UNDERSTANDING
Farmers Managed Seed System
{FMSS}

PELUM ASSOCIATION

Networking For a greener Africa.

Both ENDS

Connecting people for change

ACKNOWLEDGEMENT

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We are deeply grateful to the Seed Savers Network, GBICAK, and MEAP for sharing their stories, insights, and experiences with us. Their courage and resilience in facing the challenges impacting FMSS are truly inspiring. Special acknowledgment goes to Mrs. Beatrice Wangui (farmer), Mr. Sam Nderitu (GBIACK), Mr. Harrison Mwangi (farmer), Mrs. Mary Njoki (GBIACK), Mr. Karangathi Njoroge (MEAP), and Mrs. Catherine Ng'ang'a (farmer) for their time, insights, and expertise. Your stories of change are inspiring, educative, and impactful.

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LIST OF ABBREVIATIONS

CBO.....COMMUNITY BASED ORGANIZATION

FMSS.....FARMER MANAGED SEED SYSTEM

G-BIACK.....GROW BIOINTENSIVE AGRICULTURE CENTRE OF KENYA

GMOS.....GENETICALLY MODIFIED ORGANISMS

MEAP.....MAENDELEO ENDELEVU ACTION PROGRAM

PELUM.....PARTICIPATORY ECOLOGICAL LAND USE MANAGEMENT

SSN.....SEED SAVERS NETWORK

TLVS.....TRADITIONAL LEAFY VEGETABLES

FOREWORD

Agriculture is Kenya's backbone, deeply intertwined with our cultural heritage and economic prosperity. As we stand at the crossroads of environmental challenges and technological advancements, it becomes increasingly crucial to revisit and reinforce the traditional practices that have sustained us for generations. One such practice is the Farmer Managed Seed System (FMSS), a cornerstone of resilience and sustainability in our agricultural communities.

PELUM Kenya, an organization dedicated to promoting ecological land use management, is proud to present this comprehensive publication on FMSS. It not only tells success stories of farmers and organizations that are saving seeds, but also guides on FMSS. This publication is a testament to the ingenuity and dedication of farmers who have long recognized the value of saving, sharing, and preserving seeds.

FMSS empower farmers to be custodians of their own seed supplies, ensuring access to diverse and locally adapted crop varieties. By saving and exchanging seeds, farmers not only safeguard agricultural biodiversity but also enhance food and seeds security and sovereignty. This practice is particularly vital in the face of climate change, as it enhances the resilience of farming systems to withstand environmental stresses.

PELUM Kenya's efforts to document and promote FMSS are driven by a vision of sustainable agriculture that respects and harnesses the natural diversity of our ecosystems. Through this guide, we seek to inspire a new generation of farmers to embrace these time-honored techniques, ensuring that they remain relevant and robust in the modern world.

We are immensely grateful to the farmers, researchers, and partners who have contributed to this guide. Their experiences and insights have enriched our understanding and underscored the critical role of FMSS in achieving food security and sovereignty.

As you delve into this publication, we invite you to reflect on the profound impact that seeds have on our lives and livelihoods. Let us honor the legacy of our forebears by nurturing and protecting this invaluable resource. Together, we can build a future where agriculture thrives in harmony with nature, and communities flourish with the knowledge and freedom to cultivate their lands sustainably; and FMSS is core towards this.

Sincerely,
Rosinah Mbenya
Country Coordinator,
PELUM Kenya

ABOUT PELUM KENYA

Participatory Ecological Land Use Management (PELUM) Association is a network of Civil Society Organizations / NGOs working with Small-scale farmers in East, Central, and Southern Africa. The Association membership has grown from 25 pioneer members (in 1995) to over 280 members. PELUM Kenya is the Kenyan country chapter of the PELUM Association and has a membership of 60 Member Organizations. PELUM Kenya network promotes agroecological principles and practices through the following approaches; advocacy and policy influence, networking, capacity development, information, and knowledge sharing. The various agroecological practices promoted include; organic agriculture, sustainable agriculture, regenerative agriculture, agroforestry, permaculture, conservation agriculture, biodynamic agriculture, family farming, and bio-intensive agriculture.

All PELUM Kenya Member Organizations do not promote GMOs or the use of synthetic agricultural inputs.

VISION

Empowered, Prosperous and healthy communities in Kenya

MISSION

To Promote agroecological principles and practices among small holder farmers and pastoralists communities in Kenya for improved livelihoods

THEMATIC AREAS

In its 2021 to 2025 strategic plan, PELUM Kenya has the following thematic areas:

1. Institutional Strengthening, Networking & Capacity Development

2. Policy Influence & Advocacy on Agroecological Practices

3. Agro-enterprise and Market Development

4. Climate change resilience and Natural resource management

5. Gender and Youth Inclusion in Agroecology

PREFACE

In the tapestry of Kenya's and indeed Africa's agricultural landscape, seeds hold a place of paramount importance. They are not merely the beginning of the crop cycle but the very essence of food security and cultural heritage. The Farmer Managed Seed System (FMSS) is a practice that has stood the test of time, offering a sustainable and resilient approach to agriculture that aligns with both traditional wisdom and contemporary challenges. However, the entry of hybrid seeds into the market, coupled by some unfriendly laws and policies have made FMSS difficult in Kenya.

This publication by PELUM Kenya delves into the intricate world of FMSS, shedding light on its crucial role in fostering agricultural biodiversity, enhancing food security, and empowering farmers. Through the lens of FMSS, we explore the stories of farmers who have embraced seed saving and sharing as a means to secure their livelihoods and contribute to the collective resilience of their communities.

