BIDHAA SASA INNOVATE FINAL REPORT

# PRODUCT TESTING AND DIVERSIFICATION

### **OF BIDHAA SASA'S RANGE OF PRODUCTS**

# SOLD ON CREDIT

Bidhaa Sasa

**MARCH 2020** 



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### **About Bidhaa Sasa**

**Bidhaa Sasa** is a last-mile finance and distribution company founded in 2015 in Kenya. Bidhaa Sasa helps to increase the quality of life of rural families in Kenya and beyond by making household goods both affordable and accessible to them and especially to low-income rural women.

www.bidhaa.co.uk

### **About MEDA**

Since 1953, MEDA has been implementing effective market-driven programs globally. MEDA combines innovative private sector solutions with a commitment to the advancement and empowerment of excluded, low-income and disadvantaged communities (including women and youth) with core expertise in market systems and value chains, climate-smart agriculture, financial services, and investment. MEDA partners with local private, public and civil society actors, strengthening individuals, institutions, communities and ecosystems, and thereby contributing to sustainable and inclusive systemic change.

### **About INNOVATE**

INNOVATE – Adoption of Agricultural Innovations through Non-Traditional Financial Services, is a three-year initiative implemented by MEDA and funded by the International Development Research Centre (IDRC). MEDA and its partners are assessing the potential of non-traditional finance to enable large scale adoption of agricultural innovations among women and men smallholder farmers in South Asia, South America and East Africa. The research and learnings will contribute to developing policy and programming recommendations.

Learn more: www.meda.org/innovate

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## **EXECUTIVE SUMMARY**

Bidhaa Sasa is one of the participants of the INNOVATE initiative managed by MEDA which seeks to find practical and non-traditional financial services to scale up the adoption of agricultural innovations among women and men smallholder farmers. Bidhaa Sasa is a lastmile finance and distribution company founded in 2015 in Kenya. It helps to increase the quality of life of rural families in Kenya by making household goods, which include farm tools, both affordable and accessible to them and especially to low-income rural women. There are three well-known bottlenecks that inhibit the adoption of technologies by smallholder farmers in Kenya: poor awareness of new products and services, lack of accessibility of such products and services and affordability, these products and services are simply too expensive for most. And these three barriers are even more acute for women compared to men.

This project hypothesis is that non-traditional finance can kick start the adoption of agricultural technologies by rural women in Western Kenya. In this project, Bidhaa Sasa uses group liability as a nontraditional credit risk mitigation technique which is at the core of its current model. This technique works well because it is women-friendly as women in rural areas already have strong social networks. Together with making a non-traditional finance service available to women farmers, the project increases women's awareness of agricultural goods and tools and makes these physically accessible to them.

Bidhaa Sasa's aim is to learn whether its current distribution and finance model would work for the adoption of agricultural innovation, in particular hardware agricultural goods, amongst rural women farmers. This project if successful will help the business in expanding its agricultural range of products. This project's approach used the Lean Startup methodology, which the company has embedded in its operations and culture since its founding in 2015. It starts setting up two main assumptions and defining three success metrics that will validate or invalidate these assumptions. These are:

- There already exist several (at least two) agricultural products available in Kenya that are priced below \$100 and are designed for smallholder farmers in Western Kenya.
- 2) These goods have market-product fit (i.e. massmarket demand) to justify Bidhaa Sasa's current group liability and low-cost distribution model.

The project consists of a series of experiments and activities that allows us to collect data from real clients doing real transactions and measure three key success metrics: access to new agricultural tools; uptake of new agricultural tools and client satisfaction and user experience.

The project identified, tested and commercialised five different products: tarpaulin canvas to dry grain, hermetic bags and silos to store grain, water tanks to capture rainwater, and pressure sprayers for fertilisers and pesticides. It sold over the duration of the project more



than 100 units per month. 73% of the clients were women who pay and use the products themselves. The repayment rates were good and client satisfaction was good across all products.

There were five high-level lessons learned derived from this project that can help increasing the adoption of innovation by smallholder farmers:

- A customer centric approach with value-added services beyond credit is needed
- To increase awareness and education peer-to-peer learning seems most effective
- There are not many hardware tools out there and accessibility remains a problem, from China to client
- When selling agricultural products and services one must be aware of seasonality and long sales cycles
- Women's role in farming societies is underestimated and their needs as farmers not addressed properly

## THE PROBLEM

# Rural women lack access to technologies and financial solutions

The living conditions of rural families in Kenya and most Sub-Saharan countries are inadequate, and their land productivity is one of the lowest in the world. Most families still use tiny kerosene lamps to light their homes at night. People travel long distances on foot to charge their phones in a shop or fetch clean water. Most of the farm work is still done by hand.

Women have little choice but to cook on the ground outdoors, with firewood they collected from ever-dwindling sources. Women as they spend more time at home and are tasked with most household chores like cooking or fetching water suffer most from such poor living conditions.

