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Delivering genetic innovations to farmers: Challenges and opportunities for accelerated varietal turnover

RESEARCH ABSTRACTS BOOKLET

November 2024

Compiled by: Michael Ndegwa, Sarah Kariuki, Berber Kramer, Francisca Muteti and Collins Bulinda

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Introduction

The maize seed systems in Kenya are pivotal to agricultural productivity and food security, supporting millions of smallholder farmers who rely on maize as both a staple crop and a source of livelihood. While significant progress has been made in developing improved maize varieties, the adoption and dissemination of these genetic innovations remain slower than expected. This sluggish varietal turnover limits the benefits of these innovations, raising critical questions about the factors influencing seed adoption and the mechanisms needed to enhance farmers' access to high-performing hybrids.

This booklet compiles **12 research abstracts** that evaluate various demand-side interventions designed to accelerate maize varietal turnover in Kenya. The studies focus on innovative approaches that empower farmers, agro-dealers, and other value chain actors with the tools and information necessary to drive adoption of improved varieties. Key topics explored include the use of trial seed packs, third-party performance information for seed products, digital and social marketing strategies, agro-dealer incentives, and the integration of insurance mechanisms to reduce adoption risks.

Each abstract includes the name and contact email of the principal investigator (PI) to facilitate further dialogue and collaboration. Unlike traditional studies focusing on breeding and seed production, these abstracts delve into interventions aimed at stimulating demand and addressing barriers at the farmer and market levels. By showcasing these innovative approaches, the booklet provides evidence-based insights into actionable solutions that can drive varietal turnover and enhance the performance of Kenya's maize seed systems.

For academics, policymakers, and stakeholders in the maize seed value chain, this collection offers a unique opportunity to explore and adopt strategies that align with market dynamics and farmer preferences. As we strive toward resilient and inclusive seed systems, this booklet serves as a vital resource for fostering collaboration among key actors. The ultimate goal is to ensure that smallholder farmers in Kenya have timely access to superior maize varieties, enabling them to meet the challenges of a changing climate and evolving agricultural landscape.

Incentivizing Agro-dealers to Drive Varietal Turnover and Adoption of New Seeds

By Sarah Kariuki, Francisca Muteti, Annemie Maertens, Michael Ndegwa, Hope Michelson, Mercy Mbugua and Jason Donovan

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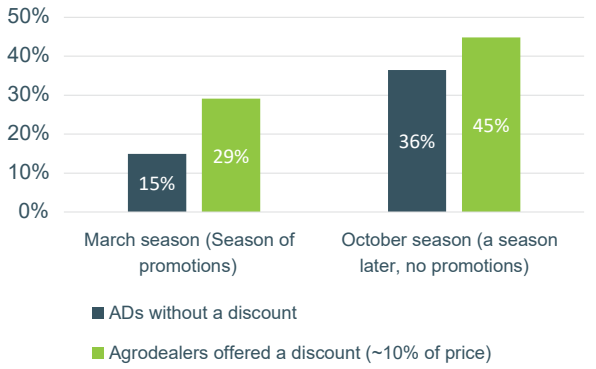
Despite the release of high-yielding maize hybrids, many farmers continue to rely on older varieties, slowing varietal turnover and limiting genetic gains. Agro-dealers, through their stocking decisions and direct interactions with farmers, could help increase access to new seed products and information on new seeds. However, they face significant challenges, including credit constraints, under-specialization, substantial risk, and customers who are not proactive in looking for new products. Using a randomized design with detailed panel data from agro-dealer interviews, mystery shoppers, and customer experiments, we tested whether offering agro-dealers a 10% introductory price discount on new hybrid seeds could encourage them to stock and promote these products and if such efforts would lead to higher adoption rates among farmers.

We worked with a sample of 164 agro-dealers from eastern and central Kenya and collaborated with a major distributor that sold seeds and various inputs to these agro-dealers. The agro-dealers were randomly divided into two experimental groups: i) the comparison group, where the agro-dealers received a price list of all products available in the distributor's shop, including basic details such as the year of release, the yield potential, and special attributes; ii) the treatment group, which, in addition to the information provided to the comparison group, was offered a 50 KES discount on the purchase price for each 2 kg packet of seeds bought through the distributor.

Share of the promoted products in total sales



Results show that the discount significantly increased both the likelihood of stocking new seeds and their shares in total stock. This incentive also encouraged dealers to gather more information about new products. While the discount did not affect average prices, it motivated agro-dealers to actively share product information and encourage hesitant customers to try new options. As a result, the agro-dealers who received the discount sold more of the new hybrids, implying that agrodealers can be leveraged to accelerate the uptake of new seed products and eventual varietal turnover.

