



ALLIANCE FOR FOOD SOVEREIGNTY IN AFRICA



STORIES OF SEED ACTIVISM:

JOURNALISTS FROM 14 COUNTRIES REPORTING PEOPLES
SOLUTION TO CORPORATE CONTROL OF AFRICA'S LIFE

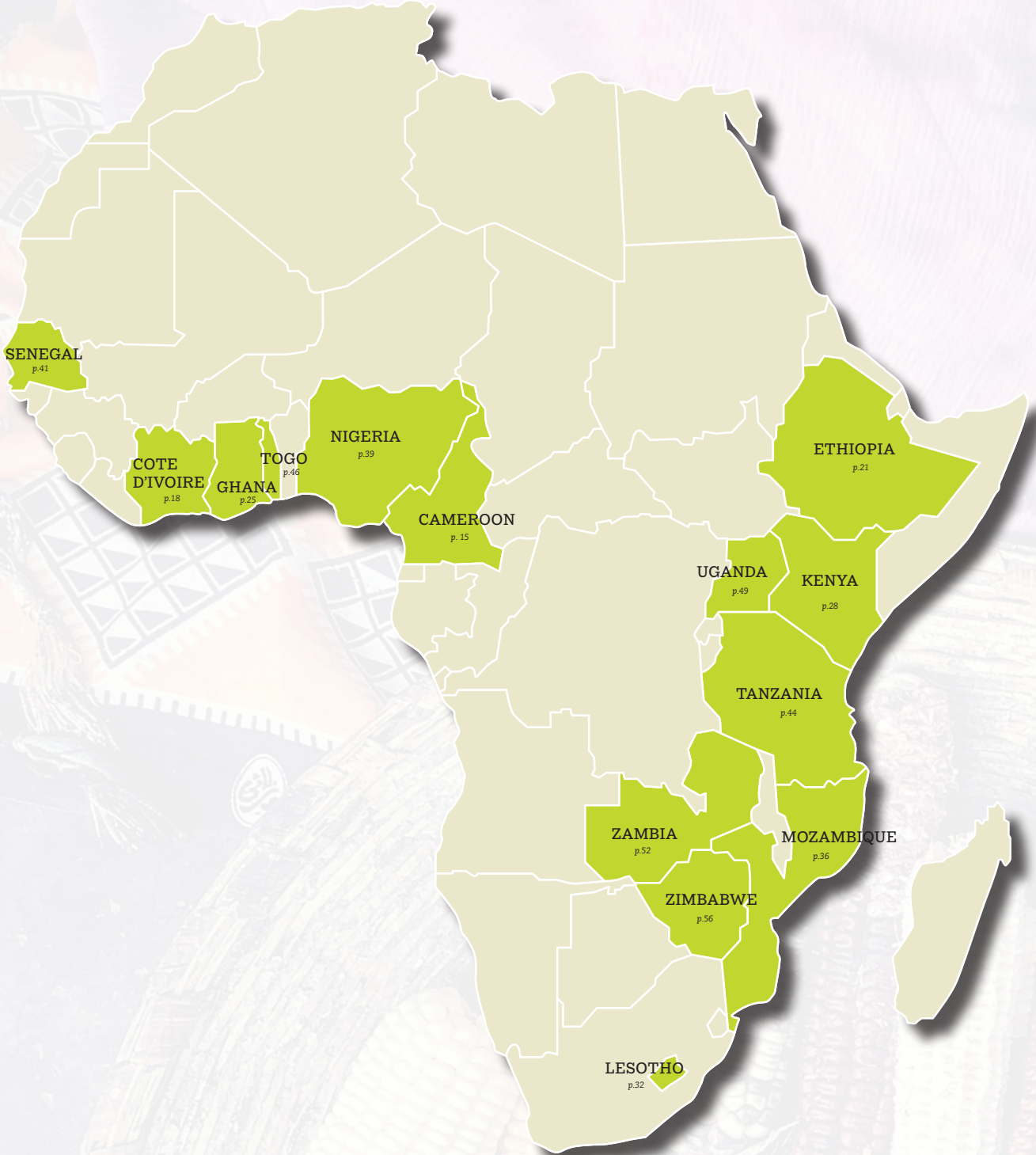


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Message from the General Coordinator



I remember visiting a village called Segno Gebeya in the Northern Part of Ethiopia. Segno Gebeya means a market on Monday. The local head of Ethiopian Organic Seed Action (EOSA) took us to a demonstration field near the market. EOSA has built a community seed bank there, and the field is a demonstration site for the seed bank. There were 106 varieties of wheat. 106 varieties, I could not believe it. What surprised me was the explanation given to us by a local farmer working with EOSA. He gave us their names, and also explained their cultural significance. Some of the differences between the seeds was not very evident to a city boy like me, but all were significant to the community. It made me realize, ‘what are these seeds without this farmer’s knowledge?’ His cultural knowledge gave meaning to what we were looking at.

Our seeds are our stories. In the heart of each seed is an extraordinary story of repeated experimentation, frustrations, success and innovations of our ancestors. It is mind-blowing to think about what has happened in the domestication of one single seed variety. Seeds are deeply tied to our spirituality. They are used as food, feed and medicine. All of nature revolves around them. We have songs, poems, ballads, plays, bedtime stories and proverbs celebrating our seeds. We have language to express their behavior. Our women are custodians of our seed. They have an incredible amount of knowledge on how to care and process each seed.



This story, this narrative, is threatened by another narrative. The basis of this other narrative is violence, greed and control. It denigrates our seeds and holds them responsible for the problems that we experience with our food systems. This narrative has no regard for science which shows that the productivity of our seeds can be enhanced through participatory breeding. It has been demonstrated that farmers and breeders can work together to produce better seeds. But the narrative of violence, with its money and propaganda machine, tells us that unless there is intellectual property right protection for seed breeders and unless we use seeds produced by companies, we will not have a future.

We have to fight this ever-deepening corporate capture of our genetic resources, facilitated by a global architecture of legislation treating seeds as private property instead of commons and upholding the rights of private breeders over farmers.

The journalists in this book give a fascinating story of African initiatives to protect farmer-managed seed systems. They give you hope, and they teach you ways of participating in this too.

Happy reading.

Million Belay, Ph.D.
General Coordinator,
Alliance for Food Sovereignty in Africa (AFSA)

Foreword



Dear friends,

As we enter the second year of a global pandemic, we must reflect not only on the multiple crises that beset our peoples and our continent, but also on whether we have done enough to tell the true story of seed on the continent and to reclaim what is rightfully ours. This story is embedded in our tragic colonial history: of land, seed, and cultural dispossession of our peoples, which continues unabated through neo-colonialism today.

Historically, seed co-evolved with peoples, landscapes, ecologies and whole societies and African food systems. Today, we are mired in ecological crises, yet, despite this - and against all odds - smallholder farmers and indigenous and local peoples still produce a significant amount of Africa's food. Continuing to manage their land in an integrated and holistic manner, they remain the custodians and caretakers of our agricultural biodiversity - the true conservationists of our priceless seed and traditional knowledge systems. They understand the value of nature as part of an integrated farming system, better than anyone else.

However, African smallholder farmers are facing huge pressure and threats. These include multiple climate and other shocks such as droughts, floods, pests, and pandemics. In addition, they are also adversely impacted by mining, deforestation, plantations, agribusiness expansion, war and conflict, corruption, despotic regimes, elitism, and never ending indebtedness on the part of our governments. This in turn is driven by "rogue capitalism" - global finance and investment flow and the way in which these operate in the world today. Taken together, these are destroying the lives of smallholder farmers,



rural dwellers and nature. More importantly, these forces are foreclosing the futures of Africans. Tragically, we are witnessing smallholder farmers being dispossessed of their land, seed, territories, ecologies, food and farming systems. Many are ending up as poorly paid and exploited labourers on commercial farmers. Others are ending up as cheap labour on mines and plantations where they work under the most miserable conditions. Yet others are being enticed into commercial farming, on the basis of false promises being made to them.

We are all aware that there is enormous pressure on nature to produce more food. Food production systems need energy, water, pollinators, fertile land, infrastructure etc. The interlinkages between nature and food production systems means that we no longer have the luxury of separating them. The multiple shocks striking the continent including COVID-19, offers us some valuable lessons in this regard.

Today, we are beggars, asking for scraps at the masters' tables for some reprieve, including exceptions in draconian International Union for the Protection of New Varieties of Plants (UPOV) style intellectual property rights and seed laws. Yet, there is no political will on the part of governments to ensure the legal recognition of the right to seed and fully implement farmers' rights.

In order for us to reclaim our rights we must explore a renewed understanding of the primacy of farmers' rights over private property rights, as integral and inseparable from a bundle of human rights. And that this is in turn integral and inseparable from the integrity of socio-ecological and life-supporting systems, more fundamentally. This requires pan-African solidarity and movement building towards shifting the narrative, shifting the paradigm, and shifting unequal power relations. We must decolonise, push back strongly against false solutions, and reclaim our diverse heritage and futures.

The African food movement has been a crucial force in pushing back against corporate power and imperial designs in our food systems, and defending the integrity of Africa's biodiversity, seed, land and smallholder farmers. However, the pushback against the onslaught on the continent requires more than a focus on agribusiness and food systems. Indeed, the food movement needs to broaden its understandings and concrete political activities to span the intersections between food systems; agricultural and mineral extractivism; conservation, biodiversity loss; financialisation/rogue capitalism; and debt and neo-colonial trade. The human and ecological liberation of the continent requires nothing less.

As part of this journey, we strongly advise you to read AFSA's new publication: "*Stories of seed activism: journalists from 14 countries reporting peoples solution to corporate control of Africa's life*". The booklet, a compilation of grassroots stories from across the continent, highlights the critical role played by community seed banks in buttressing local seed systems and economies, farmers' agency, food security and agroecology.

Happy reading!

Mariam Mayet
Executive Director,
African Centre for Biodiversity (ACB)



Executive Summary

Agroecology and seed diversity are vital sources of resilience.

BY CHARLES DHEWA

If agroecology, local seed systems, and indigenous livestock breeding practices in Africa were not resilient, they would not have survived the hundreds of years of infiltration from imports. Stories in this publication demonstrate how local seed systems continue to be a fundamental component of agroecology and African food systems.

It is clear that despite their claims, corporate seed systems have failed to address hunger, poverty, and malnutrition across Africa, mainly due to a profit motive. As a result, communities have taken matters into their own hands by building strong seed banks at community level while continuing the culture of exchanging seed that has been reliable for generations.

Indeed, the impacts of COVID-19 across the last year has undoubtedly clarified the value of communities producing nutritious food within their local economies.

Community seed banks becoming permanent institutions

Although African agricultural policymakers are more interested in working with local and international private seed companies, local communities have continued to develop and safeguard their own seed banks. It stems from a realization that dependence on commercial seed and external input companies makes agriculture too expensive for the majority of smallholder farmers. When large numbers of farmers lack self-sufficiency and must depend on government input schemes, it is a clear sign that the system is broken.

Community seed banks (CBS) are a common pool resource anchored on the traditional African culture of exchanging seeds in more inclusive ways.

In addition to introducing a seed policy in the early 1990s, Ethiopia has pioneered the CBS system. Currently, there are over forty CSBs in different agroecological zones of the country, built by NGOs and government investments. More importantly, the system has been adopted as a national strategy to support the agricultural sector by providing collective solutions to production challenges faced by farmers. Managed by associations formed by farmers, who are committed to using their indigenous knowledge in diversified food production, the CSBs are structured to provide solutions to the frequent seed shortage by ensuring easy access to stocks of diverse crop types.

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The CSBs also reserve grains for households facing food shortages in times of unexpected shocks. Going a step further, they complement the national gene bank's conservation effort to pass diversified crop genetic resources to the next generation. In cases where farmers want to work with financial institutions, CSBs are also an ideal form of collateral.

Across Africa, CSBs go by different names and forms, evolving from the traditional African culture of saving and exchanging seed at a community level. The story from Ghana shows how the use of farmer-saved grains like maize, cowpea, and chilli pepper are every day across many ecological zones of the West African nation. The fact that these seeds are characterised by low germination percentage, poor growth, low yields, and disease has prompted policymakers to reform the commercial seed sector's institutional framework as part of enabling farmers to access so-called improved varieties. However, the question that has not been asked and answered is: what do farmers and communities lose by embracing so-called improved varieties?

