



Piloting a new approach to agricultural credit for productive use assets

Learnings from Amiran Kenya – Project
Madaraka



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Executive summary

The agriculture sector in Kenya is of huge importance to the country and its people but suffers from a lack of credit availability. Through 2019, agricultural distributor Amiran Kenya established a new business unit focused on credit sales to financially underserved customers. This initiative is called **Project Madaraka**, and has the objective to develop a new approach to providing credit to farmers to purchase productive use agricultural assets in Kenya. Amiran was supported in doing so by Shell Foundation and the UK Government's Department for International Development (DFID).

This report details the key lessons that we (the Madaraka team) have learned from approximately 50 credit sales, including both small growing farmers and SME agribusinesses. They include

- **Credit innovation:** A focus on the incremental cash flow generated by a potential asset sale, and on mitigation strategies for any associated operational risks (including insurance) enabled us to serve customers who would normally be excluded by traditional credit assessment practices;
- **Right product, right customer, right plan:** This approach was most successful with customers who saw growing an agricultural project as a commercial opportunity, and who were enthused by a 'package' of technical support (e.g. inclusive of inputs and agronomic advice) rather than solely an asset. Linking payment terms to the expected cash flow of the sale helped to unlock wavering customers, although products that were new to market, required specific technical skill or which were from brands with limited customer awareness remained high risk;
- **Working in the dark:** The lack of granular data available on the small-scale agricultural market (such as plot-based information on yield, agricultural practices, and infrastructure) made it difficult to serve these customers with the precision that we would like, and meant that developing a sales strategy for scaling was more complex; and
- **The last mile:** Despite several successes, smaller-scale farmers suitable for smaller-ticket sales were extremely difficult to service through this approach, which is comparatively hands on and time-intensive. We believe they are likely to remain difficult to serve other than through third party, specialist aggregators.

With further support from Shell Foundation and DFID, we will look to scale up Madaraka's operations through 2020. We will continue to tweak Madaraka's operating model in line with the key lessons from its pilot and explore how to most effectively serve this otherwise underserved customer base. In doing so, there are two key areas in which we hope to see more sector-wide action and would be pleased to partner with other interested parties in developing. These are:

- **Manufacturers designing for, and listening to, SME agribusinesses.** We believe that developing operational partnerships with distributors presents a significant opportunity for manufacturers with ambition to grow in the SME agribusiness space. Distributors will often be closest to the specific wants and needs of customers, but insights gained about specific products and services often go unutilized, with no clear route to feed this back to the manufacturers. Developing partnerships that encompass activities such as marketing and product development should enable more of a customer-centered design approach, which we believe will support growth in this sector.
- **Collating enterprise-level data and producing industry-wide insight.** GOGLA and the off-grid solar sector have demonstrated the utility of cross-sectoral sales and impact metrics, and we believe similar activity would enable more sophisticated and effective approaches across the agricultural sector.

1. Context and research focus

1.1. The Kenyan agricultural sector

The agricultural sector directly contributes more than 26% of Kenya's GDP and a further 27% indirectly. The sector employs more than 40% of the total population, and this figure rises to more than 70% when looking only at Kenya's rural population.ⁱ Despite this, only 3-4% of commercial bank credit is lent to agribusinesses.^{ii,iii}

Agricultural production and value addition are exposed to a broad range of operational, environmental and market risks which present a challenging profile for traditional financial institutions to serve. Alternative mechanisms for micro-scale agricultural credit have emerged, including MFI's offering agricultural credit (predominantly in dairy value chains), PAYGO asset finance (predominantly for solar products), and farm input credit businesses. However, we believe that farmers' productivity challenges stem from several agronomic knowledge and resource constraints which mean that the availability of finance on its own is rarely enough. Instead, these must be tackled holistically with a high level of agronomic expertise. There is currently very little in the market by way of approaches to comprehensively service both the product and credit needs of customers in the agriculture sector.

