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Special Issue - Food Justice and Food Sovereignty in the context of the Right to Food

SEEDS AND FARMERS' RIGHTS AS DRIVERS OF CHANGE ON FOOD SYSTEMS

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ABSTRACT

In the heart of Kenya's vibrant agricultural landscape lies a fundamental aspect crucial for food security, cultural heritage, and economic resilience: the right to seed. Embedded within the fabric of traditional farming practices, the right to seed encompasses the freedom of farmers to save, exchange, and utilize traditional and farmer-bred seeds. In Kenya, as in many other countries, this right is not only a legal concept but a cornerstone of agricultural sovereignty. However, its preservation faces challenges in the face of globalization, corporate interests, and evolving intellectual property regimes. Yet, amidst these challenges, significant strides are being made, with collaborative efforts at the global level, particularly through initiatives led by the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), aimed at promoting and protecting farmers' rights. Every smallholder farmer has the right to safe, nutritious and healthy food and the ability to sustain themselves and their societies with the existing endorsed resources. The concept of farmers' rights came out as a subject of debate in international agricultural circles, spearheaded by the Food and Agriculture Organisation of the United Nations (FAO). This includes the right to save, use, exchange and sell farm-saved seed and propagating materials, the right to protect traditional knowledge among others. In developing countries, the right to seed is a fundamental aspect of agricultural sovereignty and food security. This still emulates the subject debate from FAO. However, attention in scientific literature and policy circles for both seeds and farmers' rights are compromised. This paper employs mediation analysis to explore the causal relationship between seed rights, farmers' rights, and food sovereignty, highlighting the pivotal role of smallholder farmers in shaping sustainable food systems. The findings underscore the importance of inclusive policies that prioritize farmers' rights and empower local communities to sustainably manage their seed resources.

Key words: Farmer-managed seeds, seed banks, Access, smallholder farmers and benefit-sharing

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INTRODUCTION

In developing countries, the right to seed is a fundamental aspect of agricultural sovereignty and food security. It encompasses the freedom to save, exchange, and sell traditional and farmer managed seeds, ensuring that smallholder farmers have access to the seeds they need to sustain and improve their agricultural practices. It is critical for several reasons, primarily because it ensures biodiversity conservation, food security, and the preservation of cultural heritage. Indigenous and farmer managed seeds are vital for adapting to changing environmental conditions, managing pests and diseases, and countering the impacts of climate change. These seeds also carry the weight of cultural traditions, further highlighting their significance. Every farmer deserves the right to have access to quality and diverse seeds if the country is to achieve food sovereignty and ultimately food security. However, punitive laws and monopoly by multinationals are among the biggest threats to seed sovereignty in Kenya.

LITERATURE REVIEW

The literature extensively supports the pivotal role of Community Seed Banks (CSBs) as guardians of agricultural biodiversity and enablers of food security. CSBs act as repositories for diverse seed varieties, particularly those adapted to local environments and farming practices [1]. Through practices such as seed saving and exchange, CSBs facilitate the preservation and dissemination of this rich genetic diversity, thus bolstering resilience to environmental pressures and minimizing reliance on external inputs [2]. Furthermore, CSBs are acknowledged for their significant contribution to empowering farmers, especially women and marginalized communities, by granting them access to high-quality seeds, technical expertise, and robust support networks [3]. This empowering function of CSBs plays a crucial role in enhancing agricultural productivity and sustainability in communities worldwide [4].

Challenges to the Right to Seed in Kenya

In recent years, Kenya has witnessed the encroachment of commercial interests into its agricultural sector, leading to the dominance of a few multinational corporations in the seed market. This commercialization threatens the diversity of seed varieties available to farmers, with an emphasis on high-yielding but often genetically uniform varieties. Additionally, the enforcement of intellectual property rights (IPRs), including patents on seeds, poses a significant challenge to farmers' rights. These IPRs can limit farmers' ability to save, exchange, and utilize seeds, thereby undermining agricultural diversity and traditional farming practices.

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The Role of International Treaties

Amidst these challenges, initiatives led by the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) are playing a pivotal role in promoting and protecting farmers' rights to seed in Kenya. The CBD, through its work on access and benefit-sharing (ABS) and the Nagoya Protocol, seeks to ensure that farmers and local communities have equitable access to genetic resources and fair and equitable sharing of benefits arising from their utilization. By advocating for the recognition and protection of traditional knowledge associated with seeds, the CBD contributes to safeguarding farmers' rights and promoting agricultural biodiversity.

