and livelihoods of farmers are not compromised by administrative shortcuts or corporate haste, reinforcing the PPV&FR Act as a tool for equitable seed governance.²⁰⁴

¹⁹⁷ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1093

¹⁹⁸ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1093

¹⁹⁹ 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*, <<https://spicyip.com/2024/01/nuziveedu-v-plant-varieties-authority-reaping-the-fruits-of-pioneers-seeds.html>>

Accessed on 24 March 2025.

²⁰⁰ 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*,

²⁰¹ 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*,

²⁰² 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*,

²⁰³ 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*,

²⁰⁴ 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*,

If Nuziveedu highlights the need for safeguards in the system, Odisha shows how farmers can thrive when those safeguards are supported on the ground.²⁰⁵ Under PPVFR, farmers are empowered to register traditional crop varieties for legal protection.²⁰⁶ Odisha stands out as a success story, contributing 85% of all farmer-filed applications for plant variety protection in India almost entirely for rice.²⁰⁷ This success is rooted in Odisha's rich rice biodiversity and strong collaboration among farmers, local NGOs, and government officials.²⁰⁸ These partnerships helped farmers identify unique local varieties, prepare documentation, and navigate the endorsement process required for registration.²⁰⁹ The Odisha case shows that with proper support, farmers can actively participate in safeguarding indigenous knowledge and securing rights over their plant varieties.²¹⁰ It also highlights the practical impact of the PPVFR Act in recognizing farmers not only as cultivators but also as innovators and conservers of biodiversity.²¹¹ The model demonstrates that legal tools like PPVFR can work effectively when paired with grassroots awareness and institutional facilitation, offering valuable lessons for other regions seeking to protect traditional seed systems and promote farmer empowerment.²¹²

3.4 Conclusion

This chapter explored the vital role of informal seed systems in ensuring food security, directly addressing the research question by highlighting how these systems provide crucial support to smallholder farmers. By detailing India's approach through the Protection of Plant Varieties and Farmers' Rights Act (PPVFR), 2001, which legally protects farmers' rights to save, use, exchange, and sell their seeds, this analysis presents a model that upholds food sovereignty and aligns with international obligations such as ICESCR. This framework not only offers a counterpoint to the restrictive amendments of Kenya's Seeds and Plant Varieties Act but also suggests a pathway for

²⁰⁵ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry' *Agricultural Economics Research Review*, 2014, 95, [10.5958/j.0974-0279.27.1.008](#) on 24 March 2025.

²⁰⁶ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²⁰⁷ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²⁰⁸ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²⁰⁹ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²¹⁰ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²¹¹ Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

²¹² Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry,' 95.

reform. By integrating these insights, the chapter connects to the problem statement, illustrating how empowering traditional seed practices through supportive legal measures can address food insecurity and ensure the constitutional right to food, ultimately fostering sustainable agricultural development and poverty eradication.



CHAPTER 4: LESSONS FROM INDIA AND THE INTEGRATED SEED SYSTEMS APPROACH FOR KENYA

4.1 Introduction

The regulation of seed systems plays a crucial role in determining farmers' access to seeds, the protection of breeders' rights, and the overall sustainability of agricultural biodiversity. Kenya's 2012 SPVA Amendment, which aligns with UPOV 1991, prioritizes formal seed systems and breeder protections, often limiting smallholder farmers' ability to save, exchange, and sell seeds. This chapter examines alternative approaches that could inform Kenya's seed policies, particularly India's PPVFR Act, which offers a farmer-centric legal model, and the Integrated Seed Systems Development (ISSD) approach, which promotes a more inclusive seed framework. By analyzing these approaches, this chapter explores how Kenya can balance plant breeders' rights (PBRs) with the needs of smallholder farmers, ensuring that both formal and informal seed systems are supported.

4.2 Lessons from India

India's PPVFR Act provides an alternative legal framework that prioritizes both farmers' rights and breeders' rights, offering valuable insights for Kenya. Unlike Kenya's UPOV-aligned system, which restricts farmers' ability to save, exchange, and sell seeds, India's approach ensures greater legal protections for smallholder farmers while still maintaining breeder protections.²¹³ The key lessons drawn from India focus on farmer-centric legislation, legal recognition of informal seed systems, and the integration of international agreements with local needs. These aspects demonstrate how a more inclusive and adaptable legal framework can support both formal and informal seed systems, enhancing food security and agricultural sustainability in Kenya.

