Real IPM
Grantee Case Study
Contents
Introduction to Real IPM.......................................................................................................................... 1

Project Overview....................................................................................................................................... 2
  Marketing Flourish ................................................................................................................................. 3
  Mazao Flourish Demo Plots ..................................................................................................................... 4
  Project Implementation Challenges ........................................................................................................ 5

Impacts Summary....................................................................................................................................... 6
Continuing Impact in Light of the Covid-19 Pandemic............................................................................. 6
Impacts in CSA, Gender, Youth, and Nutrition ....................................................................................... 7
  Climate Smart Agriculture: .................................................................................................................. 7
  Gender: ................................................................................................................................................ 7
  Youth: .................................................................................................................................................. 8
  Nutrition: .............................................................................................................................................. 8

Vertical Bag Farming: Growing Food and Nutrition Security ................................................................... 9

Key Learnings........................................................................................................................................... 10

Background
AgriFI Kenya Challenge Fund (AgriFI) seeks to support productive and market-integrated smallholder agriculture through the provision of financial support to agri-enterprises. The aim is to contribute to improvements in the capacity of smallholder farmers/pastoralists to practise environmentally sustainable and climate-smart agriculture as a business in inclusive value chains. AgriFI’s objectives are aligned with the Government of Kenya’s aspirations for the agriculture sector as embodied in its Vision 2030, the Big 4 Agenda, and the Agricultural Sector Transformation and Growth Strategy (ASTGS).

This is one of a series of 6 case studies commissioned to extend key lessons and recommendations from grantee level review and analysis. A previous research phase explored high priority impact areas including gender, youth, nutrition, and climate smart agriculture (CSA) with a view to supporting effective design, targeting and implementation of AgriFI. These case studies test some of the logic and understanding of that research, illustrating effective strategies, issues of concern, and areas with potential for increasing positive impacts.

The suite of case studies include two (of 8) Call 1 grantees, three (of 12) Call 2 grantees, and one non-grantee as a counterfactual. Grantees from the COVID-19 Response and Recovery Call and Call 3 have not been included due to insufficient progress with project implementation at the time of fieldwork. Grantees were selected for inclusion on the basis of VC (i.e. broadly representative of the wider portfolio), geography (i.e. reasonable geographic spread), and relevance to key impact areas (i.e. strong learning potential). Fieldwork was conducted in late June and early July 2021 in compliance with COVID-19 guidance and restrictions.
**Introduction to Real IPM**

Real IPM is a producer of biological control agents (BCAs) – including biopesticides, predators, and biofertilisers – based in Thika, Kenya. The company’s mission is to provide a holistic offering of natural farm inputs to reduce the use of synthetic and chemical products applied to crops. A decade ago, only 10% of agricultural producers in Kenya used organic farm inputs – Real IPM is working to change this by creating affordable, effective biological products and advocating for natural pest and crop solutions.

Sensitisation and advocacy are major components of Real IPM’s work in the biological farm input sector. **Making producers and consumers aware of the health and environmental benefits of organically-grown produce is key to creating higher demand for natural solutions and encouraging farmers to transition to using BCAs.**

Historically, Real IPM’s largest customer base has been commercial producers in Kenya’s floriculture and horticulture sectors. These large-scale, commercial farms have opted to grow organic produce in part due to their position as exporters and in response to international demand for organic produce.

Real IPM’s products are residue-free, eliminating the risk that produce gets rejected for exceeding minimum residue levels when exporting.

