

# Contents

02	Editorial
	Joe Kobuthi
06	Glossary
08	App-solutely Plowing Through: Debunking the Digital Farming Myth and its Plot Against Farmer Sovereignty Zahra Moloo
14	Pesticide Paradox: Unwrapping the Regulatory Riddle in a World Where Veggies Need More Protection than Your Medicine Cabinet Christine Gatwiri
20	Kisii's Crop Rotation: From Smallholder Fields to Urban Yields, the Evolution of Agriculture in a Changing Landscape Silas Nyanchwani
24	Pokot's Pantry Paradox: Unveiling the Quirky Icons of Food Aid in Wests Wild West Darius Okolla
28	Kenyan Pastoralists: Navigating Nature's Maze in a Herd-Knock Life Hassan Roba and Dalle Abraham
34	Coffee break
36	Sow Unfair: Digging into the Gender Plow Gap in Agricultural Labour Pierra Nyaruai

## Editorial

In a world inundated with slogans advocating for healthier and sustainable living, it's easy to overlook the insidious normalization of absurdities within our food systems. What was once considered morally reprehensible or ethically dubious has now become an accepted norm, hidden beneath the shiny veneer of convenience and modernity. As we journey through the labyrinth of our culinary landscape, it becomes imperative to unmask the rotten core that lurks beneath the surface, challenging us to question the very foundations upon which our food systems rest.

In Kenya, the journey into this culinary abyss begins with some questionable government policies and a political class more focussed on self-aggrandisement rather than helping its citizens.

Consider the Seed and Plant Varieties Act Cap 326 of 2012 that prohibits farmers from sharing, exchanging or selling uncertified and unregistered seeds. This legislation punishes offenders with a prison sentence of up to a maximum of 2 years or a fine of up to KES1,000,000 or both. The punitive nature of this law reinforces neocolonialism and potentially gives big multinationals, big business and profit-driven entities free reign to pirate local resources, undermining the ownership of indigenous seeds and intellectual property rights in indigenous knowledge on seeds in Kenya.

The absurdity lies not only in the exploitative systems of the agro-industry but in the fact that such practices are deemed acceptable by a society that claims to embody the spirit of collectiveness. As consumers, we must confront the ethical incongruity of our choices, as the normalization of these absurdities perpetuates a cycle of suffering that extends far beyond farming communities.

Equally disturbing is the normalization of food waste in a world plagued by hunger and scarcity. According to the Food and Agriculture Organization of the United Nations, roughly one-third of the food produced for human consumption is lost or wasted globally every year. This staggering statistic highlights the absurdity of our modern food systems, where perfectly edible food is discarded while millions around the world go to bed hungry.



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Our voyeuristic media, which revels in the sensational and in sleaze, misses the opportunity to explain to the public the systemic nature of Kenya's perennial droughts. Instead, when the country is hit by extended drought, citizens are fed a staple of images of politicians flagging off relief food to droughtstricken areas, of starving children and emaciated livestock, their skeletal frames visible through sagging skin, standing weakly, sunken eyes reflecting the desperation of impending death due to prolonged deprivation of both food and water.

In our quest for industrial-scale agriculture and cosmetic modernity, we are witnessing the disappearance of local agro-knowledge and indigenous food crops—like Black Nightshade, Finger Millet, Sorghum and berries—due to their poor market potential. The structural and legal institutional framework of Kenya's commercial agriculture that replaced the indigenous political ecology of food has led to the emergence of structural food shortfalls and endemic malnutrition. This normalised absurdity not only exacerbates issues of food insecurity but also contributes to environmental degradation, as wasted food releases harmful greenhouse gases into the atmosphere.

The influence of profit-driven motives extends beyond the production and distribution phases and permeates into the very core of our dietary choices. The proliferation of highly processed, nutrient-deficient foods has become an alarming norm in our daily lives. As we indulge in convenience, we often overlook the price we pay with our health for the illusion of quick and easy sustenance.

The normalisation of sugary, salty, and fatty processed foods has led to an epidemic of diet-related diseases, from obesity to diabetes. Yet, the relentless marketing campaigns and shelf dominance of these products continue to shape our dietary landscape. The absurdity lies in the fact that we willingly compromise our well-being for the sake of convenience, unknowingly perpetuating a cycle of poor health that burdens both individuals and healthcare systems. Moreover, the ethical implications of our dietary choices extend to the exploitation of labour and smallholder farmers. Kenyan parastatals are known for the mismanagement and inefficiencies that have cost small-scale coffee, tea, maize, pyrethrum, sugar, and milk producers high losses over the years. Leakages, poor management of grain stores, and corruption at buying centres are responsible for many of the problems. The procurement of maize, sugar, and imports of agricultural chemicals are the source of most of the national scandals affecting the availability and prices of staple commodities, which in turn lowers the quality of life and nutritional status of poor Kenyan households.

The absurdities ingrained in our food systems manifest not only in the physical realm but also in the intellectual and emotional disconnect between consumers and the sources of their sustenance. The rise of the detached, transactional relationship with food is emblematic of a society that has lost touch with the intricate web connecting agriculture, nature, and nourishment. The very act of eating, once a sacred and communal experience, has been reduced to a mindless routine, fuelled by the allure of instant gratification and the normalisation of detachment.

Breaking free from the shackles of these normalised absurdities requires a collective re-evaluation of our values and a shift in our perception of what constitutes an ethical and sustainable food system. It necessitates a conscious effort to reconnect with the origins of our food, acknowledging the intricate interplay between the choices we make and their far-reaching consequences.

We must prioritise a paradigm shift towards an agroecological and sustainable agricultural practices that respect the natural rhythms of the earth and the principles of food sovereignty. Embracing local and seasonal produce not only reduces our carbon footprint but also fosters a deeper connection to the land and the communities that sustain us. By supporting ethical farming practices, we can actively participate in dismantling the rotten core of an industralised food system built on exploitation and disregard.

To combat the pervasive influence of immoral food systems, teaching ethics will become a powerful tool in empowering consumers to make informed and healthconscious choices. By promoting nutritional literacy and advocating for the right government policies, we can dismantle the normalised absurdity of prioritising the individual over the commons. Additionally, supporting local farmers and embracing whole, unprocessed foods can contribute to a healthier and more sustainable food culture. Addressing the exploitation of labour within the food systems requires a re-evaluation of our priorities. This will entail a multipronged effort by government, civil society actors and international organisations to demand fair wages, safe working conditions, and ethical labour practices in order to shift the narrative away from the normalisation of exploitation. Creating a conducive policy and business environment that prioritises the well-being of workers and citizens over profit margins sends a powerful message that the human cost of our food should never be overlooked or dismissed.

Finally, the future of this revitalisation is going to be grassroots-based and sustained by networks of conscious actors organising to dismantle the power of the agro-industrial complex. By embracing the communal aspect of food, we can foster a deeper appreciation for the interconnectedness of our food systems and the impact of our choices on a global scale.

Inspired by the Netflix documentary Rotten, this issue of Cha Kula, thus highlights the absurdities in our food systems in Kenya, both historically and in the contemporary moment. In Zahra Moloo's article, the myth of digital farming, we discover that while there are many apps that promise a "technofix", for farmers, they mask a more insidious reality. Farmers unknowingly contribute to entrenching corporate interests in agriculture by embracing digital platforms. Christine Gatwiri underscores the critical need for effective regulatory measures, improved monitoring, and a comprehensive approach to ensure the safety of pesticides in the food chain. Balancing the necessity of pesticides with potential risks requires continuous evaluation, adaptation, and a commitment to safeguarding public health.

Silas Nyanchwani paints a stark picture of the unnoticed transformation of Kisii's agricultural landscape, emphasising the urgent need for sustainable farming practices, climate adaptation, and comprehensive strategies to address the complex challenges faced by the region. Darius Okolla's piece on food dependency and the symbols of aid reliance among local farmers and pastoralists in west Pokot highlights that self-sufficiency requires coordinated efforts, community engagement, and a shift from aid dependence to sustainable agricultural practices. Dalle Abraham and Hassan Roba opine that it's time to move beyond stereotypes and embrace a comprehensive understanding of pastoralism for meaningful development in northern Kenya. Pierra Nyaruai notes that there is a pressing need for more comprehensive,

inclusive, and effectively implemented policies that can help change the narrative for women as transformation of small-scale entrepreneurial farming will begin with recognising, respecting, and remunerating the invaluable labour of women, and compensating them for their work.

Even in the face of the myriad contradictions and absurdities within our food systems, all is not lost.