However, technologies like hermetic grain storage solutions that reduce grain spoilage, solar systems that light homes and charge phones, or efficient cook stoves that reduce expenditure on biomass fuel and smoke already exist. Whilst available in cities these simple yet life-improving products are usually not accessible or affordable to rural families.

Why do these products, some of which are not even high-tech, not reach rural families? There are three well-known bottlenecks that inhibit the adoption of technologies by rural families: poor awareness of new products and services, lack of accessibility of such products and services and affordability, these products and services are simply too expensive for most. And these three barriers are even more acute for women compared to men. Poor infrastructure in rural areas, low levels of income and simple lack of understating of the rural market dynamics, has meant that investing in rural distribution is still considered an expensive, high risk and not viable business opportunity. Women are not natural targets of rural marketing campaigns because their incomes are perceived as lower than their male counterparts as they have fewer choices when looking for paid work outside their farm.

In general women's earnings are not high enough to buy with upfront cash the goods or services that are important to them like cooking devices, lighting for the children and tools for the farm. Often, they lack their own assets and credit histories which prohibit their access to formal financial services (e.g. savings, borrowing, insurance) beyond mobile money in some countries. They also tend to lack the knowledge of goods and services relevant to them, and they lack mobility and time to "shop around". Retailers and financial providers tend to be based in towns that rural women rarely visit. These institutions also tend to focus on "productive" assets (e.g. cows, water pumps, shop inventory) that are traditionally a man's matter, have "higher" value (\$500+) and lower due diligence costs.

### **BIDHAA SASA'S MODEL**

# A tupperware-style distribution and finance model centred on women groups

Bidhaa Sasa is a last-mile distribution and finance company serving rural women in Western Kenya, offering them a range of life-improving goods on credit that are delivered to their homes.

We target rural families in Western Kenya with goods that improve their quality of life. We focus on the women within these families as our entry point, customers and adopters of innovation. Why women? Because rural women are still in charge of most household chores and the care of their children while tending their plot of land and animals. They and their children are the ones that will benefit the most from these life-improving goods.

Although it is perceived that rural women are not an attractive market opportunity for goods and services as mentioned above, rural women are rich in social capital. Our model leverages the existing social networks that are part of everyday life in rural areas, especially among women, for both the marketing and financing of a series of goods that improve their quality of life. We specialise in products priced around \$60 that have the highest potential to impact women's lives but require financing because their incomes are low. Our range that has been developed with clients' own feedback includes today solar lamps, systems and radios, efficient cookstoves, LPG cylinders and cooking accessories, water tanks, tarpaulin canvases to dry grain and hermetic bags and silos for grain.

There are other credit providers who finance goods, but the financing is either linked to a "productive" pre-existing loan (e.g. microfinance institutions, One Acre Fund) or a pre-existing pay-as-you-go solar system (e.g. Mkopa). We do not rely on pay-as-you-go (PAYGO) technology because it is limiting on product choice, nor do we rely on collateral and credit assessments as they are too costly for loans below \$500. Instead all our clients pay for their products with payment plans that we manage ourselves without the need of collateral or bank accounts provided they buy in a group of at least five people and that they all share the liability. The product itself acts as collateral and all members co-guarantee each other. This group liability model is well understood especially among women who are already very active in several self-help groups or socially minded groups. But affordability is not the only barrier we are trying to overcome. How can a lady farmer get hold of a new tarpaulin canvas that won't break in one season? Does she even know Bidhaa Sasa exists? Inspired by successful direct selling techniques for Tupperware, we have developed a very cost-effective last-mile distribution model, where clients themselves recruit new clients in their own homes. These group leaders, like the hosts of the Tupperware parties, organise demonstrations in their own homes where they show our products and recruit new clients. For this work they earn rewards in the form of cash and gifts and most importantly they earn social recognition in their villages.

Since launching in 2015 we have served over 40,000 rural clients with lifeimproving goods from seven branches in Kenya. All our clients buy our products with payment plans and mobile money (M-PESA) and belong to a group. Our archetypical client is a middle-aged woman whose main selfdeclared occupation is being a farmer, a teacher or a business lady selling produce at local markets. They typically have four to five children, work one or two acres of land and their family income is below the average "poverty line" in Kenya measured using the PPI method.



# THE HYPOTHESIS

Non-traditional finance can kick start the adoption of agricultural technologies by rural women in Western Kenya

Offering non-traditional credit to rural women is crucial to accelerate the adoption of impactful technologies. In this project, we continued using group liability for credit risk mitigation because it is suited to the selling of products that do not benefit from remote switch-off technology so we can extend credit for a variety of non-electrical goods in particular tools and goods for the farm. Group liability is also women-friendly as women in rural areas already have strong social networks.

Together with making a non-traditional finance service available to women farmers, we also continued to develop our gender-focus lastmile model to increase women's awareness of agricultural goods and tools and make these physically accessible to them.

With this INNOVATE project we wanted to learn whether our distribution and finance model would work for the adoption of agricultural innovation, in particular hardware agricultural goods, amongst rural women farmers. This project if successful will assist us in expanding our agricultural range of products that originally only included canvases to dry grain to other goods. Potential new goods include solar water pumps, storage bags, silos, wheelbarrows, chicken incubators, milk cans, chain link. The project will also help us improve the way we collect and store sales and impact data and our logistics, IT and inventory capacity.