But Real IPM is not only a commercial farm supplier: recognising the significant health, nutritional, and environmental benefits its organic BCA products can have when adopted by farmers of all scales, **Real IPM has made concerted efforts to make its products more accessible to smallholder farmers (SHFs) in recent years.** This mission has not been without challenges; positioning BCA solutions for sale to SHFs, who typically have less access to capital and expendable income to invest in organic production, is expensive and requires innovative approaches. Real IPM has received support from the AgriFI Kenya Challenge Fund (“AgriFI”) to explore new promotion techniques and SHF integration strategies for one of its most promising products for SHFs: **Mazao Flourish.**

- **288 to 300 staff** (fluctuating seasonally)
- **27% female**
- **60% youth (<35 years of age)**
Project Overview

Real IPM has operationalised AgriFI funding to support the marketing and SHF uptake of Mazao Flourish (“Flourish”) – a biological mixture of beneficial microbes, which can be used as a biofertiliser for promoting root growth and increasing yields of horticultural crops. Flourish can reduce or eliminate the use of synthetic fertilisers, yielding safe and organic produce such as tomatoes, onions, maize, and legumes – some of the most important crops for food and nutrition security in Kenya. In on-farm trials, Real IPM found that using a combination of Flourish and a lower volume of a typical synthetic fertiliser could increase crop yields by up to 30% while decreasing synthetic fertiliser use by 25% – with positive implications for SHFs’ yields, food security, and incomes.

Real IPM’s journey to integrate SHF consumers into its customer base began when the company identified an accessibility gap in the market for organic pesticide and fertiliser solutions. Kenyan SHFs producing crops for household consumption, domestic sale, and export lacked access to safe and affordable BCAs, and instead resorted to synthetics. Whilst commercial farms can afford – in terms of available capital, as well as land availability, labour, and financial security from diversified revenue streams – to trial alternative solutions such as Flourish, it’s riskier for SHFs operating small plots and relying on their yields for subsistence and income to explore the same options. Real IPM must employ different marketing strategies to demonstrate the product’s benefits to risk averse SHFs.

Flourish is not a direct substitute for synthetic fertilisers; comprised of a unique combination of microorganisms, it’s more effective and safer than traditional fertiliser, and more costly by volume. Real IPM is tasked with communicating Flourish’s ultimate cost effectiveness, health benefits, and environmental impact to consumers who have historically relied on cheap, chemical-based fertilisers. Encouraging SHFs to uptake Mazao requires significant shifts in mindset and behaviour around organic production.
Marketing Flourish

Flourish is produced at Real IPM’s factory in Thika – with the production equipment pictured below – using cultures stored in the UK and imported into Kenya. Flourish is currently produced based on demand, and the company has the equipment and space necessary to increase its production capacity as demand for the product grows. Once produced, Flourish is packaged into 1L, 500ml, 250ml and 100ml containers for marketing to SHFs. Consumers then mix the biofertiliser concentrate with water and apply by spray pump as drenches.

Real IPM has four primary market segments to which Mazao Flourish and its seven other BCA products are marketed: 1) small-scale farmers, 2) large-scale and commercial farms, 3) agrovets and other distributors, and 4) distributors in other countries, particularly those affiliated with Biobest Group, the Belgium-based company which acquired Real IPM in 2017. Across these market segments, small-scale farmers remain the hardest target group to reach.

A recent market analysis commissioned by Real IPM found that whilst its large-scale segment is preferential towards high quality products and more flexible in terms of pricing, its small-scale market is attracted to ‘quick-fix’ and low-cost solutions. Real IPM’s new Smallholder Marketing Department, developed with support from AgriFI, uses strategic marketing to address segments’ differences in size, preference, and pricing sensitivity. Flourish’s marketing is focused in 10 counties (Muranga, Kirinyaga, Meru, Narok, Machakos, Kajiado, Laikipia, Bungoma, Kakamega, and Kiambu) based on growing conditions, prominent crops, and farmer demand. Real IPM has several distribution mechanisms to reach its SHF clientele in these counties, including:

- 30+ agrovets stocking Flourish and other Real IPM products in shops;
- 5 product promoters hired to advertise Flourish, primarily to SHFs in rural areas;
- 7 field officers hired to provide technical assistance and extension services;
- Linkages with 6 commercial horticulture exporters to reach their SHF outgrowers;
- Real IPM’s online store; and
- 60+ farmer demo plots and 4 permanent demo plots equipped with shops.

