Meet Our Farmers

2021

MERCY AGRIFIN



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Background

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Background

80% of the population in lower-income countries rely on food grown by smallholder farmers. In Kenya, agriculture is the backbone of the economy; however, many smallholder farmers struggle to maintain a viable livelihood through farming.

Small-scale farms like these make up 90% of the world's farms and produce the majority of the world's food. But this fragile way of life — which so many people depend on — is being threatened at an alarming rate as climate change drives more unpredictable and frequent weather shocks, including extreme temperatures, drought, flooding, and land degradation.

Many smallholder farmers in Kenya depend on rainfall to grow crops to provide for their families, often supplementing that with any other income sources they can piece together, including smallscale retail and day labor. It's a lifestyle in which most are earning just enough to get by. Opportunities to get ahead — save, invest, expand — are limited or non-existent, exacerbated by weather patterns that can no longer depend on producing seasonal food and income. When rain is scarce and harvests fail, farmers have to look for other sources of income, and in the most desperate situations, sell off their assets.

The weather is, however, not the only barrier to success. Farmers in rural communities lack access to financial products and resources to improve farming techniques. Instead, they rely on advice from neighbors and family. Additionally, local suppliers frequently sell counterfeit inputs, like seeds, which are low-quality and underperforming. Other vital inputs, like fertilizer, medicine, and pesticide, are often too expensive or unavailable.

The pandemic has drawn attention to many countries' complex fragility, highlighted most clearly in the interplay of public health, markets, and food systems. In Kenya, where strategic reserves are low, disrupted food systems, logistics, and evidence of food hoarding and the largest Desert Locust invasion in 70 years put Kenyan farmers under increasing pressure.



Small-scale farms make up 90% of the world's farms and produce the majority of the world's food.

- Mercy Corps

Mercy Corps' AgriFin programming (MCAF) represents USD 35 million in innovation funding from the Mastercard Foundation, Bill and Melinda Gates Foundation and the Swiss Development Corporation to support development, testing and scale of digitally-enabled services for smallholder farmers. With this support, AgriFin now reaches more than 16 million smallholders.

We spoke to some of the farmers working with a selection of our partners as well as some of the partners themselves to hear their stories. Here is a collection of these stories.

Norah Chepkirui



Farmer: Norah Chepkirui, 33 **Partner**: Africa Instore Solutions **Themes**: Gender, Youth Employment Location: East Bomet County, Kenya

Background

DigiFarm is an integrated mobile platform that offers farmers convenient, one-stop access to various services. The platform's goal is to decrease cost and increase the quality of farm inputs while enabling farmers to transact, learn and grow. DigiFarm was created by the Safaricom Foundation to help smallholder farmers, like Norah, overcome many of the challenges and constraints they face. Smallholder farmers account for over 85% of the country's agricultural output. Still, many live in poverty despite their importance to the economy and food security. DigiFarm aims to rectify this by helping farmers grow their businesses to be more efficient and more profitable.

One of DigiFarm's implementing partners is African In Store Solutions (AIS). AIS is a microenterprise working with smallholder farmers to assist with finance, access to certified inputs, capacity building, and facilitating improved market access. AIS specializes in sales management advisory and enterprise development and works with local entrepreneurs and communities to improve economic livelihoods.

Mercy Corps AgriFin supports Field Agents that are working with DigiFarm. These field agents are called DigiFarm Village Advisers (DVAs). Their role is to recruit farmers onto the DigiFarm platform and support them throughout the agricultural cycle - helping them to access high-quality inputs and aggregate produce for the market. For each farmer that is registered, via a system of geotagging the farm itself, the DVA receives 100 KES (\$1). DVAs also receive a percentage for the aggregation of produce collected from the farmers they are working with. Often, younger, technically savvy farmers are recruited as DVAs, because they understand the smartphone applications used to register farmers.

Norah Chepkirui is a recent DVA recruit. This story has been edited for length and clarity.





Norah's Story

Norah, 33, lives on a remote farmstead with her three children and extended family. She is a single mother, a student of agriculture, a farmer, and recently, a DigiFarm Village Advisor (DVA). Inspired by her brother, she decided to also become a farmer, "He had no job, but he employed himself through farming, and that's where I got my passion." Once Norah started farming herself, she realized she had a natural aptitude and wanted to share her skills with others in her community. Initially, she worked as a volunteer training farmers through NGOs, "those seminars built my passion for working with farmers."

As a volunteer, she realized many of the farmers in her area lacked soil quality expertise, hindering their productivity. Norah volunteered to visit over 400 farms to conduct soil analysis of the area and help farmers improve their knowledge and crop yields. "I was not getting any income," Norah laughs, "I was just enjoying it." Norah's passion for farming, coupled with her natural leadership skills, led to her recruitment by Africa Instore Solutions' (AIS) as a candidate to join the DigiFarm platform as a DVA. A DVA's role includes recruitment, training, organizing groups for aggregation, and helping the farmers access the services that DigiFarm offers (i.e. loans). Norah receives 100 KES (\$1) for each farmer registered and a percentage of the aggregation.



Although Norah loves her work as a DVA, it can be challenging navigating gender norms and traditions. Norah was one of the first women in east Bomet County to become a DVA. She explains that regardless of her level of experience, not everyone is open to accepting direction from a woman. However, when farmers see improvements in their crop health and yields due to Norah's advice, it changes their attitude. Her success enabled Norah to build a strong rapport with her clients. In addition to recruiting clients to the DigiFarm platform, Norah is now recruiting and managing 20 other DVA's. In 2020, she recruited over 3,000 farmers onto the DigiFarm platform.

doing".