In addition, with this case study we wanted to show that with a women-centric model, repayment rates are equal or better to those achieved by microfinance institutions selling larger loans. We wanted to demonstrate that good repayment behaviour is possible even for goods that are not perceived as income-generating but that have other benefits such as saving money and time and improving living conditions and farm productivity.



### **METHODOLOGY: A LEAN STARTUP APPROACH**

- Assumptions
- Success Metrics

Bidhaa Sasa uses a Lean Startup methodology to develop its business model, this involves setting up experiments, collecting data and feedback from real clients for learning and iterating until the right value proposition and model is found.

This project's approach was not different. We started setting up two main assumptions and defining three success metrics that will validate or invalidate these assumptions.

### Assumptions

As one of the main objectives of the project was to find new agricultural technologies that could be added to our current business model, we had to assume that:

- There already exist several (at least two) agricultural products available in Kenya that are priced below \$100 and are designed for smallholder farmers in Western Kenya.
- These goods have a market-product fit (i.e. mass-market demand) to justify our current group liability and low-cost distribution model.

### **Success Metrics**

The project consisted of a series of experiments and activities (see Test Plan below) that allowed us to collect data from real clients doing real transactions. It is important to note that all Bidhaa Sasa's data is genderdisaggregated and collected from the field by its own well-trained staff with mobile-based tools. Metrics were identified to determine whether the tested products resonated with customers' perceived value a to align with customer value and determine future direction.

The three metrics to measure the testing outcomes were:

Metric	Success Criteria
Access to new agricultural goods / tools	To identify and test the demand for at least 3 new farm tools
Uptake of new agricultural goods / tools	To sell at least 100 units per month
Client satisfaction and experience (includes usage of agricultural good / tool purchased by women)	Net Promoter Score (NPS) of above 30% and repayment rates with PAR30 below 25% per product. 50% or more women clients and users for all products



Product testing and identification of new agricultural tools offered to rural women with payment plans

The project consisted of testing new agricultural products that could fit the current financial and distribution model of Bidhaa Sasa in Kenya. This can help the business to expand its range of products and diversify its revenue and risks while still serving smallholder farmers and women in particular. The project also included improving the way we manage and store data, the development/implementation of an inventory management software capable to deal with a varied range of products, and the design of a new mobile app. The project planned to get expert advice from an agricultural tools specialist to identify possible agricultural products to test-sale and a logistics expert to learn how to handle such new goods and to implement an inventory software. Bidhaa Sasa also planned to hire a designer to design a mobile app for the business' sales team to increase their productivity.

### **Baseline Studies**

The project started with two baseline-type of studies.

**First, we ran a small survey among our own clients which we sent via SMS (a technique Bidhaa Sasa uses regularly).** This Locus of Control survey collected responses from around 200 clients. The questions shown below aimed to understand to what extent smallholder farmers already use agricultural technologies and their

level of knowledge and access to them. The survey also asked about their ability to pay or borrow to purchase them.

#### Locus of control questions:

- Do you use agricultural technologies and innovations in your daily farm activities?
- Do you know what agricultural technologies you need to improve your harvest?
- Do you know where to buy these technologies and innovations to improve your harvest?
- Do you have money to buy agricultural technologies and innovations you want?
- Do you borrow loans to purchase agricultural technologies and innovations?

Second, we commissioned a baseline study to an external team of consultants to understand better the current levels of adoption of ag. tools by farmers in the regions where Bidhaa Sasa operates (Western Kenya). Its title was "Use and best practices of agricultural tools by smallholder farmers in Western Kenya". The study ran one-to-one interviews with randomly selected farmers and focus groups with relevant experts all located in five counties where Bidhaa Sasa operates. In total 22 households were interviewed in each of the five counties, 10 key informants were interviewed and between 5 to 10 individuals attended a focus group in each of the five counties. Typically, the key informants and individual attending focus groups represented farm coops, self-help and women groups, government agencies and private sector companies.

### **Testing of New Ag Products**

One of the main objectives of the project was to identify new products with a price point that fit the current Bidhaa Sasa model. Affordability of goods is still the main barrier of adoption of new technologies by rural women, even when they are offered user-friendly credit terms. Our clients have limited cash to be used regularly over time as their incomes fluctuate over the seasons. We have found that monthly instalments of around \$7 are affordable for most but anything above \$10-15 would limit the uptake to the richest farmers. Extending the payment plans is not necessarily a viable option, anything above 12 months is less desirable, probably because farmers' incomes follow yearly cycles and forecasting beyond one year is hard. Apart from tarpaulin canvas that had been already tried in the past, we identified Purdue Improved Crop Storage (PICS) hermetic storage bags and hermetic silos to store grain, water tanks to collect rainwater and pesticide/fertiliser pressure sprayers. We discarded other products like solar water pumps that are very in vogue lately mainly because of the price point (\$500-\$1000), and other products like egg incubators because of price and limited demand. Bidhaa Sasa's aim is to offer mass-market products, which means product must be attractive to most farmers, not just the rich ones or commercially minded farmers.

