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DESIGNING DIGITAL FINANCIAL SERVICES FOR SMALLHOLDER FAMILIES

Lessons from Zimbabwe, Senegal, Rwanda, and Cambodia

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CGAP

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I.

HOW CAN PROVIDERS DESIGN DIGITAL FINANCIAL PRODUCTS AND SERVICES THAT BETTER MEET THE NEEDS OF SMALLHOLDER FAMILIES?

Digital financial services (DFS) are playing an increasingly central role in financial inclusion efforts. Mobile phones are reducing costs and connecting low-income clients to the formal banking system for the first time. New data collected via digital devices are breaking down barriers to reaching customers once considered too risky to serve. And for no one group is the promise of digital finance more compelling than for the world's 475 million smallholder families (Lowder, Raney, and Skoet 2014),[1] whose distance from brick-and-mortar branches and risk profile have traditionally excluded them from access to formal financial services. However, despite a growing number of digital deployments aimed at smallholders (Grossman and Tarazi 2014), significant obstacles to smallholder uptake and use of DFS remain. From poor rural mobile network connection penetration, to low rates of mobile literacy and access to phones (particularly smartphones), smallholder families are often unable to use or are uncomfortable with existing DFS.[2] While the potential of reaching such a large, untapped market might offer clear benefits to financial service providers (FSPs), DFS cannot translate into the financial inclusion of smallholder families unless they also effectively meet smallholder financial needs and desires.

Recognizing the need for DFS that better respond to smallholder demand, CGAP partnered in early 2015 with an FSP in each of Zimbabwe, Senegal, Rwanda, and Cambodia (see Box 1) to design a new generation of smallholder-specific digital financial products and services. Under the guidance and expertise of two human-centered design (HCD) firms (Dalberg's Design Impact Group and IDEO.org), CGAP and its FSP partners[3] worked to explore, create, evolve, and test possible digital solutions for smallholder families.[4] The process not only generated key insights into smallholder demand for DFS, but also resulted in several innovative digital product designs with the potential to reshape how stakeholders approach DFS for this difficult-to-serve client segment.

Following on the successful completion of the design work, this publication synthesizes learnings from across the four countries, with the aim of providing FSPs, donors, and other stakeholders with actionable insights into the ingredients for building successful, smallholder-specific DFS. HCD, however, is not a quantitative research exercise. It focuses on in-depth conversations and interactions with a small number of end-users and other stakeholders (approximately 50–100 interviews during the course of each project discussed here). As a result, the relevance of preferences, features, and products discussed here are highly context-specific—they do not represent a "secret recipe" for all smallholders. Sample sizes were small, there was variation in smallholder prefer-

ences both across and within the four countries, and the products and features discussed here have yet to be piloted or deployed at scale. Still, where possible, CGAP has attempted to highlight insights and themes that emerged across provinces, countries, and continents. In addition, although smallholder families were the target segment, the holistic approach to meeting their financial services needs sometimes resulted in solutions designed to address a financial need unrelated to agricultural production. Consequently, some of the findings presented here hold true not just for smallholders, but also for a range of poor client segments, while others may apply to both digital and nondigital channels alike. Nevertheless, when taken together, they provide FSPs with several user-inspired approaches to designing innovative DFS with the potential to more effectively meet smallholder demand.

This publication begins with a brief overview of the HCD methodology, before outlining a set of recommendations for FSPs to consider when developing new DFS offerings for smallholders. These recommendations, supported by field insights, are organized around four key design principles:

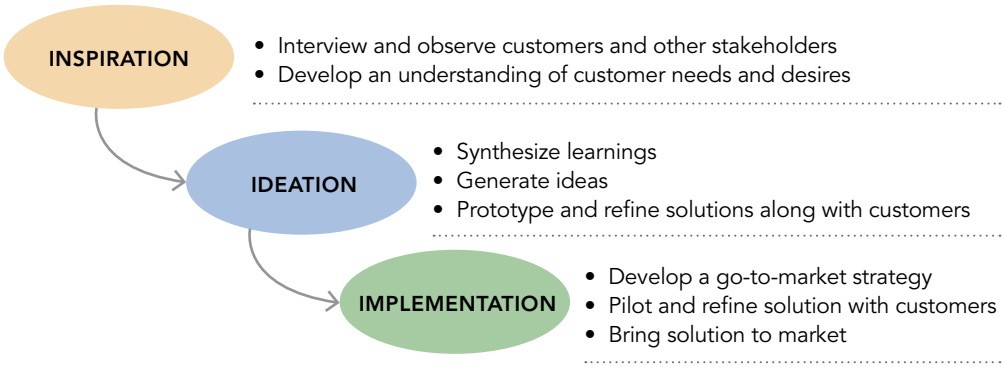
- Design around Smallholder Needs and Aspirations
- Design to Drive Adoption
- Design for Continuous Engagement
- Design for Customer Growth

Following the recommendations, this publication closes by identifying next steps in the design process, opportunities for further research, and potential challenges to bringing innovative DFS to market.

A Human-Centered Approach to Design

In seeking insights into how to design better financial products and services for smallholder families, CGAP employed HCD (see Figure 1). Unlike top-down approaches to product design, HCD is built on learning directly from customers in their own environments, ultimately providing valuable insights into customer needs and the products, features, and experiences that customers value most.[5] With so little information existing on the financial behaviors and preferences of smallholder families, HCD's focus on drawing inspiration from interactions with end-users ensured that their needs and aspirations remained central

FIGURE 1: The HCD Process



throughout the design process. HCD also emphasizes rapid failure and iteration (i.e., rapid prototyping) in response to new insights and information—approaches that proved valuable as designers continuously learned alongside the smallholder families that CGAP and its partners are trying to reach. Moreover, while HCD looks at customers and end-users first for inspiration, it also carefully considers the needs of a broader set of stakeholders and ecosystem players, the broader competitive and regulatory environment, the capabilities of the implementing FSPs, and the possibilities and limitations of technology as part of its search for solutions.

Across each of the four smallholder design projects, the HCD process began with qualitative research, during which designers spoke with farmers, agridealers, third-party agents, and other actors in rural and agricultural communities. Employing a wide range of techniques, including one-on-one interviews, interactive activities, informal observation, and impromptu conversations, designers sought to gain insights into the lives of smallholders, the challenges that they face, and their aspirations.

Following the research phase, the HCD process focused on synthesizing insights to identify potential opportunities for partner FSPs to profitably meet an identified need of smallholder families, including the business case for each concept at scale. These in turn led to a number of preliminary product concepts, which were developed into prototypes to be tested with end-users. These prototypes ranged from simple—a flyer or a poster, for example—to more complicated prototypes such as mobile applications. Throughout the prototyping process, designers worked with smallholders to gauge their interest in and comfort with the product concepts being tested. Based on this feedback, designers continued to iterate on the prototypes and test them with end-users, before finally centering in on final product designs that were presented to the senior management of our partner FSPs along with detailed business plans and go-to-market strategies.

Throughout the design process, CGAP and designers relied on the strong involvement of its partner FSPs to shape and guide the development of product concepts. In each project, FSPs joined designers in the field when speaking to smallholder families, and organized interviews with key personnel, including branch managers, loan officers, third-party agents, and others. Inviting FSPs to lead the design process not only allowed CGAP to arrive at design solutions that played to their organizational strengths, but also ensured that each product concept offered a compelling business case for providers.

With greater insight from human-centered design work on consumer preferences, challenges, and choices, myAgro will be able to more rapidly scale market impact and move greater numbers of farmers out of poverty.

—Anushka Ratnayake, founder and executive director, myAgro

During an interview with designers in Cambodia, a smallholder farmer participates in an exercise that aims to identify key household expenses.

For many of CGAP's partners, HCD represented a radical shift in how they approach designing financial products and services. However, the HCD methodology, with its focus on designing around customer needs and aspirations, is not proprietary, and does not necessarily require the involvement of expensive design firms or external technical assistance.[6] Indeed, a key component of CGAP's engagement with providers was to provide FSPs with the tools required to make customer-centric principles an ongoing part of their approach to serving smallholder families. As a result, CGAP hopes that the impact of these four design projects will not remain limited to the product concepts outlined here, but will rather set the stage for a series of digital financial products and services that keep the needs of smallholder families at the center.

BOX 1

AN OVERVIEW OF THE PRODUCT CONCEPTS DESIGNED ACROSS THE FOUR PROJECTS

Econet Wireless (Zimbabwe) Ltd, Zimbabwe's largest MNO and mobile money service provider:

- **Save 4 School:** A mobile-enabled, goal-based savings account designed to help smallholder families plan ahead for their children's school fee payments (see Box 2).
- **My Yearly Package:** A smartphone/tablet app designed for use by agridealers that allows customers to input data about their farms and receive a tailored package of inputs bundled with financing (featuring remote credit approval), weather-index insurance, and customized mobile information services (see Box 7).
- **"I am Ecofarmer":** A marketing campaign designed to overcome smallholder mistrust of financial services by appealing to their pride as farmers (see Box 3).

myAgro, an agricultural retailer that sells farm inputs on layaway in Mali and Senegal:

- **Farmer Loyalty Program:** A reward and recognition system that helps farmers develop saving habits, while also promoting regular and continuous engagement with myAgro (see Box 8).
- **Vendor Toolkit:** A set of tools that empowers vendors to take on greater responsibilities enabling vendors to engage and support farmers more frequently and consistently (see Box 6).