Norah's work with DigiFarm has been transformative for her and her family. In addition to her enthusiasm for the work, being a DVA means she can pay both her and her children's school fees, "I used to work in a salon to pay school fees. But when DigiFarm came, they promoted me. Now I have a better salary and I can farm at the same time." Norah says that being a DVA has helped her become a better farmer and plan for the future. She explains that she often uses her farm to conduct demonstrations on best farming practices, reflecting: "You can't just say, 'do as I say but not as I do', sometimes as an extension of that you have to prove to people your product, by demonstrating yourself."

Since starting her work, Norah has noticed an increase in the number of female farmers. She cites a jump in female agricultural students: "At first I was the only woman studying general agriculture, now there are more than 10 of us!" In terms of her future, Norah is confident that agriculture is the way forward: "In Bomet County, we shall continue producing food, and will feed the whole of Kenya, if not the world!"

In addition to training farmers on how to use the platform, Norah also helps them implement more efficient farmer practices through teaching clients how to use fertilizers, test the soil, and use plowing machinery. Norah explains that when she visits farmers, she draws on her own farming experience to convince them of new techniques' benefits. For example, this year, Norah experienced first-hand the crop loss caused by heavy rainfall. Through DigiFarm, she learned how to make terraces that divert water. Experiences like these mean she can relate to her clients' struggles, "I serve as a farmer as well as a DVA." DVA's also visit farmers to assess and diagnose specific problems they might be having, such as pest control. Norah has taught clients how to apply chemicals to protect maize from pests, "You can find that some farmers have problems with diseases or pests, but they don't realize this until a DVA goes there."

One of Norah's most enthusiastic farmers is Weldon. They first met in 2019, when Norah was distributing seeds to farmers nearby. A discussion with Norah around her work with DigiFarm inspired Weldon to join the platform. DigiFarm's inputs created such substantial improvements for Weldon's farm and livelihood. He now works as a Digital Master Agent (DMA) for Norah (DMA's work under DVA's, stocking and selling inputs). Weldon views Norah as an inspiration to younger female generations, "My daughters ask what she does, what she's studied, so we know it's good what she's

Brian Mouti



Farmer: Brian Mouti, 27 Partner: SunCulture Themes: Climate Change, Employment, Data Date: 23 November 2020 Location: East Bomet County, Kenya

Background

In the era of climate change, relying on rain-fed agriculture has become unsustainable. When rains are scarce, farmers risk losing entire crops to drought. Transporting water by hand is time and labor-intensive, resulting in a decrease in farm productivity.

SunCulture develops technology to combat climate-related challenges for smallholder farmers by harnessing the power of the sun. With SunCulture solar irrigation solutions, farmers are more climate-resilient and, over time increase their income and productivity. SunCulture farmers report an 81% increase in income due to solar water pump acquisition and save on average 17 hours a week in time spent fetching water manually.

AgriFin helped SunCulture develop the right distribution channels and partnership models to ensure its products meet target customers' needs and effectively reach them through innovative and trusted distribution channels.

Brian Mouti is a farmer who acquired SunCulture's solar irrigation technology. This interview has been edited for length and clarity.





Brian's Story

Brian Mouti lives in the village of Kapsita, at the base of the Mau forest in Nakuru County. He began farming in 2016. Brian lives in a small homestead with his wife and toddler son, just uphill from the 2-acre farmland he rents. Growing up on a farm, Brian learned firsthand from his parents everything he knows about agriculture:

"I never went to college to study agriculture. It's just that we are brought up farming; we learned from our parents. Also, when you want to do something, you can learn through the process of doing it. So that's what I'm doing."

The first few years, however, were not easy. From the onset, one of the biggest challenges Brian faced was the recurring drought. "It affected me so much - you can't harvest properly. You are doing some cultivation, but the harvest is quite small." In Brian's community, most farms rely solely on rainwater to irrigate their crops, leading to low productivity during the dry season. Brian explains that rainfall is increasingly uncertain, meaning that farmers live precariously from one season to the next, "Is it going to rain, or will we experience drought? There's that much unpredictability when it comes



to the climate."

During dry periods, Brian would spend 4 hours a day drawing water from a borehole and carrying it back in buckets to irrigate his crops. After a few particularly difficult weeks during a drought in 2019, he began searching for better solutions. Through Facebook, Brian discovered SunCulture and their solar-powered water pumps. After contacting a SunCulture agent and viewing the pump system, Brian became convinced he had found the answer to his problems. With SunCulture's hire-purchase financing option, Brian paid a deposit of 10,000 KES (\$100) and received his pump in February 2020.

SunCulture's solar pump links wirelessly to mobile phones, communicating information to improve productivity, such as weather conditions and pump supply levels. The system also helps farmers monitor their energy usage. Brian gets phone alerts when the battery is low so that he can adjust his energy use. He will know to wait until the next morning to use the pump again, ensuring his household doesn't experience a blackout. In addition to the pump, Brian received a flash disk with instructional videos on crop management.

Having the pump has made a big difference in Brian's work and his productivity. Now, he can water all of his crops in just 30 minutes. The time saved enabled Brian to expand and diversify his farm. He now grows Managu (African Night Shade), Saget (African Spider Plant), Kale, and Spinach. The ability to plant without the fear of drought and other climaterelated issues enabled Brian to grow his business and meet seasonal demand.

Currently, Brian sells his produce to mama mbogas (women micro-vegetable sellers) and hotels, which earns him a steady wage of 30 - 40,000 KES (\$300 - 400) per month. As he expands his operations, he's looking to larger customers such as supermarkets. His experience investing in SunCulture's technology has been so positive that he often encourages fellow farmers in his community to do the same. Brian's success in farming has made him a role model in his community. He helps other youth, either by employing them or sharing his knowledge. He says, "The young people can see I'm a serious guy when it comes to farming, and most are asking how they can start doing this too." Brian's business growth has enabled him to employ two extra farm hands and additional workers during the harvest season.