The Role of Information and Price Promotions in Farmer Experimentation with New Varieties

By Sarah Kariuki, Jason Donovan, Francisca Muteti, Michael Ndegwa, Mercy Mbugua and Pieter Rutsaert

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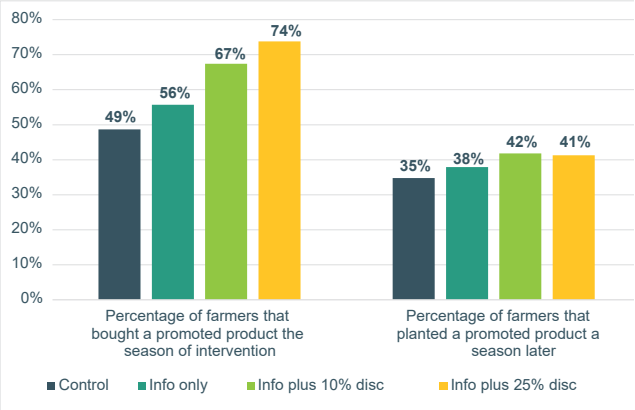
Lack of information on new seed products and farmers' aversion to trying new products may limit farmer uptake of new seeds, thus slowing down varietal turnover and preventing farmers from fully realizing the potential benefits of recent genetic advancements. Encouraging farmers to try new seed products during the early stages of commercialization could help farmers learn about these varieties, thus speeding up their adoption and accelerating the growth in the market share of the new products.

This study examined whether providing farmers with general information and offering introductory discounts in retail can induce farmers to try new seed products. We intercepted all farmers who visited 44 agrodealers across the eastern and central regions of Kenya. Only farmers who expressed a plan to purchase maize seed for their farms were included in our study, resulting in a sample of 1790 participants. Farmers were randomly assigned to one of four experimental groups: i) a control group that did not receive any maize seed information; ii) an information group that was provided with general information on how breeding enhances maize seeds, meaning that newly released seeds could perform better and encouraging them to try new seeds. They were also informed about four recently released maize varieties available in the store that are suitable for their agroecological zone and are promising based on feedback from agro-dealers and other stakeholders; iii) an information plus discount group, where farmers received the same information as the information group along with price discounts (either 10% discount or 25% discount on the price of maize) on the four new maize varieties. We tracked farmers' seed choices immediately after intervention and during the subsequent growing season to evaluate long-term effects.



Providing farmers with general information on why it is important to try new seed products and nudging them to do so increased the percentage of farmers who bought any of the promoted products from 49% in the control group to 56% percent in the information group, a 14% increase in the likelihood that a farmer bought a promoted variety. Bundling that information with a 10 percent discount increased the percentage buying these products from 49% in the control to 67%, while the 25 percent discount from 49% to 74%. The treatments also increased the amount of seed of these varieties bought. Farmers stated the desire to experiment with the new seed as their main reason of purchasing these products. The effect of information alone was diminished by the next season, but the combined effect of information and price promotions persisted, suggesting that farmers valued the new products and were willing to pay full price after trying them. These results indicate that information bundled with introductory discounts during the early stages of commercialization can effectively encourage farmers to experiment with new hybrids, facilitating varietal turnover and enhancing genetic gains for end users.

Testing the role of specific seed product performance data in influencing farmers seed choice

By Michael Ndegwa, Collins Bulinda, Jason Donovan, Sarah Kariuki and Pieter Rutsaert

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Dozens of new maize hybrids are released regularly across in Kenya by public and private sources. These products are bred to respond to changing production environments (mainly higher yield and increased tolerance to drought, pests and diseases) and hence are more adapted compared to older ones. Reliable third-party seed performance information plays an important role in guiding seed purchase decisions of maize farmers in the Global North. However, such information is not available for farmers in the Kenyan context. Farmers lack objective guidance on the comparative performance of commercially available seed products. This deficiency could be one among the major contributors to the persistent problem of slow varietal turnover in Kenya. As a proof of concept, we use farmer generated yield data of different maize hybrids to assess the potential of such data in supporting farmers seed choice. We intercept farmers as they approach the agrodealers shops and select only those who were buying maize seed during that visit. We randomly assign them to either of two experimental groups namely comparison and treatment groups. We encourage all participants to consider a seed product they have not grown before that they wish to experiment with. To support them to experiment, we offered them a voucher to pay for one bag of maize seed. For the treatment group, we shared the farmer reported product performance data for varieties grown in their county. They were free to select the one bag for experimentation from the list shared or just buy whatever other product they preferred.