Much of Real IPM’s small-scale customer traffic is drawn from word-of-mouth recommendations, and SHFs’ exposure to the benefits of BCA products in their farming communities. Whilst targeted adverts and promotional materials are important, demonstrating impact is paramount to attracting SHF consumers.
Mazao Flourish Demo Plots

Given that Real IPM must demonstrate the impact of Flourish to SHF customers, demonstration plots ("demo plots") are a particularly important mechanism for this. Real IPM has established four permanent demonstration plots – in Kirinyaga, Meru, Isiolo, and Kakamega counties – where SHFs can observe the impacts of Flourish application on various crops. Side-by-side comparisons are made by treating beds of crops with various combinations of Flourish and traditional fertilisers, alongside control beds. The plots use drip irrigation to conserve water, and natural BCAs for all pest management.

Kelvin Irungu helps manage Real IPM’s Kisima demonstration plot, located 35 kilometres northeast of Nanyuki, Kenya. The newly established plot has been operating since February 2021 and already attracts an average of 10 interested farmers per week, in addition to hosting larger advertised events and farm training days. Kelvin emphasised the plots’ roles in raising awareness of natural biopesticide and biofertiliser solutions, and reiterated the importance of changing customers’ mindsets to boost adoption rates.

The demo plot and side-by-side comparisons highlight four key benefits Mazao has on crops, which are communicated to potential customers when they visit the demo plot: 1) robustness and strength of root systems, 2) quality of yields, 3) quantity of yields, and 4) vigour and overall health of crops. Kelvin and his team rely on visual evidence to prove these four benefits to customers.

Demo plots also facilitate interactions between SHFs and Real IPM, creating a forum for customer feedback, farmer training, and sensitisation. These interactions are mutually beneficial for Real IPM, which collects valuable consumer data and ensures customer retention through relationship building, and SHFs, who benefit from access to information and training.

In order to sustain the demo plots after the conclusion of AgriFI funding, Real IPM has implemented income-generating activities on the plots. Produce from the plot is sold in local markets, and seedlings are sold to SHFs in the area. The profits from these sales are then reinvested into demo plot maintenance and expansion, farm inputs, crop attendants’ salaries, and further marketing. The demo plots offer exciting opportunities for growth, with the potential of establishing nurseries or seed multiplication for further revenue generation and facilitating SHFs’ access to these services.
Project Implementation Challenges

Mazao Flourish was first introduced on the market in 2019, making it one of the company’s newest offerings. Across 2020, Flourish’s monthly sales trended positively. However, there are inherent challenges to introducing an unfamiliar product to a cash-constrained market. Real IPM has faced – and expects to face – the following key challenges.

<table>
<thead>
<tr>
<th>Knowledge gaps around BCAs</th>
<th>One of Real IPM’s greatest challenges is the knowledge gap that exists around organic biocontrol agents, and the deep reach of producers offering traditional synthetic options. Lifelong SHFs are likely to have brand loyalty to an agricultural input producer and may lack knowledge around the alternatives. The company also notes that the BCA sector is largely unregulated, and lacks direction at the apex level: without a clear body driving the sector to become greener, especially for small-scale consumers.</th>
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<tbody>
<tr>
<td>Competition</td>
<td>Although the 20+ companies currently producing synthetic fertilisers in Kenya have made few ventures into natural product production, Real IPM is cognisant that if those large companies were to create biopesticides or biofertilisers in the future, they would be advantaged by their existing customer bases and name recognition. These companies’ synthetic offerings are Flourish’s biggest competition.</td>
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<tr>
<td>Product shelf life and expiration</td>
<td>The shelf life of Flourish also presents certain challenges: given that Flourish contains living microorganisms, it has a relatively short shelf life of 6 months. This shelf life disincentivises some agrovets from stocking the product, as they risk losing capital if they purchase Flourish from Real IPM but are unable to sell it to consumers before its expiration.</td>
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<tr>
<td>Relationship-based customer retention</td>
<td>The need to retain contact with SHFs utilising Flourish prevents promoters from covering large areas, as more follow up is needed than with alternative synthetic products. In order for SHFs to continue purchasing Flourish, they need to see the impacts – and in order to see the impacts, they need to be coached and supervised on how to apply Flourish effectively. Real IPM intends to continue developing its marketing strategy to ensure that no consumers are “lost” due to lack of follow up and interaction, utilising tools such as video content, SMS messaging, and group-based marketing to engage SHFs throughout the growing season.</td>
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<tr>
<td>Attracting a CSA-minded customer base of SHFs</td>
<td>The challenges Real IPM has faced in recent years highlight the need for a mindset-shift around farming and what the average Kenyan SHF looks like. Real IPM is intimately familiar with the lack of youth and women in farming; with their average customer being 40-50 years old and having relatively low education levels, Real IPM is constrained in the innovative marketing and customer outreach techniques it can implement. Whilst new technologies and ICT-based marketing strategies reach youth, they can alienate older and less technologically savvy farmers and agrovets.</td>
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Real IPM knows that its **younger and female clients have higher demonstrated interest in climate-smart agriculture (CSA),** and thereby are more willing to adopt the company’s BCA products. But what would be required to draw more young and female individuals to small-scale farming? This overarching question remains integral to shaping an agricultural sector which facilitates growth for companies like Real IPM.
Impacts Summary