1.2. Amiran in Kenya

Amiran has been distributing agricultural equipment, technology and inputs in Kenya for more than 50 years. We work with farmers and agribusinesses at a range of scales, offering both product solutions and support from a team of agronomists with expertise in tropical agriculture.^{iv} We have served farmers in Kenya through the boom in export horticulture over recent decades, through which Kenya has become a global leader. In the last 15 years, we have also served smaller scale farmers through agrodealers around the country, a nationwide network of Amiran field agronomists, and through direct sales to farmers of the Amiran Farmers Kit.^v

Amiran has not yet, however, managed to substantially grow sales among smaller scale farmers and SME agribusinesses. We believe this is because of two key factors:

- At this scale, farmers lack the purchasing power required to invest in growth, intensification, and risk reduction due to persistent poor farm productivity; and
- This poor productivity results in challenging farm economics and poor financial strength, leading to these segments being underserved by traditional financial institutions.^{vi}

To support the growth of sales of equipment to smaller scale farmers, we had previously explored a range of third-party financing relationships in a finance-led approach to the market. We have had, however, limited success in achieving scale through these initiatives due to the operational complexities and unique risks of agricultural products.^{vii}

As a result, we launched Project Madaraka^{viii} in mid-2018. Madaraka is a new business unit designed to leverage Amiran's expertise in resolving agricultural productivity gaps to responsibly structure and deploy credit for innovative products in higher risk customer segments that are unattractive to traditional financial institutions.

1.3. Partnership with Shell Foundation and the Department for International Development

Shell Foundation and the UK Government's Department for International Development (DFID) supported the setup of Project Madaraka in 2019, the first full year of operations, co-investing alongside Amiran to meet the costs of establishing a credit sales process and portfolio.

The aim of the first year's activities was to pilot both new and existing products on credit, including both lower ticket agricultural equipment and input packages (up to \$2,000) and high-ticket productive use assets (typically over \$5,000). Madaraka also aimed to onboard new suppliers, to establish appropriate systems and processes in order to demonstrate the right business model going forward, and to develop insights on the right agronomic and credit products for different customer segments.

1.4. Research focus

Under the scope of the engagement with Shell Foundation and DFID, our activities relating to higher ticket products were focused on answering the following key research questions, which are the focus of this report:

- What are the key barriers that currently prevent penetration of high-ticket productive assets into SME Agribusinesses?
- What is the right business model to deliver finance for high-ticket, high-risk agricultural productive assets, including those harnessing renewable energy, from a variety of manufacturers to challenging customers in a scalable and sustainable way?
- What characteristics do prospective customers need to have for them to be most suitable for credit?

Terminologies

For the purposes of this report, and for Madaraka's work more generally, we use the following terminologies:

- **Productive use asset / productive asset:** an asset which enhances income generation opportunities and / or productivity;
- **Small growing farmer (SGF):** individuals (usually households) with farms typically below 15 acres (majority below 5), who grow at least some crops for commercial reasons, usually in a mix of open market sales and that which they trade with buyers through contracted outgrower schemes; and
- **Small and medium enterprise (SME) agribusiness:** companies in the agricultural value chain that are involved in farming or the provision of services to agriculture, and the carrying out of post-harvest activities.

2. Pilot design and results

2.1. Designing Project Madaraka

Project Madaraka was established to increase access to agricultural solutions among smaller scale farmers, leveraging Amiran Kenya's agronomic expertise and existing market presence. Madaraka facilitates sales of Amiran products on credit. It reaches small scale farmers through aggregators and serves SME agribusinesses directly.

Throughout the Madaraka pilot, Amiran's team of agronomists designed product solutions for customers that were customised for their needs. These activities were integrated into the credit process to design payment plans that were tailored to the economics of the products purchased by the customer, so that over time the cash flow generated from the purchase is sufficient to pay down its cost and leave surplus income in the customer's pocket.

Amiran's knowledge of a wide range of value chains, and the costs and risks of related farming activities, ensured that credit decisions are grounded in a sound understanding of agronomic and operational risk. Furthermore, Amiran's manufacturer agnostic product offering, customer focus, and comprehensive product offering provided an opportunity to cross-sell and up-sell solutions to customers that addresses their productivity gaps and unlocks the revenue generation potential of their agricultural operations.

