

INNOVATOR GUIDEBOOK:

End-User Financing Models for Scaling Water-Energy- Food Innovations

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GUIDEBOOK PURPOSE

The goal behind this guidebook is to present you, the innovators, with an overview of both historical and fairly new end-user financing models prevalent in the water-energy-food nexus. Pay as you go, crowdfunding, pay by produce, rent to own, value chain financing, and donor funding are presented as the newer end-user financing models, in contrast to traditional models such as microfinance, rent as a service, credit unions/cooperatives, and bank loans. This guidebook will provide a brief description of each model, a look at how each model affects stakeholders, an individual SWOT analysis of each model, and a brief guide on an innovator's perspective when implementing said models. Case studies will also outline lessons learned.

The guidebook can help you make an informed decision when planning the implementation of end-user financing activities. By examining previous implementation scenarios for all models, you can decide which financing method best suits your organization and end-users. Additionally, it is important to note that not all models will suit your organization, business environment, and end-users.

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INTRODUCTION

Smallholder farmers in developing countries are a prime example of a group with low access to financing, despite needing it the most. Financing has been proven to help scale up businesses and the cause-and-effect relationship of increased agricultural investment to improved overall economies is well documented.¹ Sustainable agricultural financing would result in further economic development and food autonomy.

Barriers in financing also have implications on the environment that can be addressed through the adoption of climate-friendly innovations. When farmers cannot access innovative products such as cleaner burning fuels, renewable energy, or more efficient equipment, they are forced to rely on products that can be more costly in the long run, less efficient, and more polluting. Hence, accessible financing for innovative products functions on two levels with positive financial and environmental implications.²

According to FAO's estimates, if men and women had equal access to productive resources, total agricultural productivity would rise by 20 to 30 percent. This could raise total agricultural output in developing countries by 2.5–4 percent and reduce global hunger by at least 12 to 17 percent.³ Additionally, women fulfill a diverse set of roles in rural agricultural households and their activities often contribute a small - but potentially significant - amount of income to the household. This is often not visible or counted by financial institutions when assessing household cash flows.⁴ Gendered differences in awareness of climate change effects and the adoption of climate-smart agriculture practices to mitigate such risks, leave women further behind.⁵

Given the obvious gap in financing through traditional means and the efforts it would take to reform existing models across a legislative and cultural landscape, the need for innovative financing models has become necessary.

Understanding End-User Financing

Access to financing for developing communities has traditionally been a barrier standing in the way of access to innovations that would improve their livelihoods and lifestyles. While large formal financial institutions have reserved their services for larger clients with extensive credit histories, individuals with little to no financial history have been forced to seek financing in less advantageous manners.⁶

In the last two decades, microfinance institutions (MFIs) have gained popularity by offering easy, low-ticket loans to traditionally underserved clients. On the surface, MFIs look to be filling an important role, financing clients that would traditionally be turned away by banks. Digging a bit deeper however, MFIs that run with the purpose of making profits rather than serving communities can take advantage of their clients in a variety of ways, such as predatory interest rates and penalties.⁷

Even as a push is being made for bank loans to become more accessible, banks can ask clients with little credit history to put up collateral that often exceed the principal of the loan, putting the clients at risk of losing an asset that supports their livelihood and could potentially make them more impoverished. Access to financing can be summed up as being extremely expensive, risky, and still largely inaccessible, especially for end-users with little to no collateral.

The Opportunity and Impact of End-User Financing

Realizing the gap in financing for poor and underserved communities presents an opportunity for innovators to come up with financing solutions that help the people who need access to innovators' products the most.⁸

By leveraging a social innovation lens approach and coupling innovative financing models with education, accessibility, and collaboration, the models could be strengthened. With worldwide population projections hinting at 9.8 billion people by 2050,⁹ ensuring that innovations that target sustainable food practices reach smallholder farmers is critical in the battle against climate change and food shortages.

Furthermore, as has been widely documented, social and cultural norms negatively impact women smallholder farmers, but there are numerous ways that organizations can design models that work for both low-income men and women. Adopting gender-transformative approaches/financing models that challenge current social norms through dialogue and awareness-raising campaigns can play an important role, along with promoting policies and strategies that support access to finance for women.⁵

Presenting opportunities and focusing on models that circumvent the issues associated with working with smallholder farmers (i.e., residing in remote areas, having poor or non-existent credit histories, no collateral, limited market access, and low income) is of paramount importance to the social innovators creating, or looking to create, sustainable change.



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TRADITIONAL END-USER FINANCING MODELS

1 Microfinance

Microfinance institutions (MFIs) are semi-formal financial entities that mostly focus on funding small loans given in a small-time frame. Within the agri-food world, MFIs currently serve smallholder farmers with short-term loans for input products such as seeds or small materials. These institutions charge much higher interest rates than banks. However, it has been observed that in some cases, predatory lending practices have led to high defaults in multiple geographies, thereby putting large numbers of poor farmers in a debt trap and catering to bottom of the pyramid marketing through questionable credit rating mechanisms.¹⁰ Sometimes, farmers take loans from MFIs that they are not fit for and lock themselves in a cycle of debt.

However, various non-profits, as well as for-profit, MFIs are helping improve the landscape of microfinance by coupling loans with financial education and training for debtors, ensuring that income is being built rather than pushing disenfranchised people further into poverty.

Interest rates are highly subjective and can vary greatly from one MFI to the other. End-users in this model apply for loans, get the money from MFIs, purchase the product, and repay part of the loan with added interest every month. In order to balance the risks of lending to customers that are not traditionally considered creditworthy, MFIs pool several loans together and boost the average strength of their portfolio.



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Key Parameters

Product amount covered	Full
Down-payment required	No
Average cost of the product covered	Typically, \$100 to \$5000
Does the farmer payoff via money	Yes
Collateral required	No
Interest accrued	Yes
Interest rate	In the range of 10% to 30%
How does the farmer pay	Cash
Total repayment tenure	12-24 months
Repayment frequency	Monthly payments
Action in case of delayed payment	Restructuring or refinancing the loan
Who is funding the access to finance	Microfinance company and its investors

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Access to finance with no collateral • Some MFIs provide basic financial and budgeting education • Access to loans with no prior financial history • Faster way to access money 	<ul style="list-style-type: none"> • Contracts are often complicated • May have very high interest rates • Certain predatory practices by some MFIs have led farmers into a debt trap, sometimes contributing to farmer suicides
Microfinance institutions	<ul style="list-style-type: none"> • Supporting local/rural economies • High interest returns 	<ul style="list-style-type: none"> • Dealing with potentially risky clients • Risk of delinquency may be high
Innovators	<ul style="list-style-type: none"> • No financial risk • Ability to reach more end-users by conducting outreach efforts in collaboration with MFIs 	<ul style="list-style-type: none"> • No/little control over MFI financing terms • Variability in agreements between different MFIs can potentially cause complications

*The stakeholder analysis is based on inferred information from the case studies documented below.

SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Innovators carry no upfront financial risk and could focus on the product itself rather than financing • Typically, MFIs are highly available in rural areas, whereas traditional banks are not • MFIs could pool loans into portfolios that balance the specific risks of each client • Working with MFIs could strengthen the community from within and helps end-users build a financial history 	<ul style="list-style-type: none"> • Interest rates may be higher than banks • End-users may not be financially literate • No standard terms - different MFIs have their own terms for loans
Opportunities	Threats
<ul style="list-style-type: none"> • Innovators could partner with MFIs to find loan schemes that suit end-users • MFIs could fill a critical funding gap for innovations requiring less capital • MFI loans used wisely could contribute to SMEs' and farmers' growth over the long run • Grouping financial education and MFIs could both provide funding and educate end-users • MFIs funding could lead to economic empowerment of women farmers in rural communities 	<ul style="list-style-type: none"> • MFIs are not as closely regulated as banks and may set their own loan agreements with high interest rates • MFIs may entice end-users with questionable practices and may use complicated financial jargon • Some MFIs prioritize returns over the well-being of their debtors, leading to debt traps • For-profit predatory practices within certain MFIs may push smallholders to self-harm and suicidal behavior.

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Case Studies

Gham Power Nepal Private Limited (WE4F)

Gham Power is a Nepal-based innovator that provides integrated irrigation systems, digital ecosystems, and agricultural advisory services through their "Yield Improvement in a Box" service. Using their "Off-Grid Bazaar" platform, they also provide affordable solar-powered irrigation services through established networks of local farmers in the rural areas of Nepal,

With over 70% of Gham Power's primary end-users being women, they have put a special focus on financial and agricultural education, making sure that all their end-users have the tools they need at their disposal. In the last two years alone, Gham Power has worked with 200 farmers, partnered with 3 different MFIs, and achieved increases of up to 80% of farmers' income while increasing loan mobilization with partner MFIs by over 6 times.

Combined Lessons on the Pitfalls of MFIs

By combining several case studies across Bangladesh, Mozambique, Nigeria, and India, the drawbacks of resorting to MFIs become apparent. First, looking at cases in Bangladesh and Mozambique, the organization Beyond Good Intentions found out that some local MFIs were charging interest rates of up to 50%, with some farmers saying that the loans put them in worse financial situations than what they were already in. Second, the study in Nigeria showed that without proper support from MFIs with sustainable long-term visions rather than short-term profiteering goals, default rates reached 25% in the area. Combining that knowledge with the example of India, where Myrada, a non-governmental organization (NGO) found that education was a necessary step to sustainable long-term social entrepreneurship strategies, the pitfalls of poorly thought-out microfinance interventions becomes clear.

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

The first step involves you mapping out potential markets, looking at how large they are, understanding the characteristics of the stakeholders in each market, and approaching a few end-users. Additionally, you can assess the demand for your product with potential end-users to understand the business and growth potential involved.

- **Research MFIs and Understand Financing Structures**

Within each area that you have mapped out, you should also be looking for MFIs, preferably ones that have already worked with members of the community. Once these MFIs have been discovered, you must then understand what types of projects they work on, loan schemes they provide, kind of returns they ask for, repayment periods, and so on.

- **Decide on the MFI-Innovator Relationship**

When deciding to go with the MFI route for financing products to end-users, you have the choice to either partner with specific MFIs in the region or simply choose to tell end-users that MFIs can be used for financing with no further involvement from yourself. Both methods are valid with the former able to possibly negotiate better deals for end-users with the expense of it being a hands-on approach.

- **Pick Which MFIs are Most Suitable to Work With**

Regardless of whether you decide to partner with MFIs or not, by simplifying the available choices for end-users who may not be as financially adept, there may be a payoff of better results for initial and continued success.

Implementation and Support

- **Go to Market**

Following the exploration of MFIs within the region, you are then tasked with going back to the end-users and proposing the products, either with or without the financing offers provided by local MFIs. You should also ask the end-users about other possible clients.

- **Receive Payment**

Once the end-users have agreed to purchase the product, consulted with a MFI on capital, and received approval for their loan, you will receive payments on the product. From whom you receive the payment depends on their chosen route. If you go with the partnership route, then you would receive it from the MFI directly. If they go with the awareness route, then the end-user would receive the loan and pay you.

- **Set Up and Support**

After receiving the payment, you would move on to the next step of setting up the product for the end-users and provide after sales services.

- **Analyze and Evaluate Successes**

For future knowledge - and because of the involvement of a third-party - it could be advantageous for you to keep up with both the MFIs and the end-users, helping them understand how the relationship is going and whether the financing method was successful and how it can be improved.



2 Rent as a Service

Renting allows the use of physical assets without ownership of that asset. The flexibility of renting schemes in agriculture means that high-cost solutions can be applied to optimal use cases such as hourly, daily, weekly, monthly, or even years-long rental contracts.

With rental models, end-users acquire the asset from you for a predetermined amount of time, paying you when the item is returned or at fixed intervals. Occasionally, an upfront warranty or insurance is paid in case of any damage to the item, which is also optimally insured by you. When the contract is fulfilled, the insurance deposit is returned to the end-user.

This model generally works for high value farm machinery like tractors, harvesters, and seeders. Considering the high-ticket and industrial nature of the products being rented out, farmers tending to small patches of land may choose to forego these services and resort to their own manual labor.

Key Parameters

Product amount covered	Partial
Down-payment required	No
Average cost of the product covered	More than \$5000
Does the farmer payoff via money	Yes
Collateral required	Yes, insurance on the product is generally required
Interest accrued	No
Interest rate	No
How does the farmer pay	Cash
Total repayment tenure	Immediately for short contracts, hourly/weekly/monthly for longer contracts
Repayment frequency	Depends on contract
Action in case of delayed payment	Legal action/keeping insurance deposit
Who is funding the access to finance	Innovators

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Ability to access product with limited or no collateral • Ability to use high ticket items products on a need basis • May have flexible payment cycles 	<ul style="list-style-type: none"> • No ownership • Longer renting schemes cost relatively more than ownership
Innovators	<ul style="list-style-type: none"> • Long-life products could allow for long cash flows • Stretches the usability of the product over its lifetime • Prices could be adjusted based on seasonality 	<ul style="list-style-type: none"> • Maintenance and ownership expenses are up to the innovators • Insurance expenses may be higher on products that are rented out

*The stakeholder analysis is based on inferred information from the case studies documented below.

SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Could be quick access to expensive items for end-users • Product could use year-round and priced based on demand • End-users could navigate usage as per their need and land size • Product could be used as much as the end-user can afford, in a measurable sense 	<ul style="list-style-type: none"> • Constant need for schedule and use-management by innovators • Maintenance costs fall on innovators • In most cases damage caused by end-users needs to be repaired by innovators or repaired via using the insurance amount • Renting may be highly seasonal
Opportunities	Threats
<ul style="list-style-type: none"> • Could integrate phone-based payment options (i.e., mobile money) • Data collection could help innovators understand who needs the product when and contact tend-users before they need it • A bid-based renting system could allow innovators to maximize revenues based on current demand 	<ul style="list-style-type: none"> • May be an increased likelihood of damage by inexperienced users • Newer products may make previous ones obsolete • Damage may take a long time to get fixed or be irreparable damage

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Case Studies

Hello Tractor

Operating in Nigeria since 2014, Hello Tractor functions as a hybrid monitoring and rental platform where tractor owners can rent out their tractors to smallholder farmers. The service is accessed through a digital booking system that owners also use to manage their fleets. Hello Tractor also sells to owners GPS monitoring systems that track data for the owners; these systems cost between \$80 to \$200. According to Jehiel Oliver, the founder of Hello Tractor, approximately 75% of tractors in Nigeria are equipped with Hello Tractor GPS systems.

The Inclusivity of Farm Machinery Rental Services in Punjab, India

By examining various farming machinery and equipment rental business models for, the author of the study, Sukhpal Singh, was able to conclude that the demand for the products was quite high, especially among lower-income farmers who could not afford more expensive machinery. Farmers were also generally open to using these services, though disagreements did arise due to availability constraints as well as high prices. Overall, it helped the machinery reach the hands of the farmers who needed it, increased their yields, and improved their livelihood.

Trringo

Hailed by some as the “Uber for tractors.” Trringo was established in 2016 as a farm equipment aggregator service that allows farmers to rent tractors and other mechanized farm equipment without any investment. Through the purchase of tractors and other equipment from Mahindra, a tractor manufacturing firm, rural businessmen set up hubs in their region as franchise locations and connect with local farmers through the Trringo app. A separate helpline number also helps farmers with technological difficulties to access Trringo’s services. Trringo currently operates more than 100 centers across five regions of India, servicing over 1000 farms. [Learn more here.](#)

Innovator’s Perspective: How to Implement Design and Planning

- **Conduct Cost Analysis**

Understanding cost structures related to purchasing the product, insurance, and maintenance, as well as the legal structure surrounding a rental business, is an essential step in understanding the feasibility of a rental project.

- **Conduct Market Research and Scope**

Having understood the costs, you should then look into whether potential markets exist for the product they are providing. Once said markets are found, it is important to understand how large the markets are, when they will require the use of the product, and for how long.

- **Decide on Size of Product Fleet**

After understanding individual costs and the characteristics of potential markets, you can then move on to deciding whether they should only plan to rent out one unit or multiple units. The product fleet can also be expanded as time goes on and the customer base grows.

- **Design a Rental/Reservation Platform**

This optional step will allow end-users to book when they will need the product - allowing them to lock in specific dates and prices beforehand. This platform will also help you predict the demand and market of end-users.

- **Determine a Revenue Structure**

Having thought out the cost, scope, and demand cycle, you should decide on if they should have a dynamic pricing structure that could sway end-users to low season pricing or a fixed price system that works on a first come, first serve basis.

Implementation and Support

- **Go to Market**

Once you are ready to launch your product, you should once again communicate your product to the end-users through connections previously built during the design and planning stage. You should also approach other potential clients that have similar characteristics to their current end-users.

- **Receive Payments Pre- and Post-Use**

Whenever an end-user reserves or contacts you to use their product at a future date, it is preferable that the end-user places a deposit. Once the end-user picks up the product from your organization, or it is delivered to the end-user, the rest of the payment should be processed.

- **Maintain the Product**

You should regularly maintain the product to make sure regular wear and tear do not damage the product and discourage further use by end-users. This includes inspections before and after renting out the product, regular maintenance checks, and frequent upkeep.

- **Contact Clients for Potential Bookings**

You can have a log of when an end-user last rented the product and contact them after a period of time to ensure that they continue using the innovators' services.

3 Credit Unions/Cooperatives

Credit unions are nonprofit financial organizations that provide savings, deposits, and loan services. They are owned by their members. Customers are shared owners and have the right to influence the strategic direction of said credit union. As seen in the following case study, credit unions can be successful in reaching women end-users and providing much-needed access to financing for them, by making them part of the union/cooperative; and forming groups of women farmers provides a collective voice to women issues in the community. Organizations with a strong focus on gender mainstreaming can utilize credit union models to reach more women farmers and impact their life positively.

While credit unions can serve as a vehicle for positive social change, it should be noted that the involvement of politics and the politicization of leadership can encourage resource mismanagement and negate the transparency on which credit unions are built. Credit unions can also be limited by geography and the extent of funding they can provide to their members, especially smaller credit unions.

To apply for a loan, one should be a member of the credit union that they are applying to, present their case through the necessary documentation, and then pay monthly installments with interest.

Key Parameters

Asset Ownership	Yes
Product amount covered	Full/Partial
Down-payment required	Yes
Average cost of the product covered	\$200 and above
Does the farmer payoff via money	Yes
Collateral required	Depends on ticket size
Interest accrued	Yes
Interest rate	Lower than traditional bank rates, average 8-14%
How does the farmer pay	Cash
Total repayment tenure	12-36 months, sometimes up to 72 months
Repayment frequency	Monthly
Action in case of delayed payment	Blacklisted and collection of any collateral
Who is funding the access to finance	Credit union and its members

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Access to financing within the community • Credit unions could act as a forum for knowledge • Credit unions could help farmers build long-term partnerships within the community and increase financial literacy, especially for women farmers 	<ul style="list-style-type: none"> • Only established members of the credit union can apply for credit • Credit unions may not be prevalent within certain geographies due to lack of regulations • Credit unions may be limited by the amount of credit they can give
Innovators	<ul style="list-style-type: none"> • Able to reach more farmers through credit union outreach • No financial management as it is managed by unions themselves 	<ul style="list-style-type: none"> • May have the risk of negative brand perception if even one member does not like the product
Credit Unions	<ul style="list-style-type: none"> • Specialized credit unions could invest in their area of expertise • Credit unions could encourage sustainable products and local entrepreneurship • Potentially low loan delinquency when lending to agricultural clients • Credit unions could increase their membership base by lending to smallholders, leading to an increase in their corpus fund (e.g., rainy day fund) 	<ul style="list-style-type: none"> • May have higher risks associated with taking on newer members' projects • New products and innovations may be associated with higher risks

*The stakeholder analysis is based on inferred information from the case studies documented below.



SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Members of the credit union hold each other accountable, so, potentially, lower chances of delinquency • Compared to traditional loans, credit union loans may be easier to access • Compared to banks, credit unions may have lower interest rates on credit and higher rates on savings • Members are shareholders and may assist in strategic decisions • Large networks may act as supporting elements giving members more buying purchasing power 	<ul style="list-style-type: none"> • Credit unions may require members to commit savings for a period of time before receiving loans • Credit unions may be limited with the amount they can provide in loans • Some credit unions are not insured
Opportunities	Threats
<ul style="list-style-type: none"> • Innovators could use their relationships with credit unions as entry point for new end-user collaborations • Credit union members could act as accountability officers for loan receivers • Collaborations between credit unions and innovators could create specialized loans for end-users • Credit unions could be used to help represent a certain group of individuals with a shared background on a political/legislative stage 	<ul style="list-style-type: none"> • Defaulted loans could reflect poorly on an innovator • Negative reputations or word of mouth surrounding an innovator can quickly spread within a cooperative • Over-politicization of the cooperative's leadership may weaken the mission and trajectory of the credit union

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Case Studies

Balancing Democracy with Service Delivery: Power Relations, Politics, and Accountability in Cooperatives Supporting Emergent Livestock Farmers in South Africa

Published in 2020, a study by Gwiriri and Bennett, found that cooperatives in South Africa often had difficulty collaborating and reaching out to their government, unless their leaders were politically well-connected. The crux of this phenomenon was that while cooperative leaders are expected to report to the government as part of transparency practices, well-connected leadership was less likely to be held accountable for any mismanagement or favor exchanges (i.e., non-monetary benefits, conflict of interest situations).

Furthermore, the leaders could effectively disburse services to their allies or keep it to themselves, negating the purpose of the cooperative as a vehicle for social good. The authors of the study also suspect that in South Africa, as with other postcolonial

developing countries, the politicization and election of politically connected figures delegitimizes local governments in favor of cooperatives, which have stronger ties to rural communities.

Kenya Union of Savings & Credit Cooperatives (KUSCCO): Funding Farming through Kenya's Savings Groups

In Kenya, the World Council of Credit Unions (WOCCU) has worked to improve lending through savings groups by working with a network of 2000 Savings and Cooperatives Societies (SAACOs). By working on promoting character-based lending and focusing on projected cash flows rather than traditional credit histories, and disbursing payments through digital platforms and ATMs, KUSCCO hopes to help farmers transition from their traditional staple crops (which are overabundant in markets), to specialty crops that improve farmers' financial positions and value-chains.

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

Partnerships with credit unions could allow you to approach the end-users directly. However, understanding the function of credit unions and cooperatives, as well as their distribution, is a necessary step in launching a partnership with a credit union. It is important to note that most credit unions require members who are seeking loans to have been members for a previously agreed upon length of time, guiding end-users to join a credit union for financing is a lengthy process.

- **Prepare a Pitch Presentation**

After considering the details of each credit union's individual rules, interest rates on loans, and approximate capacity to give out loans to its members, you should move ahead by creating new - or adjusting pre-existing - pitch presentations. This action will enhance the quality and relevance of the presentation.

Implementation and Support

- **Pitch to Members/Board of the Credit Unions**

After you establish which credit unions/cooperatives could be interesting points of contact for outreach, you must then communicate with the credit union. Forming a relationship with a credit union/cooperative's point of contact will allow you to approach individual members of said credit union. The step would be taken through a larger pitch, emails, or contacting each member individually.

- **Finalize Deals**

Once an end-user decides they would like to own a product, they will then apply for credit with their credit union. If they receive the amount they need for the product, you and the end-user will then finalize the deal, with the end-user paying you in full.

- **Set Up**

If the product requires a set up, you must transport, set up, and explain how to best use the product for the end-user, as the final step in the sales process.

- **Provide Maintenance**

While maintenance services are not required, having them done by your organization guarantees that the upkeep is done correctly. Maintenance extends the life of the product and ensures that your reputation is not sullied by preventable issues.

- **Collect Data and Do Continuous Demand Planning**

Once you are able to set up your first couple of systems, collecting user feedback will allow you to analyze the product acquisition process, particularly how seamless it is from the point of view of the end-user and the credit union's relationship with the debtor, as well as how satisfied the involved stakeholders are. These reports will then boost your pitches going forward and improve the overall process of selling your product.



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4 Bank Loans

In the past, it has been observed that the banking sector's accessibility to smallholder farmers and those without extensive credit histories has been an issue that kept it from being a viable option for end-user financing. Even now, banks are less likely to sanction loans to poorer farmers. In the case where farmers are not turned away, loans often carry hefty interest rates and/or a collateral value that exceeds the principal of the loan. This is because banks often consider smallholder farmers to be high-risk debtors, on top of traditional financiers being inexperienced with these types of loans.

Looking toward an agricultural development bank does solve some of smallholder farmers' issues with access to finance. First, agricultural development banks are better equipped to assess and value agricultural loans. Second, agricultural development banks are established to support only agricultural projects and are therefore incentivized to properly assess and serve agricultural stakeholders. And finally, in some cases, agricultural development banks are financially supported through donors and/or governments and can offer slightly lower interest rates than commercial banks. However, getting a loan still requires a lengthy vetting process and the availability of said loans is not guaranteed.

Key Parameters

Product amount covered	Partial
Down-payment required	Yes
Average cost of the product covered	Typically, more than \$5000
Does the farmer payoff via money	Yes
Collateral required	Yes, but exceptions exist, like third party guarantees
Interest accrued	Yes
Interest rate	Approximately, 7-12% for developing countries
How does the farmer pay	Cash
Total repayment tenure	Around 3-10 years
Repayment frequency	Monthly payments
Action in case of delayed payment	Legal action and collection of any collateral
Who takes the financial risk	End-user
Who is funding the access to finance	Bank

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • May be able to build a documented credit history • Typically, lower interest rates than MFIs and non-banking financing institutions (NBFCs) 	<ul style="list-style-type: none"> • Could be very difficult to access traditional lending if farmers do not have collateral • Informal value chains may make smallholders fewer desirable debtors
Innovators	<ul style="list-style-type: none"> • Could support communities in need, leading to country's growth • May open up credit to a new customer base 	<ul style="list-style-type: none"> • Smallholder farmers typically operate in rural areas • Collateral-free loans may have huge delinquency rates • May be dealing with new clients with no, or low, financial literacy
Banks	<ul style="list-style-type: none"> • Could indirectly build a rapport with large lenders • May carry no financial risk, in the case of third party collateral 	<ul style="list-style-type: none"> • Decreased market for areas with weak banking penetration • Financing through banks may be difficult to achieve for end-users and, potentially, does not lend itself to rapid business growth

*The stakeholder analysis is based on inferred information from the case studies documented below.