As consumers, we hold the power to challenge and reshape the status quo, dismantling the rotten core that underlies the seemingly innocuous practices that have become ingrained in our daily lives. By advocating for ethical, sustainable, and mindful choices, we can collectively build a food system that nourishes both our bodies and our conscience, steering away from the normalised absurdities that threaten the very foundation of our culinary existence.

## Glossary

Agroecology: The application of the science of ecology to agriculture, by understanding how nature works and mimicking natural systems.



Food Security: Food security exists when all people at individual, household, national, regional and global level is achieved at all times have **physical** and e**conomic** access to sufficient safe and nutritious foods that meet their dietary needs and food preferences for an active and healthy life.

**Food system:** All processes and labor involved in keeping us fed: growing, harvesting, processing, packaging, transporting, marketing, consuming, and disposing of food and food packages. It also includes the inputs needed and outputs generated at each step.

**Industrial Food System:** This system relies heavily on intensive practices and large scales, using machinery, pesticides, fertilizers, genetic engineering, cheap labor and vertical integration to channel the bulk of profits to a few large companies. This system also contributes heavily to environmental degradation, and is fraught with social injustices.



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Digital farming: Digital Farming is the consistent application of the methods of precision agriculture and smart farming, internal and external networking of the farm and use of web-based data platforms together with Big Data.



Food sovereignty: Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations.



Highly Hazardous Pesticides

(HHPs): HHPs have high levels of acute or chronic hazards to human health and the environment. In addition, pesticides that appear to cause severe or irreversible harm under conditions of use in a country may be treated as highly hazardous.



Pastoralism: Pastoralism can be considered as a low external input agroecological system that makes the most of the patchy and variable resources found in the world's rangelands, to produce not only food, but also a range of other products and services.



## App-solutely Plowing Through: Debunking the Digital Farming Myth and its Plot Against Farmer Sovereignty

By Zahra Moloo

Digital farming has been falsely sold to farmers as a way for them to earn a better living and generate higher yields while taking care of the environment. Today, the world's largest tech companies, which control the flow of data, are closely integrating with agribusiness companies like Monsanto that supply agricultural products to farmers, including pesticides, tractors, and drones.

In a promotional video created by Safaricom, a group of farmers sit listening attentively to a representative of Digifarm, an agricultural technology platform. All the farmers wear identical Digifarm caps on their heads. Later in the video, Geoffrey Kimathi, a farmer who uses Digifarm's services, explains how Digifarm has enabled him to have access to loans and fertilizers that he was not able to acquire before. His revenues have improved so much, he explains, that he is now able to send his children to a private school. Digifarm's promotional video ends with Kimathi smiling into the camera, a veritable example of how Digifarm's app has transformed the formerly miserable lives of poor smallholder farmers.

Digifarm is a service of Safaricom, Kenya's largest telecommunications provider. To access Digifarm, a farmer downloads the app from GooglePlay with his or her personal information. By entering into an agreement with the company, the farmer can access loans in order to purchase inputs such as fertilizer and pesticides, certified seeds, and "training on best farming practices". In return, the farmer sells his or her produce to Digifarm at what Digifarm calls "competitive market prices". As part of the Digifarm package, the farmer also has access to Arifu, a chatbot service that offers farming advice. Digifarm is one among a whole range of digital agricultural platforms that have sprung up in Kenya and other African countries. Another is the digital farming platform Azure Farmbeats created by Microsoft (soon to change to Azure Data Manager for Agriculture). Azure Farmbeats collects data on farmers' soil, water, and crops, and in turn offers recommendations and farm health advisories. Like Digifarm, Azure Farmbeats also has a chatbot service called Kuzabot, developed in 2020 under a partnership with the Bill Gates-funded Alliance for a Green Revolution in Africa. Other tech platforms include iprocure, Digicow which offers digital vet and AI services, and HelloTractor – an app described as the "uber for tractors".

These new agricultural technology platforms are part of a growing trend in the digitalization of agriculture. This trend is based on a narrative, pushed by the United Nations and multilateral institutions like the World Bank, that digital technologies can improve the food system by providing essential information to farmers, enabling them to increase their yields and profit, and doing so in a way that is environmentally sustainable. The greatest beneficiaries, the tech platforms claim, are the farmers themselves, as evidenced by the smiling Geoffrey Kimathi after encountering the range of lifechanging services from Digifarm. But what this story obscures, and what Digifarm and Microsoft do not reveal in their promotional materials, is the bigger picture of why digital agricultural platforms are proliferating on the continent, who is behind this new trend, and what digitalization means for smallholder farmers.

Zahra Moloo is an investigative journalist, documentary filmmaker, and researcher from Kenya, based in Montreal, Canada.



#### Big Ag marries Big Tech: A Dangerous Merger

Over the last ten years, the industrial food system, the part of the food system that is controlled by corporations and produces food on a mass scale using pesticides, fertilizers and modified seeds, has come to be controlled by fewer and fewer companies. Today, only four companies control the entire industrial food system: Bayer, Corteva Agriscience, Syngenta Group/ChemChi¬na, and BASF. At first glance, this trend appears to be a problem limited to the global North, where a significant part of the food system is in the hands of large agribusiness companies. In the rest of the world, seventy per cent of food is still produced by small-scale producers.

However, there are increasingly greater efforts to impose the same corporate food system that exists in the North all over the world. In Africa, such efforts are led by organizations like the Gates-funded Alliance for a Green Revolution in Africa (AGRA) which aims to strengthen private sector interests in agriculture in Africa, and to transform smallholder farming into a "business". One of AGRA's principal partners is Bayer, the giant agribusiness company which in 2018 bought Monsanto, the largest producer of genetically modified seeds and of the toxic herbicide Roundup. AGRA also partners with the African Development Bank whose approach to agriculture is to "shift from a highly diversified, subsistence-oriented farming activity towards a more commercially-oriented agriculture with improved access to markets".

The attempt by agribusiness corporations and philanthropic donors such as the Gates Foundation to capture peasant food systems is nothing new - it has been going on for decades. What is relatively new is the merger between agribusiness and data companies.



### Having access to "certified" Syngenta seeds may sound good on the surface. But ask any farmer about their seed practices, and most likely they will mention how seeds have been saved and shared among farmers and peasants since time immemorial. "

In 2014, Monsanto bought The Climate Corporation for US\$930 million, a company that underwrites weather insurance for farmers using tools like machine learning. Its Chief Technology Officer, Robb Fraley, said that in the next years, Monsanto would likely become an "information technology company". For Monsanto, data analytics represented the "next major breakthrough" for farming. They were not far off the mark. Today, the world's largest tech companies, which control the flow of data, are closely integrating with agribusiness companies like Monsanto that supply agricultural products to farmers, including pesticides, tractors and drones. For instance, tech giant Microsoft has developed an app to collect information from farms, Apple has an Apple Watch to provide information to farmers about their crops, and Amazon now owns the American supermarket chain, Whole Foods. On the agribusiness side, Syngenta/Chemchina acquired the digital platform Cropwise, which offers digital solutions for agriculture, and Corteva owns Granular, a software development company whose stated aim is to help farmers to be more "profitable and efficient".

These new mergers have proven to be immensely profitable for agribusiness and tech firms alike, through the extraction of one main resource: data. Data, referred to nowadays as the "new oil", is a resource whose value increases the more of it is hoarded and aggregated.

It is data that digital agricultural platforms like Digifarm are after: data about seeds, soil, crops, fertilizers, and weather from farms. In turn, the farmers who provide this data constitute a ready-made market for agribusiness companies to sell their products to. Data platforms like Climate Fieldview, developed by Bayer (or Bayer-Monsanto), harvest farmers' data by analyzing pictures of farmers' fields and crops and then suggest which Bayer products and herbicides farmers can buy. Microsoft's digital platform Azure Farmbeats and its chatbot Kuzabot provide farmers in Kenya with information via WhatsApp and SMS about which inputs to use and which companies to buy from, while Digifarm - and its app Arifu - has a relationship with the seed and pesticide company Syngenta: farmers' use of the platform "creates a demand for Syngenta seeds".

Having access to "certified" Syngenta seeds may sound good on the surface. But ask any farmer about their seed practices, and most likely they will mention how seeds have been saved and shared among farmers and peasants since time immemorial. But over the last decades, increasingly larger portions of the seed market have come under the control of companies like Syngenta that develop genetically modified crops. Genetically modified seeds from the top agrochemical companies, Bayer, Corteva, Syngenta, and BASF, now account for nearly half of all global seed sales. This trend, in combination with the imposition of laws that privatize seeds and criminalize the sharing and exchange of seeds by smallholder farmers, ensures that agricultural corporations like Syngenta take over even more of the food system. Combine that with company-made inputs like pesticides, fertilizers and herbicides, and a system of industrial agriculture emerges to take the place of smallholder farming.