All these products were initially tested by existing clients. This testing phase is standard in the Bidhaa Sasa model and is crucial to understand the user experience. Here we want to learn what the end user feels when using the new technology. We usually let existing clients to use samples of the product for a few days or weeks, then we collect feedback on their user experience. Price is never disclosed upfront and only discussed at the end of the feedback survey, this is to avoid distorting the user experience.

*Ultimately, only technologies that really transform the user experience are worth commercialising both for the impact potential and its commercial viability.* 

### Sale of New Ag Products

If a product testing phase data is very positive, Bidhaa Sasa would start including it in the catalogue with one or two branches. This is the test-selling phase where we measure uptake, repayment behaviour and user satisfaction. In this project the five ag tools were test-sold in different branches and some eventually rolled out to all branches.

Finding the right balance between the payment plan length and amount paid per month is very difficult. In 2019, Bidhaa Sasa ran several A/B tests to fine tune the pricing of all the products in the catalogue, including the new ag. tools. As shown below, the differences can be subtle, but our clients are extremely sensitive to these parameters.

#### PRICE LIST A

Product	Total Paid by Customer	Number of Monthly Instalments	Monthly Instalment (\$)
1 canvas + 4 PICS Bags	\$42	5	\$8.40
Silo	\$108	8	\$13.50
Water Tank (1000L)	\$140	10	\$17.50
Sprayer	\$84	6	\$14.00

#### PRICE LIST B

Product	Total Paid	Number of Monthly Instalments	Monthly Instalment (\$)
1 canvas + 4 PICS bags	\$45	8	\$5.63
Silo	\$117	12	\$9.75
Water Tank (1000L)	\$144	14	\$10.29

### **Logistics Experiments**

Last-mile distribution of goods is complicated because of the distances between urban centres and the farmers' locations, the lack of a proper road network and the lack of mobility of rural women. Bidhaa Sasa's model includes value added services in all the products offered: not only do we offer credit to all but we also deliver the goods to our clients' doorsteps which helps to overcome women's lack of time and ability to travel to urban centres. Since 2015, we have relied on delivering exclusively to groups of clients using motorbikes for the last-mile leg (from town to farm) to lower costs. The main aim of this project was to test new products that could be added to our catalogue, so it was crucial to understand to what extent motorbikes were adequate for the delivery of new ag. tools. If motorbikes were not an option, we needed to understand what methods of transport would make these new tools accessible to our clients who do not have their own modes of transportation.

Therefore, during the project we started two different experiments to solve the last-mile problem of transporting bulky goods that do not fit on the back of a motorbike. The experiments will help to decide between a decentralised version where goods are dispatched from each branch and a centralised version where goods are dispatched from a centrally located fulfilment centre.

#### **Improved IT Internal Capacity**

This project also had a component related to IT systems. Bidhaa Sasa started a massive project to migrate all old systems to Salesforce and Taroworks, an application that is designed to work offline and online. This new IT system will allow the business to improve its ability to collect data from the field (both commercial and impact data), improve staff efficiencies by using a user-friendly app that can work offline, and also track inventory which is crucial as the catalogue of products becomes more complex.





### Adoption of new agricultural tools by rural women

### **Baseline Results**

The project ran between June 2018 and January 2019, all the numbers and results below refer to activities during this period. Around 200 clients answered our locus of control questions, of which 65% were women (which is in line with Bidhaa Sasa's client gender split). The results are summarised below. There was no clear distinction between male and female respondents. Clearly, lack of cash to buy any new technology is the main barrier to its adoption however more than half can borrow to pay for them if they were knowledgeable enough and had access to them which is not necessarily the case.

The baseline analysis commissioned to the external consultants helped to confirm what we already suspected. Some high-level results are summarised below.

#### **BASELINE RESULTS: LOCUS OF CONTROL QUESTIONS**

Locus of Control Question	Yes
Do you use agricultural technologies and	65%
innovations in your daily farm activities?	
Do you know what agricultural technologies	48%
you need to improve your harvest?	
Do you know where to buy these technologies	41%
and innovations to improve your harvest?	
Do you have money to buy agricultural	22%
technologies and innovations you want?	
Do you borrow loans to purchase agricultural	54%
technologies and innovations?	