Urwego Opportunity Bank, a microfinance bank in Rwanda, and part of the Opportunity International network:

- **Konti Y'ikibina (Savings Group Account):** A staged product offering that digitizes savings group transactions using a mobile platform and allows groups to access instant loans secured by group savings. As the platform builds a credit history on individual members, they eventually receive the option to apply for instant individual loans using their mobile phones (see Box 5).

Amret Microfinance Institution, a leading Cambodian microfinance institution with a largely rural client base:

- **Goal+:** A goal-based savings account that allows customers to save for long-term goals such as cows, weddings, and education. Customers sign up and deposit via mobile tellers or third-party agents equipped with a smartphone/tablet app (see Box 4).
- **Family Connect:** A remittance product that allows children of smallholder families working in cities to link their savings accounts to those of their parents, which allows them to send and receive money with no transaction cost for a low annual fee. The accounts can also link to a joint Goal+ account to encourage parents and children to save together toward common goals (see Box 9).

II.

DESIGN AROUND SMALLHOLDER NEEDS AND ASPIRATIONS

It may sound obvious, but the first step when designing any product or service is to identify and build the value proposition around smallholder family needs and aspirations. FSPs and technical experts can sometimes rely on a cut-and-paste approach to financial services for smallholder families—taking solutions that worked for other client segments and rebranding them for a smallholder clientele. In other cases, smallholder finance may reflect a supply-driven approach, with product offerings driven by provider considerations rather than customer demand.

While FSPs have introduced innovative financial services in recent years, traditional products targeting smallholder families remain largely confined to variations on credit for agricultural production. In fact, a recently completed landscaping exercise found that of the 608 smallholder-targeted financial solutions surveyed, an overwhelming 87 percent were credit-based (Rural and Agricultural Finance Learning Lab 2015). Because most of the world's smallholder families lack sufficient collateral or tight connections to value chains—and in many cases may engage in farming for subsistence rather than for profit—the industry's focus on agricultural credit has resulted in product offerings that too often do not meet the needs or reflect the realities of the vast majority of smallholders.[7]

Digitizing agricultural credit, while an important component of smallholder-specific DFS offerings, will likely face many of these same constraints. The good news is that smallholder families have a broad range of financial needs and aspirations that can be effectively met by a wider array of financial products and services, particularly those that are digitally enabled. Based on conversations with a diverse array of smallholders, the following are demand-side considerations for FSPs seeking to develop DFS with compelling value propositions for their smallholder clients.

1. Smallholders Want Financial Services That Support Their Full Range of Household Needs and Aspirations.

With most approaches to financial services for smallholders focusing exclusively on financing agricultural activities, FSPs often overlook the variety of other needs and aspirations, such as education. However, conversations with smallholders in all four countries revealed that agriculture often takes a back

I want to send my children to school because I didn't have the chance to go.

—Mrs. S., Smallholder, Zimbabwe

seat to aspirations like education, weddings, and home improvements. These competing household expenses, while not directly related to agriculture, can redirect resources away from important farm investments, or force families to sell valuable assets at a loss, with significant consequences for a household's income-shaping strategies.[8] This is especially true of noncommercial smallholders or those only loosely connected to value chains, who may place less of a priority on agricultural investments than the commercial smallholders with tight connections to value chains typically targeted by agricultural credit products.

For Mrs. S, a smallholder and mother of four in Zimbabwe's Murehwa district, ensuring that her children get a good education is among her family's top priorities: "I want to send my children to school because I didn't have the chance to go," she told designers when asked about her household's most important expenses. But while Mrs. S keeps track of the due dates for each of her children's three annual US$15 per child primary school term payments, planning ahead is always a struggle. Believing that education is the best chance her children have

BOX 2

HELPING SMALLHOLDER FAMILIES SAVE 4 SCHOOL IN ZIMBABWE

What it is: A mobile, goal-based savings account that allows smallholder families to save gradually for their children's school fees, with an optional microcredit line to fill any gap.

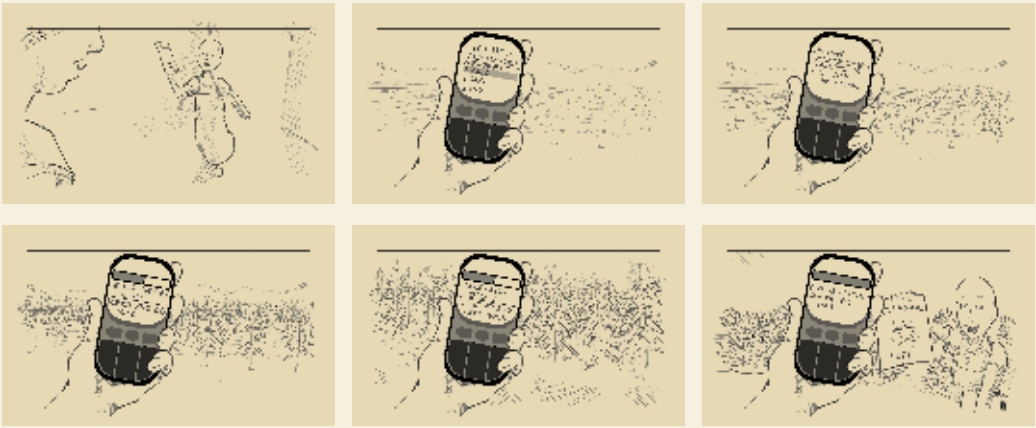
Financial need or aspiration met: Smallholder families prioritize their children's education, but struggle to plan ahead for term payments.

How it works: The service leverages Econet's EcoCash mobile money platform to connect smallholders to a mobile, goal-based savings account where they can choose a minimum monthly deposit amount ($2–5), with the option to deposit larger amounts as cash flows permit. When school fee payments are due, EcoFarmer automatically transfers customer savings to a chosen school, which pays the EcoCash transfer fee associated with the transaction amount. For schools, the service provides a compelling value proposition, as the majority of primary school students do not pay on time and/or pay in-kind with goods or labor.

Key features

- Low minimum monthly savings with the option to save more.
- Flexible payment terms, with no penalties for customers who miss a monthly payment.
- Savings are locked and paid automatically to schools at the beginning of the term.
- Creditworthy customers (as determined by an algorithm) have the option of accessing a microloan to cover the remaining balance if they do not meet their savings target.

Business case: Mobilizes deposits, drives smallholder adoption and use of EcoCash.



to live a better life, Mrs. S always finds a way to pay, even if it means selling valuable livestock at a loss, purchasing one less bag of fertilizer, reducing consumption, or even neglecting her own farm to work off her debt in the school's tobacco fields.

Meeting the nonagricultural financial needs of smallholders via DFS can offer a powerful value proposition to these customers. After repeatedly hearing from Zimbabwean smallholders that paying school fees represents both a priority and a significant pain point, our designers built and tested prototypes for a mobile, goal-based savings account that would allow farmers to gradually save for their children's school term payments. The ultimate product concept, Save 4 School (see Box 2), was well-received by the smallholders with whom it was prototyped. Education was an equally important investment for smallholder families in Rwanda and Cambodia, where designers also explored digital financial products targeting school savings.

School first, food after. There is no reason why our children would miss a day of school.

—Smallholder, Rwanda

2. Smallholders Want to Plan ahead, but Short-Term Priorities Make Saving for Long-Term Aspirations Difficult.

Smallholders from all four countries cited a need for financial tools that help them to save for the future. Faced with short-term priorities like feeding their families, smallholders struggle to plan ahead for long-term goals and aspirations, such as farm investments, education, and weddings. Yet, most financial offerings available to them focus on credit rather than savings. Credit is undoubtedly an important tool for financing investments, but it is not always the best option for smallholder families who live on less than $2 per day, many of whom lack the collateral or buyer contracts required to access loans, or may be reluctant to take on the costs and risks associated with debt.

myAgro, an agricultural input retailer operating in Senegal and Mali, exemplifies how a service provider can use digital savings products to allow even the poorest smallholder families to access the quality seeds and fertilizer needed to increase productivity. Rather than providing inputs on credit, myAgro customers pay little by little in advance for a chosen package of high-quality seeds and fertilizer that is then delivered to their farms at planting time. The model allows farmers to pay gradually for the input packages by purchasing scratch cards that function like airtime top-ups, with a secret code that they send via SMS to myAgro to add value to their layaway account.

Although credit products can offer an alternative to long-term savings for certain qualified customers, some smallholders also expressed a desire to avoid the cost and risk

Fertilizer [is my biggest challenge]. I lost all my money after the last selling season, and I have no one reliable to borrow from.

— Mrs. C., Zimbabwe

We want to buy another cow and renovate our house but we don't have a plan for how to make that happen.

—**Pelagie,** Rwanda

of debt—"All my money goes to pay off my debt," said a Cambodian smallholder. Recognizing the value of savings products for helping smallholder families to achieve long-term aspirations, designers in both Cambodia and Zimbabwe proposed digital, goal-based savings accounts. In Zimbabwe, this took the form of products that allow customers to save for education (see Box 2) or farm inputs (see Box 7); in Cambodia, designers conceived goal-based accounts for long-term needs ranging from weddings to livestock (see Box 4).

3. In a Risky World, Smallholders Value Speed and Ease of Access to Financial Services.

For those smallholders who seek to improve their livelihoods by investing in their farms or trying a new entrepreneurial venture, the uncertainty inherent in agricultural life often acts as a disincentive. Without a safety net to fall back on, these smallholder families may forgo important investment opportunities, opting instead for safer, but potentially less profitable, choices (e.g., growing staple crops instead of higher value but less familiar cash crops). This risk aversion represents a major opportunity for DFS, which can provide rapid access to capital in times of need.