2.2. Scope of activities in the pilot year

Through Madaraka we provided products to two distinct customer segments: small growing farmers (SGFs) and SME Agribusinesses. Each of these activities were funded by different partners during the pilot year. Shell Foundation and DFID financed the work with SME Agribusinesses, which is the focus of this report, while SNV Kenya Smart Water for Agriculture and HortiIMPACT programs financed our work with SGFs. This report focuses on what we learned from building our credit portfolio through sales of larger ticket productive assets to SME Agribusinesses.

The credit portfolio from 2019 includes over 50 customers. The majority (around 40) are SGFs, with input packages at approximately \$300 per acre and biogas credit sales of \$500 digesters. To December 2019, a further nine sales have been completed to customers in the SME Agribusinesses segment, including six open field irrigation customers, one greenhouse customer, one solar PV customer and one hand tractor customer. All customers are at the installation / commissioning phase or are in the moratorium period before repayments are due, therefore repayment data is not yet available.

2.3. Direct sales of larger ticket productive assets

Our target segment for direct sales of larger ticket productive assets was SME Agribusinesses, to whom we piloted higher ticket credit sales (above \$5,000, and below \$50,000). Their financing needs represent those of the "missing middle" in SME finance,^{ix} which is exacerbated in agriculture by the high risks of farming and related activities. Much of their current financing availability comes from traditional financial institutions, under strict collateral requirements and balance sheet-based credit assessments, which introduces a limit to the SME's capex investment capacity.

2.4. A new approach to credit

In the pilot year we focused on reaching underserved agribusinesses. To do this, we first identified that a customer was unwilling or unable to purchase the products on a cash basis and unable to secure financing from elsewhere. Reasons for this included having taken out the maximum amount of available credit based on balance sheet strength and historical cash flow, or being a relatively early stage / informal business without the documented track record required by traditional financial institutions.

Traditional credit assessment practices focus on collateral and track record. We took a different approach. As a starting point, **we focused primarily on the risks attached to operation of the asset and how they will be managed / mitigated**, allowing us to assess potential impact on repayment capability. We focused on the quality of the product in operation, the level of after sales service available, and the incremental cash flow of the asset as primary drivers in this decision.

This **operational risk centered approach** was justified on the basis that Amiran and new product partners have the operational expertise and after sales service capacity to ensure the products perform and therefore add value, thereby ensuring that the customer has no performance related disincentive to make repayments. Because of this, we were able to offer credit to SMEs that would otherwise not have been able to purchase the product in question.

As **secondary markers for credit qualification**, we looked at customers' track record, credit history and collateral, focusing on any red flags (e.g. outstanding debts that are overdue as recorded in credit reference agency reports). For **risk factors beyond the control of operations** (e.g. weather or market price), which therefore cannot be managed, we sought to assess their potential magnitude and likelihood of impact and sourced insurance where possible. Where that was not an option (e.g. market price), we discounted some assumptions in the cash flow for repayment, to ensure that we were not introducing too much risk in the payment plan, as is standard practice in credit assessment.

2.5. Covering our risk with insurance

Recognizing that we were taking an innovative approach to credit, we sought to cover our risk with insurance where possible. Alongside giving comfort to the customer that some risks beyond their control can be mitigated, insurance acts as a source of collateral for investors and therefore supports our scale up plan to attract commercial capital. Relevant insurance products include product insurance (beyond warranty coverage) and crop failure insurance (per growing season). We bundled crop failure insurance with any inputs provided on credit, and asked customers to procure and demonstrate to us product insurance for equipment taken on credit.

The requirement for insurance is often part of traditional credit institutions' offer to clients, however we found the market for insurance products related to agricultural products to be relatively nascent and challenging to achieve the levels of asset protection that may be available in other sectors (for example, it's usually difficult to insure a product that is permanently installed in an open field against theft/vandalism as it is not possible to secure access to the asset).

2.6. Our credit marketing strategy

To help us make the most of this new approach to credit, we marketed the products with a focus on their potential income generation impact, and promoted our payment plans around this. This was intended to highlight the potential for the products to effectively pay for themselves over time, in a way that the customer's current resources and financing options (if any) could not facilitate. We held informal consultations with a range of asset, micro and agri-finance practitioners to develop a set of principles to help guide our work in structuring repayment plans.