Despite efforts to address governance challenges surrounding the seed sector, they remain complicated and unresolved. Most African countries continue to face a chronic lack of varietal diversity. A critical question is how do we ensure the private

sector does not push a profit motive ahead of an agenda that ensures the availability of sustainable seeds?

There are numerous challenges, but smallholder farmers' limited involvement in setting breeding priorities remains at the heart of the issue. It is compounded by under-resourced public regulatory bodies and weak public extension systems that promote improved varieties.

Uganda reveals success with a local community seed bank system in the Ongake community. They have been preserving and multiplying seeds for easy access for smallholder farmers during the farming season. They provide hundreds of different varieties of indigenous food crops that can withstand sub-Saharan Africa's harsh climates in ways that improved seeds cannot.

The culture of seed sharing is also prevalent in Zimbabwe. Agroecological work in the Chimanimani district includes promoting farmers' varieties that can withstand tumultuous weather. Local farmers save successful seeds for reuse and share them with their communities. Thriving through agroecological farming, these seeds are resilient in the face of climate shocks such as drought and flooding.

Despite success of agroecology and grassroots initiatives, NGOs have been mixing and matching imported and indigenous seeds in Africa for decades. Like Community Technology Development Organisation (CTDO), some have attempted to form a private company but are struggling to compete with commercial seed companies with more promotional resources that mislead farmers toward hybrid seed.

Surging confidence in indigenous ways of storing seed

In Kenya, indigenous knowledge and methods go hand in hand with the CSBs. A farmer shares her method of strategically dangling maize cobs, which have been selected for seed, above a traditional firewood stove. The cobs are kept dry and preserved by the gentle heat and soot from the fire below. In plastic jerry cans, she stores sorghum and millet seeds dusted with ash from the fire to conserve them ahead of the next planting season.

There is also no doubt that waning confidence in foreign seeds is triggering a resurgence of indigenous seed exchange networks. The preserved seeds are regularly exchanged informally among farmers seeking to maximise yields, primarily through crop rotation. Buoyed by promises in the newly adopted Kenyan Constitution and shifting preference for indigenous foods, smallholder farmers across Kenya are becoming more active in creating their own seed conservation and exchange networks and reducing reliance on a few exploitative commercial seed companies.

Private seed companies are showing interest in indigenous seed too. For instance, an official from a large seed corporation in Zimbabwe confirmed learning a lot from indigenous seed systems. There is likely a silent overlap between formal and informal seed systems waiting to be discovered, given

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Lesotho is an excellent example. Local seed suppliers respond to customers' preference for locally grown seed instead of imports. In fact, most indigenous farmers from the Basotho district have mastered the art of passing on the best sorghum seed from one harvest to another. They seem to be getting better each time despite the change in climatic conditions. It is something that commercial seed companies could very well learn from.

Combining individual efforts with collective efforts

In all the stories, there is a reoccurring theme of individual achievement benefiting from collective efforts. In Mozambique, there is an awakening to the value of land and the benefits of belonging to an association. In Mahotas' green belt, farmers understand how important access to land and land security is to their ability to continue practising agroecology. Support from

local NGOs has taught vital skills in securing land rights and reducing conflict.

Limited market for agroecological and organic products

A common theme is the small size of the market for agroecological and organic commodities. Farmers in Mozambique lament that customers prefer the beauty of chemically produced produce over healthier agroecological produce. It has constrained the demand for organic seed.

Seed governance in favour of agroecology

How can we tailor seed governance in favour of agroecology? It is a crucial thread joining all the stories as seed governance remains a contentious political issue, often hampered by state control and the complicity of international corporations.

While the tradition of keeping and exchanging seeds is part of Senegalese food production systems, there is still the need to conserve non-cultivated biodiversity. In 1997, a seed catalogue was established, but it did not consider all cultivated and non-cultivated biodiversity. It is limited to a few commonly used crop species. This is a significant issue. In all African countries, no one takes care of non-cultivated biodiversity, although it is a bigger source of food for the majority at the grassroots. It may be easy to preserve cultivated small grains and vegetables but who is taking care of wild fruits and vegetables that are an integral part of African food systems and immunity?

In Nigeria, ignoring local seeds is disadvantaging farmers. While Syngenta and Monsanto play considerable roles in seed distribution in Nigeria, Dupont, Dizegoff, and the IITA have also been known to promote GMO seeds at the detriment of local seeds. The result is a legal suit filed by civil society organisations against governmental agencies for their negligence in allowing the rise of GMO crops. As it stands, with its open acceptance of GMOs, Nigeria remains at a crossroads in achieving seed sovereignty.

In Uganda, the story is very different. In August 2019, President Museveni declined to sign the National Biotechnology and Biosafety Bill 2012 into law, arguing that it is essential to safeguard the ordinary Ugandan. The Bill seeks to provide a regulatory framework that facilitates the safe development and application of biotechnology, research, and development of GMOs. In this way, President Museveni's stance is undoubtedly progressive and hopeful for agroecology's long-term promotion.

In Tanzania, the lack of credible seed governance shows up in the proliferation of fake seeds. The private sector relies heavily on the government for support and guidance. However, government agencies lack the resources and capacity to regulate the market effectively. According to Tanzania's former Minister for Agriculture, Japhet Hasunga, counterfeiting in Africa's agricultural input sector takes multiple forms, from imitation branding and packaging to partially diluted or entirely fake products.

In Togo, civil society organisations are leading the fight for indigenous seed through championing governance issues. Some support producers through advice and technical advice, while others offer financial support to assist farmers.

Support from civil society organisations has amplified farmers' voices across the continent. In Uganda, the National Chairperson of ESAFF, Hakim Baliraine, has vocally criticised the national seed policy as a sponsored yet deliberate policy to favour conventional agricultural seedlings against agroecological seedlings. He is particularly critical that the government did not consult smallholder farmers or their networks during drafting.

Zambia is also grappling with seed governance and Plant Genetic Resource policies, and experts lament the lack of protection for the informal sector. If influential civil servants are struggling to enact change, it seems unlikely that disadvantaged farmers can tackle these issues without support.

According to Frances Davies, co-ordinator for Zambia Alliance for Agroecology and Biodiversity (ZAAB), efforts to develop seed policies in the 1990s have been left on the wayside. Any contemporary legislation does not cater for seeds concerning small-scale farmers in any real detail.

Across the border in Zimbabwe, policies remain in favour of formal seed companies. While the government acknowledges the importance of farmer seed systems, it does not actively support them. On the other hand, public funds routinely subsidise hybrid seeds and synthetic fertilisers.

When asked about Zimbabwe's policy on seed and farmers' rights, Dr John Basera, the permanent secretary in the Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement, did not respond. Having come from one of the biggest seed companies into government, there is no doubt he supports corporate seed systems. It may not be coincidence that Dr Basera's former employer has benefitted from the government's Pfumvunza programme.

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Conclusion

Tying agroecology and seed systems are commendable and a winning intervention across Africa. It is clear that community-based seed systems are not just structures but represent a particular world view that should be nurtured and sustained. We must now ask ourselves: how can we use digital technology and platforms to process wisdom that is integrated into most farming communities and food production zones? How can we protect innovations like community seed bank systems from abuse, co-optation by seed companies, manipulation, and marginalisation while helping them evolve into resilient institutions?

Special interest groups like private seed companies will always attack inclusive models like community seed banks and farmer saved seed systems to protect their top-down commercial power. The onus is on AFSA, CSOs, and community-based organisations to oversee, support, and defend these institutions and a culture of exchanging seed that legitimately brings forth and empowers local farmers' knowledge and wisdom.

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AFSA and similar movements have a critical role in shifting the way conversations about food systems are currently designed and convened. This will help farmers and ordinary people engage more deeply in what is going on in African food systems and generate long-term benefits. The fact that communities and farmers at individual levels continue to demonstrate confidence in agroecology and seed systems shows potential for bringing the wisdom of the past and voices from the margins into the conversation. COVID-19 has demonstrated that we share a lot in common with each other and with nature.

It is crucial to begin imagining forms of effective communal self-governance that can best utilise the gifts of farmers, communities, herbalists, traditional leaders, and local artisans while maintaining their sovereign thoughtfulness and values. That can only happen if farmers and communities are empowered to shift the balance back from predominantly top-down, outside-imposed, projected development to development

that is co-created with the people whose lives are affected by deformed food systems. As shown in all the stories, locally-driven approaches allow farmers and local communities to act upon institutional processes like community seed banks, which provide the necessary scaffolding for systematic knowledge capture and interchange for everyone's benefit.



Cameroon

Cameroon celebrates sustainable agriculture at nation-wide event

BY LEGER NTIGA

Cameroon has just hosted a special edition of the Cameroonian Days of Excellence in Scientific Research and Innovation. Due to the coronavirus pandemic, it was a spread-out event, organised in the different regional capitals; Douala in the Littoral, Abong-Mbang in the east, and Bamenda in the north-west. Here, local farmers and agricultural experts came together to test the country's developments in promoting seed production and agroecological farming techniques.

At the forefront of seed governance in Cameroon is the Institute of Agricultural Research Development (IRAD). During the conference, IRAD exhibited Artemisia seedlings, Artemisia herbal tea, 100% organic coffee, cocoa butter, cocoa caramel, cocoa nibs, macabo chips, rice and turmeric biscuits as well as fruit tree seedlings such as mango, papaya, avocado and orange.

The common denominator of all these products is that they are all grown with improved seeds with no chemicals added. Most of them are being developed in experimental environments, including systems that integrate fish farming and

above-ground plant cultivation.

Similarly, a fodder silage system cultivates maize, sorghum, bean and soya bean seeds, coffee and cocoa plants. Here, a system of intercropping means cocoa pods help to enrich the soil for the benefit of yam seeds. Other crops include numerous fruit varieties, tubers and cuttings of cassava and pepper, and banana trees.

These cultivation approaches, which aim to enrich the soil, are being popularised to increase yields in a country that was once proud of its food security.

“Cameroon’s agricultural policies aim to regain one of our greatest achievements from the times before the security crisis,” says IRAD Director, Noé Woin. “Our goal is to ensure every citizen has their own garden to meet their food needs. For this reason, IRAD is working daily on a series of improved seed varieties. In combination with no chemicals, these seeds will then be made available to distribution segments where farmers and producer groups can obtain them for large-scale cultivation.”

In 2005, Cameroon created the National Seed Council by decree. The body is responsible for promoting and organising a reliable seed sector and stimulating its development. The Council was also established to regulate and control the registration of new varieties, protect farmers from the sale of counterfeit seeds, and facilitate the country’s production of quality seeds. For this reason, the Council is backed by the National Agricultural Investment Plan, which seeks to develop research on improved high-yielding varieties and boost the competitiveness of farms.

From this perspective, the Ministry for Scientific Research and Innovation (MinReSI) is responsible for seed regulation and various development for different crops. While the wider formal seed sector comprises of public entities, agricultural institutions, non-governmental organisations, small businesses, and private sector companies engaged in various seed-related activities. Some of the most dynamic seed-producing cooperatives are located in the western and north-western regions. They have good economic performance and democratic governance structures, although the cooperatives’ business model is generally not robust. These various private and state bodies supervise the farming world. They highlight the importance of sharing knowledge and skills through regional meetings to promote scientific research know-how.

“We are proud to know that producers have come to understand that the use of chemicals for productivity purposes is totally harmful to our agriculture. Thanks to IRAD, we have set up organic enrichment units that the technical teams in the field are passing on to the farmers,” says Minister of MinReSI, Madeleine Tchuinté.

On the grassroots side of the initiative, producer cooperatives are sublimating approaches that have improved yields and product quality.

“We are the maize production cooperative of Lékié and, thanks to improved cuttings seeds, our land has grown. So have our yields,” explains Jean Oscar Noah, the cooperative’s chief engineer. “Above all, we now use machinery that protect our working environment and they do not deteriorate because everyone uses organic fertilising materials. This means that we can also practice agroforestry on large parts of our land, using these techniques to give shade to plants which need it.”

In fact, due to the health crisis of 2020, IRAD has had a surge of visitors wishing to taste their most popular produce, Artemisia’s herbal tea. This “magic” plant is part of Cameroon’s endogenous solutions to the COVID-19 pandemic and the ongoing fight against malaria. It is full of vitamins and is said to boost the immune system - vital during a health crisis.