FMSS is more than just a method; it is a philosophy rooted in the principles of ecological balance, community solidarity, and self-reliance. By saving and exchanging seeds, farmers become stewards of their own destinies, capable of adapting to the ever-changing environmental conditions and market demands. This system supports the preservation of diverse crop varieties that are locally adapted and resilient to climatic stresses, thus bolstering sustainability of our agricultural ecosystems.

This publication is a comprehensive guide designed to inform, inspire, and equip the reader with the knowledge and tools necessary to implement and advocate for FMSS. It encompasses detailed accounts of successful seed-saving practices, practical guidelines, and insightful reflections from those who have firsthand experience in managing seeds.

PELUM Kenya's commitment to documenting and promoting FMSS is a testament to the belief that sustainable agriculture is achievable when we honor our natural heritage and work collaboratively towards a common goal. As you engage with the content of this publication, we encourage you to think about the significance of seeds in your own life and community and what role you can play in promoting and supporting FMSS in your own capacity.

UNDERSTANDING FMSS

A Farmers' Managed Seed System (FMSS) is a method of seed production and distribution, managed and controlled by the farmers themselves. This system is crucial for maintaining agricultural biodiversity, ensuring seed and food sovereignty, and promoting sustainable farming practices.

Key Components of FMSS

- **Seed Selection and Preservation**
  - **Selection**: Farmers choose seeds from their best-performing crops based on desired traits such as yield, resistance to pests and diseases, and adaptability to local conditions.
  - **Preservation**: Selected seeds are carefully preserved using traditional methods to maintain their viability. This might include drying, storage in cool, dry places, and the use of natural preservatives.
- **Seed Exchange and Sharing**
  - **Exchange**: Farmers often exchange seeds with one another to diversify their seed stock and introduce new genetic material. This can occur within communities or between different regions.
  - **Sharing**: Seeds are also shared during community gatherings, festivals, and through local seed banks, ensuring that all farmers have access to quality seeds.
- **Local Seed Banks**
  - **Community Seed Banks**: These are established to store and manage a variety of seeds for communal use. They act as a reservoir of genetic diversity and provide seeds during planting seasons or after crop failures.
  - **Farmer-Owned Seed Banks:** Farmers also establish their personal seed banks where they save seeds awaiting the next planting season.

Knowledge Transfer

·**Traditional Knowledge**: The FMSS relies heavily on the traditional knowledge of farmers regarding seed selection, preservation, and cultivation practices.

·**Training and Workshops**: Knowledge is transferred through peer-to-peer knowledge sharing forums, workshops, generation to generation knowledge transfer, farmer field schools among other platforms.

·**Adaptation to Local Conditions**

·**Resilience**: The FMSS supports the cultivation of crop varieties that are well -adapted to local climatic and soil conditions, enhancing the resilience of farming systems.

·**Innovation**: Farmers continuously innovate by experimenting with different seed varieties and cultivation methods to improve productivity and sustainability.

BENEFITS OF FARMERS' MANAGED SEED SYSTEMS

Farmer-Managed Seed Systems (FMSS) offer several significant benefits, which contribute to agricultural sustainability and resilience. Below are some of these benefits:

Biodiversity Conservation

FMSS play a crucial role in conserving agricultural biodiversity by maintaining and using a wide variety of crop species and landraces. This diversity includes traditional varieties that may not be commercially viable but are well adapted to local conditions. Preserving this genetic diversity helps ensure a resilient food supply and protection against pests, diseases, and changing environmental conditions.

Cost-Effectiveness

FMSS are often more cost-effective for farmers compared to purchasing seeds from commercial sources. Farmers save money by reusing seeds from their own harvests and exchanging seeds with other farmers, reducing their dependency on expensive, externally sourced seeds. This financial saving can be significant, especially for smallholder farmers with limited resources.

Seed Access

FMSS improves seed access, particularly in remote or underserved areas where formal seed distribution systems are either lacking or unreliable. Through FMSS, farmers can access a variety of seeds that are better suited to their specific agro-ecological conditions. This localized system ensures that seeds are readily available when needed, enhancing timely planting and productivity.

Seed Sovereignty

FMSS empowers farmers by giving them control over their seed resources. Seed sovereignty means that farmers can save, use, exchange, and sell seeds freely, without being restricted by patents or proprietary seed laws. This autonomy supports traditional farming practices and allows farmers to maintain their agricultural heritage.

Food and Nutrition Security

By supporting diverse crop cultivation, FMSS contributes to food and nutrition security. Farmers can grow a variety of crops that provide balanced diet and meet the nutritional needs of their communities. Additionally, the availability of diverse crops reduces dependency on a single food source, mitigating the risk of food shortages.

Resilience to Climate Change

FMSS enhance resilience to climate change by promoting the use of locally adapted crop varieties that can withstand extreme weather conditions, pests, and diseases. This adaptability is crucial as farmers face increasing variability in climate patterns. Diverse crop varieties can buffer against climatic shocks and ensure stable food production.

Sustainable Agriculture

FMSS support sustainable agricultural practices by encouraging organic farming methods, reducing dependency on chemical inputs, and enhancing soil health. These practices contribute to long-term environmental sustainability, preserving ecosystems, and maintaining the natural resource base for future generations.

Knowledge and Culture Preservation

FMSS help preserve traditional agricultural knowledge and cultural practices. Farmers pass down knowledge about seed selection, planting techniques, and crop management through generations, fostering a rich cultural heritage. This preservation is vital for maintaining diverse farming practices and promoting agro-biodiversity.