Through the consultations above, we developed the following principles:

- The credit terms should match the payback period and repayments the cash flow profile;
- The customer should own the product at the end of the term (i.e. not a lease);
- Down-payments should be significant enough to be a sum that 'matters' to the customer; and
- The repayment plan should leave incremental income in the customers pocket during the term.

2.6. Product offering

From our existing product stable, we offered greenhouses and open field irrigation installations. Beyond our existing product range, our experience was that products manufactured by firms with certain criteria gave the best fit.

We learnt that we were most likely to build effective partnerships with firms which have:

- Market ready products with paying customers (albeit not necessarily in Kenya);
- A strategic interest to develop a supplier relationship with Amiran as a potential distributor and has the desire to partner with Madaraka as a potential financing partner;
- The offer of a warranty and / or product performance guarantee in line with the expected credit terms on the product;
- A willingness to share product margin with Amiran;
- The technical capacity to support installation, commissioning and after sales service on the ground as required; and
- The capacity to originate and serve pilot year sales leads.

Our scope had an emphasis on products which leverage renewable energy and facilitate climate change adaptation. As such, we classified products according to the following categories:

- **On-farm mechanisation:** solar or biofuel powered where possible, mostly movable assets which facilitate spraying, planting, harvesting, or irrigation;
- **Post-harvest value addition:** equipment for cooling, milling, drying, refining and other industrial processes and the powering thereof with solar or bio-energy powered where possible; and
- **Bio-energy generation from waste:** biomass, biogas and biofuel – using bi-products like animal feeds, organic fertilisers, reduced hazardous waste management costs domestically or on-farm (e.g. cooking, farm use of feeds and fertiliser) or to power other productive assets in agriculture (e.g. fuel source for gas engines powering equipment for post-harvest processing, heating and/or cooling).

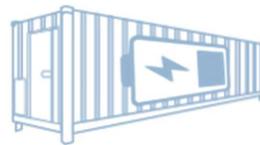
Using these categories, and through building partnerships with manufacturers fitting the above criteria, we narrowed down our new product list to the following for pilot credit sales:



Hand tractors with attachments for mechanized planting, ground preparation and crop protection



Solar PV and hot water installations for agribusiness



Off grid / solar enabled cold storage solutions



Larger irrigation / greenhouse installations with solar water pumps where required

2.8. Higher risk products

Alongside higher ticket items, our pilot was to focus on higher risk products that currently have limited financing available and / or uptake from SME agribusinesses.

We identified three key elements that give a product a higher risk profile:

- **The product is new to the market and carries some form of premium versus other alternatives**

SME Customers, being capital constrained, perceive the higher cost as introducing more risk given the opportunity cost of using that money elsewhere. The challenge is then how to demonstrate to customers the value of the product and convince the premium is justified (example: premium cold storage systems, solar water pumps, and hand tractors manufactured by product category leaders competing with cheaper products already established in the market).

→ **The product requires technical skill / training to operate correctly**

These products represent a step-up in existing operations risk and complexity, requiring a learning curve to acquire technical expertise to operate correctly. (example: greenhouse / irrigation with solar water pumping when introduced as a new product to a farm that previously used other irrigation and pumping methods).

→ **The product is from a new manufacturer**

Limited operating history / brand awareness means the customer perceives the product as high risk as they do not yet trust the brand and the product / service offering from the manufacturer (example: innovative solar PV, off grid cold storage, biomass and biogas energy solution manufacturers that are often newer on the block than the SME customers they are targeting).

3. Research questions and findings

3.1 What are the key barriers that currently prevent penetration of high-ticket productive assets into SME Agribusinesses?