Some smallholders already rely on informal financial services in an emergency. For example, smallholder families in Rwanda reported that, despite their exclusion from the formal financial system, they frequently withdrew savings from savings groups or savings and credit cooperatives (SACCOs), or sought loans from friends, family, and neighbors. However, given the limited capital available to these informal and semi-formal institutions, credit may not always be available, or may be insufficient to smooth smallholders' consumption as they wait for the next cash inflow. Moreover, because many savings groups have set contribution and payout schedules, withdrawing savings in a time of need may not always be possible, especially when faced with covariant shocks such as a natural disaster that affect multiple group members.

With the right tools, FSPs can offer smallholder families a more robust financial backstop by providing them instant, digitally enabled access to savings and microloans via third-party agents and/or mobile phones. After identifying this opportunity, designers in Rwanda developed a concept for a mobile phone-based system that would allow Urwego Opportunity Bank (UOB) to eventually offer savings group members access to instant, unsecured microloans via their mobile phones (see Box 5).

Whenever there is a hailstorm I wish had some kind of protection to save against such risky and bad times, or even a place to take cheap emergency loans. This makes me hesitant to consider taking bigger risks and investments into other crops, machinery or even trading businesses.

—**Muvyuni,** Rwanda

4. Smallholders Value Timely and Responsive Agricultural Information That Can Serve as a Gateway to DFS.

From planting tips to weather information and beyond, smallholders crave and value access to information. While not a financial service in itself, information services can expose users to digital tools and can serve as an entry point for providers to build on when introducing new smallholder-targeted DFS.

When speaking with designers, smallholders emphasized the value of agricultural information, which they consider a scarce commodity. Although agricultural extension programs exist in all four countries, extension officers are stretched thin and cannot always be present when their assistance is needed most. Digital tools like mobile phones can help to fill the gap by putting vital information directly in the hands of smallholders, and several FSPs have turned to these services to bring more smallholders into their client base.

In Zimbabwe, Econet's EcoFarmer service provides customers with no-cost weather and planting tips, in addition to other information, such as market prices, via SMS messages sent to a mobile phone. However, while EcoFarmer customers were largely pleased with the service, they also yearned for more personalized, responsive information. As a result, designers explored how these services could be better tailored to the profiles of individual customers, while also allowing these customers to access information on demand. One of the product concepts developed included a package of agricultural inputs, financed through either savings or credit, for which agents collect information on a customer's farms during registration that can later be used to provide tailored agricultural information via SMS. In addition, customers would have the option to send SMS questions to EcoFarmer, which would be answered by EcoFarmer's agricultural experts (see Box 7).

CGAP has previously identified the potential of information services to become the first step in developing a digital ecosystem for smallholders (Grossman and Tarazi 2014). For example, once information draws farmers to sign up for a digital platform, agrodealers would then pay a fee to target registered farmers with input advertisements. Buyers would be paid to upload information about their crop purchase transactions, thereby creating an information trail on specific farmers, including what and how much they sell, as well as the amount of payment the farmers received. This information could be used to establish the creditworthiness of farmers who typically lack any formal credit history. FSPs could also use the farmer transaction history to sell loans and other financial products via the mobile channel. Ultimately, once the ecosystem is fully running, it would provide the rails for the related financial transactions, such as buyer payments to farmers for their crops, farmer payments for inputs, or farmer repayments of loans.

[EcoFarmer information services are] helpful, but I want to be able to text back. I want to be able to ask my questions and get the most up-to-date information. . . . I want an extension officer in my pocket.

—**Smallholder,** Zimbabwe


PROGRESSION
Dollar pour vendre aux vendeurs (exemple)
Production
Numéro ID
A QUI CHERCHE LE VENDEUR
PLANIFI
FORMATION AGRICOLE
AMI CHEMIN
ARGENT
Production
Numéro
OR
Collecter la récolte
1:1 Conseil en plantation
Présent à la formation agricole trimestrielle
Créer un plan financier

III.

DESIGN TO DRIVE ADOPTION

Designing around smallholder families' financial needs and aspirations, while an important first step, is only part of the equation. Indeed, even the most compelling product ideas do not necessarily translate into adoption. This is especially true when targeting smallholder families who may not trust financial services, or may have trouble using it or understanding it due to low levels of literacy or financial capability.

CGAP's experiences across the four countries provided key lessons for how product design can overcome some of the obstacles that prevent smallholder families from trying DFS. These include steps that FSPs can take to (*i*) address mistrust of formal financial services, (*ii*) more effectively communicate product features and benefits, and (*iii*) minimize the perceived risk of trying a new service.

1. Overcome Mistrust of Financial Services.

Perhaps the biggest challenge when rolling out a new smallholder-focused financial product or service, digital or otherwise, is overcoming the mistrust that smallholder families harbor toward the formal financial system. From Zimbabwe to Cambodia, many smallholders were apprehensive of formal financial services, citing scams, hidden fees, inflexible terms, excessive interest charges, and a general sense that these services were not "for them." This apprehension holds true for many low-income client segments, as CGAP has found in its previous design projects from Mexico to Pakistan (Seltzer and McKay 2014). While the terms and features of a digital product or service may attempt to address many of these concerns, convincing smallholder families to engage with formal financial services, digital or otherwise, often means redefining how they perceive providers themselves.

Nowhere was this mistrust of formal financial services as pronounced as in Zimbabwe, where memories of the country's 2009 experience with hyperinflation and dollarization remain fresh. Almost overnight, Zimbabweans who had entrusted their money to banks saw their life savings wiped out, shaking the country's confidence in the formal financial system. With the banking system in disarray, some smallholders turned to alternative credit providers to finance farm inputs, only to find themselves the victims of scams: several smallholders recounted their experiences with an input provider that offered inputs on credit in return for a modest down payment, but then never delivered the inputs.

BOX 3

TAPPING INTO SMALLHOLDER PRIDE IN ZIMBABWE: THE "I AM ECOFARMER" CAMPAIGN

What it is: A social marketing campaign that seeks to overcome smallholder mistrust of formal financial services by celebrating the experiences of smallholders, building pride through inspiring stories, and showcasing examples of successful EcoFarmer customers.

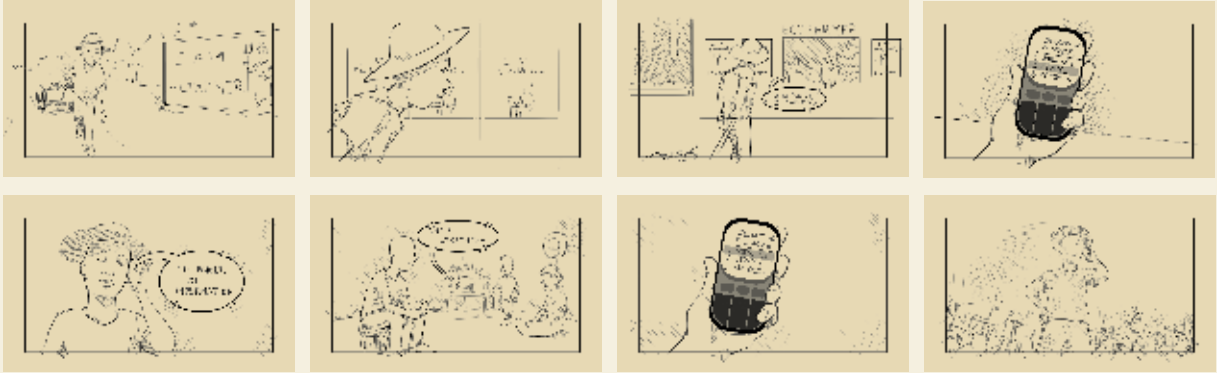
Financial need or aspiration met: Smallholder families in Zimbabwe are highly mistrustful of formal financial services, but are also intensely proud of their role in rebuilding the country's economy.

How it works: The proposed campaign seeks to tap into the enduring pride that exists around farming in Zimbabwe, which once had the reputation as the "breadbasket of Africa." It features real smallholders telling stories about their experiences and successes on posters, billboards, radio, television, and SMS messages. It also offers smallholders the option to listen to interactive voice response (IVR) stories using their mobile phones.

Key features

- Messages celebrate farmers and promote pride, optimism, and community.
- Content features success stories of farmers and other relatable experiences.
- Marketing touch points include billboards, posters, brochures, radio ads, SMS, and IVR.
- Interactive media invite farmers to respond, share their own stories, explore more information, and sign up for services.

Business case: Raises awareness of EcoFarmer brand, increases customer base, builds knowledge of smallholder market, including key drivers of smallholder engagement (e.g., what types of campaigns they respond to most).



Having given her last US$60 as a down payment to an input provider in hopes of finally getting the right amount of fertilizer to increase her maize yield, one smallholder told designers that even after borrowing from friends and neighbors, she only had enough to purchase half of the fertilizer that she needed. Staring out at her struggling maize field, she lamented her decision to trust financial services.

While Zimbabwe may be an outlier given its history of financial turbulence, attitudes toward formal financial services were equally negative among the smallholders with whom we spoke in Cambodia, Rwanda, and Senegal. In Rwanda, several smallholders spoke of hidden fees and minimum balances for savings accounts that led their savings to diminish, rather than grow, over time. In Cambodia, smallholders recounted how loans from microfinance institutions (MFIs) had trapped them in a never-ending cycle of debt, forced to take out new loans to pay off existing ones. And in Senegal, vendors for myAgro

explained how difficult it was to convince smallholders to try the service when some in the villages were spreading false rumors, telling their neighbors that the organization planned to run off with smallholders' savings.