Results indicate that majority of the farmers found the information easy to understand and recall while at the shop. Majority also indicated that the information was trustworthy and useful. Further, product performance information influenced farmers' product choice for a bag of seeds to experiment with, increasing the demand for the listed products. In particular, the information increased the demand for the top two performing hybrids threefold (from 7% to 27%) and the likelihood of actually purchasing those products twofold (from 5% to 13%). These findings suggest that product performance information is indeed an important constraint that farmers face while deciding the products to grow and that seed product performance information has potential to support their seed choices and encourage varietal turn over.

Seed Product Performance Information – Embu County

Product	Age	Bags per Acre – County Average	Bags per Acre – Top 25% of farmers
PRODUCT 1	7	13	25
PRODUCT 2	4	11	22
PRODUCT 3	10	8	14
PRODUCT 4	48	7	14
PRODUCT 5	26	7	11
PRODUCT 6	27	7	11
PRODUCT 7	19	7	11
PRODUCT 8	16	6	13
PRODUCT 9	19	6	11
PRODUCT 10	7	5	8

Innovations in seed trial packs as a marketing tool for new maize varieties

By Michael Ndegwa, Hope Michelson, Sarah Kariuki, Annemie Maertens, Jordan Chamberlin, Mercy Mbugua and Jason Donovan

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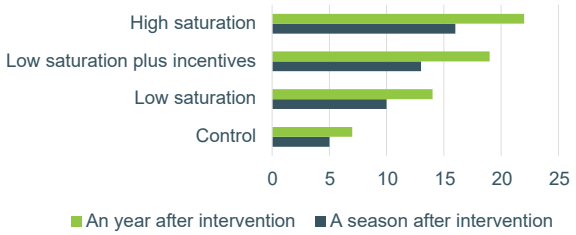
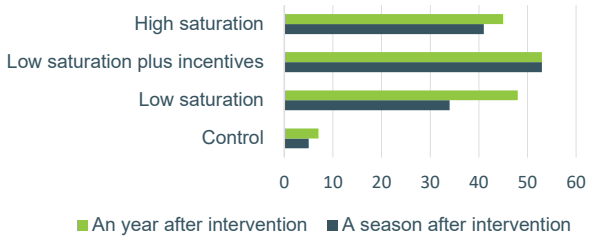
Farmer experimentation is key to adopting new technologies, innovations, and adapting to climate change. However, these experiments often happen in small, private settings, where other farmers might not learn from them. This study looked at how encouraging farmers to experiment with new maize seed hybrids can generate information for both the experimenting farmers and their neighbors, accelerating the adoption of newer maize hybrids. The experiment evaluates how monetary incentives and share of experimenting farmers in a village can be leveraged to deepen learning about new seed products. The interventions were at village where, in 52 villages, 10% of farmers were given seed trial-packs (low saturation treatment arm), in another set of 52 villages, 10% of farmers were given seed trial packs and offered Ksh 1500 (at three intervals) to incentivize them to disseminate information (low saturation plus incentives treatment arm), and in another set of 52 villages, 35% of farmers were given trial packs (high saturation treatment arm). We also collected data from another set of 52 villages without any intervention (control villages). The intervention took place during the March 2023 season and evaluation data was collected a season later (the October 2023 season) and a year later (the march 2024 season).

Figure 1: Non hosts wanted to plant a promoted variety



We observe substantial active dissemination of trial performance by trial hosts to their neigbours in treatment villages. Financial incentives had a positive effect on dissemination where trial hosts who received them put more effort to reach their neighboring farmers. As a result of own experimentation and dissemination, awareness about and demand for the promoted hybrids grew markedly among both trial hosts and their neighbors. As shown in Figure 1, compared to the control farmers, the low saturation treatment arm doubled the demand (the likelihood that a farmer wanted to grow a promoted product – whether they got it or not) of the promoted varieties among the farmers who did not host the trials but learnt from their neighbors – from 5% to 10% one season after intervention and from 7% to 14% one year after the intervention. The impact of the other two treatment arms on the demand of the promoted products among the non-hosts was even higher. As shown in Figure 2, The impact of all the treatment arms on the demand of the promoted products among the farmers who hosted the trials was substantially high, increase demand about 6% to over 50% among farmers who received trial packs and incentives directly.