Conclusion

Farmer-Managed Seed Systems offer numerous benefits that support biodiversity conservation, cost-effectiveness, seed access, seed sovereignty, food and nutrition security, climate resilience, sustainable agriculture, and the preservation of knowledge and culture. These advantages contribute to a more resilient and sustainable agricultural system, particularly in regions where formal seed systems are less accessible.

CHALLENGES FACING FMSS

FMSS face several challenges that can impede their effectiveness and sustainability. Some of these challenges include:

Quality Control

FMSS often lack standardized quality control measures, leading to variability in seed quality. Poor quality seeds can result in low germination rates, poor crop performance, and reduced yields. Ensuring genetic purity and health of seeds which are free from pests and diseases can be challenging especially without adequate testing and certification mechanisms.

Policy Support

FMSS are often not recognized or supported by national seed laws and regulations, which tend to favor formal seed systems. Some existing regulations may impose restrictions on the exchange and sale of farmer-produced seeds. This calls for formulation of policies that recognize and support FMSS, ensuring they are integrated into national agricultural strategies.

Access to Resources

Smallholder farmers often have limited access to credit and financial services, which restricts their ability to invest in seed production and storage infrastructure, thus hindering effective seed management.

This calls for providence of access to credit, grants, and subsidies to support seed production and storage. It would also be ideal to invest in the development of storage facilities, irrigation systems, and transportation networks to enhance seed management.

Lack of Awareness

Many farmers lack awareness and knowledge about the benefits of FMSS, best practices in seed management, and the importance of biodiversity. Insufficient access to information and extension services often limits farmers' ability to improve their seed systems.

This calls for strengthening of agricultural extension services to provide farmers with information and training on FMSS. It also calls for awareness creation through modes such as campaigns, workshops, training programs as well as digital and traditional media platforms to educate farmers about the benefits and best practices of FMSS.

Competition from Multinationals

Multinational seed companies often dominate the market with hybrid and genetically modified seeds, at the expense of local varieties. Unlike FMSS, these companies have significant marketing resources.

Support is needed towards creating opportunities for FMSS to access local and regional markets, including establishing farmers' markets and cooperatives. There would also be need to implement fair trade policies that protect and promote the interests of smallholder farmers against large multinational corporations.

Conclusion

Addressing these challenges through targeted support can enhance the effectiveness and sustainability of Farmer-Managed Seed Systems, contributing to resilient and diverse agricultural practices.

TIPS FOR SEED SELECTION AND SAVING

Ex Situ Seeds selection and saving – for seeds saved out of the farms

Selecting seeds for saving involves careful observation and consideration to ensure that you choose the best possible seeds for future planting. Here are some key steps and tips for selecting seeds for saving:

- **Choose Healthy Plants**: Select seeds from plants that are healthy, vigorous, and free from disease. Look for plants that have shown good growth;- mark those that germinate first, grow fast, and fruit first. Also, be keen on those that show resistance to pests and diseases, and have thrived under your local growing conditions.

- **Pick the Best Specimens**: Within the healthy plants, choose seeds from the best specimens. Look for plants that have produced the highest yield, best flavor, or any other desirable trait specific to the crop.

- **Select for Desirable Traits**: Decide on the traits you want to preserve and improve, such as drought tolerance, early maturity, flavour, size, or colour. Save seeds from plants that exhibit these traits.

- **Save Seeds from Multiple Plants**: To maintain genetic diversity, collect seeds from multiple plants rather than just one. This helps ensure a broader genetic base and reduces the risk of inbreeding.

- **Wait for Full Maturity**: Harvest seeds only when they are fully mature. Immature seeds are less likely to germinate and may not have the desired traits.

- **Proper Harvesting**:
    - For dry seeds (beans, peas, grains), allow the pods or seed heads to dry on the plant if possible. Harvest them when they are dry and before they start to shatter.

    - For wet seeds (tomatoes, cucumbers, squash), harvest the fruit when it is fully ripe. Extract the seeds, rinse off any pulp, and dry them thoroughly.

- **Clean Seeds Thoroughly**: Clean seeds to remove any plant debris, pulp, or chaff. This reduces the risk of disease and helps ensure good storage conditions.

- **Dry Seeds Properly**: Ensure seeds are completely dry before storing them.

- **Label and Store Correctly**: Store seeds in a cool, dry, and dark place. Use airtight containers to protect them from moisture and pests. Label containers with the crop type, variety, and date of collection to keep track of your seed stock.

- **Regular Testing and Renewal**: Periodically test stored seeds for germination rates and renew your seed stock by planting and saving seeds every few years. This helps maintain viability and ensures you have a continuous supply of quality seeds.

In Situ Seed Saving – For Seeds Saved In The Farms

For **in situ conservation**, farmers need to designate sections of their land for planting specific crops that must be conserved on their farms. These sections, known as seed plots or conservation plots, are crucial for maintaining the genetic diversity of crops.

Farmers should take care of these seed sections by ensuring the fields are kept free of weeds, pests, and diseases. This helps maintain the purity of the seeds and ensures their viability for future planting seasons.

Crops whose seeds are commonly preserved in situ include cassava, sweet potatoes, arrowroots, yams, among others. These crops are often well-adapted to local conditions and play a vital role in food security and cultural heritage.

Farmers are encouraged to keep sharing the seeds from their conservation plots as a way of multiplication and easing access to these important crop varieties.

By sharing seeds with other farmers, they contribute to the preservation and dissemination of valuable genetic resources, ensuring the continued availability of diverse and resilient crops for future generations.