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SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Could build credit history for farmers while allowing banks to diversify their loan portfolios • Small and short-term agricultural loans are less likely to default compared to longer-term loans with larger principals²⁰ • Banks could take on the burden of assessing end-users' creditworthiness 	<ul style="list-style-type: none"> • Typically, banks have lower rural area penetration • Banks may be less likely to finance agricultural loans because they are considered riskier • Smallholder farmers may be unlikely to have an extensive financial log • Farmers could lose their land if it is used as collateral • Many farmers lack the financial knowledge to understand their loan conditions
Opportunities	Threats
<ul style="list-style-type: none"> • Government-supported banks could provide loans to the small farmers with low risk • Zero-collateral loan schemes by agricultural banks • Agricultural loans could become a tradeable asset in financial markets • Could expand banking into rural areas 	<ul style="list-style-type: none"> • Farmers may be an easy target for unethical banking practices • MFIs and credit unions may exist in rural areas as competition

Case Studies

Bank of the Philippines

In 2009, the Philippines had passed a law that required banks to lend 25% of their loan portfolio to the agricultural sector. However, many banks have been late to make such reform, paying hefty fines to the government instead of lending to farmers with no credit histories.

In a bid to better serve the agricultural sector, the Bank of the Philippines launched a no-collateral and decreased-documents loan program to farmers and agripreneurs in 2021. The Bank of the Philippines also signed a memorandum to boost their outreach efforts to agripreneurs and increase financial inclusion.



NEW & INNOVATIVE END-USER FINANCING MODELS

1 Pay as You Go & Pay Per Use

Pay as you go financing relies on a metered usage-based system where end-users pay a fee for what they use. Typically, customers make incremental payments, with the usage being measured, and they may eventually pay off and own the entire product. Within the water-energy-food nexus, pay as you go is predominantly used for high-ticket items that are cyclically used in the agricultural production/processing cycle, such as tractors, power grids, solar irrigation, and machinery.

In pay-per-use (fee for service), customers pay according to their consumption, but they never own the product. Cash and mobile money are the most common payment sources. Also, this model does not require a credit check on the customer.

In these models, innovators set up the product close to the end-users or use plug and play solutions that provide ease of use to end-users, with the usage being measured. Payment is then made to the innovators at set time intervals and are based on usage.



Key Parameters

Asset Ownership	No
Product amount covered	N/a (service model)
Down-payment required	No
Average cost of the product covered	\$500 and above - PAYGO \$2000 and above - Pay Per Use
Does the farmer payoff via money	Yes
Collateral required	PAYGO - no (creditworthiness check in some cases) Pay per use - no
Interest accrued	No
Interest rate	N/a
How does the farmer pay	Mobile Money & Cash
Total repayment tenure	Payment is "as per use"
Repayment frequency	Based on "usage as per need" in cropping cycle
Action in case of delayed payment	Disconnecting service or deferring payment. End-users may be blacklisted if they fail to make payments. To reapply, they will need to prove improved credit.
Who is funding the access to finance	Innovators/investors

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Upfront investment cost barrier is removed • Cost is spread out into very small chunks over the agricultural production cycle • Previously unaffordable items may now be affordable • Potentially zero maintenance charges 	<ul style="list-style-type: none"> • No asset ownership • Typically, farmers require cash in hand, unless a longer credit window is introduced
Innovators	<ul style="list-style-type: none"> • Typically, regular and sustained revenues • Compared to direct product selling, there is a smaller sales cycle • Typically, you are in control of your product and can optimize its use for multiple end-users • Product may now be affordable for poor farmers • Compared to upfront sales, there are potentially higher expected returns over the life of the product 	<ul style="list-style-type: none"> • You may need to collect regular fees • May have transportation and setup costs • Crop losses due to climate conditions can bear huge losses for smaller SMEs implementing these models • Large capital investment is required upfront • Asset ownership burden on innovator during setup • Cash flow risks arise because the model is heavily dependent on a regular demand of services over several months or years
Investors	<ul style="list-style-type: none"> • PAYGO or Pay-per-use business models may help exponentially grow a company and serve poor farmers, that may not have been possible through direct sales • PAYGO or Pay-per-use models may lead to an increase in sustained revenue for portfolio companies, increasing the possibility of higher returns on investment • Typically, onboarding new end-users is easier and helps gauge actual demand early on • Investors with gender lens and BoP lens at core could reach their mandate by investing in SMEs implementing these models 	<ul style="list-style-type: none"> • Typically, innovators' businesses cannot succeed if they do not reach a large customer base in a timely manner • Investors may have to take the risk of demand fluctuations due to climate/market risks

*The stakeholder analysis is based on inferred information from the case studies documented below.

SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Relationships with end-users are regularly revisited • The product-as-a-service model may ensure continuous and repeated cash flows • If farmers fail to pay, systems may be repurposed offered to other nearby end-users • App/Internet of Things (IoT) integration may help provide efficient and effective service delivery • Risk of end-users failing to pay can be greatly reduced thanks to metered use cases • Pay as you go and pay per use models may easily substitute existing metered services (i.e., water, electric, gas) • A community model where the product is used by multiple end-users may help preserve shared resources (e.g., groundwater) 	<ul style="list-style-type: none"> • Innovations, like solar pumps, are often expensive • Cash flow is based on the demand of a large pool of farmers • Requires upfront capital investments from innovators • A constant demand in the region is needed to ensure small- and medium-sized enterprises (SMEs) able to continue providing these services • May not make sense for end-users with larger operations • Less attractive to end-users that want to own products for individual use
Opportunities	Threats
<ul style="list-style-type: none"> • Mobile money integration • Ability to onboarding smallholder farmers in large groups because of reduced barriers • Grouping farmers in specific areas together and providing other value-added services • Customers may build up credit histories and get access to additional services through timely payments • Product and service usage plus payment data may drive better dynamic customer experiences • Opportunity for innovators to collect data and for data monitoring by end-users 	<ul style="list-style-type: none"> • Quality and timeliness of service is highly related to business sustainability • Legal protections do not exist in the case of non-payment by a farmer, as well in the case of non-service by an innovator • End-user data privacy concerns may arise • Negative word of mouth or dissatisfaction by a group of end-users could greatly decrease revenues

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Case Studies

Fres

Fres is an energy nonprofit that fills the rural energy gap by providing solar-powered energy systems on a pay as you go basis. FRES advances electrification in rural areas of Africa, by setting up commercial electricity companies under local management. They target remote, and sometimes challenging, areas that are at the greatest risk of being left behind.

Fres Mali's annual report states that "to improve payment rates, we finished screening our existing customer base and canceling the contracts of customers with a bad payment record. In combination with the implementation of stricter customer acceptance procedures, debt monitoring and service termination policies in the event of non-payment, we expect the average payment rate of 90% achieved in 2020 will be even higher in 2021." [Learn more here.](#) [And here.](#)

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

You should map out the areas that you are targeting based on the number of farms in that specific area, the approximate use that farmers would get out of the product, seasonality of demand, frequency of crop cycles, farmers' ability and willingness to pay, existing alternatives to the service, and so on. Based on these parameters, you will be able to assess if the product you are offering has a substantial enough market where a pay as you go or pay per use model can thrive.