4.2.2 Farmer-Centric Legislation

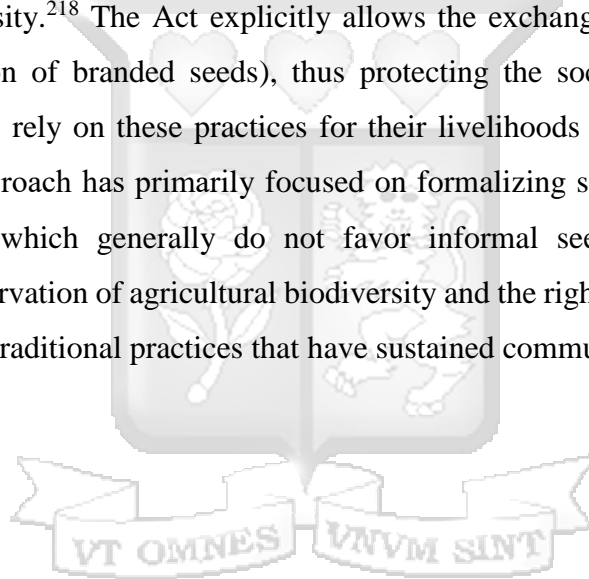
In examining the approaches of Kenya and India towards seed system legislation, there is a stark contrast in the empowerment and protection afforded to farmers. Kenya's adherence to the UPOV 1991 under the Seeds and Plant Varieties Act is indicative of a framework that prioritizes breeder

²¹³ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

rights over farmers' rights.²¹⁴ This legislation allows farmers to reuse farm-saved seeds strictly on their own land, but restricts any form of sharing or selling, which curtails the broader community practices that are integral to informal seed systems.²¹⁵ On the other hand, India's PPVFR Act stands out for its inclusive approach towards farmers' rights.²¹⁶ Section 39 of PPVFR Act not only allows farmers to save, use, sell, and register their traditional varieties, it also protects them against unintentional infringement and mandates the disclosure of expected seed performance.²¹⁷

4.2.3 Legal Acknowledgement of Informal Seed Systems

India's legal framework through the PPVFR Act acknowledges and supports informal seed systems, providing a robust defense of farmers' practices and their roles as breeders and conservators of biodiversity.²¹⁸ The Act explicitly allows the exchange and sale of farm-saved seeds (with the exception of branded seeds), thus protecting the socio-economic interests of smallholder farmers who rely on these practices for their livelihoods and cultural heritage.²¹⁹ . Conversely, Kenya's approach has primarily focused on formalizing seed systems to align with international standards, which generally do not favor informal seed practices.²²⁰ This has implications for the preservation of agricultural biodiversity and the rights of smallholder farmers, potentially undermining traditional practices that have sustained communities for generations.²²¹



²¹⁴ Munyi P. et al 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach', 164

²¹⁵ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 67

²¹⁶ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

²¹⁷ Section 39(2), The Protection of Plant Varieties and Farmers' Rights Act (India)

²¹⁸ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1092

²¹⁹ Section 39(1)(iv), The Protection of Plant Varieties and Farmers' Rights Act (India)

²²⁰ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628.

²²¹ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 622

4.2.4 Integration with International Agreements

Both India and Kenya need to align their domestic policies with international agreements.²²² However, India's PPVFR Act exemplifies how a country can tailor international standards to better reflect and support local conditions and needs, such as section 39 of the PPVFR.²²³ This Act integrates the principles of the CBD and the IT treaty by ensuring farmers' rights to seed access, usage, and knowledge-sharing are protected and promoted.²²⁴ This alignment not only fulfills international obligations but also reinforces India's dedication to a legal framework that supports biodiversity conservation alongside agricultural innovation.²²⁵ In contrast, Kenya's strict adherence to UPOV 1991 through its 2012 amendments to the Seeds and Plant Varieties Act tends to prioritize breeder rights, often at the expense of farmers' traditional practices.²²⁶ This alignment with international standards, while necessary, could benefit from a more balanced approach that also considers the unique socio-economic and ecological contexts of Kenya.

In summary, India's integration of farmers' rights within its legal framework serves as a commendable model that Kenya could consider. By adopting similar protective measures for farmers and ensuring that international agreements do not overshadow local needs, Kenya can enhance its food security while supporting the sustainable practices of its smallholder farming communities.