RESULTS FROM 110 HOUSEHOLD SURVEYS, 10 KEY INFORMANT INTERVIEWS AND 5 FOCUS GROUP DISCUSSION (BUNGOMA, KAKAMEGA, NANDI, TRANS NZOIA, VIHIGA COUNTIES)

Main crops	Maize and beans are the livelihood crops with low productivity levels (3 bags of maize per acre)
Livestock	Cattle, goats, sheep, chicken
Must Have Farm Tools (Rented or Purchased)	Ox-plough, tractor, Jembe (hoe), Panga (machete), Wheelbarrow, Sickle, Drying canvas.
Desirable but Not Accessible or Affordable	Pulveriser/Grinder, Maize Sheller, Hermetic Bags, Silo, Milk Cans, Chaff Cutter, (diesel) Water Pump
Who Uses, Who Pays	<ul> <li>Users: same split between men and women (at 40%), labourers at 20%</li> </ul>
	Payers: men 70%/women 30%
	<ul> <li>Unspoken rule: women are in charge of smaller tools, men of bigger tools</li> </ul>
Access to Credit	25% of respondents had borrowed to purchase tools from banks, savings groups and One Acre Fund

Some interesting conclusions of this study are:

- Maize production will not be completely phased out; recent focus on relatively high value crops - banana, coffee and indigenous vegetables – and dairy being championed and campaigned by government and development agencies;
- Mechanisation is low but much needed, there is also scarcity of labour;
- Banks are popular sources of financing for bigger tools and equipment. Farmers also prefer to buy the bigger tools individually as opposed to in groups. This can be attributed to the fact that men pay mostly and that they are mostly the custodians of bank accounts. Savings groups are a second source of financing;
- There are very few players in the supply chain of tools and equipment in the region.

### **Testing of New Ag Products**

From the baseline study results we decided to focus on tools that are must-haves or desirable. Another factor is price: we focused on the tools that are too expensive to be bought with cash up front and would need an affordable payment plan for most farmers. This made us exclude solar water pumps which retail for \$500-\$1000 a unit and maize shellers among other expensive equipment. We also excluded hoes and machetes as these are readily available in every village market and can be purchased straight away by most. As mentioned earlier, we identified and tested canvases, PICS hermetic storage bags and hermetic silos to store grain, water tanks to collect rainwater and pesticide/fertiliser pressure sprayers.

At the start of the project, the Bidhaa Sasa catalogue only included one farm tool: a tarpaulin canvas to dry grain. The sales of this product had had mixed results, with clients not paying promptly (even defaulting) and with a poor uptake due to the high price/quality ratio of the product offered. In this project we found a better supplier that offered a higher quality canvas at a better price, Bells Industries. They are also one of the few (or only) suppliers that manufacture PICS bags in Kenya. PICS bags are 90kg hermetic bags to store grain like maize. Because of its triple layer design, it does not need to use pesticide regularly like most traditional bags do, which means it saves time and money and is more convenient. The level of awareness of this technology is still very low despite work done by some NGOs.

As mentioned in the baseline study, finding suppliers that stock the products in country is not easy. There are few and very difficult to have access to and often not very willing to do business at all. This means that there is no real choice for the end users, and they will always be at the mercy of the few suppliers in terms of pricing and quality.

For the grain silo, we found ourselves in now a typical situation, dealing with the only supplier that stock the item but has no interest in growing their business. For this reason, the sales of silos have been partially frozen. For water tanks, we had the luxury to choose between a couple of suppliers: the first one we chose did not deliver so we changed to a second one mid-course.

After testing these five ag tools we decided to commercialise them using different payment plans as mentioned above. However, the pressure sprayer is only offered in two of the seven hubs because feedback from the testing phase show little demand in the five most western hubs where tea is not grown.

#### Sale of New Ag Products

Over the 20 months period of this project (between June 2018 and January 2020) we sold more than 3000 units broken up as follows.

#### SALE OF NEW AG PRODUCTS

Product	Units Sold	% Female Clients	Average PAR30	Average NPS
1 canvas + 4 bags	3178	73%	12%	56%
Silos	82	76%	0%	39%
Water tanks	328	77%	0%	41%
Pressure sprayer	73	53%	2%	N/A

It is important to note that if the product is directly linked to a crop its sales will be linked to the season of that crop. In our case, canvases, bags and silos are all used with maize and hence most of the sales (80%) occurred after the harvest (between September and December). Pressure sprayers are only relevant for tea and cattle farmers and are only offered in two of our seven hubs. Bidhaa Sasa sales model is complex as it involves creating groups of clients interested in buying the same product at the same time, this results in a relatively long sales cycle. We measured how long it took to convert to a sale from the moment the new ag. product was shown to potential clients for the first time, this was between 9 to 10 days which was similar to non-ag. products' cycles.

We also measured how successful our initial demonstration meetings were at yielding sales, as the demonstration meeting is usually the first time clients see the products. On average 30% of people who are shown the canvas and hermetic bags did eventually buy, however, for water tanks 6 times more people bought that were shown the product. This illustrates the challenge of distributing large items, not only are they difficult to deliver to the end client but even creating awareness is difficult. In rural areas, awareness is created by physically demonstrating the new technology or innovation to the target market, which is not particularly complicated if one is able to recruit their own peers to do this. The water tank is typical in that it is not practical for us to demonstrate it like other products, but we must rely on existing clients demonstrating their own installed tank at their own homes. In this project we tested the potential use of marketing videos to create this much needed awareness for products that we cannot carry to demonstration meetings. We created videos for silos and water tanks and all sales staff are now instructed to show them in their meetings. So far there is no evidence that these videos have increased demand for silos or tanks. Although everyone likes the videos it is not an ideal marketing tool: there are too many limiting factors like the small screens of the smartphones used, data storage and network problems, even the location of the meeting matters, if this is outside, watching videos in a small screen is not ideal.