The benefits accruing to agribusiness companies are not limited to selling products to farmers. In the same way personal data from social media users on Facebook and other social media platforms is sold onto third parties, so data from farmers can be sold onward to insurance companies, pesticide dealers, large food companies, banks, and even NGOs. Meanwhile, the apps marketed to farmers are completely free to use. In the Netflix documentary about social media platforms, the Social Dilemma, Google's former design ethicist, Tristan Harris explains, "If you are not paying for the product, you are the product." So while Digifarm markets itself to farmers as being free, the company neglects to mention that what it gets in return is the ability to extract, for free, the data that farmers provide when they sign up to the platform and to then own that data or sell it onward.

If one digs deeper, it turns out that these platforms are not even completely free to use. The research organization GRAIN explains how farmers that are "contracted" by Digifarm must buy inputs that are sold on credit at high interest rates, pay for crop insurance, sell their crops to the company at non-negotiable prices and then pay a fee to receive payments on the digital money app. Those who do not follow through with their payments face serious consequences: farmers who are late in repaying their loans must pay a penalty of 15% fee of the outstanding balance and have lower loan limits in the future, while farmers who default are blacklisted from Digifarm, which in turn means they cannot borrow from other lenders, such as banks, SACCOs and M-Shwari. GRAIN calls this system "contract farming on a mass scale".

#### The Farmers don't Know Why They Farm

While the underlying corporate interests in the deployment of agricultural technologies remain hidden from farmers, making it difficult to identify the dangers of signing up to new data platforms, there is another reason why agricultural technology platforms have managed to proliferate and take hold of the farming sector – namely, the narratives that shape discourses and perspectives around both technology and agriculture.

One of the narratives that Digifarm perpetuates in its promotional materials is that farmers "do not know the reason they farm certain crops". The farmers' ignorance and lack of knowledge is illustrated visually by images of them looking upwards, listening to a Digifarm expert sharing information. To prove that Digifarm's services are beneficial to farmers, Geoffrey Kimathi, a Digifarm farmer, testifies that all was not well before Digifarm appeared: he could not acquire pesticides, fertilizer or manure, and his yields were too low. After he signing up to Digifarm, he has access to affordable products, seeds that are "not fake" and his revenues have improved so much, he explains, that he is now able to send his children to a private school rather than the public school they were enrolled in before. He has become, in Digifarm's vision, a "profitable" farmer.

In his book, A Feast of Flowers, anthropologist Chris Krupa describes how Marx understood the power of narrative as a "social force in its own right:" Krupa looks at how narratives - specifically in Ecuador's flower plantation sector - work to "validate capitalist beneficence". In Digifarm's video, the narrative that farmers do not know what is good for them, or even why they plant the crops they do, validates the intervention of agricultural technology platforms like Digifarm in terms of capitalist beneficence: they come in to help alleviate the farmers' suffering, transforming them from poor ignorant farmers into modern businessmen. This story is underpinned by assumptions that agriculture is a business and farmers are, or can be, entrepreneurs in the agribusiness system. In this narrative, farming should be about making as much money as possible, as efficiently as possible, while producing food at a lower cost. Left out of this story is the importance of farmers' relationship to

the land, their traditional practices and existing knowledge systems.

Working alongside this story is a larger, now widespread belief that technology is not only desirable, but necessary to "solve" the complex social problems that we face today. Critics characterize this narrative as a "technofix" narrative which overlooks structural causes of problems like food insecurity and access to land, in favour of quickfix technical solutions. Technofix language is widespread among digital agriculture platforms: Syngenta's Cropwise mentions the importance of a crop's "efficiency", of "optimizing" a farm, and having "digital solutions" while Digifarm describes its aim as "leveraging technology" to resolve "key challenges" in order to make farmers wealthier. If the problems to which these platforms are providing solutions are low yields and precarity in farming as a result of climate change, there are much larger systems that need to be confronted, and far better longer term "solutions" like agroecology, which the Alliance for Food Sovereignty in Africa (AFSA), a network of African farmer organizations, has identified as a way forward for farmers and the planet.

Digital farming has been falsely sold to farmers as a way for them to earn a better living and generate higher yields, while taking care of the environment. It's a narrative that obscures a much more insidious process. By downloading and using these apps, farmers are buying into a model of farming that further entrenches corporate interests in agriculture, paving the way for more of the food system to be captured by the largest agribusiness corporations in the world.

Digital farming has been falsely sold to farmers as a way for them to earn a better living and generate higher yields, while taking care of the environment.



### Pesticide Paradox: Unwrapping the Regulatory Riddle in a World Where Veggies Need More Protection than Your Medicine Cabinet

By Christine Gatwiri

Regulating pesticide registration and labelling is not enough; close monitoring on the ground is critical. In Kenya, this is where the food safety chain begins to break.

The government closely regulates how substances such as alcohol, cigarettes and drugs are used, sold and marketed. Alcohol advertisements must specify that the product is "not for sale to persons under 18 years" and cigarette packets carry mandatory health warnings. The Pharmacy and Poisons Board, the regulatory body in charge of medical drugs, may withdraw a drug if there are safety concerns, or if it does not meet market authorisation thresholds.

Pesticides are drugs, for all intents and purposes. The difference is that they act on plants and not humans – managing or killing weeds, pests and diseases caused by organisms like fungi. However, they can and often do find their way into human bodies, a reason for greater regulation.

Pesticides enter the human body directly through food consumed and indirectly during application, mixing or storage. Other ingestion routes include contaminated water or when pesticide residues travel up the food chain through fish/aquatic animals or bees into honey.

It is a matter for concern when pesticides cross into humans or the environment. This is because they act outside of their intended organisms, leading to side effects, some of which can be potentially harmful. In humans, they can lead to reproductive toxicity, cause harm to unborn children, damage genetic material or cause mutation, which may lead to cancer. In the environment, these drugs can affect bees and kill marine life, beneficial insects, and birds. Theoretically, pesticide use within stipulated application and pre-harvest guidelines should be relatively safe. And there are dozens of regulations concerning the manufacture, registration, marketing, use and application of pesticides, both locally and internationally. However, there is a mismatch between intent and the reality on the ground.

Like drugs, pesticides are subject to strict regulations to minimize or prevent toxic effects on humans or the environment. The World Health Organization (WHO) and the Food and Agricultural Organization (FAO) provide guidelines on labelling, application and monitoring of pesticides, and even on their marketing and advertising. Individual countries customize the FAO/WHO guidelines to develop regulations to suit their contexts.



Pesticides enter the human body directly through food consumed and indirectly during application, mixing or storage

Ms Christine Gatwiri is a Food Systems Researcher and Writer at Farming Food Africa.



#### Pesticide Regulations in Kenya

The Pest Control Products Board (PCPB) is the government body that regulates pesticides. The PCPB website provides a list of registered, banned or restricteduse products, and lists of the premises licensed to sell pest control products as well as the various relevant acts, regulations and notices.

The PCPB classifies pest control products under four categories: Restricted, Commercial, Agricultural, and Domestic. The Restricted Class lists products that meet a specific oral, dermal or environmental toxicity threshold, along with limitations to their distribution and use, and the qualifications of those allowed to apply them.

The Commercial and Agricultural categories list pesticides whose toxicity threshold is much lower than that of the Restricted Class and their use and distribution are also stipulated. The pesticides in the Domestic category have a much lower toxicity threshold and are considered safe for household use, without special precautions or equipment specified. The packaging is in such sizes that the amounts can be safely used and stored at home.

#### Reality on the Ground

Regulating pesticide registration and labelling is not enough; close monitoring on the ground is critical. In Kenya, this is where the food safety chain begins to break.

The International Code of Conduct on Pesticide Management recommends buffer zones and strict preharvest intervals when using highly hazardous pesticides (HHPs). However, most farms are too small and some are located next to residential areas, schools and hospitals, rendering the establishment of buffer zones difficult.

Moreover, pesticides are sold to untrained farmers; only 1 in 6 farmers can read labels according to a recent Route to Food report. Pesticides classified in the Restricted, Agriculture, and Commercial categories and requiring certain qualifications/training to use end up being handled like those in the Domestic category – applied without the mandatory personal protective equipment (only 1 in 6 farmers wear protective gear), without any training, and under poor storage and disposal conditions.



The FAO recommends an incident reporting system where emerging problems with pesticide formulation or use can be tracked, recorded and the data used in decision-making. This is an example of the kind of feedback loop that is required to connect policy on paper and practice on the ground, yet this approach does not seem to be used in Kenya where pesticide poisoning is a growing concern in public health. According to one study, up to 52% of acute poisonings in agricultural zones are caused by pesticides. In addition, numerous reports have shown residues of toxic pesticides above the tolerated maximum residue limits (MRL) in market produce, yet this feedback is not taken to rectify the policy on paper further disconnecting policy and practice.