Since using SunCulture's solar water pump, Brian has expanded all areas of his business. He cultivates more land, grows more crops, and employs more people. His passion for farming is evident, and he hopes that with continued support from technology providers like SunCulture, more people can carve out a living in agriculture. He comments, "Those who have started looking up to me have got a long way to go, but with climate-smart technology, it makes work easier."



Mwangi

Farmer: Stephen Mwangi, 52 **Partner**: iShamba **Themes**: Emergency response, Data Location: Arutani, Nakuru County, Kenya

Background

iShamba is a subsidiary company of Mediae, a Nairobi-based edutainment production house specializing in education for development. Mediae produces the popular TV series Shamba Shape Up, which broadcasts practical tools and knowledge to improve productivity and income on farms.

iShamba is an information service developed to help smallholder farmers turn their farms into profitable businesses. Farmers can access a wide range of services through iShamba, including; WhatsApp Q&A groups, an emergency response hotline, weekly market price alerts for produce, weather information, and farmer-focused events. Currently, iShamba has 380,000 active users across Kenya.

Mediae and AgriFin have been working together since 2016 to address farmer capability constraints using high-potential low-cost digital tools. This partnership implemented a wide range of farmer-focused communication interventions through edutainment programs. Most recently, AgriFin has been working with iShamba to develop and promote the use of its Desert Locust programming and hotline as an information and citizen reporting tool. One farmer accessing content through iShamba to help with his new farming venture is Stephen Mwangi.

This interview has been edited for length and clarity.





Stephen's Story

In December 2019, Stephen Mwangi, 52, decided to make a significant change in his life, "I used to live in Nairobi with my wife and three children, but when I saw that [the family farming] business wasn't doing well, I decided to move back home." Stephen's father had recently passed away, leaving the family farm empty. He packed up his family and moved back to his home village of Arutani, in Nakuru County.

While Stephen did have some previous experience of farming, it was only on a subsistence scale, "I grew maize and beans on a small scale, and the yield wasn't good because, in three acres, I could only harvest 500kg of maize and 100kg of beans," (approx. 150kg maize and 30kg beans per acre). Stephen associates his low yields with a lack of knowledge around best practices: "My farming knowledge then wasn't good. I used to intercrop maize and beans, which I later came to realize has disadvantages".

One evening, Stephen was watching TV and came across Shamba Shape Up, where he learned of iShamba. He registered for their free WhatsApp group in January and found it so helpful he immediately opted for the premium subscription. iShamba offers both free and paid versions of its services. The free version allows farmers to receive localized weather information and weekly messages on two chosen crops and their market prices. The premium / subscription model grants users access to the free



services, a dedicated call center, and a WhatsApp group for their area for an annual fee of 600 KES (\$6). Being a member of the [WhatsApp] group also means farmers can strike up trade and business with other farmers in their area.

With his professional background in logistics, Stephen brings a business approach to farming with plans to expand, "I felt that the land is small, so from December, I decided to rent 8 acres of land which I am now clearing". He is already growing a vast array of crops, including; maize, thorn melons, tomatoes, capsicum, black nightshade, coriander, kale, Napier grass, bananas, and sweet potatoes. The WhatsApp group has been critical in helping Stephen continue to expand the diversity and scale of his crops: "Recently, when my capsicums had a disease, I posted about it on the group and they directed me to the right chemicals to use in spraying."

In the future, Stephen plans to scale up his farming even more, "Come next year, I hope to have a bigger field of maize and also have better timing for the tomatoes. I plan to extend farming and do it as a full-time job and if possible, have one crop under one unit of land of four acres". His success has raised the curiosity of other farmers in his community, "Some of them have been asking questions saying, 'How did you come just the other day and are already doing all these crops?' I just tell them that there is a group on WhatsApp that has been helping me in knowing and controlling the pests and diseases in crops".

the farm looks bright.

Additionally, in light of the Desert Locust invasion and with support from AgriFin, iShamba developed the Shamba Shape Up Emergency Hotline. The hotline allows farmers to report locust sightings, access multimedia educational content, see weekly maps of locust movements, and speak to an agricultural expert. There is also a dedicated WhatsApp number that allows farmers to form groups according to their locality. Luckily for Stephen, he has yet to be affected by locust swarms, "Locusts came, but they just flew above this area; they didn't land here."

For Stephen, having access to the iShamba services has been transformative for his farm and his livelihood. In particular, being a member of the WhatsApp group has allowed him to resolve any problems quickly and efficiently, 'Any issue I have on my farm I just post it there. If my crops have developed a disease, I take a photo of it and post it to the group. They respond, telling me which chemicals to use or a contact to consult". Stephen has also phoned iShamba's call center to solve ongoing farming issues as he experiences them.

Stephen's experience with iShamba has led him to become a source of knowledge for other farmers in his community, and he tries to help them where he can, "These guys here are my friends, and I usually talk to them about iShamba. Whenever they have problems in their farms, they consult me, and we solve it if we can". With his business acumen and appetite for learning, there's no doubt that Stephen's future in managing

Benson Kareithi



Farmer: Benson Kareithi **Partner**: Hello Tractor **Themes**: Logistics, Platforms

Date: 26 November 2020 Location: Njoro, Nakuru County, Kenya

Background

In Kenya, many smallholder farmers fall short of productivity and profits due to a lack of available technology. However, with access to the right equipment, farmers can become more efficient and generate larger yields. Hello Tractor is a digital platform that assists agricultural equipment owners in renting out their hardware to farmers. Their software helps manage the entire operation including monitoring assets, scheduling jobs, managing crews, route analysis, and fuel management. By attaching a small tracking device that links to their smartphones, owners have real-time data on when, where, and how their equipment is used, ensuring optimum rentals and safeguarding against misuse.