STORIES OF CHANGE

My Seeds My Wealth

Every time she saw her neighbors planting, Ms. Beatrice Wangui would rush to her husband and request for money to buy seeds. She needed to plant too. Unfortunately, it was not always certain that her husband had money for seeds at that particular time. Often, this demand for money led to domestic quarrels between Ms. Beatrice and her husband.

However, this has since become history, thanks to training and inspiration from the Seed Savers Network (SSN), where she learned the art of seed saving. "I save seeds and share them with other farmers. They, too, share whatever seeds they have, and this, for me, is not only sustainable but also an efficient and affordable way of accessing seeds," says Ms Beatrice.

Each year, she is assured of planting on time, having saved seeds from the previous season. She no longer solely depends on commercial seeds, which not only saves her money but also fosters peace in her home. She no longer has to watch as her neighbors plant ahead of her. "I have the liberty to plant whatever I want and whenever I want because I am always seed-secure," says Ms Beatrice.

Her farm is located in a rather dry area that often experiences low rainfall. Often, the hybrid seeds would fail due to poor weather conditions. With seed saving, she harvests each season—thanks to crop diversification and embracing indigenous varieties that are more resilient.

Her collection is both in situ and ex situ and includes 62 varieties of beans, indigenous maize, pulses, herbs (like oregano, rosemary, and mint, among others), traditional leafy vegetables, arrowroots, and sweet potatoes. "My collection keeps growing as I keep collecting more seeds from farmers," she says.

Her vision is to inspire as many women as she can reach to embrace seed saving as a way of gaining the freedom to grow, consume, and sell whatever they want, whenever they find it convenient.

"When counting their wealth, women should count seeds twice."
- Ms. Beatrice Wangui, Farmer, Gilgil

Seed Access Is Food Sovereignty

In 2014, Grow Biointensive Agriculture Centre of Kenya (GBIACK) Executive Director Mr. Samuel Nderitu, sponsored by PELUM Kenya, joined 11 other stakeholders on a fact-finding mission to India regarding Genetically Modified Organisms (GMOs) and their negative impact on farmers, some of whom had been driven to suicide. The visit included tours of both GMO and agroecological farms.

It was then that a visit to agroecological farms near the Himalayan mountains inspired Mr. Nderitu to start seed saving, not only at GBIACK but also among the farmers with whom the organization works. "Those farmers were not using any synthetic inputs and were exclusively planting saved seeds, which was so inspiring," recalls Mr. Nderitu.

Upon returning, he established the first small seed bank at GBIACK, which has since grown in size, quantity, and diversity of seeds. "For me and the farmers we work with, there was no turning back, especially after witnessing the benefits of seed saving," says Mr. Nderitu. At a time when agrifood systems are threatened by climate change, the culture of seed saving has become even more important as a sustainable way to combat climate change and its effects. "FMSS are very resilient and have been there over the decades, passed from one generation to the other," says Mr. Nderitu, adding, "They are Open Pollination Varieties (OPVs) and thus very resilient."

While seed security is a common term, Mr. Nderitu notes that seed sovereignty is even deeper and more important. Seed security simply means that seeds are available but not necessarily accessible due to high prices or long distances from farms to agro shops. On the other hand, seed sovereignty means that farmers have the right and freedom to grow, exchange, share, and save seeds. It means that farmers are at liberty to have seeds throughout the years and that they freely own them. "It also means that farmers have the knowledge to save their own seeds and grow whatever they want whenever they want," says Mr. Nderitu, adding that Africa should strive to have seed sovereignty.

While noting that many African governments have allowed hybrids and GMOs, he calls upon them to allow farmers to grow what they want by supporting FMSS. Additionally, GMOs and organic produce and products should be well labeled to allow consumers to choose. "Organizations supporting FMSS and agroecology in general should not relent but continue promoting the agroecology agenda," says Nderitu. This way, he adds, there will be reduced cases of non-communicable diseases, poverty, and environmental degradation.

"There cannot be food security if there is no seed security."
– Mr. Sam Nderitu, Executive Director, GBIACK

Youth Securing The Future Through Seed Saving

In recent years, there has been a growing interest among young farmers and agricultural enthusiasts to embrace seed saving. This practice not only supports sustainable agriculture but also empowers youth to take control of their food systems and contribute to biodiversity conservation. Often, young people who aspire to farm face numerous challenges, with capital and access to seeds being among the most significant.

To address these and other challenges, some youths are embracing seed saving —thanks to educative campaigns by organizations such as Seed Savers Network (SSN). Based in Langa Langa, Gilgil, Nakuru County, Mr. Harrison Mwangi has not only been saving seeds but also inspiring other youths to practice the same.

"In school, we are just taught about banks as financial institutions. However, through SSN, I have since learned of seed banks as a secure and efficient way to save and exchange seeds as a currency, " says Mr. Mwangi. With rain patterns becoming increasingly unpredictable, farmers need to always be ready to plant.

They need to have seeds that are resilient to climate change. Seeds, Mr. Mwangi notes, are the freedom that the youth need to thrive in agriculture. True to his statement, he is able to raise his college fees through agriculture, thanks to a seed-saving culture that has enabled him to save money.

"I grow diverse crops, and I have something to sell all year round. This way, I am able to raise my own school fees and support my parents," says Mr. Mwangi.

Every Monday and Wednesday, Mr. Mwangi and other farmers, most of them youths, meet at an 'Earth Market' where they buy and sell organic produce and products. This is usually an opportunity for them to exchange different seeds. "By exchanging seeds, we are contributing towards the restoration of biodiversity and food security," he says.