Selling on credit when the collateral is the product itself is risky. If the product does not perform as expected, the disappointed client will stop paying as the worse that can happen to them is to have their product repossessed.

Therefore, Bidhaa Sasa's model can only work with quality products and well-trained sales staff that do not oversell the benefits of the products.

One goal of the A/B tests on pricing was to learn if longer payment plans (and lower monthly instalments) increased uptake at the expense of increasing the risk of default (the longer the payment plan the longer the risk of non-repayment). The uptake in the hubs with longer payments was higher (on a per salesperson basis) than in hubs with shorter payments rates and the repayment rates were not significantly different. Historically the business repayment rates are good since we started in 2015, and the repayment rates of the ag. products are in line with the other products in the catalogue.

### We have found that when the products directly save time or money the client finds ways to meet the monthly instalments.

For example:

- Hermetic bags and silos reduce grain spoilage and losses (of up to 30% of the harvest) which translates into money not spent on food or extra income if surplus maize can be sold.
- Water tanks save time as the users do not have to travel to collect water by hand.

In this project the PAR30 results of each product were like the ones for other products with important fluctuations over the season (from extremes 0% to 50% PAR30 in some cases). We also measured the individual NPS scores for each product, and again, these were in line with the other products in the catalogue, mostly around 50%. It is interesting to note that overall NPS scores (would you recommend Bidhaa Sasa to your friends) are consistently higher (at 85%) than product NPS scores (would you recommend product X to your friends). This may be due to the added value services that Bidhaa Sasa offers included in the sale: from credit, to delivery, education, installation and post sales.

And lastly, on the gender split, the results are also in line with the rest of the products in the catalogue, not surprisingly as the Bidhaa Sasa model specifically targets women. What may come as a surprise to some is that when asked 'who makes the instalment payments?' most of our female clients say it is themselves, and when asked who uses the product bought it is also themselves. Women buy, pay and use these products all on their own. Interestingly, when men bought canvases, in half of the cases it was their wives who use them. Perhaps this is consistent with the findings in the baseline report that found there is an unwritten rule in rural households, men are responsible for large and expensive equipment (perhaps because they have easier access to bank loans) and women are responsible for smaller tools. But where is the line between large and small pieces of equipment? We reluctantly launched our water tank as it is priced above the sweet spot of \$100 and were half-expecting to get a very different male/female distribution, which has not been the case at all. In 2020, we plan to offer a bigger water tank (assuming we find a way of transporting them) and we may finally discover whether or not there is a "glass ceiling" for the acquisition of farm equipment.



### **Logistics and IT Projects Progress**

The logistics experiments have not yet concluded, nor have we yet decided which of the two models (decentralised version where goods are dispatched from each branch or a centralised version where goods are dispatched from a centrally located fulfilment centre) will be adopted and rolled out. For now, we are inclined for a central fulfilment centre option which will allow us to justify investment in large vehicles (not motorbikes) for the transportation of bulky products. Because of the transportation issues of large items, the uptake of silos and water tanks has been much lower than what we would have liked, and these will only be properly promoted once the logistics are solved.

The IT project is also underway with the first phase of the migration to Salesforce to be rolled out in March 2020. The new system will allow us among many other things to track accurately inventory movements from the supplier to the end client. It will also help sales staff to be more efficient in their time management and properly follow up on leads and clients.

### **Overall Results of Project**

The outcome metrics exceeded their target thresholds, validating the two main hypotheses of this project.

1) There already exist several (at least two) agricultural products available in Kenya that are priced below \$100 and are designed for smallholder farmers in Western Kenya.

In fact, we found more than two products available in country that costs around \$100. However, our pipeline for further additions is now quite small, we are testing chain link and barbed wire that are both used to fence plots.

2) These goods have market-product fit (i.e. mass-market demand) to justify our current group liability and low-cost distribution model.

All the products tested in this project have been sold with the exact same terms and conditions as the rest of the products in the catalogue and in all locations except for the pressure sprayer that is only in demand in some regions. Grouping of clients which is fundamental to the Bidhaa Sasa model works for agricultural tools.

#### **OVERALL RESULTS OF PROJECT**

Success Metric	Project Results
Access to new agricultural goods/tools	5 products in catalogue: canvas, bags, silos, water tanks, sprayers
Uptake of new ag goods/tools	<ul> <li>3661 units sold between June 2018 – January 2020 (183 units sold/month)</li> <li>73% of clients were women, who pay and use their own product</li> <li>Good repayment rates with PAR30 ranging between 0% to 12% depending on product</li> </ul>
Client satisfaction and experience (includes usage of ag. good/tool purchased)	NPS scores between 41% to 56% depending on product

### LESSONS LEARNED

Access to financial services, especially for borrowing, is a well-known bottleneck for the adoption of new technologies and innovations by smallholder farmers in Kenya and beyond, and this is even more acute when looking at female farmers. Rural women lack access to traditional loans because of their lack of collateral and perceived lower incomes. Non-traditional financial services with tailored products to women's needs and aspirations are critically needed to increase adoption of technologies and innovations.