Hello Tractor features tractor owners and booking agents who help farmers without smartphones access digital products and services. In Kenya, Hello Tractor has 300 tractor owners and 80 booking agents on their platform. AgriFin has been supporting Hello Tractor around its business modeling, payments mapping, and credit solution, as well as tractor optimization modeling. Hello Tractor is a relatively new venture. In 2018 the tech start-up began looking for tractor owners to pilot their tracking device and smartphone app. Benson Warui Kareithi, 44, was one of those early adopters. Today he is one of the platform's biggest advocates.

This interview has been edited for length and clarity.





Benson's Story

Benson is from Njoro town in Nakuru County, a 4-hour drive north-west of Nairobi. He grew up in a farming community and started his own small-scale farming business in 1998, where he worked one acre of land with just a handheld hoe. Now 44, Benson owns two New Holland TT75 tractors, fitted with a plow, harrow, tiller, and three acres of land. His journey to owning his first tractor was born out of a dream to acquire multiple tractors and use them to plow other farmers' land. He worked for three years as a taxi driver to purchase his first tractor and immediately set to work, offering his plowing services to farmers.

Benson would work with a driver to take his tractor around to different farmers who wanted their land plowed, "While at the farm, the driver plows, and my job is to take measurements to know the acreage that they plowed." Although Benson was excited about his new business venture, it wasn't without challenges. Benson explains how his drivers constantly duped him, "We didn't have the acreage measuring technology, and a driver would tell me that a farm is one acre when it actually is bigger. They would sometimes tell me that we charged 2,000 KES (\$20) per acre



when they were charging 2,200 KES (\$22)".

When Benson heard about Hello Tractor, he wondered if their platform could help solve his driver woes. After attending a meeting organized by a Hello Tractor representative, he signed up for their pilot program. A few days later, Hello Tractor installed a tracking device on Benson's tractor to help him monitor usage.

The tracker has taken much of the stress out of Benson's business, allowing him to monitor the acreage plowed more precisely:

"The app has an alarm which pings once the tractor is started in the morning. I can also monitor the location of the tractor and can find out the acreage that it has plowed, wherever it is. I use the app to measure, and I note it down in the book. I will do this for every instance that I find out that it has plowed. Then in the evening, I can cumulate and know the total number of acres that the tractor has plowed".

For Benson, being able to know where his tractor is at all times gives him peace of mind, "I can sit in the comfort of my home with no worries at all and still monitor how my tractor is working." It also means that Benson no longer has to get into disputes with drivers about money, "On the issue of income, it has helped me safeguard from being conned by drivers. Now, they can't tell me that they have plowed less than they have plowed".

Before joining Hello Tractor, Benson plowed 50 acres per month. Since joining Hello Tractor, his business has doubled with even greater demand during the harvest season. His business's growth has meant an increased ability to provide for family members, paying for education, medical bills, and improvements to their homes. Benson is now investigating expanding his fleet, "There is a machine used to plant wheat called a spreader. I would pair it with my four-wheel tractor together with a harrow, and I will be in business".

While he acknowledges success is essential, for Benson, the real joy comes from his passion for tractors, "Besides making money, when I see my machines working without any mechanical problem, it makes me very happy. Then when the client is content with the work you have done, that is what is most important for me."

Rose Siama



Farmer: Rose Siama **Partner**: Farm to Market Alliance **Themes**: Market Access, Post-Harvest Handling Location: Matayos, Busia County, Kenya

Background

Kenya has enormous agricultural potential; however, the country faces severe bottlenecks, from a domestic production deficit in critical crops to limited market access for farmers. Farm to Market Alliance (FtMA) is a consortium of six agri-focused organizations (AGRA, Bayer, Yara, Rabobank, Syngenta, and the World Food Programme) in Kenya working in East and Southern Africa to improve market access for smallholder farmers. FtMA works to overcome challenges in smallholder value chains, co-innovate new products and services, and broker partnerships and linkages between smallholders and private sector players.

The consortium works with the Cereal Growers Association (CGA) to implement its programming in Kenya. FtMA Kenya works with a network of 70,000 farmers across 12 counties to overcome market-access challenges by identifying and building a network of rural agri-entrepreneurs known as Farmer Service Centres (FSCs). FSCs work to bridge the gap between farmers and value-chain actors, endeavoring to increase trust and transparency amongst all stakeholders. Currently, FtMA's network encompasses 394 FSCs. AgriFin is one of FtMA's technical and learning partners and supports developing digital financial products, partner linkage, and publicity through learning events.

Rose Siama is an FSC and Mercy Etiang is one of her aggregators. This story has been edited for length and clarity.





Rose's Story

Rose lives in Matayos, Busia County, with her husband and four children. Before joining FtMA as an FSC, Rose engaged in subsistence farming, growing mainly maize, cassava, sorghum, and sweet potato. Her farm productivity was low, and Rose struggled to feed her family and get a fair price for her produce at the market. "Upon harvesting, the maize would sustain me for two months, but by the third month, I would be back to buying maize for our consumption. I would work on other people's farms to feed my family. I used to be continually in debt because I had to borrow money and had problems repaying the loans."