- **Determine Payment Method**

Based on the implementation area, banking penetration, mobile banking, and the standard collection of applications and features available on mobile phones, you should determine whether payment collection should be done through cash, banks, or mobile payments.

- **Analyze Capital Requirements**

Following the research step, you should perform a cost-reward analysis to grasp exactly how much capital you need for system setup and upkeep. This will help your organization understand if it can be provided to the farmers at or below the price of the product they will be replacing. You need to know how many systems are needed in the area, the setup costs, the operating expenses, and other associated expenses.

- **Project Cash Flows**

Arguably one of the most difficult steps for the pay as you go system, you must analyze how much revenue a specific system will be able to generate in a specific region. This should be based on previous use case scenarios and projections.

- **Conduct Investment Rounds and Go to Market Strategy**

Based on the previous planning steps and need for additional funding, you will pitch the project to investors, proposing the project's scale, the amount of funding needed, and the expected cash flows.

Implementation and Support

- **Go to Market**

Once you are done with the design and planning stage, you must bring your product to market and approach both end-users who had pledged to use the products and any potential customers in the area. End-users with pledges will be offered contracts if their areas fit your upside scenarios or revisited later on if their areas require further research. Meanwhile, the product will be marketed to other end-users who have not previously pledged usage.

- **Set Up**

You can move forward with setting up fixed systems once they have created a large enough usage network within a certain geography. The setup includes transporting the product, setting up the metering system, extending all necessary connections, and making sure that more systems can be added in the future, if the system's capacity allows it. If systems are portable, each time the system is transported to a new location, it must be installed, connected, used, disassembled, and then moved again.

- **Analyze Optimal Use Scenarios**

You, after acquiring customers, should understand if farmers can get simultaneous use out of their product, or if sequential use is required. By mapping out this data, you will understand the farmers' optimal use case and plan daily operations.

- **Manage Systems and Customer Relationships**

From the general innovator perspective (and potentially yours), pay as you go and pay per use models are more involved. In order to guarantee repeat cash flows, the models require you to both maintain the systems and ensure that end-users are satisfied with the product. Systems do not pay for themselves after one cycle and require farmers to willingly stay with you over however long the projected cash flow period allows. Your organization must keep on top of all maintenance and repairs because periods of non-use translate to no revenue, on top of the larger issue of end-user dissatisfaction.

- **Constant Demand Analysis**

Based on post-implementation use cases, you should update your usage and subscription projections as well as create growth projections as the project advances. The purpose of these projections is to update demand expectations, analyze the methods that are working and those that are not, and adjust accordingly.

- **Collect Fees**

You should collect fees when they are due from end-users. If payments are not made, you should warn the end-users, and as follow-up to those warnings, they should suspend end-users' systems and wait for payment to happen. If end-users are very late on payments, their accounts should be suspended, and they will be required to show improved financial positions or payment means before they can apply again.



2 Crowdfunding

Crowdfunding models, as the name suggests, involve the public collection of funds for end-users, either by themselves or by a third-party. While crowdfunding can take many forms, the most viable ones for smallholder farmers and end-users within the agri-food sector are debt and donor funding. Some of the crowdfunding platforms are targeted exclusively towards women and support organizations that have a clear gender focus (see the Hervest case study).

For crowdfunding, projects/solutions are published on a crowdfunding platform where private groups and individuals can contribute to them. Once the campaign expires, project publishers can access the capital, provided it has reached its milestone. In the case of a credit-based project, end-users are responsible for repaying the “loan” - as with traditional bank loans - back to the crowdfunding platform, so it can be distributed back to the lenders.

Within crowdfunding that targets the water-energy-food nexus, campaigns can be classified in two predominant scenarios. One is an innovator-focused crowdfunding campaign, that makes the product/solution the focus of the campaign and end-users are secondary to the pitch. The second scenario is a product agnostic approach, that makes the social impact on end-users the campaign’s key component.



Key Parameters

Product amount covered	Full/subsidized
Down-payment required	No
Average cost of the product covered	Less than \$1000 for donations Between \$5000 to \$1 million for debt to SMEs financing end-users
Does the farmer payoff via money	Yes
Collateral required	No
Interest accrued	Yes
Interest rate	No interest rates applicable in donor-funded scenario Between 8% to 12% paid by end-users Average 10% for debt to SMEs
How does the farmer pay	Predominantly cash or via the crowdfunding's tech platform
Total repayment tenure	6-36 months for end-users 12-60 months for SME financing
Repayment frequency	Aligned with the crop cycle
Action in case of delayed payment	Deferral, delisting, and blacklisting (some platforms provide guarantees by diversifying investor portfolios)
Who is funding the access to finance	Lenders and crowdfunding platforms

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Bypasses traditional loan schemes • Collateral-free access to financing • Gauges demand for product offering • Interest rates may be lower than traditional financing mechanisms 	<ul style="list-style-type: none"> • Can be difficult for farmers to access these funds without a third-party intervention • Potentially increased pressure with new targets related to production and timeline • Not a repeatable source of funds • In the case of crop losses, can become a liability
Innovators	<ul style="list-style-type: none"> • Potentially increased brand awareness among well-off individuals • Marketing and outreach channel for their product/solution • Low to no financial risk for the innovator, while still selling their product to poor farmers • Depending on the geographical reach of the third-party platform, could possibly expand their customer/end-user base 	<ul style="list-style-type: none"> • Generally not a repeatable/long-term strategy for solutions that require repeat customers/end-users • Campaign may not reach funding target washing away their entire effort put in by them
Investors/ Small Donors	<ul style="list-style-type: none"> • In many countries, donations are tax deductible • Generally, no lower limit for donations • Can growing their money through a social cause that interests them 	<ul style="list-style-type: none"> • Could potentially lose their money as the end-users are not directly accessible • Delay in return on investment may occur if end-user's default • Transparency of impact may be questionable in some cases
Crowdfunding Platform	<ul style="list-style-type: none"> • Revenue model for handling the marketing of innovators' solutions and administration of the funds 	<ul style="list-style-type: none"> • Credibility may take a hit, as these platform companies act as an intermediary and do not have control over end-users' or innovators' actions

*The stakeholder analysis is based on inferred information from the case studies documented below.



SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Multiple lenders could decrease the risk to one party • Potentially, low risk end-user financing model for innovators selling their product • Based on issue/solution popularity, a larger loan ticket size may be accessed • Because the returns are focused on impact, farmers could pay lower interest rates • Potentially no collateral required from the farmer 	<ul style="list-style-type: none"> • No direct connection between the lender and the borrower • End-users may need to manage their repayment schedule, as they are part of a financing chain • Knowledge on crowdfunding agricultural solutions can be sparse • The whole crowdfunding campaign can be shut down if the target funding amount is not met within a timeline
Opportunities	Threats
<ul style="list-style-type: none"> • Milestone tracking could allow real-time impact progression brings efficiency and effectiveness to the lending process • Could provide an opportunity/choice to the general public, helping those who want to invest in a cause • Could bring a diverse population into development work • Could support market growth for high impact investing of lower ticket sizes • A viable and popular option that may fill in the financing gap for SMEs • Crowdfunding platforms may form a chain of end-users and depending on the end-user's needs, may provide multiple solutions 	<ul style="list-style-type: none"> • Farm and harvest unpredictability may lead to payment defaults • Credit systems are not viable for very small projects because the risk is carried by one investor • Weak traceability of actual impact/reporting may cause loss of trust in these platforms • Unreasonable increase in the interest rates to accommodate middlemen may reduce the uptake of this model

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Case Studies

Heifer International

Heifer International is a global nonprofit that functions across 21 countries. Their goal is to provide sustainable income opportunities to the farmers within these countries and improve their livelihoods in the long run. By partnering directly with farmers, Heifer International creates programs on educating farmers to help them realize stronger harvests, improving their access to markets, and growing the farmers' business.

In 2021, Heifer was able to spend \$90 million to support farmers through donations it had received from individual donors. Heifer's fundraising strategy can be divided into two categories: donations and gifts. While donations rely on a one-time or monthly cash contribution, gifts allow people to "gift" a specific product/animal to farmers as either as parts, a whole, or a monthly contribution. The gifts are made through Heifer's partner

farmers, allowing the farmers to make money while also helping out other farmers with the gift. [Learn more here.](#)

Hervest

HerVest is a social enterprise providing financial inclusion for women through a gender lens investment approach. It functions by creating a savings fund with a goal for its depositors (i.e., buying a car, a home.), while reinvesting that money with smallholder female farmers. The funds essentially function similar to a cooperative-based approach, but the individuals contributing to these accounts do not need to be members of a cooperative. By providing low-interest financing towards specific crops, grain banking, livestock, and the provision of digitized e-extension services to female small-scale farmers in rural areas, investors can earn as high as 25% annualized returns. Hervest provides free mentoring on financial literacy, free coaching from inspiring women leaders, and access to women-focused tools, guides and growth insights.

Lendahand

Lendahand is an online crowdfunding platform that specializes in funding SMEs in emerging markets through projects posted on their website. Financial support is gathered through a campaign on Lendahand's website and supporters are paid back their investment plus an interest rate of up to 7% Lendahand has successfully funded over 2905 projects, amounting to over \$120 million, of which \$77 million has been repaid.

iFarm360

Operating within Kenya, iFarm360 is a food supply chain and crowdfunding platform that functions in a layered manner by allowing farmers access to wholesale purchasers, helping crowdfunding investors access farmers in need of investment, and providing continued education and support to these farmers. To date, iFarm360 has managed more than \$120,000 in investments with paybacks totaling \$85,000 and reached more than 2000 smallholder farmers and helped their earnings increase by over \$100,000. Investors can choose their own projects to fund through a set of carefully curated projects and can expect an earning of up to 15%. Of the 25 projects currently in iFarm360's portfolio, 24 have been fully funded with returns expected between 6 to 24 months.

iFarm360 manages all types of risk through the careful selection of farmers and crops, the selection of crop insurance, agronomy support, and market analysis. In 2021, iFarm360 won the FAO Innovation Award for Sustainable Food Systems.



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Innovator's Perspective: How to Implement Design and Planning

- **Decide on Innovation vs. Product Agnostic Crowdfunding**

Prior to launching a campaign, you must decide if your crowdfunding campaign will focus on purchasing your product or simply help the end-user acquire more capital. Each type of campaign will require a different marketing strategy. Innovation-based crowdfunding will focus on the product's ability to help the end-user, while product-agnostic crowdfunding will focus on the end-user's challenges, financial situation, and the product's potential to have a sustainable impact on their life.

- **Research about Product and its Pros/Cons vs. Alternatives**

In order to properly convey to lenders why a certain product will be a better fit for the end-user's needs than alternatives, you must share adequate knowledge of what the market has to offer compared to what you are collecting funds for.

- **Find the Correct Crowdfunding Platform**

There are many factors to consider when choosing the right platform. Depending on local laws, crowdfunding can take different forms in different regions and countries.

Repayment schemes can take many different forms, such as equity (not suitable for smallholders), debt, rewards, or even donations. Some platforms are directed with a gender-lens focus, while others are open to all. Also, platforms that offer guarantees to investors by diversifying lending through different projects could inspire more confidence, which would lead to more readily available investment.

- **Analyze Need and Potential Upside**

If you collaborate with the platforms, then you need to create a cost structure and a brief, and a realistic cost-benefit analysis to make the lender understand the value and impact of their investment. This can be done through templates, brochures, and outreach materials.

- **Project Cash Flows and Sustainability**

In consultation with end-users, you should come up with a simplified version of how their finances would be affected by your product. After combining the initial setup costs, the operational costs, and the cost of debt, if the product does not create a significant enough margin, then it is not a viable option for end-users in the long term. Projects which are pushed and then proven to be non-viable or damaging initiatives can negatively impact end-users' finances and your organization's brand and portfolios.

- **Set Up Funding Targets**

With the input of end-users, you should set up realistic funding targets based on the platform's funding bands. For example, if funding surpasses the goal by a certain margin, and provided that the platforms support additional funding bands, you should plan on reaching even more farmers. Alternatively, if funding is capped by the platform, there is no need for this.

- **Set Up Implementation KPIs**

You are required by most crowdfunding platforms to regularly update their investors/lenders/donors on the project's implementation and need to come up with measurable targets to convey progress and where improvements can be made. This is done as a gesture of good faith, to keep interest up, and to lend credibility and transparency to the project beyond the funding phase.

Implementation and Support

- **Conduct the Crowdfunding Stage**

Once all of the planning is done, you can move ahead and apply to the crowdfunding platforms that best suit your needs. The fees and the mission of the platform will affect the type of funding that you are looking for, as well as repayment at the later stages. You should be available to answer any concerns that may be brought up by investors/lenders/donors.

- **Collect the Investment**

Once all of the funding is collected, if the platform follows an all or nothing basis, you will have access to the investment if the campaign has reached its goal. In other cases, you will have access to the amount collected by the deadline. You should work with the platform to ensure that the funding is correctly transferred.

- **Provide Regular Updates to Investors**

Using the previously established KPIs, your organization and end-users must maintain your relationship with investors and regularly update them when the project is at key stages. Testimonials are a good method to use alongside KPIs.