Figure 2: Trial hosts wanted to plant a promoted variety



Further, only 3% of control farmers were likely to plant the promoted products (fresh certified seed – not recycled) a season and a year after the intervention. The high saturation treatment arm increased the likelihood of planting the promoted varieties modestly (to 5%) among the non-hosts. The likelihood of planting those varieties grew markedly among the trial hosts, where the low saturation plus incentives treatment arm achieved the highest effect (from 3% to about 15% a year after). The difference between the effect of our interventions on demand and actual planting of the promoted varieties was occasioned by supply side constraints where unavailability of the promoted varieties in the market and prohibitive prices were identified as the main ones. For the same reasons, we find many farmers from the treatment villages who recycled these varieties, much more in the midline than in the endline. Increasing the share of farmers trialing new varieties in a village or incentivizing trial hosts to encourage their dissemination efforts can be considered to deepen the impact of trial packs and experimentation in expanding the adoption of new maize varieties, but supply side constraints need to be addressed simultaneously.

Looks Matter: A Cautious Note on Using Trial Packs

By Berber Kramer, Benjamin Kivuva, Carol Waweru and Hailey Wellenstein

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We conducted a study across seven counties in Kenya from 2020 to 2021, comparing the performance of two varieties that were promoted through trial packs – Sawa maize and Advanta sorghum, selected because of their drought tolerance – against commonly grown varieties. Farmers were growing these varieties under their own farm-managed conditions, without external support. We collect photographic evidence of crop performance in farmers' fields across the growing season, and crop cutting experiments to measure crop yields, as well as survey data on farmer adoption rates in subsequent seasons, after farmers are no longer provided the trial packs free of charge.

The results indicate that in terms of visible appearance during drought years, the promoted varieties performed worse than commonly grown varieties. Nonetheless, on average, promoted varieties achieved higher yields. As a result, promoted varieties provided higher revenue, generating on average an additional 5,708 Kenyan shillings per hectare compared to commonly grown varieties. From survey data, we also find low adoption rates; even among farmers who received trial packs, we observe limited adoption once seeds are no longer provided free of charge. This is associated with farmers not perceiving the varieties to be more drought tolerant than their commonly grown varieties.

Based on these findings, we suggest that farmers may rely on visual cues to assess performance. As improved drought-tolerant varieties are bred to generate higher yields, and not necessarily to perform better morphologically, marketing may need to be accompanied with messaging that these varieties will not necessarily "look" healthier in times of drought, and that farmers will need to focus on the yield gains they achieve from these varieties. If "looks matter", when selecting what varieties to promote through trial packs, one could also pay attention to varieties that appear stress tolerant both in terms of yield and visual appearance.

Stress -tolerant variety crop | **Non-stress-tolerant variety crop**

Examples of images taken by farmers during long rains '21.

Does Taste Matter?: Accelerating varietal turnover through producer- versus consumer-targeted approaches

By Berber Kramer, Diana Machogu, Benjamin Kivuva, Aanchal Bagga and Carly Trachtman

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For subsistence farmers, the decision what to grow is often related to the decision what to consume, but most efforts to accelerate adoption of new maize varieties focus on removing production-related barriers to adoption, for instance by providing free seed trial packs to allow farmers to experiment with new varieties. In this study, we ask the question if we could also increase adoption of new maize varieties by improving awareness and potentially changing farmers' perceptions of consumption-related traits of new maize varieties.

To that end, we implemented an experiment from 2022 to 2024, whereby 160 villages were each randomly assigned to one of four treatment arms:

1. A control group, where no interventions were taking place;
2. A producer-targeted treatment where farmers received free trial packs with seeds of selected maize and beans varieties (Short Rains '22 and Long Rains '23);
3. A consumer-targeted treatment where farmers were invited to cooking demonstrations in which they cooked regularly grown varieties and the promoted maize and beans varieties side by side, followed by a blind tasting, and receipt of a trial pack of maize flour and beans to cook the new varieties at home (at the end of the Long Rains '23);
4. A treatment arm that combined both the producer- and consumer-targeted interventions.

In this experiment, we find that both seed trial packs and cooking demonstrations did not increase adoption of promoted varieties in subsequent seasons (Short Rains '23 and Long Rains '24), even though farmers liked their traits, and kept the trial pack harvest for own consumption. Adoption in subsequent seasons remained low as farmers found the seeds of promoted maize and bean varieties more expensive and difficult to find, indicating that even in relatively well-developed seed systems such as Kenya's maize sector, interventions to improve access to seeds will still be very important.