He calls on young people to establish seed banks as a way of becoming agents of change at a time when global biodiversity is under threat. "Young people must become the agents of change towards seed sovereignty," he says. To achieve this, he adds, youths need to be bold in advocating for access to seeds and the cultivation and consumption of indigenous food varieties.

"Young people must become the agents of change towards seed sovereignty."
– Mr. Harrison Mwangi, youth farmer, Gilgil, Nakuru

Passing Fmss Knowledge, A Generation A Time

Growing up, Ms. Mary Njoki watched as her parents preserved seeds from each season to plant in the next one. Sometimes, she would be directly involved in the selection, preservation, and even planting of the seeds. It was back then that she fell in love not only with agriculture but also with seed saving. When she started working at GBIACK as a trainer, Ms. Njoki says, she felt at home—practicing a career of her dreams.

"I train farmers on Good Agricultural Practices (GAP) along the agro-ecology line. I train them how to till, make and use organic manure, identify seeds, harvest, preserve, among other aspects," says Ms. Njoki. Every time she witnesses another seed bank, another farmer saving seeds, or another one diversifying crops, Ms. Njoki says she is often motivated to work more. Her greatest inspiration is seeing farmers embracing indigenous varieties as it gives her hope for food-secure communities amid climate change.

"Climate change has really affected production, and farmers can only produce enough if they grow indigenous seeds as they are more resilient to harsh weather conditions," notes Ms. Njoki.

Ms. Njoki trains farmers on traditional methods of pest and disease control. This ensures that they do not have to spend money on synthetic inputs, which are not only expensive but also a threat to the environment and biodiversity. Being the primary decision-makers on family diets, it is important to involve women in FMSS. This way, they will have varieties of seeds to plant and subsequently diversified diets for their households.

"Many farmers have been appreciating my trainings and saving seeds especially because they witness and reap the benefits. Such farmers always have some food in their farms and more in their stores," says Ms. Njoki, adding that other farmers should follow the same footsteps if the country is to be food secure. By participating in FMSS, Ms. Njoki believes she is not only fulfilling her diligent duty.

"A farmer is a farmer because he/she has seeds. If you have seeds, then you have food,"- Ms. Mary Njoki, Trainer at GBIACK

Saving Seeds Is Freedom

For over two decades, the Maendeleo Endelevu Action Program (MEAP) has been working with farmers to save seeds, aiming to enhance seed security, seed sovereignty, biodiversity, and adaptation to climate change. Working with over 500 farmers across Nakuru, Baringo, and Kericho counties, MEAP encourages farmers to save and exchange seeds, especially indigenous varieties that are at risk of extinction.

"We realized that extension service providers were emphasizing hybrids, and therefore farmers were not saving seeds," says Mr. Karangathi Njoroge, Director of MEAP. Depending solely on hybrid seeds limits farmers to growing only what is available in agro shops, negatively impacting agrodiversity and diet diversification. Moreover, many small-scale farmers cannot afford to buy seeds, further limiting their crop choices. Additionally, some farms are located far from urban centers where seeds are sold making it time consuming and costly to access seeds.

"Saving seeds is freedom," - Mr. Karangathi Njoroge, Director of MEAP.

MEAP began by facilitating peer-to-peer learning among farmers. Farmers would borrow seeds and return with interest after harvesting, with common seeds being indigenous maize, beans, sorghum, millet, and Traditional Leafy Vegetables (TLVs). "If a farmer borrows one kilogram of seeds, he/she returns 1.5 kilograms of the same after harvesting," says Mr. Karangathi.

Initially, many farmers were not familiar with the concept of seed saving and believed only in hybrids. To address this, MEAP has been bridging the knowledge gap by raising awareness about seed saving and its importance. "We have also been creating awareness about lost biodiversity and the risks that come with losing it," says Mr. Karangathi.

He urges the government to develop policies that recognize farmers as custodians of seeds and the original breeders. Additionally, the government should understand that biodiversity is essential to a sustainable food system and should promote it.


KABWIJAGURE
KAYINJA
KAKURUNGU
YELLOW


KISHOGA
MAMESHA
KAKURUNGU


KARESU


NAMBALE-
LONG


OCHUTI

At one point, he engaged some farmers in a demonstration farm where they planted hybrid and indigenous maize under the same conditions. "In Ngenia, we planted both hybrid and indigenous maize and realized that the local variety matured faster," recalls Mr. Patrick.

Through the organization, farmers often participate in expos and seed fairs. These events expose them to different seeds, methods of preservation and propagation, and other learning opportunities. "They meet their peers and share knowledge on seed-related matters, including challenges and ways to overcome them," says Mr. Patrick.

He urges young people to embrace agroecology rather than overdependence on white-collar jobs. "There are numerous opportunities for young people in the arena of Farmer Managed Seed Systems (FMSS)," says Mr. Patrick. However, these opportunities can only be fully exploited if the youth embrace agriculture, particularly agroecology.