Designers in Zimbabwe recognized early on that Econet would need to reposition its brand if it wanted to win the trust of the country's smallholder families. As it turns out, their inspiration for the rebranding came from smallholders themselves, many of whom expressed strong pride in the role that farmers play in the country's success: "Farming is the foundation of the economy," offered one smallholder when asked about how she perceived her livelihood.

A smallholder reacts to a poster prototype for the I am EcoFarmer campaign.

The idea that smallholder families are proud of their work gave designers an idea: if Econet could tap into the pride that smallholders feel, perhaps it could also drive greater adoption of its EcoFarmer suite of digital services. In response, they proposed a marketing campaign, titled "I am EcoFarmer" (see Box 3), that would feature real smallholders telling stories about their experiences and successes on posters, billboards, radio, television, and SMS messages. It also offers smallholders the option to listen to IVR stories using their mobile phones. When the campaign was prototyped with smallholders in Zimbabwe, participants were excited to see and hear people who reminded them of their own families and neighbors, and they were attracted to the stories that celebrated smallholder families' lives and successes. The potential power of the campaign was driven home when designers worked with Econet to send out prototype SMS blasts to current EcoFarmer subscribers, asking them to respond with success stories of their own: responses were so positive that even designers were surprised at the level of engagement, despite each respondent being charged for their SMS responses.

In both Rwanda and Senegal, designers also developed strategies to overcome smallholder mistrust of financial services. For example, in Rwanda, designers turned to savings groups, which were highly trusted and almost universally used by smallholders, as a vehicle for introducing smallholders to a new range of formal financial services (see Box 5). Additionally, designers in Senegal devised a system that sought to incentivize smallholders who successfully completed their layaway to become "farmer leaders," whose role would involve sharing their success stories with fellow community members and helping to sign up new customers in return for credit toward their input packages (see Box 8).

I borrow money from my children if I ever need it... savings accounts are all scams.

—Mrs. M., Zimbabwe

2. Maintain Human Touch Points in Digital Services to Ease Smallholders into the Use of New Financial Services and Technologies.

One of the main benefits of DFS to providers is their ability to expand access to financial services while also minimizing the need to maintain a physical presence in rural communities. Yet, this trend toward replacing personnel with digital tools like mobile phones can also become an obstacle to connecting with the smallholder families that these products and services aim to serve. As CGAP has previously noted (Seltzer and McKay 2014), using digital to reduce the cost of service provision should not come at the expense of the personal connection between provider and customer, especially in contexts with low levels of literacy and/or familiarity with digital tools.

When exploring potential digital solutions in Cambodia and Senegal, designers were struck by the limited use of mobile phones among smallholders in both countries. Although smallholders in Senegal tended to have access to a mobile phone, the majority interviewed were largely illiterate and mainly used their phones simply to make and receive calls. As a result, they struggled to interact with the myAgro layaway platform, which uses SMS messages to add credit to layaway accounts and send balance notifications to customers. In Cambodia, designers faced a similar but more pronounced challenge, as they quickly learned that not only were the majority of smallholders illiterate, but that even those who could read and write were unable to use most mobile services because the basic and feature phones they owned were incapable of displaying text in Khmer, the language of Cambodia.

These mobile messages will create more trust between SLA members and me. When everyone gets an SMS of the deposit they can see I am not stealing the money. But not all members can read and write text, and they must be trained.

—**Domitilla,** SLA president, Rwanda

While over-the-counter (OTC) transactions (whereby an agent or other third party uses his or her own digital account to conduct a transaction for a customer who does not have such an account) are often considered less financially inclusive than self-initiated digital transactions from a customer's own account, the importance of third-party agents and other personnel in facilitating interactions with DFS cannot be overstated. Smallholders interviewed in Cambodia and Senegal had typically never used a mobile money service, but a majority of them had used services such as Wing or Wari for OTC transactions. Having a real person there to explain and guide them through the process of making a transaction made these smallholders more comfortable with the idea of trying a new financial service. Designers therefore looked at how new digital solutions could use third-party agents and mobile tellers to ease smallholders into using DFS for the first time. In Cambodia, this took the form of tablet and smartphone-based tools for mobile tellers and third-party agents to use along with customers (see Box 4). The solution in Senegal was similar, but relied on a feature-phone-based system for vendors that allowed them to sign up smallholders for input packages and create a personalized savings plan. Vendors in Senegal were also expected to guide customers through the process of adding credit to their layaway accounts.

3. Appeal to Smallholder Aspirations to Position Financial Services as a Means toward Achieving Goals.

Smallholders in Cambodia interact with a tablet app prototype.

People use financial services as a way to achieve a dream or a goal, whether it be a mortgage for a new home, saving for a wedding, or a loan to start a new business. Smallholder families are no different. Working with smallholders across all four countries, designers found that these customers tend to be more responsive to concrete prompts to save for a specific goal (such as a cow, farm inputs, education, or a wedding), as opposed to more general-purpose prompts to save money. However, even savings goals can still seem out of reach in light of a smallholder family's meager and irregular income. Many smallholders acknowledged that they wanted to save for a goal, but doubted that they could ever achieve it: "I want to save, but it's such a small amount," one Amret customer in Cambodia admitted.

While these smallholders may not believe that they can save their way to achieving their aspirations, messaging can play a big role in convincing these customers to try a savings product. Rather than focusing on competitive interest rates or other technical features, FSPs should consider using messaging that inspires smallholders to dream. For example, working with Amret Microfinace Institution in Cambodia, designers developed marketing campaigns featuring Cambodian smallholders who successfully saved up to pay for a wedding or a motorbike for their children (see Box 4). Designers tested various marketing approaches, including more traditional, straightforward advertising that focused on product features. They found that the emotional messages evoked a greater response and interest among prototyping participants, suggesting that this approach would be more likely to compel smallholders to try DFS for the first time.[9]

I can make a sale, but I need tools that connect the product I'm selling to the farmer's dreams.

—**Mobile Teller,** Amret

BOX 4

APPEALING TO SMALLHOLDER ASPIRATIONS: GOAL+ IN CAMBODIA

What it is: A long-term savings product that inspires farmers to save for a dream and supports them along the journey with flexible terms and benefits.

Financial need or aspiration met: Research and testing with Cambodian smallholder families revealed that common aspirations include cows, education, and weddings. Designers also found that these customers are more responsive to concrete prompts to save, as opposed to more general-purpose prompts to save money.

How it works: Customers enroll with an Amret mobile teller for a foundational, long-term goal-based savings fund for the major expenses in a farmer's life, including a child's wedding, a child's education, and cows. The customer saves modest amounts with an Amret mobile teller, who comes to their home to collect the deposit. Mobile tellers are equipped with smartphone or tablet-based applications that allow for an experience that is guided, visual, and complemented with recommendations for additional financial products and services offered by Amret.

Key features

- Customized plan setting based on customer goals, ability to save, and cash flows.
- Inspiration and education tools, including videos and mobile apps, help customers identify their goals and educate them about the value and use of the product.
- Amret mobile tellers collect deposits once a month at or near the customer's home.
- Customers receive a Savings Calendar with which to track deposit schedules. A digital tracker is also displayed on the mobile teller's mobile device, including customer profile and progress toward savings goal.
- Small deposit sizes and variable frequency reduce barriers to entry and drop-off moments. Customers can miss a deposit with no penalties.
- Customers who stick to monthly targets receive higher interest rates on savings.

Business case: Mobilizes long-term deposits, allows for cross-selling of additional products.

Agricultural cooperative members in Rwanda show designers a drawing that traces the development of their community over the years, as well as their aspirations for the future.

4. Minimize the Risk of Trying DFS.

For the world's smallholder families, risk is an ever-present part of daily life. Faced with a changing climate and economic transformation, smallholders are constantly living under the shadow of threats to their already tenuous livelihoods. Considering this uncertainty, and equipped with few safety nets and limited savings to cushion against a major loss, it comes as no surprise that smallholders are typically reluctant to risk what little they have by trying a new and unfamiliar digital financial product or service.

When seeking to ease or eliminate barriers to smallholder adoption of DFS, minimizing the perceived risk associated with trying these services is key. Working with smallholders, designers identified three main product features that are critical to minimizing the perceived risk to smallholder families when trying DFS for the first time: flexibility, familiarity, and tangibility.

Flexibility. One of the most important factors when seeking to minimize the perceived risk of a new digital financial product or service is flexibility.[10] For example, when considering whether or not to try a new goal-based savings account, a customer's decision may hinge on whether or not the customer can easily withdraw that money on demand. "I'm anxious about not being able to access that money in case I need it for other purposes," explained a Rwandan cooperative group member when asked about savings accounts.

CGAP's previous HCD work, which did not focus on smallholders, found that low-income customers prefer terms and conditions that encouraged discipline, such as penalties for early withdrawal (Seltzer and McKay 2014). However, even though many smallholders expressed a similar desire for features that promote discipline, they told designers that they would be less likely to try a digital savings account that penalized them for accessing their money in a time of emergency.