Following on from such initiatives, in July 2020, Prime Minister Joseph Dion Ngute declared systems that would allow national producers to promote the label “Made in Cameroon”, to generate pride and awareness of homegrown produce.

In addition, the sector is open to moving in a more eco-friendly direction, with home-grown solutions to agricultural inputs as well.

“Cameroon has made a sustainable contribution to the promotion of local production of fertilisers and seeds from national research institutes,” says Rolande Ngo Issi, the President for the Cameroonian Association for the Defence of Consumer Rights. “The aim is to improve the production of the goods and services that weigh most heavily on the balance of trade, such as rice, maize, wheat, fish and milk.”

In the same vein, the project to support the development of agricultural sectors plans to increase onion production in the coming years. To achieve this, families in the project areas in the country’s north have received 90000 tonnes of bulb onions. The other expected results are improved conservation, increased resilience and improved technical and organisational capacities of producers. Most importantly, improving the nutritional and food security situations of small households remains an essential part of the scheme.

The Cameroonian public authorities are determined to remind the national and international community that science, technology and innovation are key to creating wealth, jobs and the promotion of sustainable development in agriculture.



Côte d'Ivoire

“Farmer-managed seed systems are part of our cultural heritage”; advocates for indigenous seeds seek recognition in Côte d'Ivoire.

PAR BY DEIDRI ANDERSON

The regulatory framework in Côte d'Ivoire focuses on conventions obtained through a certification process. However, initiatives are being taken to recognise and structure traditional seed systems and give producers access to quality seeds.

Farmer seeds and agroecology are the basis of a healthy agricultural production system

Seeds form the basis of the agricultural production system. It is the first link in the agricultural food chain. Their management and conservation are determined by the national policies that govern them. In Côte d'Ivoire, two regulations have strongly influenced seed policy and were established in 2008 to harmonise the rules governing quality control, certification, and marketing of seeds.

It is these regulations that the country enforced in 2013 through the creation of the National Seeds and Plant Varieties Committee (CONASEM) to monitor the seed certification process across Côte d'Ivoire.

However, these regulations do not apply to freely available farm-saved grains and seeds or to genetically modified organisms. Indeed, the preservation of farmer-managed seed systems (and their autonomy) is crucial to avoid the hampering of farmers' seeds. There is a need to encourage these practices, which are not envisaged in national policy.

"We are in a peasant seed system that must be recognised and that must be given all the support it needs. It must be better structured, so that there is a controlled system that guarantees the quality of seeds, even if we don't reach the certification stage," says Pauline Zéi, director of Inades Côte d'Ivoire, a civil society organisation that supports small producers and encourages family farming.

Sector-led policies limit opportunities for rejuvenation

The aim is to facilitate producers' access to quality seed outside of the lengthy and costly official certification process. Pauline Zéi assures that Inades is working hard to meet this challenge.

"We want to develop what is called farmer seed entrepreneurship, to set up seed certification mechanisms by peers within a community who have the tools to guarantee that a particular seed producer is actually making quality seed available," she explained.

"The policy in Côte d'Ivoire is a sector-based policy," she continued. "We have the cotton-cashew sector, the cocoa-coffee sector, the palm oil sector and it is up to each sector to organise itself to perform. So the sectors, according to their means, can set up services to obtain quality seeds. We mainly provide support, but we don't have much room for manoeuvre. Everything is

In Côte d'Ivoire, most of the seeds in circulation are farmers' seeds, says Jean Essé Kouadio, Deputy Director of Seeds and Inputs at the Ivorian Ministry of Agriculture and Rural Development.

According to our estimates, farmers' seeds account for

80%

of the seeds in circulation.

But these seeds are not always good quality and the FAO estimates that

40%

of productivity is directly related to seed quality.

managed within the sectors. I don't believe that industrial seeds are an obstacle to the development of farmers' seeds, since farmers' seeds represent 80% of the seeds in circulation in our territory today."

Father Vincent de Paul Worou, director of the Tshanfeto agroecological farm in Abidjan, argues that for the permanent availability of farmers' seeds, there must be official seed banks and relevant training on agroecological practices.

"To go 100% organic, we must no longer use chemical pesticides, but we can use natural pesticides".

Agroecological farming, which does not use chemical inputs, allows small producers to improve their incomes.

"Rural development is about enabling 'less well-off' farmers to make a decent living without having to buy the chemicals and fertilisers that increase their expenses and therefore affect their income," says Jean Marie Niaka, a farmer in Daloa, in central-west Côte d'Ivoire.

The threat of certification and intellectual property rights

The real challenge is the property rights of seeds fostered by official certification. It is precisely this corporate control of seeds that Jean-Paul Sikeli, Secretary-General of the Coalition for the Protection of African Genetic Heritage, denounces.

"The lobbies are the very ones pulling the strings in the vast movement to reconfigure seed policy frameworks and regulations in Africa. Their actions are aimed at getting states to recognise only commercial seeds and to criminalise farmer seeds."

He sees many threats to the EU's seed exchange system and the conservation of traditional genetic resources. It generates competition

between conventional and imported seeds that puts farmers' seeds at risk of loss and transforms food systems into places where the fast food offensive is a bonus. Worse still, there are regulations that threaten the primacy of farmers' seeds by criminalising farmer varieties, compounded by biopiracy that legalises the theft of local genetic resources through intellectual property rights.

Ensuring food security

As 70-80% of food is produced by smallholder farmers in Côte d'Ivoire, preserving peasant seed systems by promoting family farming and agroecology ensures food security.

"Farmer-managed seed systems are part of the cultural heritage of farmers and communities," explains Sikeli. "To preserve them is to ensure food security and food sovereignty for farmers and communities. To take them is to expose them to famine and poverty through dependence on seed companies. By losing these seed systems, we also lose the knowledge that is associated with the use of local seeds, in terms of farming practices, cultivation practices and culinary knowledge."

Nadège Gahy, Project Officer at Jeunes Volontaires pour l'Environnement, agrees.

"Peasant agroecology is more autonomous and local agriculture is a tool for resilience that builds food sovereignty for the people."

Côte d'Ivoire's laws recognise conventional seeds to the detriment of farmers' seeds that are not promoted and popularised by national policy. But more and more civil society organisations and grassroots farmers cooperatives are leading initiatives for the protection and conservation of indigenous seed varieties.



Ethiopia

Community Seed Bank: A Climate Change Adaptation Option

BY ABEBE HAILE

Ethiopia is one of eight Vavilovian Centers of Diversity, a distinction given to regions that first developed and later disseminated some of the world's most important domesticated crops. The country is one of the breeding grounds of primordial agriculture with a vast cornucopia of native crop genetic resources and associated community indigenous knowledge and innovations.

When established in 1976, the Plant Genetic Resources Centre of Ethiopia (currently the Ethiopian Biodiversity Institute) was the first gene bank in Africa and the first 'living seed bank' in the world. Unlike the global seed vaults then, the Ethiopian gene



bank took the initiative of partnering with local farmers to store tens of thousands of seed varieties by keeping them alive and growing in the field.

For nearly five decades, the Institute continues undertaking systematic crop germplasm exploration. Their collection and conservation activities for sustainable use of genetic resources include cereals, pulses, oil crops, root and tuber crops, spices, stimulates, fruits, flowers, vegetables and industrial crops.

It is generally recognised that genetic diversity of crops is essential to increasing productivity and economic returns, make farming systems more stable and sustainable, reducing dependency on external inputs and intensifying food security.

Studies also show that genetic diversity in crops is required to sustain genetic improvement for polygenic traits and to make the agricultural system more resilient to climate-induced events or other environmental shocks. However, direct and indirect pressures such as demographic change (population pressure), displacement of local varieties by other crops /improved varieties, shift to market-oriented crop production, pests and disease, and drought can affect the state of crop diversity.

“The green revolution that started with the view of feeding the poor led to monopolisation of the world’s food resources by a few multi-national corporations,” says Regassa Feyissa, a genetic resource expert.

He points out that farmers, especially those in colonised African countries, are highly exploited to the extent that they have lost their native crop resources. Likewise, the introduction of a commodity production system into Ethiopia’s food production system has eroded the country’s crop genetic resources.

“Although it is the smallholder farmers that continues to produce food and conserve crop and plant species, support and incentive has long been in favour of large-scale commercial commodity farming. So, due to lack of development investment, our farmers are pushed to lose their local crop genetic resources and increasingly become seed insecure,” Feyissa explains.

Yet, in the late 1980s, Ethiopia was among the first to raise the issue of farmers’ rights including the right to save, use, exchange and sell farm-saved seed and the right to protect traditional knowledge of plant genetic resources for food and agriculture. And, in the early 1990s, the country became a pioneer of the Community Seed Bank system (CSB).

Currently, there are over forty CSBs built-in different



... CSBs are structured to give solution to the frequent seed shortage by easy access to stocks of diverse crop types. ... they reserve grains for member households facing food shortage in time of unexpected shocks.

agroecological zones by NGOs and government investments. Community seed banking systems are considered a national strategy to support the agricultural sector by providing collective solutions to production challenges farmers face.

Managed by associations formed by farmers committed to using their indigenous knowledge, the CSBs are structured to give solution to the frequent seed shortage by easy access to stocks of diverse crop types. In addition, they reserve grains for member households facing food shortage in time of unexpected shocks.

The CSBs are complementing the national gene bank's conservation effort to pass on diversified resources to the next generation by preserving germplasm samples of local crops.

Feyissa says that the banks hold particular importance for building adaptation capacity of resource-poor farmer households who are vulnerable to climate change.

"The CSBs offer access to varieties of locally adapted and short maturing sequential crops

as alternatives. Their stock diversity enable farmers to replant their farm plots when the first planting fails and strengthens the resilience capacity of farmers to climate change induced shocks."

By design, seeds are the only working capital of CSBs. This is to respond to the challenges smallholder farmers encounter when trying to get access to loans. The banks provide seed loans for which a borrower is only required to repay in-kind with some increment right after harvest.

The interest — on average, 10% — is intended to strengthen the banks seed supply service capacity and accommodate new beneficiaries rather than designed of profit.

Adding on the practical importance of the Ethiopian community seed banking system, Regassa also noted that by growing seeds stored for conservation, the system enables farmers to regenerate and restore once lost on-farm crop diversity.

"In the East Shoa Zone of the Oromia Region more than 70% of the wheat fields are now

covered with improved native varieties. Twenty years ago, the percentage of native crops in the locality was barely 5%. Especially after the famine in 1980s, most of the farmers varieties were lost, following which new breeds remained dominant for a long time. But now, the CSBs make it possible to get the diversity back.”

Feyissa argues that large-scale farming and promotion of improved seed and intensive chemical and synthetic agricultural inputs usage does not bring about the desired changes in the sector. Instead, it makes the country more reliant on imported and aid foods.

His argument is based on the fact that the country’s agroecological environment, which varies every few kilometres, places diversity at the core of traditional agricultural practices, with great success.

He believes that due to the deteriorating food security situation in the country, the government decided that input-intensive agriculture was the best option for productivity. But the decision came with the inevitable consequence of environmental degradation. Worst, it further pushes smallholder farmers towards poverty and a “moral slavery.”

“Food security is when the farmers always have crops in their fields to harvest. It is when they have enough seeds to grow the next harvest. Diversified maize varieties have existed for the last 500 years in Ethiopia. But, now they are

replaced by a single formal variety. Imported wheat breeds are widely planted while we still have much more nutritious local varieties to use. It just needs investment to develop the resource,” he explains.

Also optimistic is Laureate Melaku Worede, a renowned gene and crop scientist who played a significant role in establishing the national gene bank.

“Ethiopia’s genetic resource is diverse in order to fit in different agro-climatic zones and environmental changes. Whereas the western multi-national companies might have drought resistant or improved seed varieties suitable for a specific area. It can work for some time but its sustainability is questionable,” Worede explains, talking to SBS radio Amharic program.

He also referred to the strategic move to a western industrial agriculture model of single commodity bulk production as a means to food security as a “wrong interpretation.”

“Production should always be diverse and take into account nutrition capacity, commodity varieties for household use and market and seed,” Worede notes. He advises the country to build more CSBs and strengthen the work, including the national research institutions effort, by policy packages for farmers to easily access quality seeds and agricultural technologies.



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Ghana

“Only our indigenous seeds can stand the test of time”: how farmer-managed seed exchange systems can combat food insecurity in Ghana.