Bundling Seeds with Insurance to Accelerate Technology Adoption

By Berber Kramer, Francesco Cecchi, Benjamin Kivuva, Jonathan Malacarne, Lilian Waithaka and Carol Waweru

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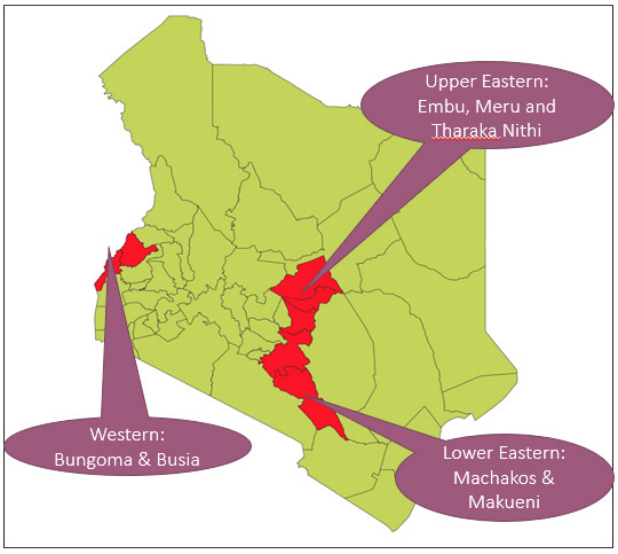

We conducted two experiments from 2020 to 2022 across seven counties in Kenya to evaluate the impact of bundling seeds with crop insurance on farmers' willingness to pay and adoption of seeds marketed as drought-tolerant and non-drought-tolerant varieties. The experiments included both male and female farmers and targeted three counties with arid and semi-arid lands (ASALs) where climate risks are pronounced, as well as four counties with better rainfall conditions. Farmers were offered seeds and insurance as stand-alone and bundled products, with variations in whether the bundle also included pesticides. Half of all villages were randomly assigned to be offered seeds of drought-tolerant varieties with the remaining villages being offered seeds of popular hybrid maize varieties.

The first experiment finds that bundling with insurance significantly increased farmers' willingness to pay (WTP) for seed, particularly when the bundle included seeds of popular maize varieties that were not marketed as drought-tolerant varieties, and seeds-insurance bundles were valued even more so when also including pesticides, likely because insurance and pesticides both reduce different types of risks associated with investments in seeds. Drought-tolerant varieties and insurance were seen as partial substitutes. The second experiment evaluated the effects of a stand-alone insurance product on technology adoption, focusing on fertilizer. Despite higher insurance take-up among female farmers, the study found the strongest impacts of insurance coverage on technology adoption among male farmers; and both uptake of insurance and impacts on technology adoption were largest in arid and semi-arid lands (ASALs).

Efforts to accelerate varietal turnover should consider bundling seeds with insurance and other inputs such as pesticides as a strategy to enhance adoption. Targeting ASALs, where climate risk is a major barrier, offers significant potential. However, stakeholders must recognize and address farmers' nuanced perceptions of risk-mitigation tools, particularly the interplay between drought-tolerant varieties and insurance. Bundling with pesticides, which increases the perceived value of the investment, and addressing gender-specific constraints can further amplify impact. Simplified, well-targeted bundling strategies including financial tools can increase investments in profitable but risky agricultural inputs, paving the way for more resilient farming systems.

Advancing Seed Adoption Through Sector-Led Social Marketing Campaigns

By David Wainaina, Fathiya Accram and Will Rodgers

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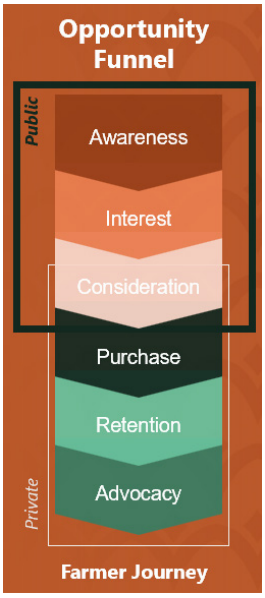

Social marketing campaigns, particularly those employing public service announcement (PSA)-style messaging, can be effective in guiding farmers through the early stages of the marketing funnel—from awareness to interest and consideration of improved seed varieties. These campaigns can be designed to educate farmers on critical seed sector issues, improve perceptions of newer and better varieties, and support behavioral change, addressing issues of low adoption rates by countering misinformation, promoting best agronomic practices, and combating counterfeit seeds.

To scale such efforts, the seed industry and donors should consider investing in Seed Trade Associations to build capacity and fund public campaigns that address these objectives. The sector-led campaigns can play a pivotal role in complementing the brand-specific marketing efforts of private seed companies by implementing top-of-the-funnel, brand-agnostic campaigns. This synergy can create a better enabling environment for seed companies to operate, expand interest and consideration in customer groups, and help meet farmers' needs with the right seed varieties. Increased adoption of improved seed varieties is essential to mitigating challenges like food security risks across Africa.