Our experience of setting and implementing the criteria for product and customer selection, as outlined in the methodology section earlier, helped us to identify the following barriers:

→ **A lack of market data**

A lack of reliable, granular market data makes commercially oriented market segmentation challenging. This leads to sales based on tactics rather than strategy and makes it hard to identify a clear commercial path to scale. We recognised early on in our project that within our key customer segments, there were many sub-segments that are yet to be defined in terms of their characteristics, size and location of the early adopters and majority market. Publicly available data and segmentation methodologies from various international development agencies provide useful macro-level insights,^x but lack the detail on agricultural production that could inform the design of our marketing activities.

To develop a marketing plan to promote different products in the context of a vacuum of market data, we had to focus on the existing market relationships of our sales teams and those of our suppliers to generate leads. To scale sales, we will need more data in order to strategically invest in marketing activities based on a reasonable understanding of who the customer is for each product and where / how to reach them.

Amiran has data on the consumption of inputs based on its sales to agrodealers around the country. This, along with our network of field agronomists, gives us a good understanding of which crops are grown where. However, for the marketing of capital equipment more detailed information is required in order to understand scale of farms and therefore precisely what

equipment makes sense in different regions. This is especially important for higher ticket equipment as the introduction of fixed cost capex introduces paybacks beyond a single growing season (unlike inputs).

Location specific data is required on what/how much are farmers growing (area and yield), with what practices, and what supporting infrastructure. This is crucial for the formation of a marketing strategy for different products. This information forms the bedrock of understanding the baseline level of productivity and potential for yield improvement through mechanisation at different scales of farm. This will allow us to estimate the best way to support individual customers up a **ladder of productivity**. With an accurate segmentation framework, we would be able to identify customers in various sub-segments based on their location, value chain, baseline of current farming activities and access to infrastructure.

We could use this to facilitate more effective sales and marketing activities and to increase our knowledge of which products to market to which segments given their current baseline activity segmentation data. We need to develop a better sense of what the productivity ladder looks like to developed to facilitate product / market fit. With such data available our objective would be to start out every customer engagement not with a narrow focus on the transaction at hand, but rather the maximal potential lifetime value given the anticipated product trajectory we could take them on. This would, evidently, require the understanding that not all segments will need the same products or take the same path to higher productivity.

The lack of readily available data is a key barrier holding back the growth of a range of business models looking to serve these segments. The cost of census-style data collection is beyond the resources of any single private sector entity. The collation of data from enterprises involved in the supply of farming products to smaller scale farmers would give interesting sector wide insights. To effectively co-ordinate this aggregation a neutral umbrella body governed by its members and administered by professionals would be required to manage this alongside general sector co-ordination. There are successful models for this in the off-grid solar sector, where GOGLA publishes a bi-annual market report capturing sales and impact metrics across the sector by aggregating data from its members.^{xi}

➔ **A lack of strategic product marketing strategy co-ordination within the supply chain**

The SME segment is largely overlooked by many manufacturers and wholesale distributors. It does not offer the volumes of the household / informal sector, nor the scale of economic value of large corporates. We hope that we can play a role in overcoming this barrier, influencing supply chain actors to share our belief that the SME agribusiness sector presents significant potential for growth.

In either eventuality, the most successful engagements we had were with manufacturers who saw the opportunity to build presence in the SME sector and were proactive in our market building and sales activities. In our pilot year this was done mostly on an ad-hoc basis due to the small scale of our initial activities and sales targets. We will take a strategic approach to manufacturer collaborations next year, working with manufacturers to partner on product demonstrations and marketing activities in order to ensure that our shared marketing spend is fully aligned with the market opportunities that we can open for them. This also gives them a front-row seat for closer insights into customer needs and future product development decisions. Manufacturers who prefer to directly manage and operate their own demonstration / marketing activities miss the opportunity to leverage these investments as means through which to activate their sales channel. We believe that manufacturers with appetite for the SME space would benefit from embedding marketing and product development resources in their distributors so that

iterative product improvements can be invested in based on market insights and a customer-centred design approach.

→ **A lack of cost-effective solutions for after sales technical support and credit management**

In a credit sale the vendor has a vested interest in a higher level of understanding of how the product is being used and whether the customer is successful as this directly impacts payment capacity. To gain that understanding, more after sales relationship management resources are required than would typically be necessary under a cash-on-delivery sale. To achieve this in a cost-effective manner, we are looking to adopt smart technologies where possible, allowing us to monitor and understand how an asset is being used. We are also planning to roll out digital data collection tools next year in order for our agents to be able to collect information from customers that is not directly transmittable from the product to us.