4.3 Integrated Seed System Development Approach

As discussed above, the Indian government's approach to balancing farmers' rights with those of plant breeders has provided valuable lessons that Kenya can certainly learn from. In addition to the lessons from India, the Integrated Seed System Development (ISSD) approach will also be introduced as a way to provide Kenya with a more comprehensive framework for balancing PBRs with the informal seed sector.

²²² Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

²²³ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 147

²²⁴ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 147

²²⁵ Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' 147

²²⁶ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 622

4.3.1 What the ISSD Approach Is

The Integrated Seed Sector Development (ISSD) model promotes a flexible and inclusive approach to seed policy that responds to the varied needs of different agricultural systems within a country.²²⁷ It recognizes that farmers rely on both formal systems, such as commercial seed companies, and informal ones, like saved or exchanged seed, and that both are essential.²²⁸ The model encourages policies that support a range of actors, including governments, private companies, NGOs, and farmer groups, to strengthen these diverse systems.²²⁹ Unlike earlier approaches that followed a fixed, step-by-step process aiming to replace informal systems with commercial ones, ISSD avoids rigid frameworks and instead allows multiple systems to coexist and evolve based on local realities.²³⁰ This makes it possible to balance goals like food security, business development, and biodiversity conservation.²³¹

4.3.2 Applicability of the ISSD Approach in Kenya

There are two main approaches to applying the ISSD approach in the Kenyan context, particularly those that will affect farmers' access to quality seeds: seed quality assurance and the rights afforded to plant breeders. For the ISSD to be applied, policy changes would be required, primarily in these two areas.²³²

4.3.3 Seed Quality Assurance

Seed quality assurance involves a structured and deliberate process aimed at maintaining the genetic, physical, and physiological integrity and health of seeds.²³³ It continues to evolve to meet international standards, addressing aspects such as land requirements, crop inspections, seed

²²⁷ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' *Journal of Crop Improvement*, 2013, 189- <https://doi.org/10.1080/15427528.2012.751472> on 28 March 2025.

²²⁸ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 189.

²²⁹ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 189.

²³⁰ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 189.

²³¹ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 189.

²³² Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²³³ Rajendra P, et al. 'An overview of national and international seed quality assurance systems and strategies for energizing seed production chain of field crops in India' *Indian Journal of Agricultural Sciences*, 2017, 288-<https://doi.org/10.56093/ijas.v87i3.68592> on 28 March 2025.

testing, and both pre- and post-production controls.²³⁴ The conventional approach has been to issue standard certification, which is compulsory.²³⁵ However, this measure has its drawbacks, with cost and lack of adequate infrastructure being major challenges.²³⁶ Kenya's approach has been to require that all participants within a seed chain ensure that certain crops are certified.²³⁷ Failure to adhere to this results in high penalties.²³⁸ To support this seed certification initiative, the Kenyan government has encouraged private companies to join as seed certifiers.²³⁹ However, this comes with risks, as private companies prioritize profits and may not see the need to offer testing and certification at reduced costs for crops that help combat food insecurity, unlike the government. This could ultimately limit farmers' access to seeds.²⁴⁰

Where the ISSD approach comes into play in this situation is by offering the Quality Declared Seed (QDS) system. QDS is a simpler and more affordable system for checking and maintaining seed quality in situations where full government certification is hard to apply.²⁴¹ It is especially useful for crops that are vital for food security like legumes, tubers, and minor cereals, but are less attractive to commercial seed companies because they have low market value.²⁴² An example of its application can be seen in the certification needs of sunflowers and Irish potatoes grown in

²³⁴ Rajendra P, et al. 'An overview of national and international seed quality assurance systems and strategies for energizing seed production chain of field crops in India' 288.

²³⁵ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²³⁶ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²³⁷ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²³⁸ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²³⁹ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁴⁰ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁴¹ Astrid M, et al. 'Institutionalizing Quality Declared Seed in Uganda' *Agronomy*, 2021, 2-<https://doi.org/10.3390/agronomy11081475> on 28 March 2025.

²⁴² Astrid M, et al. 'Institutionalizing Quality Declared Seed in Uganda' 2.