Rose's frustration inspired her to take a more active role in the farming community. Eventually, she became the leader of several informal farmer groups that work to combine produce for sale. Shortly after, the Cereal Farmers Association (CGA), a local implementing partner of FtMA, contacted her to help reach farmers. CGA supported Rose and her groups by providing seeds for crops with steady demand and developing their agribusiness skills:

"Farm to Market Alliance came to inspect the crops, and



Rose Siama

I took them around the farms. We harvested a total of 120 tonnes of sorghum that season, and the members got paid. From that moment, everyone worked harder and was more focused on farming. More people came to us, asking to be registered."

Rose's enthusiasm landed her a job with CGA as a Farm Service Center (FSC): "A Farmer Service Centre is a leader who trains farmers in crops like soy, sorghum, maize, and on agribusiness, informing them on markets - even beyond the local markets here in Matayos." FSC's also offer postharvest loss training focusing on six fundamental principles: harvesting, drying, sorting and grading, controlling quality, storage and aggregation. As an FSC, Rose bridges the gap between farmers and the market, aggregating and selling produce for her customers while communicating trends and shifts in demand.

One of the aggregators Rose sells to is Mercy, aged 28. Mercy sells sorghum to East African Breweries Limited (EABL). It was through her work aggregating sorghum that Mercy encountered FtMA. When she realized that they were also working to engage farmers in aggregating sorghum, she decided to join their efforts. Working with FtMA allowed Mercy to increase the scale of her aggregation, "From then on, the sorghum yields increased, because, through FtMA, I was able to reach many more farmers."

At the time, many farmers in Busia weren't planting sorghum. Rose and Mercy worked together to provide the training and expertise needed to encourage them to start planting sorghum for the brewery market. Farmers quickly saw the benefit of improved yields and access to a ready market, relieving them of the stressors associated with crop and market inconsistencies. To mitigate risk, Mercy trains both farmers and FSC's like Rose in quality control. She teaches them how to properly store grain, avoid moisture build-up and manage aflatoxin (fungus) so the grain doesn't get rejected by buyers.

By joining FSC's like Rose and aggregators like Mercy, FtMA is inspiring a community-driven approach to helping smallholder farmers. Working in tandem, Rose and Mercy hope to raise the quality of their farmers' products to improve their livelihoods for the long run.

James Goko



Farmer: James Goko

Partner: Arifu

Themes: E-Learning, Platforms

Location: Limuru sub-county, Kiambu, Kenya

Background

Arifu is a digital content and interactive e-learning company that provides free information to its learners. Their digital learning tools can be delivered to any mobile phone via SMS, helping underserved populations access information. Arifu upskills learners on various topics, including agriculture, and currently has 1 million farmers accessing their content across Rwanda, Tanzania, Zambia, Nigeria, and Kenya. Learning modules include a series of farming activities; input selection, planting, crop management, harvest, and financial management. The company also leverages its broad portfolio of partners to provide information on products and services specifically designed for smallholders. The platform can also issue certificates and credit referrals.

Arifu has been an Agrifin Partner for the last six years, working through different engagements to deliver learning content in financial literacy, dairy farming, poultry farming, cotton farming, and irrigation. For each engagement, Arifu works with Agrifin to develop and curate learning content delivered at no cost to smallholder farmers via SMS. Ecosystem partners that provide content include Financial Institutions, Mobile Network Operators, and Agricultural focused businesses. Arifu has also participated in various research projects through which they explore the effectiveness of digital learning tools and the impact of scale in disseminating crucial information to farmers to improve their yield, increased income, and improved livelihoods.

James Goko is one of Arifu's 'power learners', he has completed over 500 segments of learning through the platform. This story has been edited for length and clarity.





James' Story

James, 42, is a smallholder farmer living in Kiambu county with his wife and four children. He grows a variety of subsistence crops but relies on cabbages for income to support his family. In Kiambu, farmers predominantly grow maize and beans, relying on rainfall to nourish their crops. As James explains, "There isn't any other source of water for farming here. Farmers depend on rainfall, which is why we plant maize and beans [to coincide with weather patterns]." The rainy season in Kiambu typically falls between March and May. Still, it has been increasingly prone to drought, "Recently, for instance, it didn't rain even a single drop for the whole year."Unpredictable rainfall in Kiambu means smallholder farmers often struggle to maintain a steady income throughout the year. Like many farmers in the area, James has experienced the economic pressures associated with low rainfall.

After finishing school, James worked as a laborer on farms in the area, "I used to work in people's farms for around four hours a day and was paid a daily wage." James earned money this way for eight years. However, after getting married, he realized he needed a more secure means of income to



sustain his family. James continued to work as a laborer, saving money until saving enough funds to begin farming maize and beans himself. Although he was happy to have started his venture, he quickly encountered the same water-related challenges as other farmers in the area. "The main challenge was that when we have had adequate rain, then there is a surplus of produce, and that means the buyers take advantage of this and purchase at a very low price. We used to grow maize and beans in just one season a year. As a farmer, you work so hard, only to sell 2kg of maize for between 30-50 KES (\$0.30 – \$0.50)".

With a growing family to support, the impact of low prices for his crops was hard. "Feeding the family was very difficult. Sometimes we would go without food for the night and still go out to work the next day". James was barely managing to make ends meet, with help from his wife, taking on odd jobs wherever they could. "She persevered with me and helped out by working as a laborer. We needed a constant income, especially toward the time my wife was about to give birth."

In 2016, exasperated with failing maize and bean crops, James started to grow cabbages, "I was trying anything that would provide an income. I grew some cabbages and found that getting buyers wasn't difficult. I started to research more about cabbage farming because I could see its potential. Although I wasn't doing it at scale, it wasn't letting me down as maize farming had."

James saw that his cabbages "were thriving, despite having minimal rain." As a result, he endeavored to learn as much as he could about cabbage farming, but his initial efforts proved frustrating. "Other agricultural organizations that I visited in search of information gave me minimal information that didn't help me much." When James came across Arifu he was relieved to find much of the information he was searching for, "They had what I was looking for, and it came to my aid."