Most manufacturers of productive assets we engaged with either had some form of remote monitoring solution or could be integrated with off the shelf solutions for the purpose. However, more investment in hardware and software product development is needed to effectively integrate these smart capabilities and field agent data collection into the after sales activities.

→ **A lack of innovative credit analysis approaches to underpin the provision of finance**

We see finance flowing for productive assets in situations where risks are understood and can be adequately managed by borrowers due to their operating capacity, and/or mitigated by insurance and other risk hedging products. Due to the credit risk profile of agribusiness SME's under traditional credit assessment and financing approaches, we believe a lack of financing in this underserved area represents a symptom of market failure – not a cause.

One of our key challenges to date (partly driven by the lack of market data detailed above) has been identifying where to start the customer on the productivity ladder from a technical perspective, and how to understand what value increase in financial liabilities they can absorb given the risks and uncertainties they are exposed to. Customers showed a preference for credit on products that presented an incremental improvement rather than a complete transformation of practice. Our sales staff, knowing our existing product range well and having relationships with a broad range of farmers in the market, were therefore able to successfully identify customers that suited our products.

For products new to our stable we had suppliers support the generation of qualified sales leads, with a view to transition that capacity to us over time as we build the distribution relationship. This technical overlay is crucial to assess whether the product / customer combination represents an appropriate credit risk and is best achieved when the financing is playing a supporting / enabling role to technical sales team, so that only technically qualified leads reach credit assessment. We believe our new approach to assessing credit risk, as detailed above, goes some way to addressing this barrier.

3.2. What is the right business model to deliver finance for high-ticket, high-risk agricultural productive assets, including those harnessing renewable energy, from a variety of manufacturers to challenging customers in a scalable and sustainable way?

Our credit piloting experience informed the following business model insights:

→ Technical expertise should lead sales with credit in support

In order to ensure that operational risks were addressed, our technical teams led the credit sales lead origination process. Our sales activities began in earnest in Q3 following the establishment of credit processes in the previous quarter. Our internal irrigation technical salesforce sourced SME leads from the Amiran network and their existing relationships with farmers. The quality of the sales leads generated led to a relatively high level of conversion for a new initiative, at around 10% conversion. Prior to beginning the sales effort, extensive discussions were held to align on expectations between the credit and sales team, and the process was co-developed to ensure ownership and buy in from both teams. The model that worked best was for the credit team to play a supportive role to the technical team but to have at least one direct interaction with the customer in the credit process prior to contracting. As a next step we intend to upskill the sales force in credit training to ensure that we can maintain a cost-effective lead conversion ratio and the continued generation of good quality leads as we scale.

For new manufacturers, we relied on the origination capabilities of their representatives on the ground as there was not enough time to skill up our staff and had extensive conversations on scope to ensure that customers originated were a good fit. This meant that the leads that made to credit assessment were technically feasible. This is a key differentiating factor from a finance led approach where the credit process sees all leads and does not have a view on whether technically viable or not, so therefore must rely on historical cash flow and balance sheet strength to make a repayment risk assessment.

→ Sound economic modelling and integration of risk assessment is key to credit terms structuring

We treat every customer as an individual project and gather as much data as possible to be able to model out their operations and the financial impact of the product / solution to be financed. To make our repayment plans work for the customer, our key challenge is to identify and factor-in all the risks to the cash flow of the project net of any available mitigation instruments. We grouped risks into those that were operational (i.e. of technical assessment of technical / product operations, human resource capabilities / track record, and suitability of existing supporting infrastructure) and those that were beyond the customers control (market, climate) and highlighted the key risks as part of the approval and a focus of after sales monitoring. As we grow our bank of customer repayment data, we will be reviewing this risk framework to improve the structure and content. In time, we expect to see trends emerge in different segments, value chains, product categories and business models, which allow us to begin to standardise our approach to risk scoring and credit product.