Kenya.²⁴³ The sunflower sector is mainly dominated by a closed value chain system (CVC), which is a subset of the formal seed system.²⁴⁴ Closed value chain seed systems are crop-specific arrangements where seeds are provided and regulated internally by commodity companies or boards.²⁴⁵ Access and use of seeds in these systems are largely governed by the market or the enterprises themselves, with minimal external oversight.²⁴⁶ The Irish potato sector, on the other hand, is traded mostly in the informal sector, where smallholder farmers trade seeds among themselves.²⁴⁷ This makes formal certification and testing quite costly for smallholder farmers.²⁴⁸

The QDS system works by using fewer inspections to check seed quality, which helps reduce the high costs of full certification.²⁴⁹ Instead of checking every field, inspectors take samples from selected fields or seed lots.²⁵⁰ These samples are examined to find any major issues that could affect seed quality.²⁵¹ If problems are found, those areas get more focused attention. This approach is especially helpful for farmers who are spread out across large areas, like in community-based seed systems or small local seed businesses.²⁵² In Zambia, for example, farmer associations are already using QDS with support from the national seed agency.²⁵³ Because QDS needs fewer inspections, it is more affordable and makes it easier for farmers to sell good quality seeds locally.²⁵⁴ The goal of QDS is not to replace the formal seed certification system but rather to

²⁴³ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁴⁴ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 167.

²⁴⁵ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 199.

²⁴⁶ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 199.

²⁴⁷ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁴⁸ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁴⁹ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁵⁰ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁵¹ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁵² Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁵³ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

²⁵⁴ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 206.

complement it.²⁵⁵ By focusing more on informal systems, QDS can foster growth among local seed entrepreneurs, which in turn will help strengthen the seed sector.²⁵⁶

4.3.4 Plant Breeders Rights

The second policy issue that needs to be addressed when applying the ISSD approach is the exclusive rights assigned to plant breeders. Plant breeders' rights can work within the ISSD approach, but they must be applied with flexibility.²⁵⁷ ISSD allows full protection of breeders' rights in commercial farming while still giving small-scale farmers the freedom to save, exchange, and sell seeds locally, even protected ones.²⁵⁸ This balance supports both innovation and traditional practices, though it may reduce private investment in crops mainly grown by smallholders.²⁵⁹ In such cases, public institutions may need to step in. Still, countries like India show that it's possible to support both breeders and farmers.²⁶⁰

Strict adherence to PBRs can be appropriate for certain sectors of Kenya's agricultural system, such as horticulture, while being detrimental to others, such as food crops.²⁶¹ Strict adherence to PBRs can be appropriate for certain sectors of Kenya's agricultural system, such as horticulture, while being detrimental to others, such as food crops.²⁶² To address this, it is important to tailor the application of breeders' rights based on the type of crop and the farmers involved.²⁶³ For instance, PBRs may be suitable for high-value commercial crops but should be relaxed or excluded for crops grown by smallholder farmers with low incomes.²⁶⁴ In cases where small-scale farmers produce crops for commercial markets, like some oilseeds, context-specific solutions are

²⁵⁵ Astrid M, et al. 'Institutionalizing Quality Declared Seed in Uganda' 5.

²⁵⁶ Astrid M, et al. 'Institutionalizing Quality Declared Seed in Uganda' 2.

²⁵⁷ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208.

²⁵⁸ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208.

²⁵⁹ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208.

²⁶⁰ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208.

²⁶¹ Munyi P. et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 169.

²⁶² Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

²⁶³ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

²⁶⁴ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

needed.²⁶⁵ While managing such a system may be complex, this should not justify imposing a one-size-fits-all approach.²⁶⁶ Instead, effective implementation requires aligning breeders' rights with the actual conditions and needs of farmers and the agricultural sector.²⁶⁷

One practical way to operationalize this differentiated approach is by establishing a tiered rights system, as seen in Ethiopia's draft PBR Proclamation. This model classifies crops into three categories: commercial export crops, food crops, and all crops.²⁶⁸ For export crops like flowers, breeders are granted full exclusive rights, with no seed-saving permitted.²⁶⁹ Food crops remain protected, but farmers are allowed to reuse seeds on their own land.²⁷⁰ In the most flexible category, smallholder farmers, defined as those earning below the national household income average, may exchange and sell farm-saved seed locally, regardless of the crop type.²⁷¹ This kind of structure helps balance innovation with inclusivity, ensuring both breeders and small-scale farmers are supported.²⁷²

Lastly, another way to implement the ISSD approach concerning farmers' rights would be to interpret UPOV 1991 broadly to accommodate smallholder farmers' traditional seed practices.²⁷³ UPOV 1991 allows countries to set their own rules for plant breeders' rights, including exemptions for private and non-commercial seed use, but it does not clearly define what qualifies under this

²⁶⁵ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

²⁶⁶ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

²⁶⁷ Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' 208-209.