Despite growing pains, Real IPM has been able to track and capture some of the results of its new product and work with SHFs.

Real IPM measures its impacts in terms of farmers trained, product demand, customer numbers, and revenues and profits achieved. More abstractly, the company sees its results through relationships with SHFs, awareness about BCAs’ health and environmental benefits, and SHFs taking on more environmentally conscious farming practices and approaches. Changes in mindsets and belief are difficult to quantify, but are captured through customer behaviour and demand. Agrifl’s CSA research paper discusses if and how small and medium-sized enterprises (SMEs) are able to demonstrate their contribution to CSA, and Real IPM’s holistic approach to measuring tangible impact – and being aware of intangible impact – illustrates the nuance of this measurement.

To date, Real IPM has trained 5,775 farmers – 3,676 female and 2,099 male – on Flourish’s benefits and application. 2% of trained farmers have demonstrated committed uptake, meaning they consistently purchase and apply the optimal quantity of Mazao Flourish to their crops each growing season. There are a few reasons why this number is relatively low, including difficulty tracking SHF uptake through agrovets: many SHFs purchase Mazao through agrovets, leaving Real IPM reliant on agrovets to track and communicate impact. In the future, Real IPM may be able to strengthen its mechanisms for capturing impact by further capacitating agrovets, field officers, and product promoters to capture SHF product use.

It is also challenging for Real IPM to capture the number of SHFs partially adopting Mazao, either using the product inconsistently or using lower than recommended application quantities.

In 2020 (year one of Flourish sales), SHF product sales including Flourish accounted for 3% of the company’s total revenues. Whilst this figure is small, Real IPM predicts strong potential for growth, with an available customer base of roughly five million SHFs in the country.

Continuing Impact in Light of the Covid-19 Pandemic

In addition to intrinsic challenges, the Covid-19 pandemic – which coincided with Real IPM’s implementation of AgriFl funding – played a role in decision making and project rollout. Covid-19 constrained Real IPM’s planned marketing activities for Flourish, but also encouraged the company to explore innovative solutions to reach and strengthen relationships with SHFs regardless of physical proximity, which will remain relevant to the company’s overall marketing strategy beyond the pandemic.

Prior to the onset of Covid-19 in Kenya, Real IPM planned to hold in-person farm days and training events to disseminate product information about Flourish. The company was able to receive dispensation from the Government of Kenya in October of 2020 to hold socially distanced outdoor events of up to 100 participants, but could not rely on these large gatherings as a primary marketing source as initially intended.

Instead, Real IPM has amped up its digital content, producing videos to highlight the benefits of Mazao and to train SHFs on its application and best practices. Real IPM has also pushed SMS messaging to its farmer database of 3,293 SHFs (1,676 female and 1,486 male).