Seeking to balance these competing desires for flexibility and discipline, designers in Cambodia turned to incentives rather than penalties to encourage discipline. When designing the Goal+ savings product in Cambodia (see Box 4), smallholders emphasized the importance of having flexible access to their funds, even as they sought features that would encourage savings discipline. After considering several strategies, designers settled on an incentive-based system that would offer preferential interest rates on deposits to customers who stuck to their savings plans. Still, to ensure that smallholders had some "skin in the game" designers also recommended a modest minimum balance requirement of US$3.

This prioritization of flexibility among smallholders does not always hold true. While flexible withdrawals were important to smallholders in Cambodia and Rwanda, Zimbabwean smallholders felt that discipline was a priority that trumped flexibility. Surprisingly, the majority of smallholders who participated in the prototyping of the Save 4 School product (see Box 2) actually preferred that their savings remained "locked," which was a reflection of the importance that they place on their children's education. It also pointed to a larger issue of gender in management of household finances: some female smallholders insisted that locking savings would prevent their husbands from using school fee money for other purposes. Still, understanding that not all families would be

able to achieve their savings goals, designers built in and successfully prototyped features that would increase the product's flexibility. For example, despite including a monthly minimum contribution of at least US$2, customers would not be penalized for missing a payment. Moreover, the product offers creditworthy customers who fall short at the end of the savings period to access microloans to cover the outstanding balance.

Aside from providing access to savings in times of need, several additional strategies exist that can increase the perceived flexibility of DFS. In Senegal, where myAgro already offered customers the option to withdraw funds (with a mandatory two-week delay after customer notification to discourage withdrawals), designers looked for an approach that would make it easier for smallholders to try the product with minimal risk. myAgro customers explained to designers that they preferred to choose smaller packages for only a portion of their fields as a test. However, because the delivery of inputs coincides with the beginning of the planting season, smallholders were forced to wait months before actually receiving the packages, and even longer to see their impact on yields. These behavioral observations led to the design of micropackages for things like vegetable seeds (among other input combinations) that smallholders could use to quickly test the myAgro system. Because vegetables can be grown year round in small gardens, these low-cost packages allowed farmers to get results in a matter of weeks instead of months, thereby allaying fears that myAgro would run off with their money and giving them the confidence to enroll for larger input packages.

Familiarity. Another important approach to minimizing perceived risk is to design products that feel familiar to smallholder families. As CGAP has found in previous design projects, poor people can often be uncomfortable with, or even fearful of new technology (Seltzer and McKay 2014). This is especially true of smallholder families, who tend to have even less exposure to new technologies than their poor urban or nonagricultural peers. This discomfort and lack of familiarity with technology can increase perceptions of risk when considering whether or not to try a new DFS.

To overcome this aversion to technology, designers sought to leverage existing financial behaviors in their product concepts. For instance, designers in Rwanda used savings groups as a channel through which to introduce smallholders to formal financial services (see Box 5). The first step in this process was to simply digitize savings group transactions, which not only provided groups with more efficient and secure management tools, but also began to familiarize them with UOB's mobile banking platform.

myAgro's approach to customer deposits offers another example of how FSPs can make DFS feel more familiar to smallholder families. By using scratch cards to add credit to customers' layaway accounts, which mimics the already well-established behavior of purchasing airtime top-up scratch cards, myAgro offers smallholders a familiar touch point in their digital interaction with the layaway platform.

Tangibility. The final consideration when seeking to minimize risk perceptions is tangibility. Throughout interactions with smallholder families, designers often observed a tendency to save in-kind rather than in cash (or in a bank

BOX 5

INFORMALIZING FORMAL FINANCIAL SERVICES: KONTI Y'IKIBINA IN RWANDA

What it is: A mobile service based on a group account that digitizes savings group transactions, provides access to instant group loans, and eventually enables creditworthy group members to access instant, unsecured individual microloans.

Financial need or aspiration met: Savings groups are an integral part of smallholder families' financial lives in Rwanda, but struggle to manually manage funds. Additionally, Rwandan smallholders cited a need for quick, affordable access to savings and credit in times of need.

How it works:

- *Step 1*—A group savings account is set up in person at a bank branch, with three members of the group leadership required as signatories. Upon enrollment, a mobile wallet associated with the group account is established, which is accessible through USSD menus on the group president's mobile phone. The wallet allows single, lump-sum mobile deposits of group funds collected at regular meetings into the group account. Key group details are captured during the enrollment process, and the system allows the group leadership to change plan details, make balance inquiries, and view contribution history. For creditworthy groups, the group president may also request an instant group loan via mobile. The group loan is secured by the group's savings, and group leaders are responsible for disbursing the loan to individual members and for making timely repayments.
- *Step 2A*—As groups become more comfortable with the platform, individual members make regular savings contributions via their personal mobile wallet. Individual members can also receive loans from the group in their mobile wallet, and repay the loans in the same way. All individual-to-group and group-to-individual transactions are tracked by the system and create individual credit profiles for group members.
- *Step 2B*—Individual group members who are pre-approved based on their credit profile and the group's overall credit and savings history may request an instant, individual microloan via their mobile phone. Upon requesting a loan, the group leadership is notified via their mobile phones and must approve the request. Individual microloans are secured by group savings and must be paid back directly to UOB.
- *Step 3*—Having developed a credit history, individual group members are able to graduate to a fuller range of financial products and services offered by UOB.

Key features

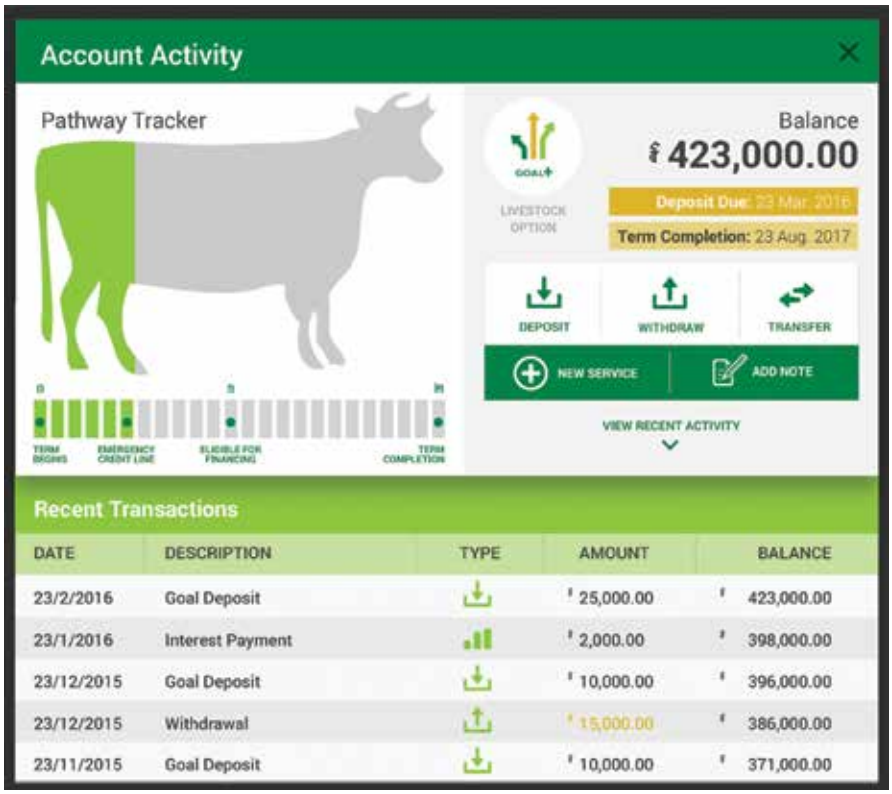
- Provides instant access to credit in times of urgent need.
- Leverages trust in and effectiveness of informal financial services to build smallholder financial capabilities.
- Enhances savings group capacity without replacing or overburdening traditional group structures and practices.
- Provides a clear path toward access to a greater range of financial products and services by building customer credit histories.

Business case: Mobilizes deposits, familiarizes group members with DFS, and builds credit histories and long-term customer relationships with the potential to offer new and more profitable products.

account). From jewelry to livestock, many smallholders prefer these stores of value due to their tangibility, even though they are sometimes forced to sell them at a loss when they need cash. Given this preference for tangibility, transitioning smallholder families from a practice of saving in-kind to saving in electronic stores of value will require a "double jump" from in-kind, to cash, to digital. Considering the already low use of cash as a store of value among smallholders, there is a clear need to make DFS seem more tangible if FSPs want to spur greater adoption of these services.

The myAgro scratch card model also provides an interesting insight into how FSPs can minimize risk perceptions by increasing the tangibility of DFS. Although myAgro did not necessarily consider tangibility when designing the scratch card system (see familiarity example above), the designers observed that customers were actually holding onto the scratch cards even after the secret code had already been submitted. For these smallholders, the cards represented tangible proof of the electronic value in their layaway accounts even though such proof was available digitally on their phones.

An additional approach to increasing the tangibility of DFS can be found in the Goal+ savings product concept in Cambodia (see Box 4). After realizing that smallholders were already well-accustomed to the practice of saving in-kind, designers considered ways that they could make digital savings feel just as tangible. Their response was to design applications that visualized both the customer's savings goal (e.g., a cow) as well as their progress toward that goal.



A screenshot from a mobile teller app prototype for Amret's Goal+ product.

We bought jewelry for our children, but when we need money we sell the jewelry out...we sell it quite often. When we need money, we sell the jewelry back to the goldsmith.

—**Solidarity Group Member,** Cambodia

IV.