²⁶⁸ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁶⁹ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷⁰ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷¹ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷² Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷³ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

exemption.²⁷⁴ Kenya's 2012 SPVA Amendment, meant to align with UPOV 1991, omitted this exemption, limiting small farmers' ability to save and reuse protected seeds.²⁷⁵ To address this, Kenya needs to update the law to include the exemption and establish rules that allow small farmers to save, trade, and share seeds, balancing breeders' rights with farmers' needs.²⁷⁶

4.4 Conclusion

This chapter examined key lessons from India's farmer-centric legal framework and the Integrated Seed Systems Development (ISSD) approach to understand how Kenya's seed systems can be improved. India's PPVFR Act demonstrates a legal model that balances breeders' rights with farmers' rights, allowing smallholders to save, exchange, and sell seeds while also recognizing their role in preserving agricultural biodiversity. In contrast, Kenya's strict adherence to UPOV 1991 under the 2012 SPVA Amendment prioritizes breeder rights and limits smallholder farmers' ability to share or trade seeds, restricting traditional seed practices.

The ISSD approach presents an alternative framework that acknowledges multiple seed systems and emphasizes a more inclusive seed policy. It highlights the need for flexible seed quality assurance measures and differentiated protections for various crops and farmer categories. By learning from India's legal model and the ISSD approach, Kenya can explore ways to balance formal and informal seed systems, ensuring that both breeders and smallholder farmers are supported within the country's agricultural landscape.

²⁷⁴ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷⁵ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁷⁶ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Kenya's seed system is at a crossroads, balancing between formalized regulatory structures and traditional informal practices that have sustained smallholder farmers for generations. The existing legal framework, particularly the 2012 SPVA, has leaned heavily toward plant breeder protections, often at the expense of farmer-managed seed systems. This study has examined the implications of these legal provisions on Kenya's food security and sovereignty. Through an analysis of the gaps in the legal framework, the significance of informal seed systems, and comparative insights from India's PPVFR, the study has provided a foundation for reevaluating Kenya's seed policies. This chapter presents the key findings and offers actionable recommendations to strengthen the country's seed system while upholding the principles of food security and sovereignty.

5.2 Findings

Kenya's legal framework governing seed practices exhibits critical gaps that undermine smallholder farmers and food sovereignty.²⁷⁷ The law largely ignores traditional seed practices, failing to provide adequate protections for farmer-managed seed systems.²⁷⁸ Farmers are prohibited from saving, sharing, or exchanging protected seeds, despite these practices being essential for their livelihoods.²⁷⁹ Additionally, Kenya's overreliance on the UPOV 1991 system has created a seed regulation environment that prioritizes the commercial breeding sector, sidelining indigenous and farmer-saved seed systems.²⁸⁰ The assumption that formalizing the seed system is the most effective pathway for agricultural development has led to policies that restrict traditional practices instead of integrating them into the broader seed sector.²⁸¹

²⁷⁷Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁷⁸Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁷⁹Section 20, Seeds and Plant Varieties Act (No. 53 of 2012)

²⁸⁰ Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' 66

²⁸¹ Munyiri T 'Seeds and Farmers' Rights as Drivers of Change on Food Systems' 24843

Informal seed systems play an indispensable role in Kenya's agricultural sector by ensuring that smallholder farmers have access to diverse, climate-resilient, and locally adapted seed varieties.²⁸² The study found that informal seed networks support biodiversity conservation, enable adaptation to environmental changes, and reduce dependency on external seed markets.²⁸³ India's approach, which legally acknowledges the contributions of smallholder farmers to food security, provides a valuable model for Kenya to consider.²⁸⁴

India's PPVFR offers significant insights into how Kenya can balance formal and informal seed systems.²⁸⁵ India's approach is characterized by legal recognition of farmer rights, integration with international agreements, and a differentiated framework that accommodates both commercial breeders and smallholder farmers.²⁸⁶ Additionally, the ISSD approach provides a structured model that acknowledges the coexistence of multiple seed systems and promotes policies that cater to the diverse needs of farmers.²⁸⁷ The study found that Kenya could benefit from adopting a more flexible regulatory approach that integrates both formal and informal seed frameworks.