Real IPM continues to explore alternative marketing mechanisms, particularly utilising digital channels. The company plans to release an additional video series detailing the product and its application technique in the coming months.
**Impacts in CSA, Gender, Youth, and Nutrition**

These four impact areas are integral to Real IPM’s operations and vision, particularly for the Mazao Flourish product. Real IPM’s impacts to date in these areas include:

**Climate Smart Agriculture:** Flourish’s most conspicuous impacts are in CSA; in the short term, reducing the usage rates of synthetic fertilisers and encouraging uptake of BCA solutions leads to healthier produce for human consumption. In the long term, natural products have less damaging impacts on soil quality and soil nutrient profiles, ensuring that land can continue to grow healthy produce for years to come.

Building a strong SHF customer base through the marketing of Flourish will, in theory, lay the groundwork for Real IPM to provide a wider range of SHF-focused CSA products in the future.

**Gender:** Much of Real IPM’s gender impact is achieved through its intentional hiring practices. 27% of staff are female, as are 60% of upper management. Real IPM has opportunities to increase its gender integration by recruiting more female field staff, such as demo plot managers/lead farmers, and promoters.

Real IPM has also achieved impact by making BCA and vertical bag farming technologies available to female farmers and farmer groups, although improved tracking mechanisms would be required to quantify this impact. Working with female SHFs belonging to farmer groups – particularly groups growing high value crops such as tomatoes – the company has been helping to streamline communication and knowledge transfer to promote Flourish. Real IPM largely attributes its success reaching female SHFs to group formation.

Despite reaching more women than men for training and sensitisation, the company has higher sales/adoption of biopesticides amongst male customers than female. In practice, it is likely that women who are trained on Flourish encourage their household to utilise the product, but that men typically dominate purchasing – particularly for farm inputs and agriculture – and are therefore buying Flourish on behalf of female SHFs. The nuance required to understand not only who purchases the product, but also who decides that the household should adopt the product, is difficult to capture.

A case can be made to suggest that Real IPM’s CSA impacts will have spillover effects on women’s participation in agriculture in the future. AgriFi’s gender research paper highlights inequitable and insufficient access to land amongst women in Kenya. It is likely that women are especially constrained in their access to productive land, and will continue to see restricted access as productive arable land area shrinks. Preserving nutrient rich, productive soil by increasing adoption of CSA practices – such as application of BCA products like Mazao Flourish – is important to ensuring that potentially marginalised SHFs, including women, retain access to productive land.
**Youth:** Similarly to gender, Real IPM achieves much of its youth impact by generating new jobs for young workers. Most of Real IPM’s 60+ agrovet stockists are youth, as are 60% of the company’s employees.

The company may consider disaggregating impact – in terms of BCA/Flourish and vertical bag sales – by age in the future, to capture the number of youths these products reach.

**Nutrition:** By making Flourish more widely available to SHF consumers, Real IPM intends to increase farmers’ yields and subsequent incomes, ultimately increasing disposable income and enabling households to purchase more nutritious foods. However, as the nutrition research paper notes, increased income is a useful but not definitive proxy for supporting nutrition. That is, additional income may or may not be used to support nutritional needs e.g. increasing dietary diversity. With AgriFI funds, Real IPM also contributes to nutritional outcomes by equipping small-scale, particularly rural, farmers to grow healthy foods with vertical bag farming. This a more direct pathway to nutrition impact, increasing access to a range of fresh produce, and is noteworthy for its accessibility to women with knock-on impacts on child and household nutrition.

Real IPM’s BCAs also have positive food safety outcomes; by encouraging SHFs to grow organic produce, food becomes more safe with less exposure to toxic chemicals and residues.