A donor-supported campaign executed by the Seed Traders Association of Kenya (STAK) in 2024 provides a case study of how these efforts can be designed with success. Targeting farmers in Nakuru, the campaign encouraged the use of appropriate maize seed varieties through multi-channel outreach, including radio, billboards, Facebook, Instagram, Truecaller, and Blis, an agency proprietary geotargeting tool.

Key insights emerged from the campaign, highlighting the effectiveness of various platforms and key messages. On the digital front, Facebook was particularly impactful, with an engagement rate of approximately seven farmers per US$ spent. The campaign also gathered data on Return-on-Ad-Spend (ROAS), which is a metric that shows cost effectiveness for each marketing channel. There are opportunities and potential for improving companies' ROAS by refining campaign objectives, targeting, and timing. Research highlighted the increased engagement of campaigns with value-based messaging around yields, yield stability and pest and disease resistance, which were of high interest to the farmers.

Paid search emerged as the second most effective digital channel, followed by Blis. Traditional media such as radio and billboards offered broad reach, and when combined with digital funneling tools like short codes and QR codes, generated numerous sales leads. Digital tools and technologies are available in both open-source and paid options, offering flexibility to suit various budgets. In-house capabilities and internally designed campaigns can be highly effective. Combining in-house efforts with the expertise of a marketing agency can drive greater optimization of budget across channels and enhance overall success.

These findings underscore the value of iterative learning in campaign execution, as each campaign provides data to refine strategies for future efforts. By leveraging such insights, the seed industry can create increasingly effective sector-led campaigns that address adoption hurdles and ensure sector growth.

These campaigns were supported through the Seed Marketing Innovations for Africa Program (SMIA) managed by Resourced, along with key program partners – STAK, GeoPoll, AgNexus and 5DM. Learn more about SMIA here: https://www.resourced.global/smia/

Advancing Seed Adoption Through Private Company led Digital Marketing Campaigns

By David Wainaina, Fathiya Accram and Will Rodgers

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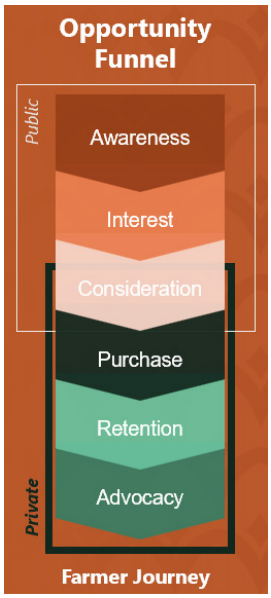

Digital marketing campaigns are particularly suited for targeted messaging with key customer groups that emphasizes direct value propositions, as well as ongoing engagement and post-sales support. They can effectively support the entire farmer journey, especially from consideration through purchase and advocacy of improved seed varieties and technologies. These campaigns can be tailored to engage farmers frequently with specific messaging that aligns with their needs and preferences, creating opportunities for communication not only before the planting season but also during and after it. This approach enhances customer service year-round.

Companies that leverage digital marketing typically cultivate greater goodwill among farmers due to consistent engagement, which complements the efforts of field sales technicians and village promoters. By integrating digital marketing into their overall strategy, companies can establish a self-funding mechanism for marketing investments, as the direct impact on sales has been demonstrated across various sectors, including agriculture.

In 2024, Resourced is partnering with three seed companies in Kenya to implement digital campaigns that serve as a case study for successful execution. These campaigns target farmers in different regions, guided by the seed companies to ensure ecological compatibility. Specific maize seed varieties are promoted through various digital channels, enabling the measurement of both platform effectiveness and messaging impact.

Early insights from the campaign indicate that seed companies often underestimate the potential of digital marketing, missing significant opportunities for business growth. Companies need to communicate the value of their seed varieties more effectively, helping farmers focus on quality rather than just price. Audience segmentation is essential, as farmers engage differently based on factors such as location, gender, age, language, and channel. Companies must invest time in understanding their digital audiences and their pain points to tailor communication effectively and select the appropriate channels to reach them.

For example, our results show that males aged 18-34 are the most engaged on digital platforms, with the youth eager to enhance their families' livelihoods through improved seed varieties. And, while men were more engaged on Facebook, women tended to be more active on Instagram. Along with ability to craft targeted campaigns geared to specific audiences, digital channels are also highly cost effective. On average, every $1 invested in digital can reach >1,000 potential customers. Converting those farmers from seeing an ad to expressing interest in purchasing seeds requires creative campaign design. Pre-testing efforts and "drip" campaigns that run continuously are excellent for gathering insights that help to optimize budgets, timing, and targeting.