DESIGN FOR CONTINUOUS ENGAGEMENT

Getting smallholder families to try a new digital financial product or service, while an achievement in itself, only gets smallholders through the first step of the customer journey. As providers know well, there is a significant gap between adoption and habitual use—and trying a digital service will not in itself guarantee that smallholder customers will become active users. Therefore the design process should not only focus on building a value proposition and driving adoption, but also on encouraging sustained use over time.

Across all four countries, designers identified three key design principles that can help drive regular use of DFS and reduce churn among smallholder customers (*i*) make products accessible to smallholders, both physically and financially, (*ii*) offer incentives, not penalties, and (*iii*) build in ongoing support.

1. Make Products Accessible to Smallholders, both Physically and Financially.

Accessibility is key to ensuring that smallholder families continue to use digital financial products and services. Issues with service accessibility emerged as an important concern for smallholder families in Senegal, where myAgro customers often struggled to find vendors when they wanted to add value to their layaway accounts. With so many priorities competing for these customers' limited cash inflows, even a few hours delay can mean the difference between making a deposit and "eating" the money, as Senegalese smallholders referred to their tendency to spend cash as soon as they received it. myAgro had already attempted to address this issue by positioning vendors at the nearby markets where smallholders sell their goods. The presence of these vendors helped to decrease the distance between cash inflows and deposits, thereby reducing opportunities to spend the cash before reaching a vendor. However, problems with accessibility extended even to vendors positioned within villages, who were often unavailable when needed because they prioritized other responsibilities. To incentivize vendors to be more available to customers, designers proposed a system of vendor reminders and incentives (see Box 6).

In addition to physical accessibility, smallholder families in all four country samples pointed to the accessibility of payment terms as another key constraint to continued use of financial products and services. For savings products, high minimum balances and mandatory deposits can be prohibitive, especially when smallholder families are hit by shocks like a medical emergency or a crop failure

An example of IVR notifications that would be delivered to myAgro vendors.

BOX 6

EMPOWERING AND INCENTIVIZING MYAGRO AGENTS: VENDOR TOOLKIT IN SENEGAL

What it is: A set of digital tools that empowers vendors to take on greater responsibilities, thereby enabling vendors to engage and support farmers more frequently and consistently.

Financial need or aspiration met: Smallholders want to save and plan for the long term, but they need ongoing support from FSPs to make and adhere to their savings plans. They also need to be able to deposit savings as soon as they have cash in-hand, and vendor availability is key to ensuring that they do not “eat” their money.

How it works: When enrolling a new customer, vendors use a feature phone-based application to select the customer’s package and choose their payment preferences (weekly, monthly, etc.). Based on the package size and deposit frequency, the application develops a personalized savings plan for the customer. As the customer begins to save, vendors use their phones to track customer progress and revise savings plans along the way. Finally, the system uses an IVR-based communication tool that calls vendors periodically to update them on farmer progress, remind them to contact customers who are falling behind, and motivate them to work harder by informing them of their performance relative to other vendors in the area and of higher commissions during specific periods.

Key features

- Enrollment and monitoring tools increase vendor ability to provide support to customers throughout the layaway cycle.
- IVR notifications are personalized and engaging, and avoid the tendency to ignore SMS notifications.
- Social and financial incentives encourage vendors to increase their availability and take greater responsibility for mobilizing their customers.

Business case: Increases the likelihood that smallholders will save regularly by shortening the distance between cash inflows and layaway deposits.

that put a strain on household finances. The same goes for credit products, where strict payment terms can easily discourage customers and lead to defaults. To make payment terms more accessible to smallholders, designers devised several solutions to make deposits and repayments more flexible.

Working with Econet in Zimbabwe, designers looked at how they could make credit for inputs more accessible to the country's poorest smallholder families. Among smallholders who had previously received loans for inputs,

BOX 7

FLEXIBLE FINANCING FOR INPUTS: MY YEARLY PACKAGE IN ZIMBABWE

What it is: An inputs package customized to a farmer's acreage and financial goals, providing a complete set of inputs along with financing, weather insurance, and information services.

Financial need or aspiration met: Many smallholder families lack the finances and information necessary to identify, purchase, and use the right package of inputs for their farms. These farmers may not qualify for traditional credit products, or may find it difficult to meet strict repayment terms.

How it works: Smallholders visit a participating agridealer or extension officer and enter information about their farms and other household data (such as farm size, crops planted, household size, etc.) into the FarmBuilder application. Based on the information entered, FarmBuilder creates an input package recommendation designed specifically for the customer's farming needs and aligned to her annual crop cycles. If the customer is purchasing inputs on credit, Econet uses an algorithm to instantly determine her creditworthiness. If the application is approved, she deposits a down payment into her EcoCash mobile wallet. She receives a voucher entitling her to the package she selected, which is delivered along with other customer packages to a nearby distribution point shortly thereafter. Once the customer collects her inputs, the loan period begins, and her down payment is transferred from her mobile wallet to EcoFarmer. During the planting and cultivation season, she pays a minimum monthly fee and receives monthly reminders via SMS. EcoFarmer also provides her with helpful tips so that she knows what to do with her inputs. When her first crop (e.g., tomatoes) is ready for harvest, she makes her first larger payment to EcoFarmer via her EcoCash wallet. Her second large payback is due after the maize harvest in July.

Key features

- Flexible repayment options, requiring minimal ($2) monthly payments and larger payments following the two crop harvests.
- EcoFarmer weather-index insurance bundled into the package.
- Smartphone or tablet-based data-capturing tool provides specific data to agrodealers, extension officers, and Econet.
- Uses groups as a channel for distribution, to leverage social dynamics and trust.
- Provides personalized planting, weather, and market information, as well as the option to text questions to EcoFarmer agricultural experts.

Business case: Collects data on a large but unknown customer segment, expands the number of EcoCash users and merchants, and increases smallholder use of merchant payments.

Loans have so much risk—lots of requirements, little time to pay them back, and high interest. I haven't tried to get one myself but that's what my friends say.

—Dismas, Rwanda

many had done so through large buyers, who provided them with inputs in return for a portion of their harvests at the end of the season. However, these smallholders complained that after repaying these loans, they were left with little for themselves and their families. The same was true in Rwanda, where smallholders who received input loans through an agreement between their cooperatives and a local bank were dismayed to find that their months of hard work resulted in only a meager payout after settling their debts.

Loans that are paid off at the end of the harvest were originally devised as a way to make credit more accessible to smallholders who could not afford regular repayments while they waited for their crops to mature. However, as the above examples demonstrate, this system can also be discouraging for smallholders who plan their lives around large cash inflows at harvest time, and who could otherwise store their harvests to wait for prices to rise. Still, the alternative—where smallholders repay weekly or monthly—may be out of reach for many smallholder families. In response, designers in Zimbabwe created My Yearly Package (see Box 7), which uses a mixture of a modest initial deposit, small, flexible monthly repayments (including a forgiveness period), and a larger repayment at harvest time to increase the accessibility of agricultural inputs.

2. Offer Incentives, Not Penalties.

Any number of factors can cause smallholder families to fall behind on loan repayments or savings targets. But even as many FSPs use punitive measures such as fees to motivate customers to adhere to their repayment or savings plans, such penalties can often have the opposite effect. With so many demands on limited household resources, smallholder families are already unsure of their ability to repay loans or achieve a long-term savings goal. Adding to that burden by imposing punitive fees serves only to discourage them further and adds to negative perceptions of formal financial services. In Rwanda, one smallholder explained that she used to keep money in a local bank, until she realized that her savings were actually shrinking over time due to fees imposed because she had failed to meet minimum balance requirements.

Rather than punishing smallholders, many of whom are trying formal financial services for the first time, FSPs should look for ways to build incentives into DFS that motivate, rather than intimidate. This holds especially true for digital savings products, which will often compete with the mattress as the preferred method of putting money aside for the future. To promote habitual savings behavior and encourage adherence to financial plans, designers recommended several types of incentives that promise to motivate savers and reduce dropouts.

An example of badges that myAgro would give to customers at various levels of achievement

BOX 8

ENCOURAGING SMALLHOLDER SAVINGS BEHAVIOR: THE FARMER LOYALTY PROGRAM IN SENEGAL

What it is: A reward and recognition system that helps smallholders develop sound financial habits, while also promoting regular and continuous engagement with myAgro.

Financial need or aspiration met: Smallholders have trouble sticking to their long-term savings goals and are often discouraged by penalties, such as fees and minimum balances.

How it works: Customers receive stars and badges that correspond to their layaway progress and particular behaviors that myAgro wants to incentivize. For example, seeking out a vendor rather than waiting for the vendor to come to them, sticking to their savings plan, or reaching the halfway point. The badges and stars provide recognition and motivate smallholders to keep up with and out-achieve their neighbors. Customers can also receive rewards and bonuses associated with specific myAgro milestones and achievements, such as t-shirts, extra layaway credit, or the opportunity to become a myAgro "farmer leader." Throughout the process, customers receive IVR-based notifications that remind them of their remaining balance, upcoming payments, potential rewards, and their performance relative to other farmers in the village to provide additional motivation.

Key features

- IVR messages allow illiterate customers to track their progress and stay on top of their savings, while also providing a more personal feel.
- Badges awarded for savings progress (and other behaviors connected to good savings practices) provide customers with continuous feedback and motivate them to achieve new milestones.
- Customer progress is continuously ranked against other community members' progress, which along with the potential to be designated a farmer leader provides social motivation.
- Tangible rewards such as bonus credit and t-shirts add to customers' motivation to achieve their savings targets.