5.3 Recommendations for Strengthening Kenya's Seed System

Kenya's SPVA should be amended to provide explicit recognition of farmers' rights. Section 20 should be revised to allow smallholder farmers to save, exchange, and use protected seeds for non-commercial purposes.²⁸⁸ The law should also remove provisions that criminalize traditional seed-saving practices and ensure that farmer-managed seed systems are legally protected.²⁸⁹ By doing

²⁸² Gill T, et al. "Strengthening informal seed systems to enhance food security in Southeast Asia" 141

²⁸³ Gill T, et al. "Strengthening informal seed systems to enhance food security in Southeast Asia" 141

²⁸⁴ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

²⁸⁵ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1092

²⁸⁶ Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' 1086

²⁸⁷ Louwaars N et al. 'Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies' 48

²⁸⁸ Section 20, Seeds and Plant Varieties Act (No. 53 of 2012)

²⁸⁹ Section 10, Seeds and Plant Varieties Act (No. 53 of 2012)

so, Kenya can create a legal framework that acknowledges the coexistence of formal and informal seed systems while safeguarding food security and biodiversity.²⁹⁰

A differentiated approach to plant breeder rights should be introduced to address the diverse needs of Kenya's agricultural sector.²⁹¹ Instead of a one-size-fits-all model, the law should distinguish between different categories of crops.²⁹² Commercial export crops, such as flowers, should remain under strict plant breeder protection, while food security crops should allow farmers to save and replant seeds.²⁹³ Indigenous and farmer-saved seed varieties should be fully protected, enabling farmers to share and exchange seeds freely without legal barriers.

Kenya should integrate the QDS system into its regulatory framework to ensure affordable and accessible seed certification.²⁹⁴ The current certification process is costly and often excludes smallholder farmers from accessing high-quality seeds.²⁹⁵ QDS provides a cost-effective alternative that maintains quality standards without imposing unnecessary financial burdens.²⁹⁶ By incorporating QDS alongside the formal seed certification process, Kenya can improve smallholder farmers' access to improved seed varieties while maintaining the integrity of its seed system.²⁹⁷

²⁹⁰ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 162.

²⁹¹Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 169.

²⁹²Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 169.

²⁹³Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 170.

²⁹⁴ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁹⁵ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁹⁶ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

²⁹⁷ Munyi P.et al. 'Seed Systems Support in Kenya: Consideration for an Integrated Seed Sector Development Approach' 168.

Finally, Kenya's seed policies should formally recognize the role of informal seed systems in food security and align national regulations with international commitments that protect farmer rights.²⁹⁸ This recognition should be grounded in frameworks that are responsive to Africa's unique agricultural context, such as the African Model Law, which was created specifically with African farmers in mind.²⁹⁹ Given that a sizable portion of Kenya's population still faces poverty and hunger, the adoption of the African Model Law alongside international agreements, such as the ITPGRFA and the CBD, would offer a more balanced, rights-based approach to seed regulation.³⁰⁰ Instead of rigid adherence to UPOV 1991, Kenya should pursue a sui generis system that reflects its unique agricultural landscape, prioritizes food sovereignty, and ensures that farmers retain control over their seeds.³⁰¹

5.4 Conclusion

Kenya's current seed laws overwhelmingly favor plant breeders, restricting smallholder farmers and undermining food security. The study has demonstrated that a more inclusive legal framework, informed by lessons from India's PPVFR and the ISSD approach, would create a fairer system that balances breeder rights with farmer rights. By amending the SPVA, introducing a differentiated PBR system, implementing QDS, and formally recognizing informal seed networks, Kenya can strengthen its seed system without marginalizing smallholder farmers. Leveraging international commitments and adopting an inclusive seed policy will further ensure a resilient and sustainable agricultural sector. These reforms will promote food security, safeguard biodiversity, and uphold the constitutional right to food while fostering an environment where both formal and informal seed systems can thrive.