James' experience using the Arifu platform was positive from the outset. "The Arifu platform is user-friendly. When I first joined the platform, I didn't have a smartphone. Since Arifu uses an SMS-based service, it suits everyone from the community". James quickly began investigating best practices for cultivating cabbage. "For instance, previously, the right time to transplant cabbages had been done by instinct. However, according to the information from Arifu is at a specific time. They say that it needs to be transplanted at three weeks, contributing to a bigger cabbage head. Secondly, I learned that selecting the best cabbage variety is important. We thought that we could grow any cabbage variety, but that isn't the case."

Implementing these changes increased James's yield, and by extension, his income. "In the past, I used to grow

cabbage on a 1/8th of an acre of land and earn about 3,000 KES (\$30). But on the same plot, with the new knowledge I attained, I can now earn between 10,000 to 15,000 KES (\$100 -\$150)." Using the Arifu platform has also given James the confidence to continue expanding his farming techniques by learning more. "I started looking for sources of water since I saw that Arifu has information on efficient water use and irrigation." Knowing the area's water-related challenges, James researched solutions through Arifu. He decided on a well and dug a 20-meter wide, 15-meter deep trench to provide a consistent water supply to his cabbages.

"I have the knowledge about the growing of cabbages, but without water, I can't grow them to the maximum. It is water that's hindering me from achieving this. I have been aspiring to be a cabbage farmer all my life, and God gave me that opportunity through Arifu. God has also given me the energy to dig, so why can't I dig the hole?"

Seeing James' success, other farmers in his community have started following his lead. "There are some who just finished digging the well while others have just started. Some other farmers here haven't harvested a thing for two years. They spend money on inputs but end up with losses, and life is becoming miserable for them. With a water source and just a little rain, I can do amazing things". James is optimistic about the future, "If all goes according to my expectation, and I can have water in the well then there will be no single day I won't have cabbages in my farm."



goes according lf all to expectation, and can my have water in the well then there will be no single day I won't have cabbages in my farm school fees without a problem.

– James Goko

Sophie Rottmann



Interview: Sophie Rottmann Partner: Mediae Themes: Edutainment Location: Nairobi, Kenya

Background

Interview

Founded in 1997, Mediae is a social enterprise committed to addressing the information needs of East Africans through sustainable and research-based media productions. Mediae focuses on supplying vital knowledge in forms that can be widely accessed and understood. The company has improved the lives of millions of viewers through improved incomes and better nutrition. Mediae's content includes its flagship program Shamba Shape Up, a makeover TV series on smallholder farms.

Mediae prides itself on its participatory, audience-centered approach. It includes its audiences in the process of shaping content tailored to what they want to see. Alongside TV programs, Mediae has also developed the mobile-based farmer information service iShamba and the online agricultural budgeting tool Budget Mkononi.

Mediae and AgriFin have been working together since 2016 to address farmer capability constraints using high-potential low-cost digital tools. AgriFin and iShamba's parent company, Mediae, have collaborated on a wide range of farmerfocused communication interventions through edutainment programs, including 'Shamba Shape-Up' and 'Don't Lose the Plot', alongside supplementary initiatives such as developing online budgeting tools for farmers. Most recently, AgriFin has been working with iShamba to develop and promote its Desert Locust programming and hotline as a citizen reporting tool and critical information source for smallholders on the rapidly escalating Desert Locust crisis in the region.

Sophie Rottman is the series producer of Shamba Shape Up. This interview has been edited for length and clarity.

Q1: How did Mediae begin?

Mediae was set up by David Campbell and Kate Lloyd Morgan in 1997 in order to look at how we can use media to support development and education. They started out with a radio program called 'Tembea na Majira' which is Swahili for 'Walk with the Times.' It was about the loves and the lives of people in a small rural village but what was key was promoting better farming practices. It had a huge audience of around 8 million listeners every week.

Then as TV became more accessible in the early 2000s, Mediae started a televised program called Makutano Junction which means 'The meeting point' in Swahili. Makutano is a drama series, focused on various social development issues - from health to governance to farming. Makutano ran for 16 years and had a weekly audience of 8 million viewers; it was hugely popular. What's interesting is when there was an issue that had to do with farming and agriculture, the viewership would actually go up and at the same time, there were a lot more questions coming in about those issues. It was at that point Mediae started to think about how to create a show focused entirely on farming. The other thing that was interesting about Makutano was that 70% of the audience were based in rural Kenya.

This led us to create Shamba Shape Up, a farm makeover series on smallholder farms across Kenya and Tanzania. We visit farmers across the country and ask them what problems they're facing, then we bring on the experts to help solve the problem. We're now in our 11th Series and



are now particularly looking at climate change adaptation. So, that's looking at how for example solar-powered irrigation, rainwater harvesting, and conservation agriculture can support farmers become more resilient to climate change. Working with the AgriFin program, we started creating awareness around agricultural insurance - how it works, how it can help you manage climate risks, and so on. We've seen a real interest amongst farmers in taking up insurance as a result.

In the process, we found it was valuable for farmers to hear from other farmers who had taken out insurance and successfully received a pay-out when disaster struck. We also worked together with the AgriFin program to create a locust emergency response on the program. Working with PlantVillage/Penn State University, we started getting information on where locusts had been sighted and put up a weekly "locust" map on the show. We then had a call to action so farmers could send us an SMS through iShamba or call in to report whether they had seen a locust. That information was then fed into a central system, and PlantVillage collected that data as well as their own data, which would help inform authorities and the locust control activities. Together we built the "Shamba Shape Up Emergency Hotline", which runs on WhatsApp for Business. It includes lots of valuable information on what a locust looks like, what to do and what not to do, weekly map updates, and short clips to help farmers deal with them. But again, the real important thing was the reporting to inform control operations at a larger scale.