Business case: Low-cost strategy to reduce dropout rates and increase the likelihood that customers will complete their package. Grows the number of repeat users.

Perhaps the most powerful insight into how to motivate regular savings came from designer interactions with smallholder families in Senegal. When prototyping various types of incentives, from bonus layaway credit to community health days, designers were surprised to find that smallholders placed the highest value on incentives that contributed to their standing within their community. In response, designers proposed an incentive system that mixes financial rewards, such as bonus layaway credit for customers who met their savings targets, with incentives, such as badges and the opportunity to be designated a farmer leader (see Box 8). "It's like the Olympics," one smallholder remarked excitedly. "Farmers will want to show each year that they are experienced and have completed multiple layaways."

Other examples of savings incentives include preferential interest rates for Goal+ customers in Cambodia (see Box 4), as well as access to instant, unsecured microloans for savings group members in Rwanda (see Box 5) and Save 4 School customers in Zimbabwe (see Box 2). While these types of incentives may not be sufficient to replace penalties when dealing with loan repayments, the flexible repayment schedules discussed earlier (including forgiveness periods for missed payments) can go a long way toward preventing smallholders from becoming discouraged and defaulting on their debt.

3. Build in Ongoing Support.

Because many smallholder families who adopt a new DFS may have trouble planning for the long term, offering ongoing support is key to ensuring that they succeed in achieving their goals. As designers found during their conversations

with smallholders, even the most motivated smallholder savers can easily fall behind without support from FSPs: "I currently have my own system—I have a set [deposit] amount scheduled each week," explained a myAgro customer in Senegal. "But I often forget to make my payment, so I asked the [myAgro] agent to come remind me every Saturday."

Digital can play an important role in providing customers with such support in a cost-effective way, through tools designed to help smallholders plan and stick to their savings goals. In Senegal, designers developed a feature called Adaptive Reminders that would notify myAgro customers when a planned deposit date is approaching or a payment is missed. The reminders are based on a savings plan that is developed along with vendors when a customer first enrolls—for example, a customer who signs up for a CFA 12,000 (approximately US$28) input package with payment due in three months could choose to pay CFA 1,000 (approximately US$1.7) per week. Additionally, the notifications include messages that compare individual customer progress against the village average, thereby serving as a social incentive for smallholders who fall behind. Recognizing the limited literacy levels among smallholder families in Senegal, the reminders would be delivered via IVR, with customers receiving a call from an automated system.[11]

An example of IVR notifications that would be sent to myAgro customers.

[The myAgro agent] is the one who should tell me how to plan and pay for my expenses, rather than just coming here to sell packages and cards. I cannot make these decisions about my finances on my own.

—**Abdou,** Senegal

V.

DESIGN FOR CUSTOMER GROWTH

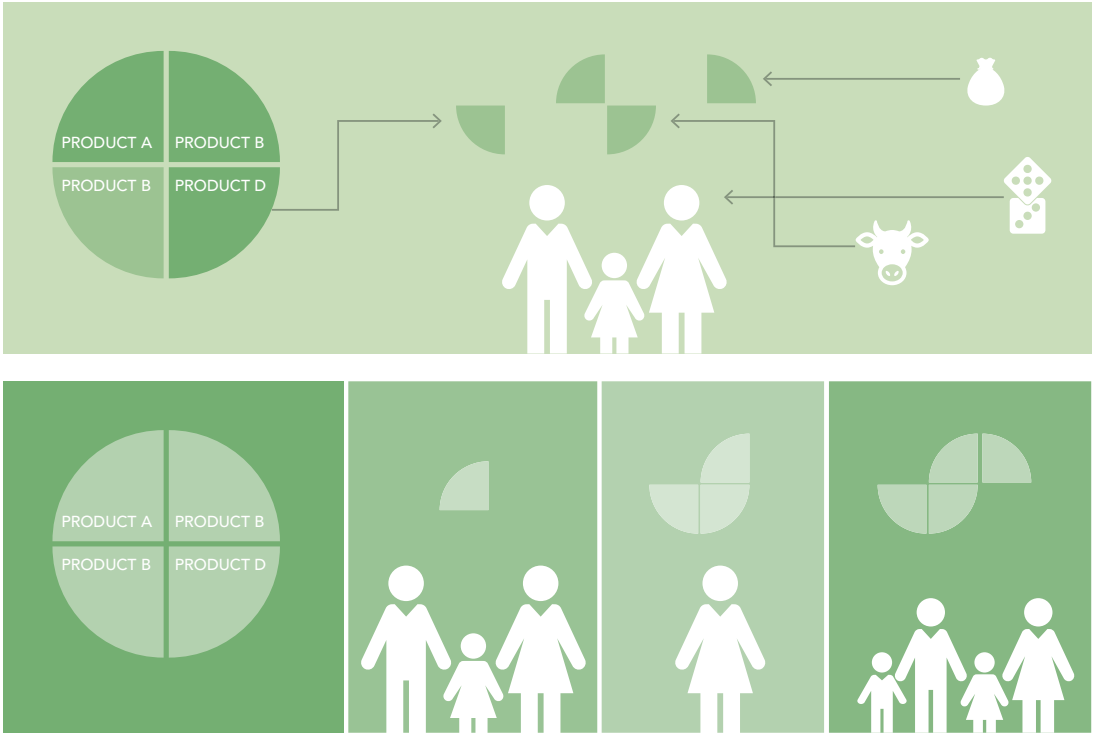
As the financial capabilities of smallholder families grow, so too should the range and terms of their product offerings. While designing DFS that achieve both adoption and continued use is important, these initial products and services should serve as a gateway to a more advanced set. However, providers often focus their smallholder offerings on individual products without any clear pathway for the customer to grow into new offerings as financial capabilities increase.

1. Offer a Portfolio, Not Only Individual Products.

Because the financial needs of smallholder families are diverse, the digital financial products and services available to them should be diverse as well. Indeed, many smallholder families already engage with a range of informal financial services, including savings, borrowing, and remittances, and there is an opportunity for FSPs to offer a similar suite of products and services.

In Cambodia, where it is common for children of smallholder families to move to cities in search of work in garment factories and other industries, designers saw an opportunity to leverage the remittances flowing from these children to their families to introduce these families to formal savings accounts. To do so, they designed a product called Family Connect, which would allow Amret customers to link their individual mobile savings accounts to those of family members, who could perform an unlimited number of money transfers between accounts for a low yearly fee (see Box 9). Families also would be given the option to link to a Goal+ savings account, which would in turn allow them to save together toward common goals, such as weddings and higher education, or even a cow for smallholder parents.

In Senegal and Zimbabwe, designers also looked at how FSPs could offer products that respond to multiple households needs. For example, designers envisioned that Save 4 School customers could expand their savings behavior to save for inputs using the My Yearly Package product, while smallholder families deemed creditworthy could also choose to take advantage of the product's option to borrow for inputs. Designers in Senegal took a similar approach, proposing a variety of layaway packages that would allow farmers to save for various needs beyond inputs, including farm tools, solar lighting, and food to get them through the annual hunger season.



Many smallholder families already use a range of informal financial services, but the formal financial services available to them often focus on one particular product for one purpose. Instead, FSPs should offer multiple products for multiple purposes that smallholder families can use to develop a portfolio based on their unique household needs.

2. Build Pathways, Not Cycles.

In Cambodia, designers met many smallholders who would take out the same loan from microfinance institutions year after year, despite having completed multiple loan cycles. This tendency to become stuck on one financial product prevents smallholders from diversifying their financial lives and building pathways toward prosperity.

Successfully serving smallholder families requires FSPs to provide pathways for financial growth. Still, some smallholder families with limited financial capabilities may not be ready for a full suite of digital financial products and services early on. To serve these families, FSPs can start off by offering a single product, such as a microloan or a goal-based savings account. However, they should also provide these customers with the option to grow into more advanced offerings over time.

The Konti Y'ikibina (Savings Group Account) product in Rwanda attempts to build in just such a pathway for customer growth (see Box 5). It begins by familiarizing smallholder families with DFS through digitizing savings group transactions, and eventually allows the groups to request group loans, which they can use to augment their own funds and lend internally. Finally, as the digital platform begins to develop credit profiles on individual group members, they gain the ability to request individual microloans independent of their savings group. Designers also envisioned that customers who become eligible for the individual microloans and successfully repay would eventually graduate to being able to access the full range of UOB's products and services.

BOX 9

CONNECTING FAMILIES AND FINANCIAL PRODUCTS: FAMILY CONNECT IN CAMBODIA

What it is: A plan that offers linked savings accounts to smallholder parents and their children who live and work in the city. The linked accounts allow these families to make low-cost money transfers and to save together by linking to a joint Goal+ account.