→ Focus the customer on the value proposition

On the basis that the pain point for the customer has been well established and demand for our product clarified (e.g. they purchased a poorer performing irrigation system and are now looking to upgrade), the focus to close the sale should be on the value / performance of the solution that we are offering. We are offering Amiran products for sale at a final price which is on a payment plan designed according to the economics of the product in question. The credit price includes an interest margin, but it also includes a markup on the cash sale price to reflect a comprehensive set of risk mitigation tools and value add for the customer beyond credit, which come together to minimise risk of default:

- A complete solution approach for the customer focused on their value chain interests (rather than a single asset approach)
- A high level of after sales agronomy/technical support to ensure the customer is successful in using the products in question
- Payment terms that are linked to the expected cash flow of the products sold on credit

→ Warranty and training are crucial, but insurance is key to mitigating non-operational risks

Farmers in the global south are subject to an almost overwhelming range of risks. FAO research has shown that the agriculture sector absorbed almost a quarter of all damage and losses caused by natural hazard-induced disasters in developing countries, while climate change continues to worsen this threat.^{xii,xiii} Smart investment is key in transforming uncertainties (unpredictable factors that can ruin a business) into risks (factors whose impact is understood and likelihood of occurring can be predicted and can therefore be managed). The more a customer invests correctly, with the right agronomic advice / knowledge, the greater the impact on exchanging uncertainties for risks (e.g. irrigation reduces dependency on uncertain rainfall patterns, but introduces the need to invest in, and carefully manage, a water source – an operational risk). For identifiable risks that remain beyond the farmers control and therefore cannot be managed, insurance is key, providing effective mitigation.

We are in the early days of understanding the full impact of insurance, both on farmer behaviour and outcomes. Initial feedback from commercial investors has been favourable, however, in terms of any demonstrable benefits of insurance cover on credit performance. We will continue to focus on this as a key piece of risk reduction in our credit exposure to customers, looking to bundle this into the credit sale where feasible, or otherwise to require the customer to take out a Madaraka-endorsed policy directly.

3.3. What characteristics do prospective customers need to have for them to be most suitable for credit?

Our objective is to find and grow customers that represent operationally and technically good risks to take, even if their track record and current financial position does not initially provide adequate security / guarantee of repayment. In so doing we are reaching customers currently underserved by traditional financing for agricultural products. To do this, we built a set of characteristics that we think reflect good bets for our credit offering:

→ Customers who seek to finance their whole project rather than selective components, represent a better risk for an agronomically savvy credit institution

Customers that look to only purchase certain components for their agricultural project but who opt against investing in a complete solution are open to sub-optimal agronomic outcomes unless the customer has substantial resources in house (typically only the case for large scale agribusiness), as some components purchased elsewhere may either not be compatible or inferior in performance and therefore introduce operational risks to the project.

By way of example of a “complete solution”, we currently offer input packages designed by agronomic experts rather than individual input products on credit. Our input packages are marketed with application protocols per value chain, throughout the growing season, to achieve the highest possible yields. We intend to incorporate inputs into irrigation packages as a key factor in agronomic risk mitigation. Another example is our Amiran Farmers Kit, which includes a complete set of water delivery and storage equipment, coupled with training and agronomy support to ensure setup of the kit is optimal for the crop in question.

→ Customers should be in agriculture and seeking credit out of opportunity rather than necessity

We seek to understand a customer's intentions to grow their commercial activities and look for signs they are already active in the markets, either through contract farming or open market sales of a significant amount of their farm produce. They must be farming predominantly in order to earn income, rather than for subsistence, if they are to take any serious steps to mechanise and invest in their farm. With this intent established our key challenge is to determine which solution would serve as the best first step for the farmer on the productivity ladder and how to price/structure the credit affordably within the economics of their activities.