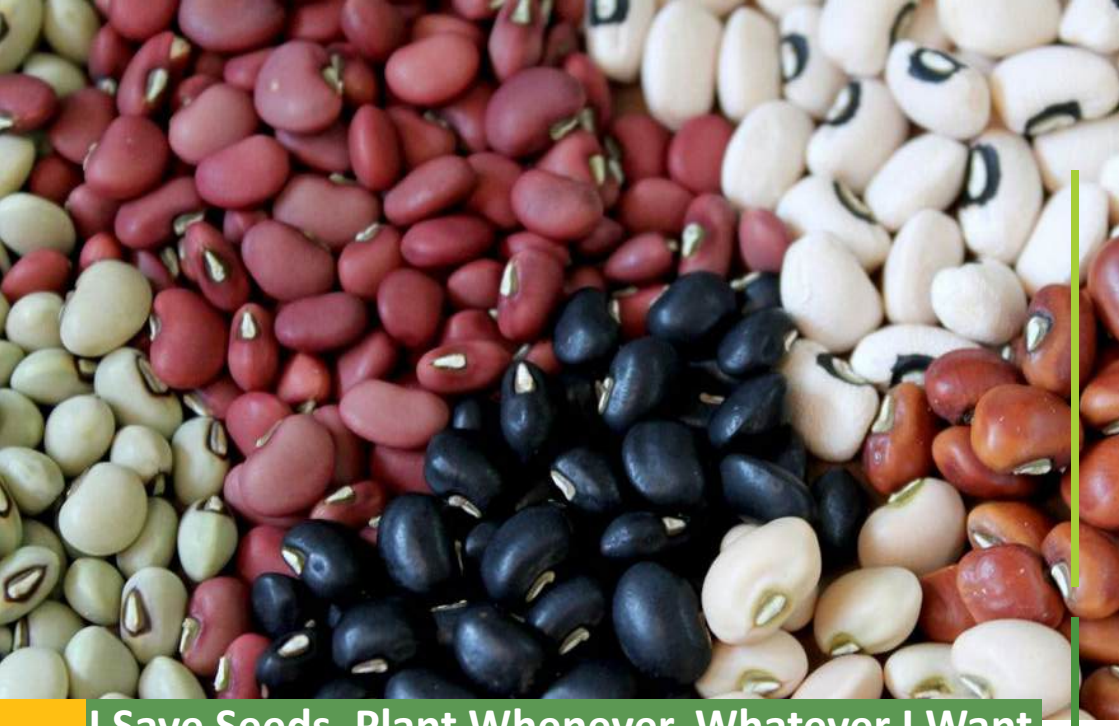
"There are numerous opportunities for young people in the arena of Farmer Managed Seed Systems (FMSS)," – Mr. Patrick Njeri, Field Officer, MEAP

Saving Seeds Is Not Primitive

Training farmers on seed saving not only benefits the current generation but also future ones. At some point in history, seed saving was seen as backward, while those who bought hybrids were considered knowledgeable, modern, and wealthy. "This perception arose from a generation that despised agriculture, ignorant of the fact that it is not only the backbone of the country's economy but also a critical source of food," says Mr. Patrick Njeri, a field officer at Maendeleo Endelevu Action Program (MEAP).

In schools, agriculture was often (and still is), an optional subject, and students were sometimes disciplined by being made to do farm work. This practice shaped their attitude towards agriculture as a punishment rather than a career to be pursued with enthusiasm and anticipation of a good harvest.

To change this attitude, MEAP has been working with farmers, including the youth, to demonstrate the impact of agriculture and the importance of seed saving. "Seed saving is a practice that started many years ago. Our forefathers depended on this system until hybrids hit the market," recalls Mr. Patrick.



I Save Seeds, Plant Whenever, Whatever I Want

Women's groups are often associated with merry-go-rounds and table banking, but a group of 15 women in Molo has beaten the odds by engaging in seed saving, thanks to training and inspiration from MEAP.

Ms. Catherine Ng'ang'a is one woman who has transitioned from depending on hybrids to seed saving and exchange, a practice she says has given her the freedo m to grow as many crops as she wishes. "Even when I do not have money, I remain seed secure because there is always something saved for the next planting season, "says Mrs. Catherine.

Each of the farmers in the group has different seed varieties that they exchange, multiply, and save. "I mostly save beans because they do well on my small farm, "says Ms. Catherine, adding that she is not limited to a single or few varieties.

In addition to being trained on seed selection, saving, and preservation, MEAP has trained Ms. Catherine and her group members on other aspects of agroecol-ogy. These include disease and pest control, organic agriculture, soil health, and other agro-ecological practices.

As a woman, Ms. Catherine is at the center of making decisions about family meals. Having a variety of seeds enables her to grow diversified crops, providing her family with a diverse diet. "When you eat organic food, you make fewer trips to the hospital because you are healthy, you generally feel better, and have peace of mind," says Ms. Catherine.

As a seed-saver, she faces challenges such as the lack of ample glass bottles to store seeds. She is often forced to save seeds in plastic jars, which are not ideal as they expand under hot weather. Additionally, her seeds are sometimes attacked by pests despite using traditional preservation methods such as ash.

Ms. Catherine aspires to visit many farmers in different parts of the country to share knowledge and learn about the challenges they face and how they overcome them. By doing so, she hopes to amplify the message and experience of seed saving beyond just her group.

"Even when I do not have money, I remain seed secure because there is always something saved for the next planting season,"
- Ms. Catherine Ng'ang'a, farmer, Molo.

I Enjoy Saving Unique Seeds

Ever enjoyed a cup of hot milo? Of course, many people have, not once, not twice enjoyed this beverage. But have you ever thought about where the milo itself, the main ingredient, came from? Many would confess that they don't know.

In pursuit of this, the writer collected some milo seeds from Mr. Peter Kariithi, 26, a youthful farmer from the Makongo Organic Farmers Group, based in Makongo village, Nakuru County. Armed with the milo seeds, the writer asked several people what they thought they were. Many said they were just beans, others guessed climbing beans, while some thought they were black beans. This confirms a knowledge gap between producers and consumers and highlights the need for popularizing Farmer Managed Seed Systems (FMSS) and acknowledging that farmers are not just custodians of knowledge, but also unique and rare seeds.