#### Market Surveillance, Traceability and Food Safety

Various government agencies monitor produce at different levels of the value chain. The Kenya Plant Health Inspectorate Service (KEPHIS) monitors plant health, including seeds and seedlings, and certifies import and export produce, ensuring that phytosanitary requirements for export produce are met. Under the Agriculture and Food Authority, the Horticultural Crops Directorate (HCD) regulates the horticultural sector, monitoring compliance of horticultural produce and enforcing standards through inspection and surveillance in aggregation and market centres. The Department of Veterinary Services monitors animal health drugs and pesticide residues in feed and animal products. The National Biosafety Authority supervises the handling of genetically modified/engineered organisms. The Kenya Bureau of Standards (KEBS) comes in at the tail end of consumer-ready foods to provide standards and examine microbial and chemical contamination in food. Through the Department of Health, the Ministry of Health exercises its mandate at different points; for example, at the consumer end to ensure hygiene standards in eateries and restaurants.

### The Food and Feed Safety Control Coordination Bill, 2023

Despite the many agencies and their mandates, regulations and standards in the country are poorly harmonized. The parliamentary Agricultural Committee on Food and Feed Safety acknowledges that Kenya lacks a functional food safety surveillance system and that the multiple agencies can hinder progress where there are overlapping mandates.

Thus, the Food and Feed Safety Control Coordination Bill 2023 currently before parliament aims to address some of these issues. The Bill proposes the setting up of institutions such as the Office of the Food Safety Controller, and

the assigning of roles for counties in the implementation and enforcement of food and feed safety measures. The roles of the Agriculture and Food Authority, KEPHIS and PCPB are expanded to include conducting audits of the established traceability mechanisms.

If the Bill is passed, the Office of the Food Safety Controller could harmonize all the bodies, agencies and regulations involved. But whether the Office will have the resources, capacities and political will to exercise this mandate is another matter.

#### Way Forward

The local produce market lacks the human resource capacities, the regulatory frameworks and the close linkage between the farmer, the dealers and the market. There are, therefore, lessons to be learned from the export produce market where small-scale producers are organized into groups and advised on pesticide use. Regular training, monitoring and testing ensure compliance. Collection and aggregation are implemented in such a way that produce can be traced back to the farmer, making it easier for dealers to identify the origin of any unfit produce.

Most of our food production – up to 70% - is by smallholder farmers who have room to utilise multiple sets of tools in pest management: crop rotation, good agricultural practices and integrated pest management; biopesticides; chemical pesticides. However, the prevailing approach is the use of highly hazardous pesticides without considering the threat of pests developing resistance. Globally, just like antibiotics in the medical field, fewer new pesticides are released each year due to the high costs of research and testing. With every new case of resistance, we face the risk of running out of pesticides.

It has to be noted that most of the highly hazardous pesticides were designed for use in high-income countries where farming is intensive and large-scale, where fewer people work in agriculture-typically 6 to 7% of the population compared to 60 to 70% in low-income

Most of our food production – up to 70% - is by smallholder farmers who have room to utilise multiple sets of tools in pest management" countries such as Kenya – and where training capacities and resources to ensure compliance and implement surveillance and monitoring are available.

#### **Balancing Safety and Need**

Safety and the need for pesticides is a constantly shifting balance that regulators need to strike. For example, in 2016, the FAO published Guidelines on Highly Hazardous Pesticides that proposed three measures for mitigating the risks of HHPs: ending their use; selecting products with the lowest risks to human health and to the environment; changing formulations and packaging in order to ensure their proper use.

However, there are other different ways to go about achieving the safety versus need balance. For example, where more toxic pesticides need to be used in the interest of food security, a phased approach can be considered in which they are used early in the growing phase while less toxic pesticides are applied towards the late growing/ harvest period.

Additionally, the PCPB is mandated to issue temporary or emergency registration where necessary, for example, during an outbreak of a disease or pest that cannot be managed by any other means.

#### **Dynamic Regulation and Feedback Loops**

Lastly, a dynamic rather than a static approach is more suitable in the regulation of plant and livestock drugs. This is of particular importance where there exist capacity or resource gaps with regard to compliance with safety or testing guidelines. Data from market surveillance can be used as feedback to inform regulation and make adjustments as the market conditions change.

Regulation can and should also be reactive, informed by emerging problems in the market. If a pesticide is registered and it is later found out that it is not being correctly used, and there are emerging risks to consumers, the regulations concerning the pesticide should be revisited and rectified. The Pharmacy and Poisons Board has such a system in place, a post-market surveillance mechanism that keeps track of emerging problems with products or their use once in the market and adjusts regulations to safeguard public health.

The Constitution of Kenya 2010 provides that Kenyans have a right to be free from hunger, and to have adequate food of acceptable quality. For that quality to be guaranteed, food safety regulators must strive to ensure that harmful pesticides do not make their way up the food chain and into our bodies.



Regulation can and should also be reactive, informed by emerging problems in the market. If a pesticide is registered and it is later found out that it is not being correctly used, and there are emerging risks to consumers, the regulations concerning the pesticide should be revisited and rectified. "



## Kisii's Crop Rotation: From Smallholder Fields to Urban Yields, the Evolution of Agriculture in a Changing Landscape

By Silas Nyanchwani

Rural Kisii has undergone a quiet transformation, unnoticed, but the effects reverberate in every homestead. Poverty has driven most families to sell their banana crop to predatory buyers from Nairobi rather than consuming it themselves. Farming has declined as wealthier families move their parents to the city or outside the country

Rural Kisii has undergone a quiet transformation, unnoticed, but the effects reverberate in every homestead. While researching this essay, I asked various farmers what had changed in the last three decades. There was a consensus that the disappearance of finger millet from nearly all farms illustrates how farming has drastically changed for the worse in Kisii.

Finger millet, best known as the key component of brown ugali and porridge, is culturally held in high regard among the Abagusii. Long before it was found to be a wonder food for diabetics, the Abagusii reserved millet ugali for elders, for culturally important functions like bride-price negotiations or for visiting in-laws. Finger millet was also used as a source of yeast in alcohol production and for other medicinal purposes.

Finger millet farming was an intricate science passed from one generation of women to the next, with each family dedicating a substantial chunk of their land to its production, both for use and for sale at the market since it fetched good returns. Today, less and less of the grain is farmed.

Wycliffe Onduso, 44, a farmer in Kisii and Transmara, says that land subdivision has rendered the production of finger millet untenable. Among the Kisii, the reasons for farming finger millet are cultural before they are commercial, and traditionally this labour-intensive grain was farmed by

Silas Nyanchwani is a writer and journalist based in Nairobi, Kenya.

women on ancestral land. However, Onduso's ancestral land in Kisii is only large enough to hold his three-bedroom bungalow and little else; he does most of his farming on land leased in Transmara where there is a preference for high-yield crops like maize and sugar cane.

In her 1998 study, *Re-conceptualising Food Security: Interlocking Strategies, Unfolding Choices and Rural Livelihoods in Kisii District, Kenya,* the late Prof. Mary Omosa explains that, "A typical Gusii farm consists of a long (and wide) strip of land running from the top of a ridge to a valley bottom and it includes the homestead." In the customary land tenure system of the Abagusii, only men can inherit arable land while grazing sites and forests are shared by kinsmen.

Nearly all the land has been gobbled up in the space of two generations, and in the case of Onduso's family and virtually all his extended family, his is the last generation to inherit a stamp-sized piece of land; his children will inherit nothing.

A mass exodus of Kisiis began in the early 1990s, with many first settling in the Rift Valley. However, fear of election-related violence saw many Kisiis settle permanently as far away as possible from the Rift Valley, with some moving to other parts of Western Kenya, to Makueni and Kitui in Eastern Kenya, to Taita Taveta and to the Coast.



Land subdivision in Kisii has limited farming, with two dire consequences.

First, where in the 1990s my mother had the luxury of practicing crop rotation and could afford to "rest" a whole acre, readying it for the next planting season, this is no longer possible. Crop rotation is practically impossible in present-day Kisii and Nyamira counties.

Secondly, as the size of land diminished, the variety of crops grown has also been reduced to maize and beans at most. Coffee plantations have been uprooted, and tea plantations may follow suit, partly due to the dwindling space for farming and housing and partly due to dwindling earnings from tea.