²⁹⁸ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 628

²⁹⁹ Kabau T et. al 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' 627

³⁰⁰ Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' 3

³⁰¹ Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' 3

BIBLIOGRAPHY

Journal Article

1. Ali A, Bhattacharjee B, ‘Nutrition Security, Constraints, and Agro-Diversification Strategies of Neglected and Underutilized Crops to Fight Global Hidden Hunger’ *Frontiers in Nutrition*, 2023, 1 - <https://doi.org/10.3389/fnut.2023.1144439> – on 13 April 2025.
2. Auma C, et al, ‘Underutilised Food Crops for Improving Food Security and Nutrition Health in Nigeria and Uganda—A Review’ *Frontiers in Sustainable Food Systems*, 2023, 2 - <https://doi.org/10.3389/fsufs.2023.1126020> on 13 April 2025.
3. Ayieko M, Odame H and Olwande J, ‘Strengthening seed systems and market development in Kenya: Perspectives on political economy and policy processes’ Tegemeo Institute of Agricultural Policy and Development, Working Paper Number 71/2021, 2021, 14 <http://www.tegemeo.org> on 13 April 2025.
4. Astrid M, et al. ‘Institutionalizing Quality Declared Seed in Uganda’ *Agronomy*, 2021, 2 – <https://doi.org/10.3390/agronomy11081475> on 28 March 2025.
5. Bini V, ‘Food security and food sovereignty in West Africa’ *African Geographical Review*, 2016, 2 – <https://doi.org/10.1080/19376812.2016.1140586> on 25 November 2024.
6. Carlile, R., Kessler, M., & Garnett, T. ‘What is food sovereignty?’ TABLE, University of Oxford, Swedish University of Agricultural Sciences and Wageningen University & Research., May 2021, 7, <https://www.doi.org/10.56661/f07b52cc>, Accessed 1 December 2024.
7. Coomes O, et al. ‘Farmer seed networks make a limited contribution to agriculture? Four common misconception’ *56 Food Policy*, 2015, 43.
8. Dutfield G “The role of the international Union for the Protection of New Varieties of Plants (UPOV)” Intellectual property issue paper 9, 2011, 5, https://quino.org/sites/default/files/resources/UPOV%2Bstudy%2Bby%2BQUNO_English.pdf – on 6 December 2024.
9. Gill T, et al. “Strengthening informal seed systems to enhance food security in Southeast Asia” Vol. 3 *Journal of Agriculture, Food Systems, and Community Development* 3, 2013, 140.

10. Gullotta G, Engels J, Halewood M, 'What Plant Genetic Resources for Food and Agriculture Are Available under the Plant Treaty and Where Is This Information?', *Plants*, 2023, 1 - <https://doi.org/10.3390/plants12233944>, on 13 April 2025.
11. Hlatshwayo S, et al., 'Usefulness of Seed Systems for Reviving Smallholder Agriculture: A South African Perspective' 21 *African Journal of Food, Agriculture, Nutrition and Development* 2, 2021, 2–5.
12. Kabau T, Mutema A 'Implementation of International Obligations on Plant Breeders' Rights in Kenya: Pitfalls and Prospects' Vol. 26 *African Journal of International and Comparative Law* No. 4, 2018, 620.
13. Kabau T et al. 'The Arusha Protocol on plant varieties protection: balancing breeders' and farmers' rights for food security in Africa' *Queen Mary Journal of Intellectual Property*, 2019, 1, Accessed on 30 November 2024.
14. Louwaars N et al. 'Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies', *Journal of Crop Improvement*, 17 January 2012, 41, Accessed on October 15 2024.
15. Mabhaudhi T, et al. 'Underutilised Crops: Diversifying the agrifood system by mainstreaming underutilised crops' *The Water Wheel*, 2024, 22 - [10.13140/RG.2.2.24827.53285](https://doi.org/10.13140/RG.2.2.24827.53285) on 13 April 2025.
16. Mastretta-Yanes A, et al. 'Human management of ongoing evolutionary processes in agroecosystems' 6 *Plants People Planet* 6, 2024, 1190.
17. Munyi, P 'Plant Variety Protection Regime in Relation to Relevant International Obligations: Implications for Smallholder Farmers in Kenya' *World Intellectual Property*, 2015, 66 <https://doi.org/10.1111/jwip.12031> on 18 November 2024.
18. Munyiri, Tabitha 'Seeds and Farmers' Rights as Drivers of Change on Food Systems' *African Journal of Food Agriculture, Nutrition and Development*, 2024, 24843 – <https://doi.org/10.18697/ajfand.135.25410> on November 18 2024.
19. Ncube C., 'Food Security and Plant Variety Protection: Seeding Hope for the African Continental Free Trade Area?', *IIC - International Review of Intellectual Property and Competition Law*, 2025, 75,- <https://doi.org/10.1007/s40319-024-01556-3>, accessed on 13 April 2025.