→ Customers need not have traditional 'positive credit' metrics, but need to have potential for growth

By screening credit reference bureau reports for customers where possible, we sought to avoid overleveraging customers. Any indication that a customer was not-current on any other financial obligations were a red flag to be clarified prior to credit approval. However outside of having a negative credit history and poor score, we determined that in the event they were unable to secure finance from third parties there could be two main reasons: insufficient liquid/tangible alternative collateral and/or lack of operating track record. As we can proactively manage technical / agronomic risk, we can take exposure to customers that have sound operations and potential for growth but either lack the records or have tapped out the security provided by other key assets which are typically the basis for traditional financial institutions credit decisions.

→ Customers must be within our reach and show demand for the products

Through the pilot we developed two channels to reach customers, serving larger customers directly, and smaller customers through aggregation. Larger customers represent opportunities to grow and transform SME agribusinesses into engines of productivity, food security and employment. We believe these players in the agriculture sector will lead the consolidation and commercialisation of agriculture, supporting the consolidation of smaller plots and having capacity for higher capex thereby being well suited for credit. This was reflected in the relatively higher lead conversation rates we experienced with larger ticket customers (SME agribusiness), versus smaller ticket customers (SGFs), who required much more investment in customer acquisition. Because of this, we will continue to develop the SGF sales channel through third party aggregators who specialise in last mile distribution, and who are likely to enable us to better reach and serve this customer segment.

END NOTES

ⁱ FAO (2019). 'The agriculture sector in Kenya'. Available at: <http://www.fao.org/kenya/fao-in-kenya/kenya-at-a-glance/en/>.

ⁱⁱ Kenya Bankers Association. (2015). 'Modelling Risk of Financing Agribusiness in Kenya'. Available at: <https://www.kba.co.ke/downloads/Working%20Paper%20WPS-03-15.pdf>.

ⁱⁱⁱ World Bank (2019). 'Kenya Economic Update: Transforming Agricultural Productivity to Achieve Food Security for All.' Available at: <https://www.worldbank.org/en/country/kenya/publication/kenya-economic-update-transforming-agricultural-productivity-to-achieve-food-security-for-all>.

^{iv} Amiran is part of the UK headquartered Balton CP group of companies and has sister companies in agricultural product distribution in 6 African countries. For more details, see: <https://www.baltoncp.com/>

^v For more details on AFK, see: <https://www.baltoncp.com/amirankenya/agribusiness/afk/>

^{vi} This is a trend that impacts the agricultural sector across the global south. For more details, see, among others, GPFI (2015). *New Trends in Agricultural Finance*. Available at: <https://www.gpfi.org/sites/gpfi/files/documents/02-New%20Trend%20Agricultural%20Finance%20Report-Final-LowRes.pdf>.

vii Agricultural products introduce unique complexity for assessing credit risk and determining effective credit terms: the minimal residual resale value of some types of equipment impacts collateralisation capacity, the requirement to be able to assess a customer's level of operational capacity to use the product (and therefore get the most out of it) requires agronomic experience and knowledge. This is not the case with, for example, vehicles (assuming the customer has a driving license) or consumer durable goods like TV's and fridges provided on credit.

viii Madaraka is a Swahili word with multiple meanings that relate to responsibilities, obligations, power, freedom and independence. We chose it as it represents our long-term objective to bring financial strength and sustainable success to all farmers and agricultural businesses across the continent.

ix Brethenoux, J. and Mulder, M. (2018). 'Unleashing the full potential of the Kenyan SME sector.' Published by the Dutch Good Growth Fund. Available at: <https://english.dggf.nl/publications/publications/2018/5/5/update-study-on-the-key-challenges-faced-by-the-missing-middle-in-kenya>

x Examples include: <https://www.cgap.org/research/publication/smallholder-households-distinct-segments-different-needs>; and <http://www.fao.org/family-farming/data-sources/dataportrait/farm-size/en/>

xi GOGLA (2019). 'Global Off-Grid Solar Market Report'. Available at: <https://www.gogla.org/global-off-grid-solar-market-report>

xii FAO (2019). 'Disaster risk reduction at farm level: multiple benefits, no regrets'. Available at: <http://www.fao.org/3/ca4429en/CA4429EN.pdf>

xiii IPCC (2019). 'IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems: Summary for policymakers'. Available at: https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM_Approved_Microsite_FINAL.pdf