The little arable land remaining is over-farmed. To borrow from Chinua Achebe's *No Longer* at Ease, when villagers contribute measly gifts to Obi Okonkwo to send him to England to study and come back to get into formal employment, it is because in the village, "men and women toiled from year to year to wrest a meagre living from an unwilling and exhausted soil".That is where Kisii is at presently; after being farmed season in, season out without a break, the soil is unyielding.

Soil fertility has gone down significantly; the portion of land that could fill a granary can no longer fill even a third of it. Whatever people harvest directly from the farm is too little to store; it is dried and taken directly to the millers. Besides, we no longer have the long cob maize variety. "Lately it is small cobs that don't yield much," observes Onduso. The harvest used to last two planting seasons (February to August and August to February). Those who did not harvest enough resorted to buying grain in mid-season, which was highly frowned-upon. Now, buying food, or *ogotonda*, is the norm, as more people have to buy maize from places like Kitale.

Petty theft has become increasingly common. "Stealing of bananas or other ready produce, including chicken, is common across Kisii," notes Onduso, a testament to the underlying poverty as more people find themselves with little to no land to farm to meet their nutritional needs.



Soil fertility has gone down significantly; the portion of land that could fill a granary can no longer fill even a third of it.

#### **Changing Dietary Patterns**

Since Kenya's independence, the diet of the Abagusii has remained relatively constant. It consists of one part starch, usually *ugali* made from maize meal, and vegetables, mostly kales as well as the common African traditional vegetables such as *manage* (black nightshade), *chinsaga* (spider plant), *egesare* (cowpea) and *emboga* (amaranth). For families with cattle, fermented milk is a common delicacy.

Contrary to popular belief, Kisiis do not hold bananas in high regard. A culinary joke that ran for the longest time was that if someone had eaten banana stew for supper and you asked them shortly afterwards if he or she had eaten, the standard response would invariably be, "No, I have not eaten, just banana stew," a testament to the pre-eminence of ugali as the staple food of the Abagusii. For breakfast, bananas, sweet potatoes, and cassava were the preferred accompaniment to tea, taken black or white.

However, given the shrinking farms, plants such as bananas that need large spaces to grow have become rare, and poverty has driven most families to sell their banana crop to predatory buyers from Nairobi rather than consuming it themselves. The result is that people have slowly embraced bread and other wheat products as a breakfast alternative. And while they can still buy sweet potatoes from Luo Nyanza, the cost has gone up considerably.

Scholars such as the aforementioned Prof. Omosa and Mario Schmidt (writing for the Food, Culture and Society Journal), have noted the dilemma most small-scale farmers face: should they consume the food they produce from their small farms or should they sell in the local markets or to buyers from Nairobi? Often the latter choice carries the day, compromising dietary choices, which partly explains the malnutrition that is prevalent in Kisii despite the region's deceptively green landscape.

#### Mass exodus and generational interdependency

According to the Economic Survey 2021, Kisii had the highest frequency of emigration of all Kenya's 47 counties. Those who leave Kisii do so with the aim of seeking better opportunities while those who remain behind, usually retired or aging parents and younger siblings, depend on them to send back money. And if things do not work out for those who leave for the city, they may find themselves relying on parents to send food to them from the countryside. Typically, the young men and women will do all manner of odd jobs, sending a portion of their wages to their parents, which they use to buy seeds for planting. In return, after the harvest, their parents send them food using the services of couriers such as Transline and Ena Coach. This trend peaked during the COVID-19 pandemic when many living in urban areas lost their jobs.

Even so, farming has declined as wealthier families move their parents to the city or outside the country. And for those parents who remain in Kisii, well-off children send money to buy food, since it is no longer economical to farm on the little available land. Rice and wheat products have slowly been embraced as middle class families are likely to afford a more versatile diet, rather than one limited to ugali.

#### The climate change factor

In early 2018, I went back to South Kisii where I had spent my teenage years and where one of my objects of fascination had been River Kuja (Gucha in Kisii), a big permanent river, often classified alongside River Sondu, Nyando, Yala and Nzoia as the main tributaries of Lake Victoria.

When I arrived in Ogembo, the headquarters of the former Gucha District, I was shocked to see that the riverbed was almost completely dry. Most springs have dried up in the once wet and fertile Kisii, and River Kuja was no exception.

When my family settled in Kisii in the 1990s, the climate was steady and predictable; a dry January allowed for the preparation of land for the February planting season that guaranteed a harvest come August. February and March brought short rains for the planting and weeding season. April-May brought the long rains that enabled a richer growth of the produce. June-July were dry months, enabling harvesting in August, followed by the short rains that enabled planting for the short season that ran from August to February. Rinse, repeat. With a few notable exceptions, such as the 1997-98 El Nino rains and the occasional prolonged dry spell, the climate remained largely friendly and predictable.

However, this weather pattern can no longer be relied upon — in Kisii or anywhere else in the country. Sometimes, as happened in early 2018, the country can go without rain for five months. And droughts can alternate with floods, leaving farmers extremely vulnerable. "A number of studies indicate that climate change has affected agriculture and food security by shifting spatial and temporal distribution of rain, biodiversity, and terrestrial resources like water, and eventually impacting heavily on food security," says Bernard Moseti, a Social Development, Policy, and Governance expert. Evidently, more and more Kisii no longer follow the traditions of the past. Those who still farm have tried to adapt by adopting crops that can cope with the erratic planting cycle. However, food security risks have multiplied because of the frequency and intensity of climate change-related disasters and weather extremes.

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### Pokot's Pantry Paradox: Unveiling the Quirky Icons of Food Aid in West's Wild West

By Darius Okolla

Food production remains a key priority and a challenge for the West Pokot region. Deforestation is the unintended consequence of insufficient food production.In 2021, humanitarian agencies in the wider North Rift region placed the number of those at risk of starvation at about 250,000.

Up until the advent of devolution in 2013, several regions of West Pokot including Kacheliba, Alale, Kongelai, Lelan, and Sigor, had one thing in common: the bags of yellow maize that would arrive promptly from the National Cereals and Produce Board (NCPB) storage facilities about two months into the planting season, or when the stores of the previous season's harvest began to diminish.

Food aid from donors, development partners, state agencies and well-wishers had over many decades become crucial to the residents of these regions despite the significant pockets of onion, maize and bean farming.

While food scarcity affected the better part of the region all the way north to neighbouring counties, it tended to be more pronounced in the areas where underdevelopment had left the populations mired in a continuous struggle for food. For decades, the imported yellow maize continued to occupy a central place in the diets of a population scarred by decades of political marginalisation. Yellow maize provided relief to food-deprived households, especially during the drier months and just before the harvest season. The relief food also benefited isolated herders who would move with their cattle through towns like Sigor, Orwa, and Sebit in search of pasture.

The first major drought during which food aid was provided to the region occurred in the early 1940s and changed the colonial administration's policy towards the North Rift region. The drought prompted the colonial government to push pastoralists into the cash economy; locals were forced to sell their herds of cows, goats and sheep to the colonial administration in exchange for jobs and cash. In the mid-1980s, Catholic missions and Scandinavian donors stepped in to try and alleviate the perennial food scarcity caused by drought and insecurity, inadvertently laying the grounds for heavy reliance on food aid. The poorer families among the Pokot would camp at food distribution centres, at church missions, and at the offices of non-governmental organisations waiting for food donations.

President Daniel Arap Moi's frayed diplomatic relations with donors in the 1980s, the structural adjustment programmes imposed by the International Monetary Fund in the 1990s and their impact on the economy, as well as the area's agricultural systems, further negatively impacted the fortunes of many households in the lower economic ranks. In the 40 years since the food aid framework was put in place, food aid continues to occupy a significant place in the region's socio-political and dietary conversation.

The available data on rainfall patterns, food security and land use, as well as vegetation cover in West Pokot between 1980 and 2011 shows that rainfall has been erratic. Farmers report declining rainfall, rising temperatures and a shortened growing season that has lowered food production. A meteorological mapping of the region over the last few decades confirms the farmers' observations, leading to notable changes in policy responses such as increased stocking, crop diversification, crop area expansion, but also reliance on food aid. Dependence on food aid is, however, not uniform across the highland zones; Kapenguria and Lelan have a lower dependency rate than regions like Chepareria or the more food crisisprone areas like North Pokot and Kacheliba.



Deforestation is the unintended consequence of insufficient food production. Small-scale farmers cut down trees and burn charcoal for sale to supplement their meagre incomes. Sacks of charcoal by the roadside are a common sight, targeting commuters on the Orwa-Wakor-Ortum-Chepareria route.