A former construction worker, Mr. Kariithi left his previous career to pursue indigenous farming after discovering his passion for unique seeds. He would often ask his fellow construction workers to bring him native seeds from their regions. "That was how, for example, I got the chuma beans variety from Kisumu, which I am still multiplying," he says.

Under the Seed Savers Network (SSN), he joined the Makongo Organic Farmers Group, where he champions the multiplication, popularization, and sharing of unique seeds. He collected the milo seed from Kitui and has been multiplying it for some time now. This, Mr. Kariithi adds, is his favorite as he not only champions its multiplication but also promotes the consumption of its beverage.

As a youth, Mr. Kariithi hopes that Kenya's legal framework will support FMSS, adding that this is the only way to free farmers towards the diversity of both seeds and food. Additionally, he says seeds are rather expensive, and young people often lack the capital to invest in agriculture. "A legal system that supports free access to seeds would be ample motivation for the young generation," notes Mr. Kariithi.

His dream is to meet other youths who are passionate about saving unique seeds and to exchange both knowledge and seeds with them. Initially, he would like to connect with such farmers within Kenya before gradually expanding to East Africa, Africa, and globally.

Mr. Peter Kariithi shows some milo seeds and a plant of the same.

My Seeds, My Freedom

Every time the rains began, marking the planting season, Ms. Penninah Ngahu would be a worried farmer. Often, she had no money to buy seeds and sometimes ended up not planting the crops she wished to.

Things changed in 2015 when she and members of her Gilgil Township Farmers Group were trained on seed saving, thanks to the Seed Savers Network (SSN), a Gilgil-based organization. Since then, Ms. Penninah has not only become a champion at her own level and within her group, but also a seed ambassador under SSN.

"Saving seeds is freedom to me because I can now plant what I want at my convenience and at minimal cost," says Ms. Penninah. She adds, "I especially like to save beans and traditional maize seeds such as Githigo because I like consuming them." Jointly with her group, Ms. Penninah engages in both in-situ and ex-situ seed conservation and multiplies diverse seeds including fodder, bananas, and sweet potatoes, among others.

Her dream is to own a big seed bank that will in the future double as a tourist site for seed enthusiasts. She also dreams of participating in international expos where she can share her experiences with other farmers.

Like many farmers, Ms. Penninah hopes that the Kenyan government will establish a legal framework that supports FMSS, as this would set farmers free to sell and exchange seeds. She believes that if this happens, farmers would not only be happier but also healthier and wealthier.

She describes the commercial seed system as oppressive, especially to farmers, most of whom live below the poverty line.

Her advice to other farmers is to change their attitude and embrace FMSS. "Most farmers associate the commercial seed system with productivity, while actually, FMSS is not only affordable but also equally productive," says Ms. Penninah.

Her call is for relevant organizations such as PELUM Kenya and SSN to train more farmers on FMSS, adding that most lack sufficient knowledge. She also urges the government to support agricultural extension officers in promoting FMSS rather than being biased towards the commercial seeds sector.

Ms. Penninah Ngahu shows some of her seeds collection

Meet Mr. Kinyanjui, the Potato Encyclopedia

At the age of 72, Mr. Joseph Kinyanjui misses his childhood days when farmers would freely exchange potato seeds each planting season. Potatoes, he says, are his favorite delicacy, especially because he has spent most of his lifetime in Mau Narok, Nakuru County, where the tuber is among the most commonly consumed cuisines.

In 1995, though, Mr. Kinyanjui noticed that some potato varieties were gradually disappearing. He blames this on the entry of what he refers to as 'foreign' varieties whose supply is controlled by multinational companies.

"Farmers started having to buy seeds every season, unlike before when they would freely exchange the same. Today, buying seeds has become the norm at the expense of Farmer Managed Seed Systems (FMSS), thanks to stringent laws that criminalize FMSS," says Mr. Kinyanjui.

In a bid to conserve potato varieties, Mr. Kinyanjui maintains more than 12 varieties, which he multiplies for seed. These varieties include *Shangi, Ndera Mwana, Kibururu, Nyayo, Stephen, Njeri, and Wanjiku.* He conserves the seeds both as an individual and as a Trainer of Trainers (TOT) under the Kiahiti B Farmers Group. His passion and commitment to saving and multiplying potato seeds have earned him the nickname 'potato encyclopedia' among fellow farmers.

A close up of some potato varieties which Mr. Kinyanjui multiplies

Through the Gilgil-based Seed Savers Network, he trains farmers from across the country on how to save and multiply potato seeds. "I want to ensure that the seeds I have reach every corner of the country and that the cultural potatoes will be preserved and passed to the generations to come, " he says.

His call to the government is to ensure the free exchange and sale of indigenous seeds among farmers, especially in the wake of climate change and food insecurity. The seeds, he adds, are affordable and easy to manage, especially because they are less susceptible to pests and diseases compared to commercial ones.

Mr. Kinyanjui further encourages young people to embrace farming, saying that it is not only profitable but also interesting. It is the responsibility of all, he notes, to contribute towards food security regardless of age. However, Mr. Kinyanjui emphasizes that food security is only attainable if FMSS is allowed to thrive.

Mr. Joseph Kinyanjui explaining about tomato seeds to farmers in Nakuru.

HOW DUTCH FIRMS ARE HAMPERING DEVELOPMENT OF FREE SEED SYSTEMS IN KENYA

Over the past years, there has been a push for the adoption of value chain development approach to the seed system, where the inputs are produced, processed and distributed by only specific actors.