BY ROGER A. AGANA

Agricultural lands are becoming more acidified, making them less fertile and causing a drop in yield. It has resulted in periods of scarcity, even famine. Resolving this crisis is an urgent priority for the survival of humankind.

Agroecology and access to quality seeds present a sustainable solution to restore soil fertility and increase yields while preserving biodiversity. Agroecology considers the need to rebuild local food systems to encourage vibrant local cultures and economies.

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In recent years, agroecological farming has seen a revival in response to the many challenges facing agriculture globally. In the current context of mitigating climate change and promoting global food security, there is a desperate need for resilient seed systems that protect seed diversity and enhance food security.

Most of our farmers continue to depend on farm-saved seeds and seeds from local markets, often maize, which is not a sustainable way of achieving increased agricultural productivity.

High-quality seeds are the basic unit of plant propagation. It is fundamental to increasing food security and improving livelihoods. Quality and certified seed usage and matching applications of other simple agricultural technologies would lead to higher crop yields and enable Ghana's agriculture to play its food security role more creditably.

Community-based seed exchanges have a history of success

In Ghana, some small-scale farmers have been selecting, saving, and exchanging seeds for generations. They have been developing, conserving local varieties, and continuously selecting seeds with a wide range of characteristics, and using seed preservation and storage techniques passed on for generations.

The use of farmer-saved seeds — like maize, cowpea, chili pepper — in Ghana is common across many ecological zones. These seeds are characterised by low germination percentage, poor growth, low yields, and are disease and

pest prone.

Domination of hybrid and foreign seeds hampers access to agroecological farming

However, Ghana's current seed industry has deficiencies throughout its entire value chain that will require a series of necessary adjustments from both the government and the private sector.

Henry Fordi is an agroecological farmer. He specialises in zero-budget natural farming: a type of agroecological farming mostly practised in India. Instead of chemical inputs, zero-budget natural agriculture promotes the use of local materials such as cow dung, cow urine, flour of pulse, water, and soil to promote the fertility of crops.

This type of farming allows him to grow more than ten crops on the same piece of land. According to Fordi, it is a challenge to get seeds for this type of farming in Ghana.

“Most of the seeds I get are hybrid which I do not recommend. You can't save hybrid seeds and use them again so I have been using the seeds I brought from India for the past 2 years now. I fear it will lose its viability soon. Because of this, I am redesigning the model to suite the ecological zone I live in.”

He added that if farmers have access to enough good quality seeds, they will grow healthy plants and enjoy food sovereignty.

“What you put in the ground is very important. You cannot put weak seeds into the ground and expect to have abundant harvest. It is good

New seeds cannot be reused, creating dependence on seed producers and requiring fertilisers to grow, which puts a constant financial burden on farmers.

to use our traditional seeds but I think more research needs to be done to improve them. If local seed availability was improved, farmers would spend less and money buying seeds every year. As a farmer, I have much regard for seeds produced in Ghana. I use the Legon-18 variety of chilli pepper and it's very good. I strongly believe that our seed breeders must be equipped to do more."

Foreign seeds struggle to adapt to Ghanaian climates, making farmers vulnerable to failed crops

William Nachina, a trained agronomist, says foreign seeds have flooded the Ghanaian market because they tried under test conditions and have been able to deliver yield expectations. He said some farmers try to harvest these seeds, but unfortunately, they do not do well because of how they are produced.

"Most people prefer certified seeds. The multinationals who bring seeds into the country do a series of trials in the various regions to see how the seeds will fare. There usually do two types of trial. With the improved practice, qualified agronomists normally do the trials to make sure the plants get all that it needs to grow and yield well. The farmers practice is where they give the seeds to farmers to try, just like any ordinary seed. They are allowed to plant it whichever way they want. At the end the two results are collected and compared. A written report is done."

The seeds that generate the most generous yield are generally considered the most successful and pushed into the market.

However, the longevity of those seeds and the fact that they are often prone to diseases and cannot withstand the climate's harsh weather conditions are essential factors that are not taken into consideration. Improved seeds may give impressive first results, but they are not sustainable nor cost-effective to a small-scale farmer.

Agroecology experts know that indigenous seeds are the answer

Constance Akwensi Selassie, an agroecologist and a member of Food Sovereignty Ghana, agrees. He believes that agroecology can be more effective if we have quality and improved indigenous seed. New seeds cannot be reused, creating dependence on seed producers and requiring fertilisers to grow, which puts a constant financial burden on farmers.

"Unfortunately, most of our seeds are imported and some of these imported seeds cannot be grown again after harvest. Only our indigenous seeds can stand the test of time. Therefore, we have to promote indigenous knowledge and production of seeds".

Agroecology and sustainable seed systems are the way forward for Ghana's agricultural system, he says. The government must invest in agroecology by supporting farmers and organisations who develop seed sustainable programme, especially at the local level.

"Agroecology is the future. It is a healthy aspect of working within nature and compensating for all the damages that has been caused."



Kenya

**“Foreign seeds do not do well in local conditions”:
Kenyan farmers rally to save indigenous seed and food systems.**



BY ALLAN ODHIAMBO

Hanging from the sooty rafters of Alphine Agonda’s tiny kitchen are close to four dozens maize cobs tied by their leaves in bunches.

Strategically dangled above traditional firewood stove, the cobs are kept dry and preserved by the gentle heat and the wafts of rising smoke from the fire below.

In one corner of the kitchen, next to an old wooden cupboard, stand three plastic jerrycans filled with dried sorghum and millet seeds. They have been dusted with ash from the firewood stove to conserve them ahead of the next planting season.

For peasant farmer, Agonda, in Kadawa village, Kisumu County, this has been her

tradition for close to 20 years now, and she does it with relish.

“What you see here is from the best of the best crop harvested from my farm. Whenever I harvest, I carefully select the biggest cobs of maize and preserve their seeds for planting in the next season because they are most suitable for my land.” Agonda points up gleefully to illustrate her point to the large cobs, slightly discoloured by the smoke rising from a traditional cooking stove below.

Informal networks of smallholder farmers share knowledge and seeds while shunning foreign crops.

Agonda is not alone in this practice. Many other peasant farmers in the area, indeed the rest of the country, are increasingly opting to preserve seeds of crops resilient to the changing and unpredictable weather conditions.

“The seeds sold to us by commercial vendors fail us because they are never best suited for the farming conditions here,” says Pius Ong’adi, a peasant farmer in Obambo, Seme in Kisumu County. “I prefer planting seeds from crops that have performed well here rather than introduce new foreign crop seeds that may not work well with the local conditions.”

The preserved indigenous seeds are regularly exchanged informally among farmers seeking to maximise yields, primarily through crop rotation.

“Seeds of some indigenous crop have become rare and we can only find them among ourselves as smallholder farmers. We have learned to exchange seeds so that you can always find the variety you want for different seasons,” Ong’adi says.

Government bodies ignore local farmers’ advice at their own peril as they shift their focus to commercial crops.

Though these farmers have found success in their indigenous seed preservation and exchange, their efforts have primarily gone unsupported by the State despite the rising threats of climate change.

The government’s focus and support budgets have been directed at promoting hybrid or improved seeds sold through formal commercial channels. Even basics such as affordable agricultural extension services are no longer available to the smallholder farmers, most of whom lack professional knowledge on ecology and plant genetics.

The effect of this has been a steady erosion of indigenous crop and seed varieties as aggressive commercial companies push for the adoption of hybrid seeds.

“The hybrid seeds have put pressure on our indigenous seeds and food culture but we won’t give up. The medicinal and dietary value of our indigenous crops are more superior than that of the hybrids peddled to us,” Agonda says.

“*We have learned to exchange seeds so that you can always find the variety you want for different seasons.*”

She adds: “Most of these hybrids cannot stand the changing climate patterns yet they try to force them on us. To me, the hype of improved commercial seeds is all about money because apart from buying the seeds you end up buying other add-ons such as fertiliser and herbicides which you don’t need for most indigenous crops.”

Reports show that indigenous crops are dying out due to reduced use.

According to a recent assessment by the National Genebank of Kenya, the diversity of modern varieties of crops is rising, but that of traditional varieties is declining. It shows that maize has the highest diversity of current varieties, followed in decreasing order by tea, common beans and pyrethrum.

The dip in the diversity of indigenous crop varieties is linked to genetic erosion due to factors such as droughts, desertification, population pressure on land, changes in land use, changes in eating habits and over-exploitation.

“Increased genetic erosion can also be attributed to policies that have, to a large extent, advocated for the use of high yielding cultivars hence the displacement of traditional plant varieties,” reports Genebank.

For instance, it notes that a local maize variety, githigu, which was very popular in central Kenya, has in recent years disappeared from the farming system.

“The breakdown of traditional systems of natural resource management with the parallel loss of local plant varieties and associated cultural knowledge can also be blamed for the increased genetic erosion,” the report adds.

The genetic pressure goes beyond grains and cereal crops. The previous aggressive promotion of a few exotic vegetables has resulted in the abandonment and neglect of indigenous vegetables.

Farming communities still champion their local varieties and are fighting back against exploitative companies.

A recent realisation of the high nutritional and medicinal value and low input requirement of the indigenous vegetables have shifted fresh attention to these varieties—triggering a massive demand for them. For example, *Crotalaria* has seen a considerable resurgence among farming communities and has mostly been promoted by word of mouth.



Most of these hybrids cannot stand the changing climate patterns...

A shifting preference for indigenous foods shows that smallholder farmers are becoming more active in creating their own seed conservation and exchange networks, which cut out reliance on a few exploitative commercial seed companies.

Towards this cause, several initiatives have been mooted such as the Seed Savers Network-Kenya, a national grassroots farmers' organisation, that targets agrobiodiversity conservation. The outfit collaborates with thousands of smallholder farmers across five counties to improve the quality of non-GMO crops by integrating modern seed saving techniques with age-old seed banking techniques.

Experts call for greater legal protection of indigenous plants and seed exchanges.

Agronomist Jorim Okoth says that there is a need to further refine the law on seed regulation in Kenya to guarantee the full rights of farmers involved in exchanging indigenous seeds.

“Though there has been some progress in terms of farmers' rights to exchange of indigenous seeds, there are concerns that sections of Seeds and Plant Varieties Act of 2012 still limit and criminalise farmers' seeds exchange system,” says Okoth. “Aspects such as who owns the rights to plant varieties need to be reviewed so that we don't run the risk of privatising seed rights in the hands of few individuals.”

Kenya amended the Seeds and Plant Varieties Act of 2012 to align it with the International Union for the Protection of New Varieties of Plants (UPOV) Convention of 1991 which it accented to on May 11, 2016.

Though this opened the scope for farmers, allowing them the freedom to propagate products of their harvest in their own farms, it brought new restrictions on seed variety registration and certification. It means that indigenous seed varieties can be patented by a few individuals, locking out the rights of millions of smallholder farmers in Kenya.

Those on the ground show clear evidence of what needs doing in Kenya. Resilient, sustainable local seeds are protecting food sovereignty for thousands of smallholder farmers and have the capacity to protect many more. As experts prove, it is time for the government to wake up and turn their attention away from commercial enterprises and towards a future of agroecology, indigenous seeds and food security.



... sections of Seeds and Plant Varieties Act of 2012 still limit and criminalise farmers' seeds exchange system.



Seedlings for sale at Ha-Stopo market, Maseru.

Lesotho

Lesotho markets struggle under the demand for indigenous seeds

BY FRANCIS MUKUZUNGA

Nkhono Mamohapi sits outside her hut to marvel at the lush green crops that have sprouted thanks to the early rains that fell in most parts of Lesotho this year.

The septuagenarian is not alone in her excitement. For the first time in more than two decades, the villagers of Thaba Bosiu can now plant maize, sorghum, pumpkin, green vegetables and other crops knowing full well that they will have a good

harvest come March or April next year.

In recent years, Lesotho has experienced a series of droughts and extreme weather conditions that have caused widespread hunger and poverty among the rural people who depend on farming to make a living.

More experienced farmers lament the impact of foreign seeds on local agricultural communities

Mamohapi blames climate change and the shift in agricultural practices from organic to artificial fertiliser enhanced methods on food insecurity. She believes that this is the reason that most crops cannot stand the long dry spells and the harsh wintry conditions that have hit the country over recent years.

As if to prove her point, she goes into her round hut and comes back with a small packet containing pumpkin seeds. She says for years, she has been able to grow high yielding pumpkin varieties in her small garden using seeds that she selects from one season to the next.