Sigor, where trees covered 19.9Kha in 2000–or roughly 10 per cent of the land mass–had lost 378ha of humid primary forest or 8 per cent of its tree cover by 2020, leading to an overall decrease in vegetation cover of 7.6 per cent over that period. This has had a direct impact on the recorded rainfall within an area that relies on rain-fed subsistence farming.

In the eight decades since the 1940s drought, food scarcity still afflicts a significant portion of the population of the region. In March 2020, exactly 80 years after the first recorded drought, the national government sent food aid into the county: 150,000 kilograms of rice, 120,000 kilograms of beans, and 60 cartons of corned beef were given out to 31,000 households affected by drought across the county at a per capita ratio of 6kgs of rice and 4kgs of beans.

Food production remains a key priority and a challenge for the county's leaders. The devolution of agriculture in 2013 placed the responsibility of overseeing food production systems in the hands of local leaders who are engaging smallholder farmers, reviving ageing agro-projects, and establishing new ones.

But ten years after devolution, many households still partially depend on relief food from local aid agencies and state agencies to supplement the production from subsistence farming.

In 2021, humanitarian agencies in the wider North Rift region placed the number of those at risk of starvation at about 250,000. Decades of partial dependence on food aid in the county have produced a demographic that sees little need to pursue development amidst a perennial food crisis and the predictable intervention of non-state actors. Poor farmers and pastoralists have come to expect-and have incorporated-relief food into their requirements as their incomes are not enough to meet their food needs.

This demographic is referred to as the satisfied poor in a theory that combines learned helplessness, cognitive dissonance and the subjective quality of life to map out instances where certain people and regions outsource their food autonomy to aid agencies irrespective of the projected size of their annual harvest.



Developed by Geraldine Olson and Brigitte Schober in 1993, the paradigm attempts to explain the satisfaction paradox—why some people who are objectively deprived nonetheless claim to be satisfied with their quality of life. They concluded that "being unhappy with the living conditions and yet 'knowing' that all available coping strategies will have no positive effect on the situation, creates a cognitive dissonance within the individual that he will try to reduce.

This reduction can be achieved either by finally using an effective coping strategy or by the re-evaluation of the perceived situation with adapted (lowered) standards".

Thus when the long-term structures that shape access to and affordability of food do not present clear pathways towards self-sustenance, poor households may learn to lean more heavily on the relatively more predictable provision of food by aid agencies, the state and wellwishers despite the fact that such efforts are meant to be stopgap measures.

In the longer run, this reliance on aid may result in deliberate disengagement by some from the affairs of the community. In fact, in recent years, the county administration has decried the rise in idling as a social malaise in the region.

Still, it should be noted that the structure of aid programming can also induce dependence, particularly in instances where the aid is sporadic and poorly connected to the food sourcing and storage needs of the local communities.

One can laud the sustained efforts to alleviate food insecurity in West Pokot–where 57 out of every 100 residents struggle to meet their basic nutritional needs–while remaining cognisant of the need to move beyond aid. The local administration has brought together a collaborative team from across several sectors with the expectation that a wider pool of stakeholders will more ably fight food insecurity in the region.



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Initiatives such as the proactive poverty graduation policy are closely linked to the mission of the West Pokot County Integrated Development Plan (CIDP), the overall framework that seeks to transform livelihoods through an equitable and sustainable utilisation of resources in order to bring to an end the dependence on food aid.

To deal with the social and psychological underpinnings of the helplessness that is driving dependence on aid, the CIDP has placed the focus on food and nutrition security, and on improving equity in socio-economic opportunities by 2025.

The current El Nino rains have provided temporary respite in terms of production of food crops and fodder for livestock. However, state agencies must continue to coordinate with aid agencies and well-wishers to shield residents from the extreme impacts of the ongoing El Nino rains. Moreover, critical medium- and long-term interventions need to be implemented to undo the learned helplessness that decades of food aid have engendered in the minds of the poor. Aid providers must begin to robustly debate how food self-sufficiency might be achieved both in terms of availability, access, affordability and nutritional diversity.

The current reprieve afforded by the unusually high rainfall in the country in general may just be the right time to start working towards not just ending food dependency but also phasing out the gunny bags and the many emblems that symbolise the reality of dependency among the local farmers and pastoralists.

### Kenyan Pastoralists: Navigating Nature's Maze in a Herd-Knock Life

By Dr. Hassan Roba & Dalle Abraham

A deep-rooted narrative and perception have been formed around pastoralism in Kenya that has created biases that lead to narrow conclusions. Pastoralism thrives in a non-equilibrium system and the main determinant factor is the change in vegetation, which is highly dependent on rainfall variability.

Livestock is bought in large numbers every year during the festive seasons and important religious festivals. This is a boon for pastoralists in northern Kenya as people flock to livestock markets across the country. Some of these festivals, like the Eid al-Adha-the Muslim "feast of sacrifice" – also open up markets in Middle Eastern countries like Yemen, Oman, Qatar and the United Arab Emirates, which look to the Horn of Africa for the supply of goats and sheep.

But with the boon comes the bane as exploitative middlemen and brokers follow in its wake. This is just one side of an ugly coin; the other looks like this: as severe famine wreaks havoc, livestock carcasses dot the landscape and people starve, the government steps in with knee-jack promises of massive irrigation schemes and livestock offtake programmes. A deep-rooted narrative and perception have been formed around pastoralism in Kenya.

This invented and fixed narrative has created biases that lead to narrow conclusions: that northern Kenya is a place of scarcity, livestock is a cultural way of life more than a means of economic livelihood, that pastoralists don't want development and they are to blame for their status. This has led to discussions that further alienate pastoral communities, their harsh ecologies, and pastoral-nomadic livelihoods. It is a narrative that has become a fixture in the Kenyan media and in government policies, and that has led to development practices that have failed to appreciate the inherent economic potential of the region's livestock sector, resulting in the setting of the wrong priorities for development initiatives in the north.

The poor understanding of what can better be described as a rapidly swinging pendulum between two extremes has led to interventions that affect local resilience and disrupt the capacity for adaptation in this highly changeable environment. When fodder and water are in abundance–usually a very short window–pastoralists implement swift, well developed and meticulously planned mobility strategies to track pasture and water in space and time. In support of these strategies, pastoralists have developed a philosophy of sharing the commons and elaborate schemes for managing the sharing of water and pasture in times of scarcity.

#### Extreme weather events.

Pastoralism thrives in a non-equilibrium system and the main determinant factor is change in vegetation, which is highly dependent on rainfall variability. Rainfall in the arid and semi-arid lands (ASAL) is usually low (less than 500 mm) and patchy.

**Dr. Hassan Roba** is a writer and researcher from Moyale, Kenya. His main research interest is in pastoral land use systems, indigenous knowledge and resource management, participatory research, and environmental governance. **Dalle Abraham** is a writer based in Marsabit, Kenya.





Policies and development practices in the region are shaped by this crisis narrative and have failed to appreciate inherent potential leading to wrong priorities for development initiative.

It is worth noting, however, that the flora and fauna in the ASAL region are well adapted to the variability of the weather conditions as are the ASAL communities who have a deep understanding of weather fluctuations—the swinging pendulum between extremes of abundance and scarcity. They have tracked these changes, adapted to them and overcome them through the accumulation of a deep knowledge and an understanding of how their environment functions.

Rapid changes in vegetation and water availability have a corresponding effect on livestock health and productivity as well as on people's livelihoods. This close coupling and co-evolution of the functioning of the ecosystem and adaptation of knowledge and capacities is what is poorly understood by external players including extension officers, policy-makers and development agents who work in the pastoral system. They treat every problem as a short nail—to be reduced by the hammer of compartmentalised quick fixes.

The pendulum of solutions also keeps swinging between simple binaries-abundance and scarcity, war and peace, opportunities and gaps-at an extremely fast pace.

In recent times, external pressure and distortion of rainfall patterns associated with climate change have led to more shocks and reduced resilience for pastoralist communities. A number of external interventions have undermined the traditional response strategies; the digging of boreholes and the establishment of water pans without consideration for how pasture is used. Similarly, interventions in livestock marketing are performing poorly because they are premised on the wrong theory that pastoralists keep a lot of livestock that degrades the environment and increases vulnerability to external shocks. It has, however, been noted that when offered access and favourable prices, pastoralists always participate in the market process. This alone has the potential of fixing a lot of the current pastoralists' crises.

However, access to market is a massive challenge. Access is non-existent at worst, or exploitative and dysfunctional at best. The logistical hurdles that an average herder in a remote place like Badan-Rero has to overcome to get his livestock to market in Nairobi are unbelievable. The very tedious and long supply chain exploits the herder at every stage. Completion of the Isiolo abattoir which is within reach of the Isiolo international airport could contribute to removing some of these hurdles. Access to the market is a massive obstacle. They are non-existent at worst, exploitative and dysfunctional at best."