Similarly, the ITPGRFA, also known as the "Seed Treaty," is instrumental in promoting the conservation and sustainable use of plant genetic resources for food and agriculture. Through its multilateral system of access and benefit-sharing (MLS), the ITPGRFA facilitates the exchange of germplasm among countries, ensuring that farmers have access to a diverse range of seeds for their agricultural activities. Moreover, the ITPGRFA recognizes the rights of farmers to save, use, exchange, and sell farm-saved seeds and propagating materials, thereby safeguarding traditional farming practices and promoting agricultural resilience.

Kenya, despite being a signatory to ITPGRFA, the emphasis remains largely on protecting breeders' rights and formal seed systems, rather than recognizing and safeguarding farmers' rights. This focus on formal seed systems overlooks the vital role that traditional farming practices, such as seed saving and exchange, play in ensuring agricultural biodiversity, resilience, and food security. While the Seed and Plant Varieties Act of 2012 aims to regulate the seed sector and promote innovation, its restrictive measures often criminalize traditional practices, further marginalizing small-scale farmers and limiting their access to diverse seed varieties. This disconnect between policy objectives and on-the-ground realities underscores the urgent need for a paradigm shift towards inclusive and participatory approaches that prioritize farmers' rights and empower local communities to sustainably manage their seed resources.

Control over seeds

The dominance of multinational seed companies has significantly impacted farmers in Kenya, narrowing their choices, increasing seed prices, and reducing access to traditional and farmer-managed seeds [5]. The commercialization of maize seeds, for instance, has led to a decline in maize crop diversity, rendering them more susceptible to pests and diseases [6]. In regions like Baringo County, despite substantial food production, residents often face food shortages due to the influence of seed companies. These companies contract farmers, promising a ready market for their produce but impose restrictions on planting different varieties of the same

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crop to avoid cross-pollination and contamination [7]. Farmers who disobey these restrictions risk having their crops destroyed, even by fellow farmers within a 200-meter radius of seed crop plantations.

A stark illustration of the consequences of relying solely on commercial seeds was seen in the North Rift region, where over two hundred acres of maize plantations failed to yield due to a failed rainy season in mid-2023 [8]. This underscores the importance of cultivating indigenous seeds, known for their resilience and tolerance to tough climatic conditions, and emphasizes the necessity of promoting agricultural biodiversity. However, restrictive laws like the Seed and Plant Varieties Act 2012, Cap 326, limit farmers' ability to save, exchange, and sell seeds without facing legal repercussions [9]. This legislation imposes severe penalties, including imprisonment for up to two years or fines up to KES 1,000,000, or both. Instances of patent disputes involving indigenous seeds further exacerbate the challenges faced by smallholder farmers in Kenya. For example, the controversy surrounding the bio-piracy of the indigenous buffel grass variety by an individual has sparked resistance from communities such as the Kalenjin and Maasai in Baringo, where the grass is integral to their livestock farming traditions [10]. This scenario exemplifies how plant breeders' rights (PBRs), akin to patents for plant varieties, pose a significant threat to Kenya's smallholder farmers. It underscores the urgent need for Kenya to vehemently oppose the privatization of its rich biodiversity and advocate for policies that prioritize farmers' rights and agricultural diversity.

Community seed banks

Community seed banks (CSBs) have emerged as grassroots initiatives aimed at preserving agricultural biodiversity, empowering farmers, and enhancing food security and sovereignty [11]. These banks have gained prominence as community-driven solutions to the challenges posed by industrial agriculture, climate change, and the loss of agricultural biodiversity. CSBs play a crucial role in preserving traditional seed varieties, which are often well-adapted to local environments and farming practices, thus promoting resilience to environmental stresses [2]. By facilitating the exchange and conservation of seeds, CSBs empower farmers, particularly women and marginalized communities, by providing them with access to diverse and locally adapted seeds [3]. This empowerment fosters social cohesion and collective action among farmers, contributing to local resilience and sustainable agricultural practices [4].