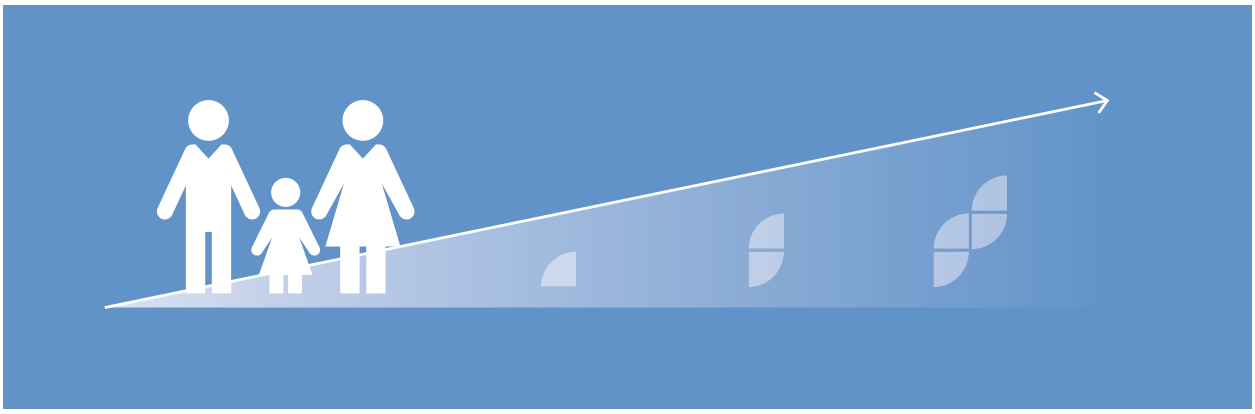
Financial need or aspiration met: Aside from providing a much cheaper alternative to existing money transfer offerings, Family Connect also leverages the increasing demand for remittance products in Cambodia to introduce families to goal-based savings behavior.

How it works: Parents and children open accounts with Amret and choose to link their accounts under the Family Connect program. Customers are able to transfer money between linked accounts without paying any per transaction fees by visiting an Amret branch or speaking with a mobile teller. Families also have the option to link their accounts to a joint Goal+ savings account to save for a family goal, such as a wedding, a cow, or higher education.

Key features

- Members receive unlimited transfers between linked accounts for a small annual fee.
- Builds aspirational savings accounts into remittances, traditionally an exchange and consumption-based process.
- Transactions can be made with mobile tellers and do not require a visit to the bank branch.

Business case: Allows Amret to capture a share of the rapidly growing money transfer market; engages new, younger, urban customers; allows for cross-selling of Amret products.



FSPs should provide smallholder families with a pathway toward new and more advanced financial offerings.

VI.

CONCLUSION

The insights and design principles presented in this publication offer FSPs exciting new strategies for designing innovative digital financial products and services that respond to the needs and aspirations of smallholder families. By providing examples of digital products and features that address key obstacles along the customer journey, FSPs can take inspiration from these as they seek to reach financially excluded smallholders in their own markets. Many of the lessons here can be tested across a broad range of smallholder customer segments, product types, and country contexts. However, given the diversity of smallholder families across the globe, these recommendations represent just a first step toward understanding their financial needs and desires—and there are undoubtedly more lessons to be learned.

It is also important to recognize the considerable challenges and concerns associated with any new digital financial product or service. Consumer protection, already a major concern for low-income populations in general, will be a key consideration for FSPs and regulators seeking to connect smallholder families to DFS. Issues such as data security, privacy, and transparency cannot be afterthoughts, especially when seeking to serve smallholder customers who are often unfamiliar with both financial services and technology. With digital channels offering an unprecedented chance to deliver high-quality, affordable, and appropriate financial services to smallholder families for the first time, delivering positive customer experiences will be key to ensuring long-term viability.

Furthermore, DFS are not a panacea and cannot help FSPs overcome every obstacle to serving smallholder families. While DFS can go a long way toward addressing both supply- and demand-side constraints to the provision of smallholder-specific financial services, they cannot substitute for quality products and responsive customer service. Smallholders have varying degrees of comfort and familiarity with digital tools, such as mobile phones, both within and across countries. Therefore, it may not always be an option to rely solely on digital channels to reach smallholder families. Additionally, it is important to create DFS propositions that combine HCD with commercially viable business models and a concrete plans toward marketing, distribution, and service support.

Over the following months and years, CGAP will continue to collaborate with designers and our FSP partners to see some of these product concepts through to implementation. As the products are rolled out to smallholders in Zimbabwe, Senegal, Rwanda, and Cambodia, some of the design principles will be validated along the way, while others will need to be reevaluated in light of new information.

The best approach to designing any product or service, financial or otherwise, is to listen to the customers you are seeking to serve. No amount of theory or expertise can substitute for speaking with smallholder families and listening to their financial needs and aspirations. Moreover, FSPs should constantly be testing their assumptions in the field with customers, and iterating based on the feedback that they receive. While the recommendations outlined here can serve as a starting point, they are by no means a substitute for designing along with your customer.

NOTES

1. The term "smallholder families" refers to all households that derive a significant portion of their income from agriculture. The term "smallholders", while sometimes used to describe the heads of smallholder families, should be interpreted herein as "smallholder families" where the context permits.
2. For more on the challenges to smallholder use of mobile financial services, see the forthcoming CGAP paper "Understanding Demand, Driving Innovation: Smallholder Households and Financial Services" prepared for the 2015 G20 Global Platform for Financial Inclusion Round Table on Innovations in Agricultural Finance.
3. Mercy Corps also lent significant support to project activities in Zimbabwe, and was a key partner in CGAP's collaboration with Econet.
4. The FSPs and design firms were selected in independent, competitive processes, and all project work presented here was completed between January and July 2015.
5. For more information on HCD and its implications for financial inclusion, see Seltzer and McKay (2014).
6. For a comprehensive guide to the practice of HCD, visit DesignKit.org.
7. For more information on smallholder segmentation, see Christen and Anderson (2013). For a wider survey of the experience in rural and agricultural finance, see Conning and Udry (2007), Nagarajan and Meyer (2005), and the forthcoming CGAP paper "Understanding Demand, Driving Innovation: Smallholder Households and Financial Services" prepared for the 2015 G20 Global Platform for Financial Inclusion Round Table on Innovations in Agricultural Finance.
8. Income shaping is a strategy in which households use productive assets and other income-generating activities to match cash inflows to expenses. For more on this and other financial management strategies employed by low-income households, see Mas (2015).
9. This was not the first time that CGAP has found that low-income populations respond better to concrete goals and dreams. Working with BTPN Bank in Indonesia, CGAP and designers found that customers responded to products, services, or experiences that allow them to think of paths to accomplishing short- and longer-term goals and dreams. In response, they developed mobile savings account prototypes designed to inspire customers to achieve realistic goals such as saving for school fees or paying a hospital bill. See Seltzer and McKay (2014).
10. Laureti and Hamp (2011) cite flexibility as a key feature of innovative microfinance products, but also emphasize the need for product features that promote discipline.
11. Product concepts in Zimbabwe and Cambodia also included features in savings products that aim to help smallholder families to set goals, develop appropriate savings plans, and track their progress. In Cambodia, mobile tellers who enroll customers in Goal+ and collect monthly deposits would be provided with a mobile app (see Box 4) that allows them to set goals and track savings progress along with customers, using a visual interface designed to be easily understood by even illiterate smallholders. Given high rates of literacy among smallholders in Zimbabwe, similar progress tracking notifications and reminders for the Save 4 School product would be delivered via SMS.

REFERENCES

Christen, Robert Peck, and Jamie Anderson. 2013. "Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families." Focus Note 85. Washington, D.C.: CGAP, April. http://www.cgap.org/sites/default/files/Focus-Note-Segmentation-of-Smallholder-Households-April-2013_0.pdf

Conning, Jonathan, and Christopher Udry. 2007. "Rural Financial Markets in Developing Countries." In *Handbook of Agricultural Economics,* vol. 3. Amsterdam: North Holland. http://econpapers.repec.org/paper/egcwpaper/914.htm

Cuevas, Carlos, and Jamie Anderson. 2015. "Understanding Demand, Driving Innovation: Smallholder Households and Financial Services." Washington, DC: CGAP.

Grossman, Jeremiah, and Michael Tarazi. 2014. "Serving Smallholder Farmers: Recent Developments in Digital Finance." Focus Note 94. Washington, D.C.: CGAP, June. http://www.cgap.org/sites/default/files/Focus-Note-Serving-Smallholder-Farmers-Jun-2014.pdf

Laureti, Carolina, and Michael Hamp. 2011. "Innovative Flexible Products in Microfinance." *Savings and Development*. Vol. 35, No. 1, pp. 97–129. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2155291

Lowder, Sarah, Terri Raney, and Jakob Skoet. 2014. "The Global Distribution of Smallholder and Family Farms." *CGAP Blog*. 9 October. http://www.cgap.org/blog/global-distribution-smallholder-and-family-farms

Mas, Ignacio. 2015. "Money Resolutions: A Sketchbook." Working Paper. Washington, D.C.: CGAP, January. http://www.cgap.org/sites/default/files/Working-Paper-Money-Resolutions-Sketchbook-Jan-2015_0.pdf

Nagarajan, Geetha, and Richard L. Meyer. 2005. "Rural Finance: Recent Advances and Emerging Lesssons, Debates, and Opportunities." Working Paper AEDE-WP-0041-05. Columbus, Ohio: Department of Agricultural, Environomental, and Development Economics, Ohio State University. http://ageconsearch.umn.edu/bitstream/28317/1/wp050041.pdf

Rural and Agricultural Finance Learning Lab. 2015. "Smallholder Financial Solutions Database: Intro to the Work in Progress." Presentation to the Initiative for Smallholder Finance Steering Committee. Washington, D.C.: Rural and Agricultural Finance Learning Lab, 14 September.

Seltzer, Yanina, and Claudia McKay. 2014. "Insights into Action: What Human-Centered Design Means for Financial Inclusion." Washington, D.C.: CGAP, October. http://www.cgap.org/sites/default/files/publications/multimedia/Insights_Into_Action/index.html

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