Companies with large, existing digital followings are able to convert new customers more cost effectively, highlighting the importance of building a substantial online presence. This underscores the need for companies to develop their own digital strategies to reduce farmer acquisition costs. Management support is crucial, especially in the early stages of navigating the learning curve. Over time, in-house learning and digital marketing experience can significantly lower these costs.

Digital tools and technologies are available in both open-source and paid options, providing flexibility for various budgets. While in-house capabilities and self-designed campaigns can be effective, combining these efforts with a marketing agency's expertise can lead to better budget optimization and overall success.

These campaigns were supported through the Seed Marketing Innovations for Africa Program (SMIA) managed by Resourced, along with key program partners – Tsavo, Advanta, Seed Co and 5DM. Learn more about SMIA here: https://www.resourced.global/smia/

AgNexus Africa: Leveraging Data for Maize Seed Variety Marketing in Kenya

By John Muthee and Ann Ngumba

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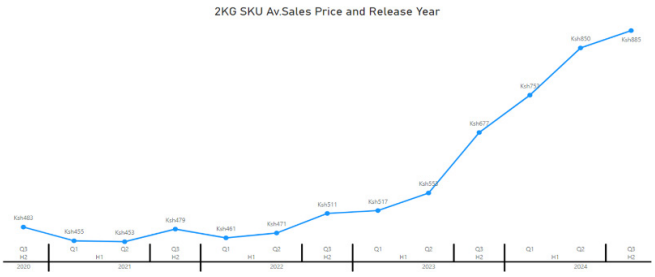
Small Holder Farmers (SHF) are the backbone of Africa's economy. In East Africa, they account for about 75% of agricultural production. These farmers attain their agricultural inputs from Agrodealers. These farmers rely heavily on Agrodealers as their primary source for agricultural inputs. Despite their significance, there has been limited information available on how small-scale farmers invest and navigate the market dynamics in this sector. To address this knowledge gap, AgNexus Africa conducts in-depth research into the evolving landscape of the agricultural market from a retail perspective. Our goal is to empower our clients with comprehensive insights into this crucial sector.

AgNexus Africa provides insights into market trends, consumer behaviour, and product performance, helping businesses to make smarter decisions about their product portfolios and marketing strategies. We believe that true market insight goes beyond mere data collection. It involves an empathetic understanding of the people, the culture, and the unique dynamics that shape consumer behaviour in this region

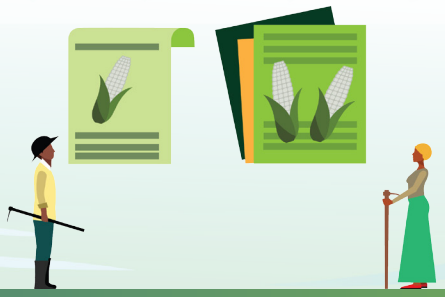
Through an agrodealer trade panel named AgriTrack™, we provide insights into how farmers invest in agriculture inputs such as seed, through their purchases from the retail market. AgNexus Africa's data and insights cover 70% of the market and we collect the data monthly enabling us to see different trends in the market. AgriTrackTM covers Kenya, Uganda and Tanzania.

AgriTrackTM offers a detailed look at the commercial maize seed market, highlighting key trends and insights. The report covers market overview, sales performance showing the market share of the different players in the market and how each of the players perform regionally. The report also explores the impact of maturity types, and eco zones on market dynamics.



Some key insights include information on the varietal turnover where we track how farmers are adopting to newer varieties. Another important factor is pricing. We are able to track how much farmers are paying for seeds.

These insights suggest a positive and vibrant market in Kenya with farmers having a lot of options in choosing maize seed. Seed companies must devise targeted innovative and competitive strategies to boost varietal turnover and farmer adoption rates. To capture market share, there is a need to focus on competitive pricing, availability of stock and promotion of the unique benefits.



Communicating information on maize hybrids through leaflets: What works from farmers perspective?