Case study

The Seed Savers Network (SSN), a national grassroots organisation in Kenya has spearheaded the establishment of 74 community seed banks (CSBs) nationwide. A comprehensive diversity assessment done by SSN revealed the loss of 35 crop varieties in just three regions, Nakuru, Baringo and Vihiga over the years. These

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CSBs serve as vital repositories for conserving traditional seed varieties, empowering local farmers, and addressing the alarming decline in agricultural biodiversity. So far, over 74,000 farmers from the network are making use of these seedbanks. Through SSN's initiatives, communities have been equipped with the technical know-how and resources needed to establish and manage CSBs, fostering social cohesion and collective action among farmers. By reintroducing lost crop varieties and promoting diverse crops, CSBs play a pivotal role in enhancing agricultural resilience and food sovereignty at the grassroots level. The success of SSN's CSB initiatives underscores the transformative potential of community-led approaches to seed conservation and food security in Kenya. Additionally, CSBs have empowered farmers to take control of their seed supply, reducing dependence on external inputs and commercial seed sources. By doing so, they provide a vital counterbalance to the potential monopolisation of seed resources, which threatens both cultural heritage and food security. As the government of Kenya considers making amendments to intellectual property laws and seed regulations, a key concern is whether there are considerations to strike a balance between corporate interests and the rights of farmers, and that these efforts aim to ensure that patents and Intellectual Property Rights (IPRs) do not impede the free exchange of seeds among farmers.

METHODOLOGY

Mediation Analysis

Why is Mediation Analysis used?

The effects of seed and farmers' rights on food sovereignty are often presumed to work through different mechanisms and interventions. Possible interventions can be evaluated using Description of Mediation Analysis. In mediation analysis, the effect of an intervention on an outcome is partitioned into indirect and direct effects. Indirect effects work through mediators of interest, whereas direct effects work through other mechanisms. Smallholder farmers are granted rights in a direction subject to food sovereignty. Countries are free to define the legal space they deem sufficient for farmers regarding their rights to save, use, exchange and sell farm-saved seed. These effects are often shown in a causal diagram.

Mediation analysis estimates indirect and direct effects and the proportion mediated, a statistical measure estimating how much of the total intervention effect works through a particular mediator. Two broad analytical approaches are used to conduct a mediation analysis: statistical and causal. Statistical Mediation analysis uses regression models to estimate the strength of intervention mediator and mediator-outcome effects. These regression coefficients can then be multiplied to estimate the indirect effect. Statistical Mediation Analysis is limited by its inability to accurately model situations in which there are nonlinear relationships between the intervention,

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mediator, and outcome or when there is an interaction between the intervention and the mediator. Causal mediation analysis is more general and rigorous. It is more general because it allows for nonlinear relationships and interactions, and more rigorous because it explicitly outlines the assumptions that are necessary.

Mediation Analysis applies to this study of Seed rights and farmers rights on food sovereignty; this is done to make causal inferences about the influence of a treatment (rights on an outcome (food sovereignty) via one or more mediators.