Proponents of this approach have argued that it has potential to revolutionise agriculture because it enhances efficiency, quality and availability of seeds.

Most countries have backed this model through the creation of laws that govern the regulation, certification and distribution of seeds and planting materials.

Seed regulation

In Kenya, the Seeds and Plant Varieties Act regulates the production of all seed varieties and planting materials.

The law requires that all seed producers and distributors must be registered, certified and have specific licences to operate in the country.

The Kenya Plant Health Inspectorate Service (Kephis) oversees the implementation of the Act, through seed testing, certification and enforcement of the regulations.

Kephis has licensed a number of seed actors – some who pushed for the creation of the law – who have the financial and technological muscles to produce seeds, therefore, keeping the sector in the hands of a few.

Locked out local varieties

In the potato value chain, Dutch companies have dominated the production, processing and distribution of planting materials.

Sadly, they have locked out local varieties like *Ndera Mwana*, which are produced and distributed through the Farmer Managed Seed Systems (FMSS), limiting farmers' ability to grow diverse crops.

Such local varieties enhance genetic diversity in the potato value chain, allowing for resilient farming.

This is because, unlike imported Dutch varieties, *Ndera Mwana* is adaptable to the local environment, resistant to pest and diseases and its production propagates traditional knowledge in seed saving and breeding that is crucial in attaining food security as climate change effects unfold.

But *Ndera Mwana* and other local seed potato varieties cannot freely be integrated in the value chain because of the law that almost criminalises their use and distribution.

Stringent Conditions

The Act mandates that seed and other planting materials must be produced under specific conditions to meet certification standards.

So stringent are these conditions that they can only be met by the Dutch commercial seed companies, therefore, making it difficult for small-scale farmers who rely on FMSS to exchange and farm traditional varieties.

Unless local varieties are recognised and integrated in the value chain, there is a big risk of losing traditional potato varieties as the sector has been left in the hands of foreign multinationals.

Another area of concern is the payment of royalties to plant breeders when farmers save seeds and use them beyond subsistence production.

The payment, according to the law, is compensation to breeders for their investment as they have exclusive control over the propagation of the seeds and planting materials for up to 25 years

This means that commercial seed varieties developed by the big firms are protected and poor farmers must purchase new seeds each season rather than save and replant, an age-old practice that had stood the test of time.

The Act, therefore, inadvertently disenfranchises local farmers and the traditional seed system as it imposes penalties on those who do not comply with the regulations.

The law, which favours the Dutch firms, is certainly stifling the development of FMSS in Kenya by imposing regulatory barriers, promoting hybrid varieties over local ones, marginalising informal market, and focusing on formal systems over traditional knowledge and practices.

It is important to ensure that farmers continue to enjoy their rights to save, share and exchange seeds amid the promotion of the registered varieties.

Safeguard FMSS

We must safeguard the contribution of FMSS in the attainment of food security as it contributes more than 90 per cent of seed potato used in Kenya.

This should be done through the implementation of strategies that recognise and support the role of FMSS in maintaining genetic diversity and enhancing food security.

Kenya needs legal frameworks that recognise and protect the rights of farmers to save, use, exchange and sell their own seeds. This can be done through the amendment of the Act to provide exemptions from strict seed certification requirements for traditional varieties.

Communities further need to be given legal ownership and control over their local seed varieties and traditional knowledge and allowed to establish seed banks that serve as hubs for genetic diversity and inform future seed development.

Additionally, there is need to integrate farmer seed system into the national seed regulations and agricultural policies, ensuring that players receive resources, including training, as those under commercial seed systems.

Meanwhile, the Dutch companies that are largely controlling the Kenyan seed potato industry should integrate traditional varieties in the value chain development to ensure farmers enjoy a wider genetic pool, which is essential in building the resilient of the farming communities.

Give and take of Kenyan seed laws

Owing to the need to support FMSS, the Seed and Plant Varieties Act and Crops Act, 2013 should be amended. This is to ensure that farmers engage in seed production and their varieties are integrated in value chains as the government strives to transform agriculture from subsistence to agribusiness in line with Vision 2030.

Crops Act 2013 provides for scheduled crops and sets out certification requirements for different crops. For instance, potatoes fall under crops with breeding program under compulsory certification which shows that farmers' varieties cannot be integrated in the value chains unless they are registered and certified as stipulated by Seed and Plant Varieties Act.

However, the technical and procedural requirements for release of a variety are beyond the reach of most farmers thus disabling their efforts to have their varieties registered and integrated in the value chains.

Notably, Vegetatively Propagating seeds (VPS), Regulations 2023, and Access and Benefit Sharing (ABS), Draft Regulations 2024 greatly usher a new glimpse of hope to farmers by recognizing farmers managed seed system and farmers rights respectively. These two regulations are a milestone in developing FMSS and an indicator of a goodwill by the government to ensure full implementation of Article 11 of the Kenya Constitution 2010 and International Treaty on Plant Genetic Resources for Food and Agriculture.

The VPS Regulations provide for a farmers' varieties registration system outside the set Distinctiveness, Uniformity and Stability (DUS) criteria and provides for farmers varieties inventory separate from already existing National Variety List. These are enablers for farmers to engage in seed business for vegetatively propagated crops in Kenya.

The focus is now on the future and hoping that a section on farmers' rights in the regulations will enhance seed saving, sharing, exchanging and selling by farmers. It should be made clear that farmers will sell seeds by providing attainable standards to ensure they fully engage in seed business.

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