However, finance is not just the only bottleneck. Limited knowledge and lack of access to these new technologies which affects both men and women are also well-known bottlenecks that are perhaps harder to overcome.

### Lesson Learned 1: A Customer Centric Approach with Value-Added Services Beyond Credit Is Needed

Thanks to this project Bidhaa Sasa successfully managed to include five agricultural technologies in their product catalogue and rolled them out commercially. All our products are sold with payment plans but also other value-added services such as delivery, education, installation and post-sales.

When selling on credit these value-added services are almost mandatory. A dissatisfied client whose product's benefits were oversold has a greater chance to default, or a poorly installed or explained new tool also increases the chances of default, and so on.

Bidhaa Sasa's customer centric approach means we must spend a lot of effort understanding our clients' preferences so we can design a value proposition via iterations that is attractive to most clients. For example, one of the first steps when designing a value proposition and its marketing strategy is to **understand the differences between who the client is, who the payer is, and who the user is of the product or service offered**. Running A/B pricing tests to find out the right balance between length of payment plan and instalment amounts is another example of our customer centric approach. Bidhaa Sasa's model targets rural women because it can leverage their social network to market new technologies. While social networks are very strong in rural Western Kenya and group liability is well understood (all members co-guarantee each other for each to buy one asset) it is interesting to see that group ownership (where all members co-own equally one asset) is not common at all. This is a very subtle difference that can make a project succeed or fail entirely, hence the importance of really understanding one's target market.



### Lesson Learned 2: To Increase Awareness and Education, Peer-to-Peer Learning Seems Most Effective

As mentioned above, together with lack of access to finance, awareness is also a major roadblock for the adoption of new tools. We were surprised to learn that the PICS hermetic bags despite having been part of large NGOs campaigns was not really understood by our clients. The pressure sprayer for example is a relatively complex product that needs a fair amount of education, and if this is not done properly the risk is that not only the client stops paying their loan, but they also stop using the tool.

At Bidhaa Sasa, we use the power of networks to create awareness of any product in our catalogue. We have found out by trial and error that the most effective way to introduce a new product is to start by recruiting the early adopters. These special clients are natural risk takers (this is a personality type and is not linked to wealth or education) and are keen to try innovations with impact. Of course, offering payment plans reduces the technology risk for the end user, the worse-case scenario is "if this new gadget does not work, I would only lose the first payment". Early adopters who are well networked are ideal to spread the word. In the Bidhaa Sasa model, early adopters become group leaders, they are given samples and supported by our staff to help them demonstrate the new product within their own social circles. Although all our staff are trained to create awareness and educate clients, we know that they learn most effectively from their own peers.

This is good news as it is more cost-effective to enrol happy clients in a referral scheme than training and paying a fully professional legion of agents or employees. However, it also has its limitations. Any product that is not easy to handle and physically demonstrated in-situ is at a disadvantage. In this project we started using videos for the marketing of water tanks and grain silos, but we do not have enough evidence to demonstrate that these are effective at creating awareness or demand.

### Lesson Learned 3: There Are Not Many Hardware Tools Out There and Accessibility Remains a Problem, from China to Client

It was very disappointing to learn that the level of mechanisation of smallholder plots is almost zero and that land remains idle because of scarcity of paid or unpaid labour. All the farm work seems to be done by hand with the occasional renting of an ox or tractor. Existing pre- and postharvest tools are few and most are too expensive for smallholder farmers who do not have the tradition of co-ownership in Western Kenya. At Bidhaa Sasa we are keenly waiting for the engineers of the world to start inventing new gadgets for smallholder farmers, meaning that they can work at small scale. Solar water pumps, solar maize grinders, solar fridges are all in the pipeline but today they are too experimental and expensive (even with payment plans) for farmers that work one or two acres of land.

Accessibility or availability of existing technologies near the end users is the last major roadblock for the adoption of these technologies by smallholder farmers. Even if they had the cash and were well informed, they would find very hard to get hold of a quality-assured product near where they live. In addition, women do not have the time and freedom to travel to the cities and "go shopping" so it is imperative that any new technology is brought to them and as close as possible. In this project we faced many supply chain problems. First, it is hard to find the importer or manufacturer of the new technology who are invariably in Nairobi or abroad. Second, some suppliers are not that interested in selling their products and negotiating with them is often frustrating. Third, there is not much consistency with the services they provide, the quality of the goods may not be constant, their warranty process is cumbersome, there is no visibility of their stock levels, the time of delivery of the goods is not respected, and so on. In this project, we had to change the supplier of the water tank and had to almost freeze the sale of silos, and of course we have suffered from stock outs, all because of the lack of professionalism of the suppliers.