“... blames climate change and the shift in agricultural practices from organic to artificial fertiliser enhanced methods on food insecurity.

..most crops cannot stand the long dry spells and the harsh wintry conditions ...



According to Mamohapi, the knowledge for traditional seed selection and preservation has escaped most of the farmers in the village who have resorted to buying foreign-bred sees.

Seed and input suppliers have noticed an increase in demand for locally grown seeds

Local seed supplier, Mrs Mahlompho tells us that her customers prefer locally grown seed as opposed to imports. Seeing a gap in the market, she has started selling them at Ha Stoppo fruit and vegetable market, where most farmers and consumers buy their agricultural products.

Although she is not a farmer herself, Mahlompho gets her supplies from various farming communities near Maseru and Beria and even as far as Butha Buthe and Leribe districts. She says the most popular type of seed among farmers is maize, peas, sunflower (for animal feed), beans, wheat and sorghum.

“In fact,” she says, “most indigenous Basotho farmers have mastered the art of passing on the best sorghum seed from one harvest to another and they seem to be getting better each time despite the change in climatic conditions.”



...most indigenous Basotho farmers have mastered the art of passing on the best sorghum seed from one harvest to another and they seem to be getting better each time despite the change in climatic conditions.

Her customers seem to agree because her business is booming.

However, Mamohapi and Mahlompho are not alone in their crusade as several larger suppliers in Lesotho have also returned to locally bred seeds.

One such organisation is Farm World in Maseru. The store supplies agricultural implements, including seed, to farmers in Lesotho. Shop manager Khotso Lekhelebane says the store has recently shifted its focus to provide local seeds after the demand shot up. Farmers now prefer locally bred seed varieties for traditional plants as they find them more resilient to the country's current climatic conditions.

"After the COVID-19 outbreak, people are looking for healthier types of food," he adds. In fact, the store had seen a trend of locals wishing to return to their roots with crops

they trust in a time of crisis.

Suppliers struggle to keep up with the demand for indigenous seeds

"We get inquiries for local seed from both rural and urban farmers but our biggest challenge is that the supply cannot meet the demand," says Lekhelebane. "We often run out while waiting for the next batch and this is when those farmers resort to imported seeds again."

Another issue is that many farmers have no choice but to use imported maize seed as Lesotho does not officially create its own. The Department of Agricultural Research at the Ministry of Agriculture and Food Security imports maize from Zimbabwe and Zambia and re-packages it under the 'Pinto' variety of yellow and white maize.

Lekhelebane explains that the seed is not hybrid but rather an "open pollination variety (OPV) that has adapted very well to the climatic conditions of Lesotho, particularly the highlands where most communal farmers live.

However, this necessity further highlights the absurdity. Lesotho has a wealth of farmers who would instead grow indigenous crops and harvest seeds from their own varieties. Yet, the lack of support and education, and propaganda around improved seeds has created a reliance on imports.

As a result, many who relied on imported inputs were left stranded when the borders were closed during the COVID-19 lockdowns earlier this year. However, according to the Ministry of Agriculture, it also presented an opportunity for many

farmers to look into becoming more self-sufficient in terms of producing their own food.

Access to seed banks will be vital to success

Access to seed, an international NGO with links to Lesotho, believes that smallholder farmers are suffering from low crop productivity due to poor agricultural practices and, notably, a lack of access to seeds.

“There needs to be a community-based seed system that involves associations of individuals, often organised as a group or cooperative with the support of NGOs that assist with seed multiplication and establishing community seed banks.”

Palladium has been working with Seeds and Markets Project (SAMP) and the government to create a seed policy. They plan to create a pathway for a regulated seed industry and better access to high-quality seed for smallholder farmers.

Organisations like the FAO (Food and Agricultural Organisation) are interested in supporting seed regulatory provisions and the training of seed inspectors to help officialise the process.

In the meantime, it is clear that smallholder farmers of Lesotho can see the worth of their indigenous seeds. Many are thriving through their use. Yet poor agricultural infrastructure in the country is forcing many away from sustainable methods of harvesting their own seeds to using expensive inputs that are unreliable due to the need to import them. It is time for the Lesotho government to face the reality of food insecurity. They must stop looking outside for solutions and use the resources and knowledge of their own farmers to generate food sovereignty and end the threat of hunger across the nation.



We often run out while waiting for the next batch and this is when those farmers resort to imported seeds again.



Mozambique

the marketplace at Maputo.

Only by releasing the commercial grip on agriculture in Mozambique can farmers thrive.

BY CHARLES MANGWIRO

The fertile Mahotas green belt, located in a quiet region of the Mozambican capital and bordering the satellite city of Matola, has historically played a key role in providing fresh produce for both cities.

In Mahotas, smallholder horticultural is carried out by small groups of people, usually related by family ties. Female-led families are mostly at the forefront of producing food for domestic consumption, but there is often little for sale to earn money for purchasing other household needs.

“ We grow produce using natural fertilisers, we do not use chemicals to boost production, it takes time to grow and this increases our costs. However, when we reach the market, the consumer does not understand the reason for the increased price.

Nevertheless, Mahota's green belt is a special place for 31-year-old Lizete Magaia, a single mother who was born in Maputo.

“I am the daughter of a farmer, I have always lived close to the fields. Part of my schooling was paid for from income made from the fields,” she says.

Magaia was born into a family of nine brothers, but she is the only one who embraced organic agriculture. She says that she realised her passion for farming at a young age when her mother offered her a piece of land to develop.

Since the age of seven, she has not stopped growing and has since extended her cultivation areas, devoting herself to vegetables and organic seed production.

In recent years, she has employed three more people and the number doubles during the weeding and harvesting periods.

“My business is growing but there is a problem with market demand,” she says, explaining that most residents in Maputo are not interested in organic crops.

“Buyers are attracted to the beauty of big, uniform produce that are grown with chemical products even though the organic ones are the most healthy.”

Lisete Magaia is most committed to agroecology.

“Our concern is with the quality of the product. We grow produce using natural fertilisers, we do not use chemicals to boost production, it takes time to grow and this increases our costs. However, when we reach the market, the consumer does not understand the reason for the increased price.”

She has been working with several organisations to advocate for organic produce and increase awareness of agroecology.

“My dream is to see young people taking up this kind of farming,” she says.

“Crops that are more fragile to heat or rain suffer the most,” Magaia says, adding that she has been experimenting with growing more drought-tolerant plants such as orange-fleshed potato and the Piri-Piri chillis.

“I produce my own seeds for my products, which means the whole production chain is in my hands,” she says. Especially during times for hardship, she only harvests the seeds that have proved most resilient during the harvest, with a hope that they too will flourish in future droughts or flooding. It is an indigenous Mozambique technique that she inherited from her mother that is,

more often than not, effective.

Soil health is integral to withstanding climate change.

Sanch Panguane is the Chairman of the Jaulane Farmers Association, an organisation that works with 1,000 farmers to change those farming habits that are damaging to the environment.

Speaking to Farm Radio International about soil health, he said:

“As the agricultural season is approaching, we will burn the weeds and kill pests in the process. The ashes from the residues are rich in potassium and calcium. This adds value to the soil and benefits the crop as we do not use fertiliser, we find that this is the way to give the soil what it lacks.”

According to Panguana, the government’s National Strategy for Adaptation and Mitigation of Climate Changes establishes guidelines for action to create resilience and reduce climate risks. It aims to promote low carbon development and the green economy, through its integration into the sectoral and local planning process.

As they continue to test the best methods, the Chairman of Jaulane Farmers Association is thinking about its future, and how they can increase production so they can feed themselves, and develop biodiversity-friendly livelihoods.

Land security plays another vital role.

Significantly, the Mahotas green belt farmers now know how important access to land and land security is for their ability to continue practising agroecology.

Among the many groups based here, it is usually those who are affiliated with an association who are practising agroecology. There are many advantages to this system too.

“Individually it is not easy to do farming, but collectively, as an association, it is possible,” says a local farmer. Farmers at Mahotas Green Belt are supported by Justica Ambiental, a Mozambican NGO that works on agroecology with communities across Maputo, Gaza and Zambezia provinces.

“For us, agroecology could be one of the most promising approaches to achieve the mitigation and adaptation potentials of agricultural systems to climate change and to strengthen their resilience,” says a representative.

The market is slow to respond to the nutritional and health benefits of agroecological produce in Mozambique. However, the zeal of some smallholder farmers is infectious. Their approaches to farming are seeing them through the turmoil of climatic hazards such as flooding and drought. Their resilience should not be commended as miraculous but instead heralded as the new norm.

As NGOs rally with smallholder farmers, it is time for Mozambique to embrace management of their food systems to combat food insecurity and restore food sovereignty to their farmers.



Nigeria

Indigenous seeds rejected in favour of GMO crops from agrochemical corporations

BY RUTH TENE NATSA

At a time when rural farmers have become victims of insurgent brutality and looming food insecurity, every measure is needed to boost the nation's food security. Seed governance and sovereignty is key to their success.

2020 has been a tough year for the agricultural sector, particularly in Nigeria. As the country recovers from the COVID-19 pandemic, border closures and turbulent farmers and herders clashes, improving food security is now more important than ever.

The former Minister of Agriculture and Rural Development, Chief Audu Ogbeh, said that agriculture is impossible without good seeds. If farmers buy the wrong types of seeds, no fertiliser will help improve their yield. Chief Ogbeh is concerned about the packaging and selling of fake seeds by some seed companies to farmers, leading to low yields.

The Minister has assured that the present administration is committed to opening offices in all the local government areas to monitor seeds supply as well as ensure

small branches of Banks of Agriculture to give loans to farmers at single interest rates.

Speaking of their efforts to increase agricultural productivity, Chief Ogbeh explains that the President Buhari administration has launched a Green Alternative Agenda to diversify the economy. Federal Universities of Agriculture have been reintroduced as well as the setting up of a high power committee to look into herdsmen and farmers disputes.

He says other efforts include the provision of drought and flood-tolerant crop varieties to mitigate the effect of natural disasters and measures to ensure availability of adequate early generation seeds (EGS) of all crop varieties to sustain the seed value chain.

Sadly the Nigerian seed sector is one that has remained neglected for a long time. It has left open opportunities for the importation and introduction of genetically modified seeds at the expense of local seeds and the detriment of farmers and Nigerian consumers.

While Syngenta and Monsanto play considerable roles in seed distribution in Nigeria, Dupont, Dizengoff and the IITA have also been known to play significant roles in promoting GMO seeds in favour of local seeds.

Following the introduction of genetically modified seeds into Nigeria, famous environmentalists and food sovereignty campaigners filed a lawsuit against the Nigerian Biosafety Management Agency (NBMA) over the approval granted to Monsanto to release GM crops in Nigeria.

The case was struck out and criticised by experts as a failure to preserve the nation's food system from being overturned by the agricultural biotech industry. They fear that the combination of GMOs and an unregulated landscape will constitute great environmental harm and will intensify poverty, hunger and devastation of consumer rights.

Chairman for the House Committee on Agriculture, Mallam Mohammed Mungono, says that a Nigerian Agricultural Seed Council has been established to reposition the sector and move its agricultural movement forward.

In a statement, he said: "Once the problem of seeds is solved in agriculture, 50% of productivity problems has been removed. We wish to stamp out quackery in the seeds industry as well as encourage genuine entrepreneurs to go into the industry, there is need to pass the bill into law."