A vision 2030 flagship project, the abattoir has instead turned into a white elephant and so the livestock market remains an arena of great injustice.

Some of the problems that define this injustice include weak predictability of the market trends, which leaves pastoralists open to exploitation by middlemen. In such a market system, a take-it-or-leave-it price is offered: a potential buyer looks at and assesses how much a goat is worth with his eyes and goes on to sell the animal by the kilo. This lack of market predictability forces the pastoralist to unwillingly surrender his bargaining powers. The exchange value lost by the herders is determined by forces other than supply and demand, a baked-in concept that shapes the unscrupulous and exploitative markets.

The problem of lack of access to market has its genesis in the old colonial containment policies regarding livestock diseases, and maintaining tribal grazing boundaries and law and order. These policies were designed as a way of easing colonial administration and not linking pastoralism to the new political and economic order and persisted long after the departure of the colonial administration. For instance, an ill-conceived colonial-era cordon sanitaire around Nanyuki exists to this day where the region north of the livestock control line is demarcated as diseaseinfested and therefore subject to certain measures that lead to inefficiency in access to markets. All livestock from the north crossing this line must have transport permits indicating that they are bound for the slaughterhouse. A similar line existed around Isiolo, effectively marking the beginning of the Northern Frontier District.

What colonialism managed to do was create superficial solutions that not only disrupted the way communities claimed, owned and used their pastureland, with lines and barriers being drawn between the acacia on the edge of the river to the hill by the forest. When they finally left, the stringent controls, including livestock repossessions, fell into a state of flux as the complex dynamism of pastoralism was never fully or effectively incorporated into national economic planning. This soon threw up new challenges: livestock rustling, displacement from pastureland, even taking on translational nature with cross-border communities invading areas that were vulnerable. But even as these fundamental changes took place, other official attitudes, systematic patterns of thought, administrative and policy biases remained in place and soon recreated the same controlling and counterproductive measures.

For herders whose livelihoods depend on livestock, the lack of a functional livestock market where they do not lose their bargaining power, creates a host of other knock-on effects. They will first not sell their livestock. This will in turn lead to overnight destitution when they lose their livestock to drought and incessant intercommunity raids. This illustrates the crux of the matter even as we acknowledge that the pastoral system has its own inherent coping mechanisms.

Twinning happy festive seasons with the ugly side of the deliberate market exploitation of the pastoral system is thus instructive. While sales of livestock briefly provide injections of much needed money into the local economy, discussions that ought to be had in this country about the long-running chain of skewed processes in the pastoral livestock systems continue to be avoided. The exploitative value chains persist and little is being done to meaningfully protect pastoralists from unscrupulous business people and exploitative market regimes.

Yet, prescriptive, knee-jack and short-lived solutions have been proposed at various levels. The adoption of information technology solutions and elaborate market information systems, the deployment of satellite imaging to improve efficacy in pastureland use, and innovative solutions like the index-based livestock insurance have not yet been fully implemented. While they may be welcome, these ideas are premised on narrow assumptions that help to advance the narrative that pastoralist communities are culturally inflexible and that livestock keeping as a meaningful livelihood is unviable despite years of advocacy by research institutions, economists and pastoralists themselves about the viability of the pastoral system.

The solutions offered have not, singly or collectively, shielded the herder from exploitation. Some have proposed techno-fixes to deeply political problems. The proposed solutions are short-term and, when viewed through a system-wide lens, nothing more than a hurried, poorly conceptualised gesture that seeks to fix non-issues like plotting migration patterns, mapping watering points, and advising on the use of pasture. These desk-based prescriptive solutions are disjointed, reactionary and shortterm. The indigenous knowledge of pastoralists offers important lessons; it has been accumulated through actionbased, incremental and iterative real-time learning on a system-wide level.





What colonialism managed to do was create superficial solutions that not only disrupted the way communities used, claimed and owned their pasture lands, with lines and barriers being drawn between the acacia on the edge of the river to the hill by the forest." The approach of "fixing the problems of the livestock sector once and for all" has often been based on tracing simple direct connections from cause to effect. This simplistic approach has led to many counterproductive blunders with most of the resources directed at remedying a problem in the pastoral lands being spent on small-scale and unworkable solutions many of which score poorly when the cost is weighed against the public benefit. This quick-fix solutionism comes from a specific mindset and attitude that has deep roots in policy processes that reject, disregard, disown and disrespect the highly complex, highly adaptive, knowledge-driven pastoral system.

Nowhere is the resilience of the pastoralist system more visible than in how it has continued to endure despite years of systemic marginalisation and deliberate underdevelopment. Despite these challenges, its immense promise continues to put to shame policy-makers and the official attitude that wishes to see pastoralism erased or forgotten, or the herder converted into a sedentary crop farmer on government-run irrigation schemes.

Deep cultural identities and knowledge have been formed around the livestock livelihood economy and the rangelands. This livelihood cannot be viewed as merely cultural or dismissed as economically unviable. Any solution that does not first seek a sustained, deliberate understanding of how the ASAL region works and how the land users have adapted through the local knowledge system, any solution that has no partnership with local people–including setting priorities regarding problems and solutions–any intervention that doesn't employ multi-stakeholder engagement to promote learning and exchanges on the best practices won't work. A solution can be found in streamlining interventions, especially those designed through long-term strategic and programmatic planning.

Most importantly, knowledge management is a key catalyst. Twinning innovation with traditional indigenous knowledge will lead to multiple adaptive solutions which will lead to system change. This can only work where local knowledge is acknowledged and appreciated. This would bring about important market-related innovation including the principles of age clustering, migration management, and culling.

#### New complexities.

With climate change having catastrophic effects on pastoralist systems, urgent, deliberate and decisive efforts need to be made. With their accumulated knowledge, pastoralists have developed resilience to harsh climatic conditions but climate change continues to alter their environment and throw up new challenges such as frequent famines, unpredictable rains and, more recently, new diseases. A few years ago, camels in North Horr started to suffer a previously unknown ailment. It took about a hundred camels to die before veterinary doctors rushed to the scene. They diagnosed the disease as Acute Camel Death Syndrome. Disease control was once a public good in this country but in the early 1990s, with market liberalisation and World Bank-imposed Structural Adjustment Programmes (SAPs), gains that had been made in the 1970s and 1980s were lost as the government stopped employing veterinary doctors and as veterinary services became privatised. This policy has not changed.

With climate change also affecting the triad of host, pathogen and environment, and as the virulence of old vectors increases, new diseases are emerging. Some of these zoonotic diseases have also affected human beings. A classic case is Leishmaniasis, or Kalazar, which is transmitted by sand flies. Sand flies aren't a new vector and live in anthills and in the holes of old acacia trees. Until a few years ago, Leishmaniasis was unknown but now there have been several outbreaks in recent times. This fatal disease takes a lot of resources to treat and many have died without accessing timely healthcare. This is a new burden for the pastoralist counties where the state of healthcare provision is already poor.

As the effects of climate change intensify, vectors and pathogens also mutate and new livestock diseases emerge, some having the potential of becoming catastrophic epidemics. Old diseases that were harmless or easily manageable now have different impacts when they strike. A timely response is needed and without having the necessary vaccination and prevention measures in place, livestock will continue to perish in large numbers.



Pastoralism in their accumulated knowledge have become resilient to harsh climatic conditions but climate change continues to alter and throw up near challenges like frequent famines, unpredictable rains and recently new diseases. Just as with poor market organisation, unfair control measures that are sometimes not even anchored in law also pose challenges in the disease surveillance sector, with some of the diseases needing complex analysis and virology. For herders in the north, some of these tests can only be accessed in far-off places like the referral labs in Karatina and Nairobi. With a new mosquito strain–Plasmodium Stephenesi–having been discovered in Marsabit, institutions like KEMRI need to move with speed to establish workable institutions in Northern Kenya.

The protection of the pastoralist from the unholy fusion of poor markets, poor policy, unimaginative solutions, the difficulties of climate change-induced shocks, all further compounded by frequent famines and livestock rustling that puts pastoral systems in a difficult place, need to be urgently addressed.

Pastoralism is a low external input venture but for this venture to be realised and turned into profitable business, deliberate efforts have to be made, with the pastoralists and herders being facilitated and helped to access markets in a timely manner and on competitive terms. This should not require the conversion of the herder into a sedentary farmer but should include incentives and abandoning the implementation of expensive solutions that yield no benefits.