Then there is the challenge of dealing with the famous last mile. This is typically the leg between the warehouse where goods are stored and the end user. Typically, this last leg is the hardest because of the lack of proper roads, proper vehicles and even well-trained drivers. To lower costs we always deliver to a group of clients as grouping is fundamental to our model, but we are still learning and fine tuning the exact configuration of this service. In this project we started to test two models for the logistics of the last mile, but we do have not enough data to decide which of the two models will be better for the clients and the business.

### Lesson Learned 4: When Selling Ag Products and Services Consider Seasonality and Long Sales Cycles

Investing in a new technology or innovation is the opposite of impulse buying. At Bidhaa Sasa we have developed a sales process that allows our clients to go unhurried through their own discovery and negotiation journey. It takes around 10 days for our clients to complete a purchase (for any product in the catalogue, expensive or cheap). In this time, they have to get familiar with the new technology (normally by testing a demo product or seeing it in a friend's house), they need to negotiate at home (can we afford it? who will use it?) and then they need to save money for the first payment, and in addition five clients need to be ready at the same time (which is the rule of our group liability model).

Agricultural tools have the added problem that they will be in demand when they are needed for agricultural and farming activities. A farmer's life is all about the crop seasons and forecasting is almost a futile exercise, hence most clients will not buy ahead of time but only when they have the certainty of how successful this season will be or can measure with some certainty this season's produce. Canvases to dry grain and storage technologies are a great example of this effect: more than 80% of our sales occurred in the months between September and December because the maize harvest starts in August.



### Lesson Learned 5: Women's Role in Farming Societies is Underestimated and Their Needs as Farmers Not Addressed Properly

Because we are mostly serving women, we have been forced to overcome all kinds of prejudices and assumptions regarding the role of women in farming societies like in Western Kenya such as *women are too poor, they are too ignorant, they don't have collateral* and so on. Every day we fight against assumptions such as agricultural innovations are a "man's" thing, or women do not have any say in deciding on investments for the farm, both of which are not the reality of rural life.

It is true though that any product or service offered to smallholder farmers will be in competition with other expenditures in the family, be it for other products, daily expenses, education expenses or emergencies, and understanding clients' decision-making process and priorities in the household is crucial. For example, this project's data have shown that there is slight tendency from our clients to buy first a cooking device and then an agricultural tool. Perhaps women invest first in the home and then in the land? Although the data collected in this project is limited, we have evidence that women are interested in purchasing high-value ag. tools that will be used by themselves and paid for by themselves over time. It does not matter who earns the most in the household, what matters is that it is clear who will build the relationship with the service provider. In our case, this relationship is with the women in the house, and we have no idea if they are the main breadwinners or not. For us what matters is that rural women can be risk takers, can adopt new technologies and show good repayment behaviour (probably better if compared with traditional finance providers).

We really wonder if it is true that men care about highly priced farm equipment and women care for cheaper ones just because of their gender, and if women were offered the same opportunities as men such as access to finance this would not be the case at all. At Bidhaa Sasa will test if there is a "glass ceiling" for the acquisition of farm equipment.

### MEDA INNOVATE LEARNING THEMES

- Customer centricity
- Smallholder household decision making
- Smallholder products and services
- Policy and regulatory transformation

### **Customer Centricity**

There are three major barriers that smallholder farmers face for the adoption of new technologies and innovations: lack of finance (affordability), lack of information (awareness), lack of transportation (accessibility). At Bidhaa Sasa we believe that by understanding the needs of customers we can offer tailor-made solutions that can solve all these bottlenecks.

### **Smallholder Household Decision Making**

The role of women in decision making and household financial management is often misunderstood, Bidhaa Sasa successfully and consistently targets women with a range of goods that have been traditionally perceived as a "man's business". Rural women have appetite for and are the main users of goods and services that improve their quality of life be it at home or the farm and when offered the right terms they can pay for these by themselves and without defaulting.

### **Smallholder Products and Services**

To increase the adoption of new technologies or innovations by smallholder farmers, we believe that these need to be packaged in a flexible and tailor-made offering that must include access to credit and pre- and post- sales services like education, delivery, installation, warranties and repairs. Fundamentally the end user needs to derive value from the innovation in a very straight forward and intuitive way. At Bidhaa Sasa we have found that the products that directly save the end user time and/or money and make their work easier have strongest demand and good repayment rates.

### **Policy and Regulatory Transformation**

Bidhaa Sasa has not been very successful at creating links to other players in the ecosystem and has been "forced" to do "everything". When we started in 2015, the traditional finance world had no appetite at all to give standalone consumer loans to low income rural women for them to acquire goods that are priced below \$100. Today in 2020 we see no signs of this having changed. In addition, securing the products in country is far from trivial and their supply chains are complex and opaque. There is a role for governments to develop policies and regulations to incentivise private sector players to import or manufacture proven technologies at scale as well as to incentivise local banks and commercial lenders to serve market segments such as smallholder farmers who typically face barriers such as affordability, awareness and accessibility of appropriate financial products and agricultural tools and technologies.