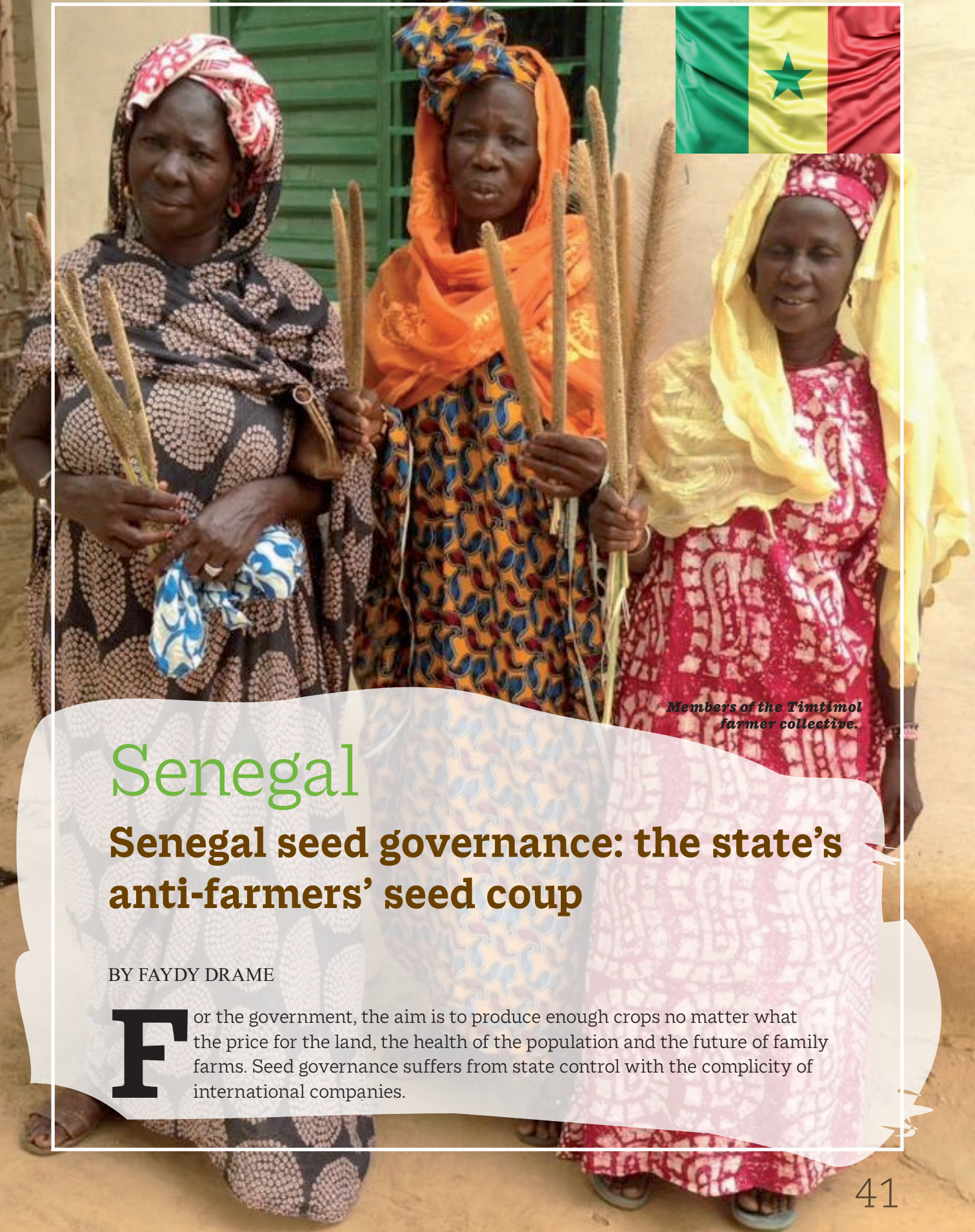
The National Agricultural Seeds Council (NASC), the apex regulatory body for the Nigerian seed industry, is responsible for registering and licensing seed companies that produce and sell certified seeds to farmers.

Director-General of the NASC, Dr Phillip Ojo, has reiterated the Nigerian government's commitment to rid the nation's market of non-indigenous seeds.

"In our efforts to rid the market of fake and adulterated seeds, the Council regularly undertakes sensitisation and educational campaigns to educate the public on the attributes of good quality seeds."

He plans to ensure that all groups and organisations going into seed business must be duly accredited and licensed by the Council. The seed business must become highly regulated, and there must be procedures and guidelines for engaging in seed production and marketing.

As it stands, Nigeria, with its open acceptance of GMOs, remains at a crossroads in achieving seed sovereignty. However, the struggle is on as activists and other non-governmental organisations continue to speak up against the evil of GMOs and in doing so, reveal the dangers and long term impact of the technology.



Members of the Tintimol farmer collective.

Senegal

Senegal seed governance: the state's anti-farmers' seed coup

BY FAYDY DRAME

For the government, the aim is to produce enough crops no matter what the price for the land, the health of the population and the future of family farms. Seed governance suffers from state control with the complicity of international companies.

Even though she practices organic market gardening, Aby Guèye, a producer in Mbawane says she is obliged to buy seeds for salad, parsley, carrot and cabbage. Like Guèye, many market gardeners in Niayes are still dependent on hybrid seeds sold in shops.

A recent project by the Federation of Agropastoralists of Diender (FAPD) has taught Gueye and her peers how to produce certain seeds. In Niayes, FAPD has set up a seed production unit to initiate empowerment of women farmers. Producing their own seeds is contributing to reducing operating costs and eliminating all or part of the purchase of expensive seeds.

Demba Ba is the main facilitator of the project and works with 120 women in Timtimol. Moving away from the dependence on hybrid and certified seeds, they produce vegetable and cereal seeds that members use in their market gardening and fields.

Ba explains that in order to give their seeds their full cultural and community value, they are kept in a specially built hut.

“The collected seeds are only distributed to members of the group who are committed to healthy and sustainable agriculture or committed to leaving conventional farming and

to retraining,” he says.

Further south in Sédhiou, Sira Sidibé and members of her association affiliated to the We are the Solution (NSS) do not yet have a formal organisation to produce and save their rice seeds. In the past, they were available and easily accessible now they have become increasingly scarce.

“Hybrid seeds have flooded our communities. We are in a process of replenishing the seeds used by our parents. But I have to admit that it is very difficult to find women with the authentic seeds we are looking for,” explains the president of NSS, Sédhiou.

In total, the 2012 edition of the official catalogue of plant species and varieties and seedlings contains 174 varieties officially cultivated in Senegal.

However, to register a variety in this catalogue, the seed producer must meet the DUS criteria – distinctness, uniformity and stability. To put it plainly, explains the ASPSP Coordinator, “it is mandatory that the proposed variety is distinct from all previously registered varieties; that all the plants that will germinate from the seed are uniform, that is to say, look like soldiers; and finally that the seed of this variety produces the same seed that is identical in all respects for

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a number of years.”

Contrary to this catalogue, at the seed fair in Djimini in Casamance (South) in 2014, the ASPSP identified 254 varieties and species of farmers seeds in Senegal. Alihou Ndiaye of ASPSP believes that the removal of vegetable gardens behind the huts in each house was “a criminal act against the seed heritage. Because it was these vegetable gardens that enabled women to produce and ensure the perpetuity of vegetable seeds”.

Even though the texts prohibit the production and marketing of uncertified seed, Senegalese small-scale farmers have always been able to produce and exchange seed among themselves.

“The advantage of these traditional seeds is that they adapt to the vagaries of the climate, unlike the new varieties that are being introduced, which are usually more productive but more demanding in terms of water and input requirements,” says Abdou Ndiaye, a retired researcher at the Institut Sénégalais de Recherches Agricoles (ISRA).

For some years now, the state’s agricultural policy has focused on reviving the sector, particularly the reconstitution of certain seed species and varieties. At the beginning, it focused much more on groundnuts because

they are the most sensitive speculation and the demand for which was enormous. “So far we still cannot meet the needs for groundnuts, in terms of certified groundnut seed,” notes the retired researcher.

In 2020, the Seed Division estimated Senegal’s needs at 150 thousand tonnes of certified groundnuts, 5000 tonnes of millet, 6000 tonnes of maize, 5000 tonnes of rice, 3500 tonnes of cowpeas and 2000 tonnes of sorghum. “These quantities are estimated on the basis of the areas sown,” says Felixe Sagne, Director of the Seed Division.

The need is currently met by annual state subsidies on agricultural inputs. For example, in 2018, the Senegalese state invested 34 billion CFA francs in agricultural input subsidies, compared to 34.5 billion in 2019 and 40 billion in 2020.

Here too Alihou Ndiaye deplores the fact that this is the first time that 10% of the 40 billion CFA subsidy for 2020 has been promised to sustainable agriculture. Proof that healthy and sustainable agriculture still has a long way to go to get its head above water. “Policy makers and researchers must therefore understand that the seed is at the beginning and end of the agricultural production process”.

Senegal’s needs estimated at



150,000 T Groundnuts	5000 T Rice
5000 T Millet	3500 T Cowpeas
6000 T Maize	2000 T Sorghum



Policy makers and researchers must therefore understand that the seed is at the beginning and end of the agricultural production process.



Tanzania

Counterfeit seeds wreak havoc for small-scale farmers in Tanzania

BY ZUWENA SHAME

Maize is the most important crop in Tanzania - accounting for 31 per cent of total food production; thus, it experiences the most counterfeit reproduction. It is estimated that Maize is grown by more than 50 per cent of Tanzanian farmers and covers 45 per cent of total arable land and generates close to 50 per cent of rural cash income.

Betwelo Mpangala is a maize farmer in the Songea Rural District, more than 900km from Tanzania's capital Dar es Salaam. He has been growing the crop for many years, and his harvest was sufficient until he started using improved seeds.

This year, he harvested less than expected after planting fake maize seeds. When he discovered that the seeds were not genuine, it was too late. So, Mpangala applied all the possible farm inputs to alleviate the problem.

"I used to harvest 25 100kgs bags per acre, but this year I harvested less than seven bags," says Mpangala.

Mpangala is not alone; many farmers are faced with a similar problem.

31%
*of total food
production
is by maize
generating*
51%
*of the rural
cash income*

“When I asked experts, they attributed the problem to fake seeds,” says a 57-year-old farmer in Mchwangimbole village in the district. Counterfeit seeds are often hard to spot before sowing. As they mature, the cobs do not fully form, leaving the farmer without a crop and without future seeds for farming.

“I blame agro-dealers and seed breeders companies who supply and sell seeds to us when they actually know that they are not genuine.” He adds that those trying to report the issue to the responsible authorities are rarely successful.

The problem is hard to prove as most farmers didn't keep records of where and when they purchased the seeds.

Theopista Ponela, in Songea Rural District, describes fake seeds as a big problem since farmers are being cheated because they cannot differentiate between the genuine ones and counterfeit products.

Ponela, a mother of four, says the fake seeds are all over the market, but the government does not attempt to sanction those behind the dubious business.

“We want the government to fix this problem, which is putting a large number of farmers into debt,” says Veronica Alex, another farmer in the area.

Veronica calls on the government to review the system in place and to distribute subsidies for seeds. The current system means that the subsidised seeds are reaching farmers too late, often after planting season.

Paulo Msemwa, one of the agricultural officers in Ruvuma Region, admits that the counterfeit seeds are problematic.

“There are unscrupulous people who move

around villages pretending to sell certified seeds. This is one of the factors behind escalating fake seeds in the market outlets. We are directing farmers to stop buying seeds from unknown suppliers in an effort towards addressing the issue,” he says.

Bob Shuma, Executive director of the Tanzania Seed Traders Association (TASTA) also describes fake seed as a global problem fuelled by a low level of awareness among farmers.

He agrees with Msemwa and urges Tanzanian farmers to buy seeds from designated suppliers only.

“It is very difficult to trace the seller,” he explained, “especially if they bought seeds from an unknown person, that’s why we ask farmers to buy seeds from the certified dealers and get receipts for future use.”

Msemwa would like the Tanzanian Official Seed Multiplication Institute (TOSCI) and security agencies to team up with seed companies to fight against fake seeds. He believes that Kilimanjaro, Arusha, and Manyara regions are the key breeding sites for fake seeds in northern Tanzania, followed by Mbeya and Iringa in southern highlands.

Tanzania’s Agricultural Seed Agency’s chief executive officer Dr Sophia Kashenge believes that the challenge is fuelled by several factors—including poor education for farmers.

“Our policies are very clear that access to high-quality seeds is essential to raising productivity and improving the competitiveness of the agricultural sector.”

Indeed, farmers must be provided with support through education in recognising counterfeit seeds and finding reliable suppliers. It is vital to strengthening an industry that sustains the food security of an entire nation.



Togo

The role of improved seeds in the Togolese agricultural sector

BY IRENE DJAHLIN

Agroecology, which restores the functioning of ecosystems by maintaining healthy soils, is an effective strategy for achieving food security in the parts of the world that need it most. Agroecology takes into account and builds on the interactions between soil, plants, animals, humans and the environment within agricultural systems. As such, it encompasses multiple dimensions of the food system, including ecological restoration, political and social stability, and economic viability.

Seed multiplication and marketing is carried out by willing farmers and approved by the support services. The Togolese Institute for Agricultural Research (ITRA) is responsible for creating and maintaining varieties. At the same time, the Institute for Technical Advice and Support (ICAT) is responsible for training and support for farmers who are multipliers.