While anecdotal evidence from Real IPM management, lead farmers, and demo plot staff indicates the positive benefits of the company’s work in the nutrition space, a more systematic approach to capturing data is necessary.
Vertical Bag Farming: Growing Food and Nutrition Security

Impacts in nutrition and food security are further achieved through Real IPM’s vertical bag farming programme. In addition to supporting Mazao Flourish, AgriFlu funds have also been allocated to the vertical bag farming initiative, through which Real IPM produces durable, UV-protected vertical bags for SHF gardening. Vertical bag farming is a low-cost, high-impact food security technique that grows healthy produce with less land and less water; vertical bags require one square metre of land to produce up to 100 plants, allowing SHFs to increase the quantity of vegetables produced by up to six times per metre.

Vertical bags are an ideal food security solution for urban, youth, and female farmers, who may experience constrained access to land plots or decision making on crop allocation. Starting at 650 KES ($6.50 USD), a bag can be used for up to ten years to produce crops such as tomato, potato, capsicum, chillies, cucumbers, sukuma wiki, spinach, kale, and even high value herbs. The bags reduce the risk of soil borne diseases, protect root zones, and avoid the growth of weeds, de-risking farming and reducing labour inputs for users. They’re also water- and fertiliser- efficient, as inputs (including Flourish, which farmers are encouraged to use in the vertical bags) are retained rather than being absorbed into ground soil.

Vertical bags not only contribute to food security, but can also unlock business and income generation opportunities, particularly for women’s and youth groups. Real IPM encourages SHFs to organise into groups, commonly comprised of women or youth, so that the company can reduce its costs in bag distribution to provide discounts, installation, and technical support services in a streamlined way.

From anecdotal evidence, SHFs reported that the bags were particularly relevant during the Covid-19 pandemic, allowing urban-dwellers to access healthy foods and to generate additional income by selling produce. Whilst Real IPM has faced challenges quantifying the impact bags have had, largely due to challenges with follow-up and reaching vertical bag customers/groups, this remains a priority of the company’s internal strategy.
Key Learnings

Real IPM offers an important illustration of the business case for climate smart agriculture. The company operates as a profit-driven business entity, but has found a financially sustainable way to provide climate-friendly products to its paying customers. Real IPM has a vested interest in attracting commercial farms and SHFs to purchase its products, having positive impacts on both the company’s profits and the environment. Whilst AgriFI funding allowed the company to make initial investments in Mazao Flourish as a new product – such as the hiring of a marketing consultant and developing a comprehensive market strategy – Real IPM has put measures in place to ensure that these improvements are sustained following the funding period, with its profits providing the capital to do so.

Real IPM not only confirms the business case for CSA, but also extends the findings of AgriFI’s previous research by illustrating the barriers CSA-minded businesses face. In addition to the standard operational challenges faced by agribusinesses at large, companies in the CSA space are also tasked with challenging the status quo to introduce new products and practices. These innovations – such as Mazao Flourish – often directly counter ‘traditional’ conceptions of agricultural knowledge. Companies offering CSA products and services are more likely to work in underdeveloped sectors and with less resourced regulatory bodies. With these factors in mind, this case study adds nuance to AgriFI’s previous research by supporting the business case for CSA, but also identifying the kinds of barriers to climate smart agribusiness development that programmes like AgriFI can help overcome.

At programme level, Real IPM reiterates the value of private sector development support for companies creating for-cost products for SHFs. Whilst many funding recipients, particularly of donor funds, have historically focused on integrating SHFs into supply chains and offering free or subsidised quality inputs and extension services as a means of increasing SHF production, Real IPM takes a commercial approach. The company has a business interest in strengthening the agricultural sector – thus creating more disposable income for its customers, SHFs, to spend on its products.

Real IPM is unique in how it interacts with ‘competitors’ in the space. Whilst the company seeks to make financial gain, it prioritises expanding the sector and creating more demand for all BCA products, not only its own. Real IPM’s Research and Development Manager, Ruth Murunde, shared that although having a wider offering of BCA solutions marketed towards SHFs on the shelves of agrovets would mean more competition for Real IPM and Mazao Flourish, it’s also exactly what the company hopes to see in the future: Real IPM envisages a Kenyan horticulture sector where consumers can be confident that any produce they buy from a local market, farm stand, or grocery store was grown organically and safely.