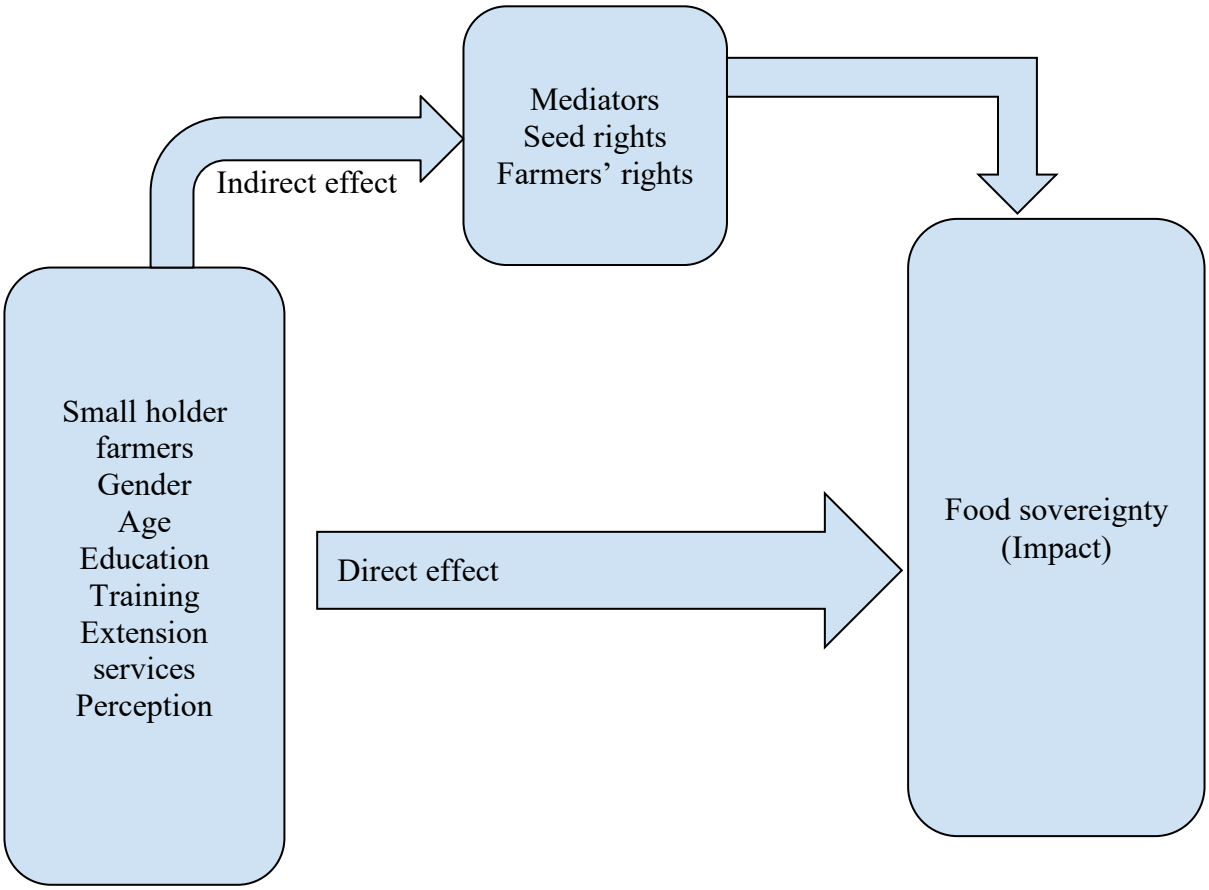

Figure 1: Mediation analysis matrix

RESULTS AND DISCUSSION

Jacoby [12] noted that we live in a multivariate world and that analysing the impact of one or two variables in isolation would seem relatively inconsequential. However, to estimate the mediation model, the process runs two regressions: one regression of rights on smallholder farmers and another regression of food sovereignty on smallholder farmers and rights. In case of conditional process models, as shown in Figure 1 above, the statistical model is augmented with interaction terms to map the moderating effects on one or more direct effects in the model. In either case, the

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parameter estimation in one regression has no effect on the parameter estimation in the other regression [13]. This approach is problematic for two reasons. First, a piecemeal regression-based approach is used to analyze the elements of the effect chain—smallholder farmers, rights, and food sovereignty—as separate processes. This statistical handling is inconsistent with understanding mediation as a single, integrated process [14]. Even when combining the regression estimates into an indirect effect, the estimation still follows a piecewise approach rather than considering the model as a whole. Consequently, researchers may be discouraged from thoughtfully considering the relationships between variables, making them less open to plausible and informative modifications of their initial model [14].

Second, each of the piecemeal regressions ignores other elements of the model, including potential antecedent constructs of smallholder farmers, food sovereignty, or rights. Iacobucci *et al.* [15] show that such antecedent relationships can strongly impact mediation effects. Moreover, the resulting biases in parameter estimates become more pronounced when considering complex, sequential moderating effects involving multiple mediators, particularly mediators potentially embedded in a larger nomological network.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

The preservation of seed rights and farmers' rights in Kenya is essential for ensuring agricultural sovereignty, food security, and the safeguarding of cultural heritage. Despite encountering challenges such as commercialization, the enforcement of intellectual property rights, and the prevalence of monoculture, significant progress has been achieved through initiatives led by international treaties like the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture.

Community seed banks have emerged as grassroots solutions to these challenges, playing a pivotal role in conserving agricultural biodiversity, empowering farmers, and enhancing food security and sovereignty at the local level. The success of initiatives spearheaded by organizations like the Seed Savers Network underscores the transformative potential of community-led approaches to seed conservation and food security in Kenya.

To sustain these positive developments and address existing obstacles, comprehensive measures are needed. These include: advocating for policy reforms that strike a balance between corporate interests and farmers' rights, promoting the establishment and expansion of community seed banks, providing technical assistance and resources to empower local communities, and fostering education and awareness about the importance of traditional and farmer-managed seeds.

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By implementing these recommendations, Kenya can progress towards a more resilient and sustainable agricultural system that empowers smallholder farmers, preserves agricultural diversity, and ensures food security for present and future generations.

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