As part of a vast campaign launched in different prefectures of the country, the National Rural Entrepreneurship Promotion Project (PNPR) will support Togo's vulnerable households. A total of 5,000 families of informal farmers are expected to benefit from 65,000kg of rice and maize seeds, worth an estimated 37 million CFA franc. Eventually, these inputs should make it possible to sow 1,500 hectares of maize and 500 hectares of rice. This operation complements the actions already carried out by the government towards informal actors and aims to strengthen farmers' resilience through timely access to seeds.

However, the current organisation of the seed sector has shortcomings that compromise its viability. First of all, there is the absence of any legislation regulating the industry and a lack of modalities for the application of the already existing laws.

The absence of legislation creates a legal vacuum that encourages the emergence and development of an informal seed sector.

Farmers and their support services remain powerless in the face of an invasion of the market by seeds of dubious quality and provenance. There are no laws authorising quality controls or seizures of non-standard seeds on the market, nor the necessary logistical and human resources. The second failure is the lack of certification of commercial seed.

Farmers incur losses when they buy counterfeit seeds, and the yield does not allow them to cover the expenses incurred. Producers, therefore, have no recourse when seeds do not meet the right standards.

In August 2020, the Coordination of Farmers' Organisations of Togo (CTOP) conducted a study on the state of producers' access to agricultural inputs in Togo. The report found industrial crops such as coffee, cocoa and cotton are predominately grown from improved seeds. For industrial crops, this is mainly down to the organisation of the commodity chains. Whereas in market gardening, which constitutes the central part of the seed trade in Togo, more farmers use certified seeds.

According to seed producers, this is due to several factors including the dominance of cross-pollinated varieties, improved seeds' relatively high costs compared to traditional seed, problems with the availability and accessibility of certified seed, and most importantly, the low level of awareness among agricultural producers of the benefits of using improved seed. There is some diversity in the number of improved varieties available on some food crops. However, this relative diversity is limited to maize, rice, cassava, cowpea and sorghum.

For example, for maize, several white-grained varieties have been introduced. The primary work carried out in Togo has concerned the testing of the introduced varieties, surveys and the collection of local ecotypes.

Only local varieties of sorghum were grown in Togo. These are generally photosensitive varieties with a very long cycle (150 to 180 days) and meagre yield potential. However, new varieties introduced from other African countries proved to be unsuitable for the tastes of Togolese producers and consumers.

Agricultural research has introduced several improved rice varieties from international research institutes (WARDA, IRRI, IRAT, etc.) and created new varieties to increase Togolese rice cultivation productivity. These improved varieties have been disseminated in all regions of the country through the Regional Directorates for Rural Development.

This programme has made it possible to select improved varieties from international research

institutes to create new varieties that increase the productivity of Togolese rice cultivation.

In the absence of new and improved millet varieties, the plant material currently in use is derived from continuous reproductions of old varieties owned by the farmers concerned. Research work on millet breeding is now halted although the collection of local ecotypes is still maintained.

In pulses, most of the improved varieties are introduced varieties from IITA (VITOCO and TVX 1850-01 E) or Senegal (58-146) or Nigeria (VITA-5). As far as groundnuts are concerned, they have not been extensively researched. Groundnuts are grown entirely in the traditional way on small plots, mainly for consumption. As for soya, the two varieties offered to producers are JUPITER and ISRA 44/73 A. The latter was introduced from Senegal. Several selected varieties are also available for agronomic research for other food crops, especially roots and tubers.

The most widely grown varieties of cassava in Togo are local varieties and the most widespread are Fétonéghodji, Kataoli, Yovovi, and Kalaba. More than eight varieties improved in Togo or introduced from IITA that have been disseminated in all regions of the country.

As part of the emergency measures taken to revive agricultural production, the Ministry of Agriculture, Livestock and Fisheries has initiated a special “improved seeds” operation through the Grassroots Initiatives Support Agency (AGAIB).

The operation aims to have commercial seeds produced from basic seeds and distributed to farmers with fertiliser on credit payable at harvest, without interest. During the project, farmers are the primary beneficiaries in terms of seed governance.

However, producers still face constraints linked to the lack of fertilisers. They obtain their supplies from sales outlets throughout the country’s regions and prefectures. There are, therefore, occasional stock shortages because demand exceeds supply.

It is clear that the Togolese government are serious in their mission to develop the agricultural sector and end food insecurity in Togo. However, the response to improved seeds has been mixed. Some are rejected on a cultural level, some do not acclimatise to the local soil, and others require expensive inputs. At first, it seems like a logical, scientific solution to food shortage but whether it has long term value remains to be seen.

In the meantime, agroecology experts across the country, and the continent, strongly advise that time and money is invested in indigenous seeds that are highly nutritious and far better suited to the local climates. They suggest moving away from chemical inputs that must be sourced by third parties and returning to organic fertilisers and pesticides that can be produced and maintained on even smallholder farms. In this way, Togo’s farmers can achieve self-sufficiency, food sovereignty, and resilience in the face of climate change



Uganda

A farmer compares maize seeds at the Ongako seed bank.

Farmers managed seed systems: the bedrock of food security and biodiversity conservation in Uganda

BY POLYCAP KALOKWERA

Along Gulu-Arua Highway, West of Gulu City is Koch-Ongako, a village in Omoro District where Mego Ventorina Amono lives. Her life's mission is to preserve the indigenous seeds of the Acholi tribe.

"I still look beautiful and strong at this age, not because of any magic but because of rich indigenous food. I eat them because they are nutritious and medicinal, even though some people have come to say that they are bad," says Amono.

Mego Amono, 67, plants only indigenous seeds because that is what her mother fed her and her siblings while growing up. She is determined to pass on that heritage to future generations.

“These indigenous seedlings were shared with us by our great grandmothers and they urged us to share it with generations after us. This is our local food,” Amono says.

She is one of the founding members of the Ongako Community seed bank that was established for the preservation and multiplication of indigenous seeds and easy access to seedlings for smallholder farmers.

“We have used the seed bank to provide opportunity for the younger generations to learn more about African biodiversity outside of a school setting,” she explains.

Amono prefers to avoid using inputs to boost her crop growth and finds little intervention works.

“Our local seeds are productive, reliable and adaptable to the local ecosystem. The majority of our crops in Acholi are not just food crops but have a special purpose, some are planted for cultural ceremonies and others are medicinal,” she adds.

She finds commercial agri-businesses arrogant and patronising.

“They think that they know our culture better than us and they should change everything

...commercial agri-businesses arrogant and patronising.

“They think that they know our culture better than us and they should change everything about it including which seeds to plant to feed our families. They are profiting at the expense of our heritage.”

about it including which seeds to plant to feed our families. They are profiting at the expense of our heritage.”

Amono shares these feelings with many smallholders families in Uganda. Some feel that they are being oppressed by the seed laws that label indigenous seeds as informal and promote improved seeds as official inputs.

According to the FAO, agricultural biodiversity is degraded as traditional farming production systems are replaced with more modern, industrialised production systems.

National Chairperson for Eastern and Southern Africa Small Scale Farmers Forum (ESAFF) Uganda, Hakim Baliraine says the national seed policy is a deliberate policy to favour conventional agricultural seedlings against agroecological

seedlings.

“Seeds laws governing seedling in Uganda is not meant for smallholder farmers and the fact that our voices were ignored during its drafting means it will serve the interest of selected parties only. You can't limit farmers rights to

exchange and trade their own traditional seeds. You can't facilitate seedlings to deliberately replace farmers varieties with unhealthy seeds. It is all unsustainable," says Baliraine.

Chairperson of the Ayiwala East Smallholder Farmers Group, Margaret Masudio says that the younger generation of small-scale farmers has since fallen prey to the seductive advertisement of improved seedlings.

"Many young farmers now don't know the indigenous seeds or can even differentiate them from the improved ones. They end up falling for advertisements and the influence of agricultural extension workers to adopt improved seeds due to a perceived higher yield," Masudio explains.

"There is no clear documentation of indigenous seeds and it has given industrial seed manufacturers the opportunity to manipulate the authorities into formulating laws in their favour at the expense of farmers."

Richard Akena, a small-scale farmer in Nwoya district, says he spent over 5 million Ugandan shillings (1400 USD) planting five acres of cassava which he has since lost to disease.

"All the cassava in the garden is rotten despite spending a lot of money to procure the cuttings after being directed to do so by the government through their [Agriculture Cluster Development] programme," Akena says.

In 2018, farmers across the region planted Nasse-19, the same cassava variety, which matures in one and a half years. The government aimed to boost food security in the area, but many fell to disease, leaving most farmers wondering why they had abandoned their local variety.

Agricultural Scientist Barnabas Francis says that many seed companies in Uganda have continued to supply poor seeds to farmers due to inappropriate isolation centres.

"Due to the pressure of the number of farmers who rely on seedlings from the government, most seed companies are not doing their due diligence to produce quality seeds, thus supplying fake seedling that don't always germinate," says Francis. "The result is food insecurity in many parts of the country."

ESAFF's Policy and Advocacy Officer Ronald Bagaga says that agricultural financing is also significant challenge for small-scale farmers because it is mainly focused on credit provision and is tied to cash and private sector providers.

"The underfunding has hampered the function of the National Agricultural Research System. Funding limitations opens the research function to an external agenda, creating a mismatch between research products, small-scale farmers rights, market demands and environment sustainability."

He continues that that the latest threat to farmers is the increasing pressure to attach intellectual property rights to improved seeds by multinational corporations, researchers and private sector actors.

While appreciating agroecology as a remedy for better seed system management, both Francis and Bagaga agree that there is a dire need to invest in research to help improve local seeds that can withstand climate changes and meet the population pressures.



Zambia

“Seeds are the cultural fabric of any people”: Regulation of seed governance and farmer managed seed exchange systems in Zambia.

BY TIMOTHY KAMUZU PHIRI

Seeds are representative not only of food but of the cultural fabric of any people. Whoever controls seed wields a lot of power in the agricultural space of any country. Therefore, it is vital that seed laws that determine their governance are put in place.

These laws have far-reaching ramifications on seed governance and the small-scale farmers' ability to have their own seed exchange system. This piece explores the Zambian seed governance landscape through the eyes of three stakeholders.

Godfrey Mwila, *Private Consultant in Farmers' Rights and Local Seed Systems*

Godfrey Mwila, the former Deputy Director of Technical Services at the Zambia Agricultural Research Institute, sits pensively before he responds to the query on the existence of plant genetic resources and seed systems laws in Zambia.

Geoffrey explains that there are several Acts of Parliament that speak on the matter.



However, with regards to the informal sector, there is no particular law or policy.

“The ministry of Agriculture and the Ministry of Lands and Natural Resources have the National Agricultural Policy and National Biodiversity Strategic Action plan respectively. However, these documents say very little on seed and plant genetic resources in the informal sector,” he says.

As for the impact of the current policies on farmers’ rights to practice farmer-managed seed exchange, Godfrey explains that the regulations do not benefit the small-scale farmers at all.

“Small-scale farmers’ seeds do not meet the standards set for variety registration certification and control by the Seed Control and Certification Institute (SCCI),” he states. “These seeds are not recognised as seeds for

production or commercial distribution because they do not appear on the National Seeds Variety List as per Plant Variety and Seeds Act of 1995.”

The lack of recognition of small-scale farmer seeds has a number of ramifications for the agricultural sector. They are neither protected from contamination or dilution through hybrid breeding nor are they endorsed, despite their many benefits. Sometimes their rejection is based on a reason as simple as aesthetics; for example, it is impossible for the Food Reserve Agency (FRA) to purchase any seeds that are not white in colour.

“The formal seed system in Zambia is dominated by private seed companies who are all formal entities that promote hybrid seeds,” continues Godfrey. “The seed system as it stands focuses too much on increased productivity and the government are convinced that the hybrids are the best for high yields.”

The same laws suppress farmers’ rights to produce and exchange seeds of their own local varieties. It ends up harming regional food security and biodiversity needed for local farming communities and the environment to thrive.

Worst still, indigenous knowledge is not paid enough attention, and the resilient traits of local varieties are being lost with dwindling quantities. It is hardly surprising when one realises that any farmer who gets support from the Farmer Input Support Programme is introduced to artificial fertilisers, hybrids and pesticides at the expense of traditional practices and knowledge.