20. Neils L, et al. 'Integrated Seed Sector Development in Africa: A Basis for Seed Policy and Law' *Journal of Crop Improvement*, 2013, 189 – <https://doi.org/10.1080/15427528.2012.751472> on 28 March 2025.
21. Ndlovu M, et al. 'Underutilized Crops for Diverse, Resilient and Healthy Agri-Food Systems: A Systematic Review of Sub-Saharan Africa' *Frontiers in Sustainable Food Systems*, 2024, 6 - <https://doi.org/10.3389/fsufs.2023.1126020> on 13 April 2025.
22. Oluoch O W and Ndede F W S, 'Synergistic Effects and Financial Performance of Kenya Agricultural and Livestock Research Organization' *International Journal of Research and Innovation in Social Science* 5, 2024, 2213.
23. Omulama B, 'Navigating Between Breeders' and Farmers' Rights in Plant Variety Protection in Kenya', *ResearchGate*, 2017, 3 - <https://www.researchgate.net/publication/319242199>, accessed on 13 April 2025.
24. Pal S, et al 'Impact of Plant Variety Protection on Indian Seed Industry' *Agricultural Economics Research Review*, 2014, 95, 10.5958/j.0974-0279.27.1.008 on 24 March 2025.
25. Peschard, K 'Farmers' rights and food sovereignty: critical insights from India' *Journal of Peasant Studies*, 2014, 1086 – <https://doi.org/10.1080/03066150.2014.937338> on 20 January 2025.
26. Peschard, K 'Seed wars and farmers' rights: comparative perspectives from Brazil and India' *Journal of Peasant Studies*, 2014, 151 – <https://doi.org/10.1080/03066150.2016.1191471> on 20 January 2016.
27. Peschard K, 'Searching for Flexibility: Why parties to the 1978 Act of the UPOV Convention have not acceded to the 1991 Act', *Association for Plant Breeding for the Benefit of Society (APBREBES)*, October 2021, 5 – <https://www.apbrebes.org/news/searching-flexibility>, on 12 April 2025.
28. Prip C, 'Farmers' Rights in the Plant Treaty: interrelations and recent interactions with other international regimes and processes', *Development Studies Research*, 1, 2024, 7.
29. Rajendra P, et al. 'An overview of national and international seed quality assurance systems and strategies for energizing seed production chain of field crops in India' *Indian Journal of Agricultural Sciences*, 2017, 288 – <https://doi.org/10.56093/ijas.v87i3.68592> on 28 March 2025.

30. South Centre, 'The TRIPS and WTO Negotiations: Stakes for Africa', South Centre Analytical Note SC/DIIP/AN/TRIPS/1, March 2017, 5 — <https://www.southcentre.int/analytical-note-march-2017/#more-9574>, on 11 April 2025.
31. Wattnem T, 'Seed laws, certification and standardization: outlawing informal seed systems in the Global South', 43 *The Journal of Peasant Studies* 4, 2016, 852.
32. Westegen O, Dalle S, Teshome M, 'Navigating toward resilient and inclusive seed systems' 120 *Proceedings of the National Academy of Sciences* 14, 2023, 2.
33. Yu Peter, 'The Objectives and Principles of the Trips Agreement' *Houston Law Review*, 2009, 980 – https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1398746 on December 6 2024.

Reports

1. The National Treasury and Planning, *Big Four Agenda Implementation Status Report 2018/2019*, April 2020, 12; Kenya *Vision 2030 Flagship Programmes And Projects Progress Report* (FY 2020/2021), August 2022, 106
2. Integrated Food Security Phase Classification, *IPC Acute Food Insecurity and Acute Malnutrition Analysis*, 29 March 2024,
3. Republic of Kenya, National Food and Nutrition Security Policy, 2011, 2

Internet Source

1. Nasike, Claire "Whose interest does the Kenyan seeds law protect?" Greenpeace, 15 July 2022 <<https://www.greenpeace.org/africa/en/publications/51807/whose-interest-does-the-kenyan-seeds-law-protect/#:~:text=In%202012%2C%20the%20Kenyan%20government,or%20a%20fine%20of%20Kshs...>> on September 28 2024.
2. 'Nuziveedu v. Plant Varieties Authority: Reaping the Fruits of Pioneer's Seeds' *SpicyIP*, <<https://spicyip.com/2024/01/nuziveedu-v-plant-varieties-authority-reaping-the-fruits-of-pioneers-seeds.html>> Accessed on 24 March 2025.