### **Crossword: Rotten**



#### Across

- 2 food with an unpleasant, strange, or off-putting taste
- 8 Pest that accelerates food decay
- 9 Preservation at low temperatures
- **10** food covered in fuzzy growth due to fungal contamination
- 12 decomposed
- **13** What's the word for food that has undergone a controlled microbial transformation?

#### Down

- 1 preserving food using salt
- 3 a gas that browns fruits
- 4 neither fresh nor and crisp
- 6 When dairy products turn they become?
- 7 food gone bad
- 11 no longer fresh or suitable for consumption
- 14 fats or oils that have turned unpleasant

The answers for the crossword puzzle are available on www.routetofood.org/cha-kula-crossword-puzzle



## Sow Unfair: Digging into the Gender Plow Gap in Agricultural Labour

By Pierra Nyaruai

The question of land ownership also affects women farmers. The Kenya Economic Report 2020 reports that even though women provide 80 of farm labour and manage 40 of smallholder farms in Kenya, they own just 1 of the agricultural land.Cultural expectations and the gender norms prevalent in Kenyan society contribute to the perpetuation of unpaid labour.

You have probably come across that cartoon illustration that people love to share on Mother's Day or Women's day of an African woman with a baby on her back, balancing bananas on her head, a hoe in one hand and various other goods in the other. That is not fiction; it is the lived reality for many women in Kenya and in Africa generally. Agriculture is often described as the backbone of the Kenyan economy and this backbone is often the collective effort of women who live and breathe the farm, for whom the farm is their livelihood, the compensation coming not in the form of legal tender but from the happy smiles of their families after a good meal.

Mary Wangari has been a farmer all her life. Since the days of her youth, she has been up at the crack of dawn to get started on farmwork. "My mother would wake us up at 4 a.m. to do the milking so that the milk would be ready on time for collection at the gate. I have never slept past 5.30 a.m. There is always something to do when you wake up early." Mary is now in her 60s and as I arrive for a visit, I find her also coming into the homestead with a load of thaara (Napier grass) on her back. As she lays her burden on the ground and invites me in for a cup of tea, I cannot help but notice that her back is slightly bent. From feeding livestock to milking to tending to coffee and other crops on her four-acre farm, there seems to be an endless supply of farmwork that needs her attention. She rarely hires anyone to help her and when she does get help, it

is mostly from visiting family members. "I only hired help once, some years back, after I fractured my foot when I slipped in the mud during the rainy season." Apart from the coffee that she sells to her local cooperative at prices that continue to fall, most of the other crops are consumed in the homestead. Visiting kin always leave with a "care package", a small gunny sack full of whatever food items are in season.

Mary's story is one that is replicated across the country. The Central Bank of Kenya reports that 20% of the country's Gross Domestic Product comes from agriculture and 27% through linkages created by agriculture. Despite the sector's significance, the contribution of women-particularly on small-scale, entrepreneurial and family-owned farms-often goes unnoticed.

Women play a pivotal role in Kenya's agricultural landscape, accounting for about 75% of the agricultural workforce, unpaid labour that is integral to the functioning of the agricultural sector, contributing significantly to the nation's food security and economic stability. The unpaid work undertaken by Kenyan women on the farm is both diverse and demanding, involving tasks such as planting, weeding, and harvesting, the intensity of the labour varying with the seasons, with women taking on additional responsibilities during peak farming periods.

**Pierra Nyaruai** is the co-founder of Mama Mboga Africa, an organisation that works with women across Kenya to champion the nutritional, cultural, and economic significance of traditional African Vegetables.



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Despite the indispensable role they play, a staggering 80% of Kenyan women working in agriculture report receiving little to no compensation for their efforts. This economic disparity not only perpetuates gender inequality but also contributes to the cycle of poverty, limiting women's access to education, healthcare, and economic opportunities.

It is El Nino season in Kenya and heavy rains continue to fall in different parts of the country, paving the way for peak agricultural productivity in many farmlands. When I meet her in Subukia, Alice Karanja is packing her *kiondo* and giving instructions to her seven-year-old daughter, who has to babysit her one-year-old brother when Alice leaves for *kibarua* (*casual labour*). "It has been raining heavily, sometimes the whole day. We farm on an eighth of an acre, but currently the maize and beans are still too young. I have to look for other work to get by." Alice plants, weeds and harvests crops on the plot of land owned by her husband who has an eight-to-five job at a local company. She also works as a casual labourer during the planting season to cater for some of her personal needs. *"Siwezi omba pesa ya pads"* (I cannot ask for money to buy sanitary pads), she laughs. Everything Alice grows on the plot of land is consumed by her family; she says her payment is that her family does not sleep hungry.

Cultural expectations and the gender norms prevalent in Kenyan society contribute to the perpetuation of unpaid labour. These norms dictate that women are responsible for the bulk of domestic and agricultural work, further entrenching their role as unpaid labourers within farming operations.

Eunice Barasa, a gender and development practitioner working in food systems, points out the crucial role of culture in contributing to unpaid labour, especially in household settings. "It is quite rampant because traditionally we believe it is a woman's role to ensure there is food on the table. The energy, strength, and other expenses you have to use on the family land is not considered labour. However, the challenge comes at harvest; it belongs to the head of the household. In most homes, it is usually a man and the proceeds will be controlled by the man, who decides which money goes where."

Unpaid labour in the agricultural sector extends into other aspects that greatly affect the relationship women have with money. Since there is no tangible way to put a value on women's unpaid labour, many formal financial institutions will often lock women out of accessing credit. Women who work in and manage smallholder farms have access to a meagre 10% of the available credit. To circumvent the issue of lack of access to credit, women will often join chamas (table banking) to cushion themselves financially but, in the main, lack of access to finance means that these women cannot make crucial life-improving decisions, including

Even though women provide 80% of farm labour and manage 40% of smallholder farms in Kenya, they own just 1% of the agricultural land. the option to switch to high-value crops. Esther Karanja from Elburgon says, "I cannot risk farming anything that my family cannot consume. Buying food is expensive and I can easily grow most of it." As a result, Esther only grows maize, beans, potatoes and, occasionally, garden peas. For many smallholder women farmers like Esther, the priority is their family's food security, and therefore they grow foodstuffs as opposed to cash crops that could generate high incomes for the family.

The question of land ownership also affects women farmers. The Kenya Economic Report 2020 reports that even though women provide 80% of farm labour and manage 40% of smallholder farms in Kenya, they own just 1% of the agricultural land. In addition, just 1% of title deeds are in the names of women, while 5% to 6% of title deeds are held jointly. In many cultures across Kenya, land is customarily passed down from father to sons, and it is generally frowned upon for women to own land. Moreover, even though the Constitution of Kenya 2010 gives women equal access to land, culture seems to still be the weight holding them back.

The economic impact of women's contributions to smallscale farming is profound, yet the lack of recognition exacerbates existing gender disparities, and perpetuates them across generations. Due to lack of exposure to better standards, younger women in rural areas walk the same path, reproducing the cycle. In the case of Alice from Subukia, leaving her young child babysitting a one-year-old is normal, because she believes that she is teaching her child to be responsible.

Even though there have been concerns raised on the issue of unpaid labour, changes in policy and legal frameworks would play a crucial role in reshaping the landscape for women in agriculture. There is a pressing need for more comprehensive, inclusive, and effectively implemented policies that can help change the narrative for these women and those who come after them. Conversations about fair compensation practices should be introduced at the grassroots level, where the culture of unpaid labour is the norm. Education and awareness campaigns must challenge ingrained stereotypes, fostering an environment where women's contributions are acknowledged and valued. Community leaders, policymakers, and entrepreneurs alike must collaborate to dismantle barriers and create opportunities that empower women to transform their agricultural endeavours into thriving businesses.

In this journey towards bridging the labour and pay gap in agriculture, the voices of the women who shared their stories are a collective call for change. As we strive for a more equitable future, let their narratives serve as a catalyst for action – a reminder that the transformation of small-scale entrepreneurial farming begins with recognising, respecting, and remunerating the invaluable labour of women, and compensating them for their work.





#### **Publication Information**

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#### About the Route to Food Initiative

The Route to Food Initiative (RTFI) a programme of the Heinrich Böll Foundation in Kenya promotes the realization of the Right to Food in Kenya through agroecology and food systems transformation. The Initiative shapes political approaches to food security and targets avenues related to policy development and implementation at national and county-level. Additionally, the RTFI relies on creative communications and media engagement to locate discussions about hunger and unaffordable or inadequate food within a human rights framework – specifically the Right to Food, which is provided for in Article 43 of the Kenyan Constitution. You can find out more on www.routetofood.org

A copy of this report is available on the Route to Food Initiative & the Heinrich Böll Foundation website and can be ordered by emailing info@routetofood.org / ke-info@ke.boell.org.

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