“Ironically, the parent seed used by seed companies and seed research institutes to create hybrids are actually the same local seeds which are not recognised!” he exclaims.

Godfrey is pleased that Civil Society Organisations are attempting to promote the rights of small-scale farmers. Still, he is critical of their ability to engage the government to amend current regulations.

“More effort is needed from CSOs to help small-scale farmers realise their rights and know the value of their local seed systems. Only then can they demand a change from government. Government will, of course, always take demands of farmers more seriously than the demands of CSOs who are not a voting constituency in their eyes,” He concludes.



Frances Davies, *Co-ordinator for Zambia Alliance for Agroecology and Biodiversity (ZAAB)*

Seed Governance and Plant Genetic Resource Policies/laws

Frances Davies co-ordinates the Zambia Alliance for Agroecology and Biodiversity (ZAAB), a network of various Zambian NGOs and CSO advocating for small-scale farmers.

“In the 1990s, efforts were made to develop seed policies, but none were adopted. Currently, there are two acts of parliament, the Plant Variety and Seed Act of 1995 and the Plant Breeders Rights Act of 2007,” she explains. “Then you also have the National Agricultural Policy, but these policies do not cater for seed and plant genetic resources in any real detail with regards to small-scale farmers and their rights.”

“What is emphasised is the commodification of agriculture and of plant genetic resources in the formal sector,” she says. “Seeds are common resources for humankind and should be treated as sacred. Our evolution as humanity is tied to the evolution of seeds,” she adds. “The current laws only look at seeds as a commercial enterprise and not as a natural resource, relied upon by a whole nation of small-scale farmers.”

“The policies that exist speak more to the private and formal sector. There is no law that seeks to manage and conserve seeds as a right to life and heritage for the common person,” she says. “The policies are biased and benefit the

commercialisation of the seed sector.”

Frances Davies celebrating the newly completed Shibuyunji Community Seed Bank

Zambia signed the International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA) which requires that farmers rights and their access to plant genetic resources are protected. However, the Plant Variety and Seed Act has been harmonised within COMESA, implying that the crops and seeds have to be uniform. If they are not uniform or exhibit any form of diversity then they are not recognised or protected.

“Diversity is the basis and source of life; enforcing standardised mechanisms pushes the diverse seed system towards uniformity. The basis of the climate change fight rests on diversity rather than uniformity!” Frances explains.

The liberalisation of economies and privatisation of public services means that the governance of the seed system has effectively been left to private entities whose interest is profit.

The result is that the laws that facilitate and benefit the expansion of the private sector market have been implemented, while policies that ensure the safeguarding of plant genetic resources are not being enforced or are non-existent.

It is very important, therefore, that CSOs continue to push the government to balance the seed governance mechanism.

“ZAAB seeks to ensure that farmers voices are heard”, Frances says. “Agroecology is the foundation upon which the grassroots movement can take hold and challenge the capitalist system of expansion and extraction of natural resources from Africa.”

“While the corporate system promotes uniformity under the guise of increased productivity, Agroecology promotes diversity. We need seeds, livestock, and wild harvested forms of products, integrated ground cover crops that promote biodiversity and work with it instead of against it,” she adds.

Forward Malambo, Pastoralist and Crop farmer in Itebe.

Forward is a pastoralist and crop farmer in the rural area of Itebe in Mazabuka.

“I am not aware of any law that talks about seed governance and genetic resources,” he says. “All we know here is that the government is in-charge of all such issues.”

He and other local farmers practise seed management because it is part of their culture and the way that they have always done it.

He believes the approach of local farmers is determined by what the government puts in place in support of farmers during the farming season.

“You will notice that the majority of the farmers plant hybrid seeds on a large scale. Hybrid seeds dominate because that is the seed promoted by the government through the Farmer Input Support Programme (FISP). The challenge is that the cost of farming becomes very high because farmers have to also look for fertilisers, pesticides and herbicides to support the hybrid seeds,” explains Forward.

Very few farmers are lucky to have fertile soils that allow them to grow hybrids without using artificial fertilisers. There is no support in terms of laws or capacity building for those who choose to grow local maize or support in sustainable land management to promote

healthier soils.

“We don’t have many NGOs here that focus on agricultural and seed matters,” Forward explains. Amongst the few that have worked in Itebe are Solidaridad and Self Help Africa. These organisations have helped with programmes that promote holistic natural resource management and conservation farming.

“We as farmers need a lot of support in relation to farming in a way that takes care of the environment and doesn’t destroy it,” Forward says. “My hope is that the government can expand FISP to incorporate local seeds, organic fertilisers and organic pesticides as well.”

Clearly, the Zambian policies and laws concerning seed governance and exchange systems are far from being where they are supposed to be. Small-scale farmers need more support and enlightenment in terms of their right to local seeds and the continuity of their heritage.

Academia, agricultural research organisations and the majority of government programmes are too pro-commercialisation when it comes to seed governance. Such an approach is fuelled by profit and needs to have more significant checks and balances. The sacred place that indigenous seeds hold in the culture of local farmers must not be lost or replaced under the guise of profit and commercial viability.

...the majority of the farmers plant hybrid seeds on a large scale.

...because that is the seed promoted by the government....

Forward Malambo in his Maize Field





Zimbabwe

Farmers' seeds are acknowledged but not protected in mismanagement of Zimbabwean seed systems

BY JEFFREY GOGO

Seed is power, a singular fact connecting centuries of Zimbabwean culture and political economy. Persisting practices such as *nhimbe* and *zunde ramambo* (both a form of farming festivals for communally shared resources) show how indigenous grains traditionally feed

communal self-sufficiency, social support systems, the village economy, recreational farming and the idea of a commons.

However, powerful interests, from colonial administration to multinational companies, government, foreign donors and regional organisations, have either neglected farmer seed systems or suppressed them in favour of commercial hybrids. In some cases, biodiversity, food sovereignty and the indigenous unity of life is compromised, leaving millions of people prone to food insecurity.

Zimbabwean laws and regional instruments protect the rights of seed companies, but the country does not have an explicit policy on farmers' seed varieties. While the government acknowledges farmer seed systems, it does not actively support them.

“There are no policies as of now in support of farmers' varieties,” says Zimbabwe Small Holder Farmers Forum's (ZIMSOFF) national coordinator Nelson Mudzingwa. “Research and development are not promoting or supporting farmers' varieties despite their value to farmers' resilience and food sovereignty.”

Further, public funds routinely subsidise hybrid seeds and synthetic fertilisers. Agroecological advances are inherently contradicted by continued reliance on synthetic inputs which downgrade biodiversity. Perennial distribution of commercial hybrids, fertilisers and food aid to millions of food-insecure smallholder farmers form a crucial part of the political economy.

Mudzingwa, whose organisation works in eight of Zimbabwe's ten provinces, says open-pollinated varieties guarantee diversity, stability and health in the environment.

“Farmers varieties are resilient to climate shocks, they are diverse and nutrient-rich, easily accessible and within the reach of many farmers. Some varieties improve soil fertility and also protect the soil from run-off and direct

sunlight. For example, broad leaved pulses have deep roots and can produce a lot of foliage that can act as soil mulch,” he explains.

Mudzingwa is a farmer in the Shashe block of farms in Masvingo district, where he also runs an agroecological school. He maintains a seed heritage archive on his plot with different varieties of oils, cereals, pulses and fruits, as well as climate-resilient rapoko varieties like garindi, nyiminya and chikumbo. Maize, the staple crop, however, boasts the most types.

Hybrids contaminate farmer seed varieties

“Some local varieties are disappearing due to contamination, it is impacting biodiversity and nutrition,” Mudzingwa notes.

Another threat is regional seed law. The legislation criminalises the promotion of local seed systems in favour of industrial varieties. However, seeds such as the new hybrid maize regularly suffers during drought affecting the food security of many farmers who plant them.

Groups like ZIMSOFF are concerned that attempts by some organisations to harmonise seed laws will relegate farmers to growers, favour corporate breeders as intellectual producers and criminalise the owning, reusing and exchanging of seeds by farmers.

Marketing Director of Zimbabwean seed company Agriseeds, Ivan Craig, agrees that some seed companies are operating in an environment where they have to be attuned to indigenous knowledge systems. His business strives to be different.

“With small grains, we have companies going to the village, taking these seeds and storing them in the bank as well as improving their characteristics to suit the current conditions,” Craig says. “I travel a lot myself and attend many agricultural shows. When I see an indigenous crop, I borrow it for our small grains

These seeds thrive best in our agroecological setting. They are resilient in the face of water shortages, floods and other weather shocks that are becoming more frequent

research. If there is anything exciting, we get in contact with the farmers for more information. We also share our research with the farmers about the advantages and disadvantages of their varieties and the practices they are carrying out,” he adds.

Craig said his company carries out research on ideal practices like contour ridging, drain-storm ridging, trenching, mulching, and soil sampling.

“We share all this with the farmers so that once there is a shortage of water, at least they will have enough moisture to keep their crops growing until they get the next rains,” he elaborates.

Despite its commitment to and understand of indigenous seeds, Agriseeds is still causing some harm to the sector. Like many of its peers, Agriseeds still belongs to a syndicate of seed companies who promote hybrid seed across member countries.

Seed sharing, the heart of community in Zimbabwe

Chimanimani in eastern Zimbabwe bears the open sores of climate change. Subject to droughts, the district also suffered devastating floods during Cyclone Idai in early 2019.

TSURO Trust’s agroecological work in the area includes the promotion of indigenous seed varieties which persist in bad weather.

Washington Nyakazeya, a 20-year old farmer from Hlabiso village, saves his seeds for reuse and shares them with other farmers in his community.

“These seeds thrive best in our agroecological setting. They are resilient in the face of water shortages, floods and other weather shocks that are becoming more frequent,” Nyakazeya explain. “We choose the bigger grains after harvesting. Before harvest, we also tie maize cobs or rapoko heads that shoot first,” he added. Farmers in the community plant even earlier than surrounding areas to avoid cross-pollination and preserve the integrity of their crops.

Sithembile Chimhete is a neighbouring smallholder farmer in Chisikaurayi village. She claims that availability is an important reason for maintaining farmer seed systems since they are the types which are better prepared for disaster and climate shock.

Sharing seeds reinforces the peculiarly rural Zimbabwean ideal of communally shared resources.

“The community bond that we rely on for farming together is promoted when we give each other seeds,” says Chimhete.

Farming practises involving communal convergence such as nhimbe have persisted for centuries in the Zimbabwean countryside. While these may affect non-monetary labour

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transactions, the free sharing of seeds is customary.

Elizabeth Mpofu of the Shashe block farms in Masvingo spoke reverently of farmer-managed seeds.

“Besides being easily accessible to almost everyone, they are very healthy and also don’t require expensive chemicals and fertilisers,” she says.

She tells of efforts to climate-proof the environment by jointly planting trees with Nyakazeya. They are occasionally thwarted by tree-fellers who are not part of these efforts. She blames government-promoted industrial monoculture for neglecting farmer seed systems.

“We do some seed fairs and exchange visits as an effort to spread seeds. We also invite journalists to our workshops, seed fairs and other programs so that they write and publish our work as smallholder farmers,” she says. “Slowly, Zimbabwean farmers are appreciating the traditional methods of farming, meaning to say we are very much confident in our indigenous knowledge.”

Foreign influence hampers progression

Nelson Mudzingwa was singular in his attack on foreign actors promoting corporate hybrids. “

The Green Revolution funded by the Gates Foundation is pushing for industrial seeds in Africa to the level of promoting GMOs. They will ultimately destroy our local food systems in another wave of colonisation. Many farmers are forced to grow what they don’t eat and eat what they don’t grow.”

In July 2015, Zimbabwe stayed away from signing an ARIPO-sponsored Plant Variety Protection Protocol concerned that the treaty could weaken indigenous farmer seed systems. The protocol aims to transfer the control of seed from smallholder farmers to profit-driven multinationals by creating a harmonised regional plant variety protection system that favoured seed producers.

When John Basera, permanent secretary in the Ministry of Lands, Agriculture and Rural Resettlement, was asked to comment, he did not respond.

However, the beauty of agroecology is that it has a cultural claim on the Zimbabwean community. Unlike many initiatives that fold, the moment civil society organisations take flight or donations run dry, agroecological practices like farmers food varieties point smallholder farmers back to the indigenous unity of life. It is due to this foundation that there is a sustainable future ahead for rural farmers in this corner of Zimbabwe.