By Victor Kitoto, Pieter Rutsaert, Jason Donovan and Sarah Kariuki

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Figure 1: Seed company leaflets

To market new seed products successfully, seed companies need to communicate product attributes and performance details effectively to farmers. The distribution of seed leaflets is a very popular method used by maize seed companies in Kenya. However, there is no existing knowledge on how farmers perceive seed leaflets, or insights into best practices that could enable seed companies to inform farmers effectively about new seed products. Using the hybrid maize seed product market in Kenya as a case study, this brief looks at the effectiveness of seed- product leaflets in transmitting information to farmers. In 2023, we conducted a farmer survey (n=646) and focus-group discussions (n=10) in Machakos County to understand what farmers expected from leaflets and how they evaluated the leaflets currently used by seed companies. While farmers have a great interest in leaflets, the availability of these was limited at points of sale. Our interactions with farmers brought to light multiple opportunities for improvements in leaflet design, both in layout and language as well as in the content that should be included in the leaflets. The results also showed that the yield expectations of farmers per acre of land were far below those communicated by seed companies on their leaflets. Large-scale, on-farm testing of currently available varieties by an independent body/entity would allow direct comparison of the performance of available products. These data would not just come from seed companies, where varieties are often tested under optimal conditions, but also from the farmer's peers, which would probably make the data more relatable for the farmers.

Table 1: Farmers suggestions on how to improve maize seed leaflets

Layout	Information
• Local language or Swahili • Clear and readable fonts • No overload of colors • No abbreviations • Visual: A plant and a cob	• Traits: maturity period, yield and drought tolerance • Practice info: How to plant seed and manage seed • Quantity not a problem so long as the information is well structured

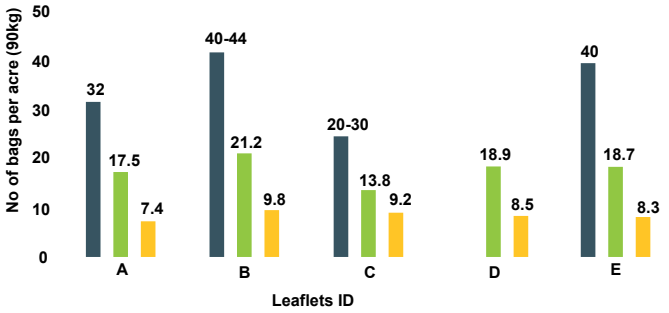

Figure 2: Yield potential listed on the flyer versus farmers' expected yields

Agro-Dealers as information Agents for New Hybrids: Gender and Social Inclusion Considerations

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Recent studies show that agro-dealers can effectively inform farmers about new technologies. However, the role of gender equity and social inclusion in these interactions remains unexplored. Using data from 311 agro-dealers involved in the rebates experiment, this study employs innovative methods—including vignettes and mystery shopper experiments—to examine agro-dealers' perceptions about the likelihood of different farmer types adopting new maize hybrid varieties. We also investigate whether the gender or age of a farmer influences the recommendations from agro-dealers for new varieties.

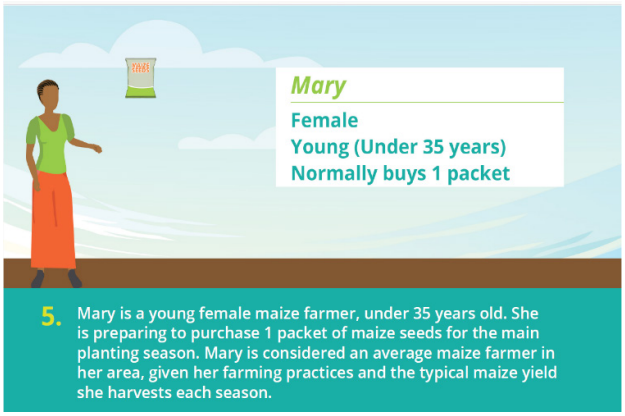

Figure 1: An example of a vignette

The vignette experiment, conducted during the second follow-up of the rebates experiment in November 2023, varied three observable factors—age, gender, and seed purchase quantity—at two levels each, generating eight unique vignettes, with each agro-dealer randomly assigned three. Additionally, mystery shoppers' data from an earlier phase of the rebates experiment were used to further assess agro-dealers' behavior toward male and female shoppers in three scenarios.

Results indicate that agro-dealers generally view younger farmers as more likely to adopt new maize varieties, while female farmers are often perceived as less likely adopters. Moreover, agro-dealers self-report that they are less likely to recommend new hybrids to older and female farmers, a pattern reflected in their actual behavior measured through interactions with female shoppers. This suggests that while agro-dealers have the potential to effectively promote new technologies, their commercial interests may drive a selective focus on farmers they perceive as more persuadable, potentially limiting the reach to specific groups. To address this gap, agro-dealer-led extension models should be complemented with other extension approaches that prioritize equitable and inclusive access to agricultural Innovations.

Acknowledgements to our donors and research partners

Bill & Melinda Gates foundation

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