Another program we worked on with AgriFin was Don't Lose The Plot. While visiting farms on Shamba Shape Up we noticed a lot of young people hanging around the farm, not doing very much. The farms were all mainly led by their 50+-year-old parents. Many young people had left school and were now helping their parents on the farm as laborers but not really adding value - basically, we realized that there's a huge potential for getting young people into farming as a business. Don't Lose The Plot really became an idea to get young people into farming as a business and using digital tools and technology. The show follows four young farmers - 2 young women and 2 young men from Kenya and Tanzania each farming on a one-acre plot side-by-side for a full growing season. The farmer who got the highest yields and made the most money in the most sustainable way won a \$10,000 dollar investment into their farm back home. The show had 4 million viewers in Kenya and Tanzania. We were changing how young people view farming away from subsistence towards farming as a business- a career.

AgriFin provided a lot of financial literacy advice and the experts who were carrying out workshops for the contestants and mentoring them throughout. Together we also developed a tool called Budget Mkononi which

means, 'Budget in your hands'. It's an online tool, where you can fill out a rolling budget on a browser or you could download it on your phone and have it as an app. The idea was to get young people to use these tools and start to think of the financial aspect of farming. During the broadcast of the show, we had 17,000 people create a budget.

O2: How does Mediae focus on youth & employment?

The youth are critical. Kenya has a really young population as a lot of sub-Saharan African countries do. What we've seen over the years across all of East Africa is a huge rural to urban migration. Young people coming to Nairobi from rural areas are then finding that it's actually quite tough. So, we've been pushing to support young people to do farming as a business and looking at the full value chain.

Our focus has been on agribusiness. Farming is not the most attractive thing for a lot of people and in rural homes, farming has a negative perception. It's the thing that you do if you didn't do well at school and didn't make it to the city. So, it's not seen as something that's a good career, it's not seen as something that's actually useful - but really, it's hugely important, because you're feeding people. So, I think we'd really like to see more young people engaged in farming as a business, making arable lands more productive, moving away from maize, growing crops that actually have an export market, that produce more, or turning crops into valuable products. Not just making the bare minimum for your farm but adding value. Making juice out of mangoes or processing avocadoes into avocado oil.

Financial literacy is a fundamental skill. I think it's an area that a lot of people really lack because they didn't finish primary school. We're very keen on training young people and farmers on financial literacy. We have been partnering with a lot of organizations to train young people on basic skills like making a budget or understanding how to take or repay loans so they can support the agricultural economy.

Q3: Is digital technology making farming into an attractive career choice for young people?

I think it does make it cooler because you see a lot of young people just sitting on their phones. Having more of that digital technology makes it more attractive in a way. But in terms of how practical it is really depends on how the tools are developed to make them useful to young people. It's not enough to just slap an app onto your phone and think someone will be a good farmer. The training is really critical. Of course, in-person training is effective, but media has the benefit of being able to scale and reach a lot of people. I think digital tools make things more interesting and more attractive and have a real potential to be more helpful.

Q4: How is Mediae shifting the perception of farming as a valuable career choice?

I think one key thing is celebrating what farmers do. Food is critical and something which never goes out of fashion. So for example in Shamba Shape Up, a key component is to look at a family and see what they do, looking at it as a positive thing and see that they are trying really hard to make this work. They're doing their best to feed their families, do the work and make a livelihood. Showing that positive angle is important, and then bringing on the experts to show them how they can do things differently to increase their yields and incomes helps that particular family as well as the 7 million + viewers at home watching the program.

Another way of changing perceptions about farming is by showing good role models on the program. Sometimes we take a farmer who isn't doing something very well to visit a neighbor who is doing really well so they can learn from them. We try bringing on young farmers as much as possible so that young viewers at home can relate and see that this is something they can do too.

Q5: How do you measure impact?

Mediae has always had a focus on seeing how we can make our programs better, so they are more useful. Every show has a research component. For Shamba Shape Up, it's the KAP study - the Knowledge, Attitude and Practice assessment. Before we broadcast, we interview 1,000 people and ask them about the key issues that we're going to feature in that series. Once we've finished the broadcast of that season, we interview another 1,000 people, this time 500 who have watched the program and 500 who have not watched it. We learn about the general changes in peoples' knowledge, attitudes, and practices around key topics for that series. It also gives us a sense of what people would like to learn more about and how we can make the program better.

We've also had very rigorous impact research done around yield and income. In series three of Shamba Shape Up there was a huge piece of research done by Reading University, Wageningen University, and the African Centre for Applied Research. They group interviewed 11,000 farmers and focused on dairy and maize because those were two value chains that people had records for. The research showed that over 428,000 households in Kenya benefitted directly from Shamba Shape Up after adopting a new practice. The estimated net increase in dairy and maize production linked to these changes was US\$24 million dollars. It was a huge impact. A lot of people say edutainment and TV don't actually have an economic impact, but it does, because people are watching the program and making the changes.

Q6: How does Mediae want to grow?

Mediae is looking to scale up its programs across multiple sub-Saharan Countries in order to support more smallholder families increase their yields, incomes and improve their livelihoods. We've already started this by producing a drama Series in Uganda called "Mpeke Town". The show is set in the fictional town of Kabulonda Mpeke, in central Uganda. The aim of the show is to improve the quality of management within farmer groups in Uganda, encouraging best practices in agricultural production and thus enhancing rural livelihoods. We've recently secured a bid with USAID that will enable us to take Shamba Shape Up to Uganda for the first 2 series. In this, we will particularly focus on climate change adaptation, promoting farming as a business and bringing in youth. Next, we'll be taking the program to Ethiopia, Zambia, and South Africa.



Elizabeth Mudogo Interview: Elizabeth Mudogo **Partner**: DigiFarm **Themes**: Digital Platforms Location: Nairobi, Kenya

Background

DigiFarm, a Safaricom subsidiary, aims to transform smallholder farmers' lives by leveraging technology and partnerships to financially empower them and enhance food security throughout Kenya. To use DigiFarm, farmers register on an integrated mobile platform that offers one-stop access to a suite of information on farming best practices, access to credit, and the market. DigiFarm has 1.3 million farmers registered on the platform across Kenya and 234 DigiFarm Village Advisors (DVAs), who support farmers from registration through aggregation.

Mercy Corps' AgriFin has supported DigiFarm since its inception with user experience (UX) design expertise to help the program reach its target market of smallholder farmers, including the design and implementation of the Digital Village Advisors (DVA) network and registration of more than 90,000 farmers.

Elizabeth Mudogo is the Product Development Lead of DigiFarm. This interview has been edited for length and clarity.

Interview

Q1: What is DigiFarm's target market?

Today, over 70% of rural Kenyans depend on agriculture for employment. We've been conducting farming activities for decades without reaching the objective of sufficiently feeding ourselves. The big issues are access to credit (less than 4% of smallholder farmers have access to credit) and agricultural expertise. Most of the farmers do not have access to content and guidance that supports their farming activities, so the quality of produce is compromised. We are also trying to address the quality of farming inputs. If farmers access quality inputs, they can deliver quality outputs and improve their profits. An additional challenge is market access. One of the things that we are interested in doing with DigiFarm is to provide a platform where the farmer is linked directly to the market.

Q2: How does DigiFarm reach smallholders?

A2: We offer both a simple USSD line where farmers dial *944# and a smartphone app to access a menu of services. If they're a new user, the system walks them through a registration process to determine where they are located, what they are farming, and what their land size is. They can then request a loan and receive a voucher to redeem through the nearest DigiFarm Master Agent. Additionally,



farmers can access other services like insurance.

Q3: What is the role of **DigiFarm Village Advisers?**

A DigiFarm Village Advisor (DVA) is, in simple terms, a lead farmer nominated by their peers to share the information we have on the ground. DVA's support DigiFarm to identify farmers, facilitate registration, and geotag their crops. This, in turn, enables us to monitor our progress. DVA's also serve as a feedback loop to communicate experiences and needs.

Q4: What incentives does DigiFarm provide DVA's with?

DVA's are paid a percentage of activity fees, including registration, geotagging, or input collection - the more activity they generate through DigiFarms' platforms, the more they receive.

Q5: What kind of partners does DigiFarm work with to provide smallholders with the right products and services?

Each partner performs a particular function. One of our core requirements is that partners have to have a standard technical capability level because DigiFarm is a digital platform. It's been an uphill task for some of them, especially for small organizations.

For learning content, we have 3 primary partners; Mediae, Arifu, and iCow. We're currently working to organize and streamline all partner content, so farmers only have to use one universal access point. For input distribution, aside from the manufacturers, we're also looking at onboarding DVA's to provide inputs to farmers at a quality price. We're working with different banks for the credit aspect to ensure a uniform facilitation fee and insurance offer. The type of insurance we negotiated for is a yield based insurance. It's calculated season to season but covers 56-70% of yield losses.

Q6: How is DigiFarm helping farmers increase their income?

We are democratizing input distribution by directly connecting farmers with manufacturers and making sure farmers are offered a fair price. The net result is increased productivity, which we hope enables farmers to make more money and scale their businesses.

Q7: Can you explain how **DigiFarm differs from** other digital platforms for agriculture?

When you look at most agricultural projects, specifically those led by NGOs, they focus on one module rather than focusing on the whole sequence of the agricultural process. A typical example is an organization that focuses only on input distribution. However, when it gets to the end of the season, a farmer may not have a market despite having a robust marketable surplus. Other organizations focus solely on insurance or financial capability, without looking at the other agricultural stages connected to these. Few organizations focus on the agricultural value chain end-to-end. To ensure that the farmer is offered consistent services meeting their needs throughout the season, we offer an end-to-end service delivery, and we uphold the farmer at the center of our efforts.

Q8: How does DigiFarm sustain itself?

DigiFarm is a platform that brings together many stakeholders. By doing this, you are adding value to them to get a specific commission at any one point. There is a specific percentage for the buyer that you are bringing on board starting from 5% for any product that goes through the portal. When you are looking at the credit facilitation fee a specific percentage goes to DigiFarm. When you look at the input distribution, it's the same. As long as you are bringing partners on board, there is a specific incentive that we charge, to in return allow partners to scale their solution with us.

O9: What is the future for the development of **DigiFarm**?

Our partners at AgriFin have supported us significantly in a number of areas over the past years. For example, we have spent considerable time collecting insights from the ground to feed into product development, and to assess the impact of what we do. We have also worked together to develop product prototypes and iterate on the design to allow us to take them to market. We are currently working on business modeling and development as well as planning for scale across our portfolio. AgriFin supports us not only in resourcing but in providing the technical know-how and access to quality partners. They also really help us to deliver our activities at speed, which is a critical element in what we do given the timesensitivity of agriculture and our own business model in particular. Now, we are looking at scaling up. At the end of 2020, we covered 40,000 to 50,000 farmers which we worked end-to-end. The target for 2021 is to scale to 300,000 farmers. There's no reason why we shouldn't be able to do that together.

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