- **Repay Investors**

If the end-users sought the debt method for funding, they will be required to pay back their loans to investors based on the terms of their agreements. If they fail to do so, they will be banned from certain platforms, preventing them from accessing financing at a later time.



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3 Pay by Produce

Pay by produce models revolve around end-users paying for a solution through the full or partial quantity of their harvest. In this model, the product/solution may be given without any down payment and the innovator earns their revenue by selling end-users' produce in the market. The innovator is responsible for selling the produce in the market to recuperate their payment and return any supplemental gains back to the end-user. Down payment is usually required and followed by payments in terms of harvest, usually aligning with the cropping cycle of the region. The innovators in this model mostly act as a centralized hub for financing and other inputs/solutions.

Key Parameters

Product amount covered	Full
Down-payment required	No
Average cost of the product covered	\$200 to \$1500
Does the farmer payoff via money	No - by agricultural produce
How does the farmer pay	Produce
Collateral required	No
Interest accrued	No
Interest rate	N/a
Total repayment tenure	6-36 months
Repayment frequency	Per crop cycle
Action in case of delayed payment	Repossession or deferring payment
Who is funding the access to finance	Investors

26.27



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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Payment is pushed to when money is available, according to the crop cycle • Cash-poor farmers are able to purchase products • Farmers no longer carry the burden of finding someone to purchase their crops 	<ul style="list-style-type: none"> • Potentially higher cost than if the farmer was to own the system upfront • No ownership of the product in the near term • Farmer may become dependent on the innovator to sell their produce which may result in unfair pricing in the long term
Innovators	<ul style="list-style-type: none"> • Regular and sustained revenues • Potentially decreased need for after-sales customer support • Innovators are in control of their product and its use case • Innovators' revenue comes from the sold produce's margin 	<ul style="list-style-type: none"> • Innovators may need to take the financial risks upfront • Increased transportation and setup cost • Crop losses at farmers' end may have huge impact on innovators' financial performance and cash flow projections • Pricing and payment is dependent on the quality and availability of the harvest • Marketing and sale of the crops may require additional capital and market knowledge

*The stakeholder analysis is based on inferred information from the case studies documented below.



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SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Low-income end-users could become owners of the product in the long term • Farmers could get direct access to market through the innovator • End-to-end value chain connection with farmer • Financing opportunity for farmers who do not have cash on hand • Your organization's knowledge of buyers may create a market for the other solutions 	<ul style="list-style-type: none"> • Your organization will take on the full risk as collaterals and guarantees to do not exist • Systems are often expensive • Your organization may charge more over the lifetime of the product, at the cost of lengthening the sales process • May forces your organization to trade in the larger value chain • Your organization may be responsible for the commodity risk
Opportunities	Threats
<ul style="list-style-type: none"> • IoT and harvest tracking systems may manage expectations • If farmers fail to pay, systems may be repurposed • Could allow your organization to access more end-users through supply chain penetration and may lead to partnership with agribusinesses/other innovators • Could develop a marketplace through which buyers may provide credit to farmers by purchasing products at a locked in price range • Your organization should hedge your risk by sourcing multiple crops from your end-users • Your organization may build trust with farmers by providing fair prices that are competitive with traditional markets 	<ul style="list-style-type: none"> • Weak relationship management with end-users may lead to a loss of trust and cripple the whole model • Crop patterns are becoming unpredictable and may pose a big risk to innovators' cash flow forecasting • Potential risk of farmers selling their produce elsewhere without informing • Weak understanding of the local context and end-users' spending patterns may lead to model failure • Potential competition from similar actors

26, 27

Case Studies

[aQysta Nepal Pvt. Ltd. \(WE4F\)](#)

aQysta enables access to sustainable irrigation through their pay per harvest model, EASI-Pay, which allows farmers to pay for products through a portion of their harvest. In combination with this model, hydro-powered pumps are provided to marginal farmers along with agriculture extension services, critical agri-inputs, and market access for their harvests. Farmers pay for the product and services through a portion of the harvest they reap from using the pump and services.

The EASI-Pay mechanism is a perfect benefit-sharing model, where aQysta's revenue grows as farmers become more successful and earn more income. When combined together, their suite of products provides increased knowledge to farmers and makes year-round harvests possible.

So far, aQysta has been able to impact the livelihoods of more than 5000 members and pump more than 300 million liters of water. [Learn more.](#)

ProducePay

ProducePay is a food tech startup that functions as an online marketplace platform that connects farmers to members of the value chain and as a short-term agricultural financing platform that allows farmers and food processors to access immediate and short-term financing. ProducePay's online marketplace allows the farmers to secure a deal with purchasers before harvest is complete, ship to the purchasers at harvest, process the payment through the platform, collect the debt and any additional fees, and finally transfer the remaining amount to the farmers. ProducePay aims to provide farmers with financing for their pre-harvest needs up to 9 months before their expected harvest, through an assessment that involves financial forecasts for the coming harvest and a site visit, aimed at securing funding within 30 days.

Since 2015, ProducePay has provided more than \$3 billion in finance to over 800 farmers/food processing SMEs across 9 countries, with no-collateral loans ranging between \$200 thousand and \$5 million.

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

You should map out the areas that you are looking to market the product to and gather feedback from end-users. Feedback will consist of what end-users think of the product, how likely they would be to adopt it, and reservations about the pay by produce model. Additionally, since this model hinges on market access, you should carry out in-depth research on existing produce buyers/agribusinesses operating in their region.

- **Understand the Local Agro-economy**

You should research the local agricultural markets and landscape, map out value chains, and understand the year-round prices of produce as commodity goods.

- **Analyze Demand**

After receiving commitments, you should create a demand projection that includes end-users' characteristics and their harvests.

- **Analyze Capital Requirements**

You should have a solid understanding of how much it will cost your organization to set up processes/operations at different capacities of demand. You should calculate costs of capital-intensive assets as well as process intensive costs.

- **Construct Financial Projections**

Following the demand and capital requirements analysis, you should combine what was learned from both models and add revenue projections. The revenue projections will be a combination of managing fluctuating commodity prices, the agreed upon amounts of produce within different contracts, and the expected harvest timeline and frequency.

- **Create Value Chain Relationships**

It is a best practice to create strong relationships with suppliers, processors, distributors, and all possible stakeholders in the agri-food value chain in order to validate data, establish demand for the produce, and get the best possible prices.

- **Pitch to Investors**

Using the value chain relationships, financial projections, and feedback from farmers, you must approach investors to acquire capital for the initial setup costs of the systems/products.

Implementation and Support

- **Go to Market**

Once you are done with the design and planning stage, you must bring your product to market and approach both end-users who had pledged to use the systems and any potential customers in the area. Early end-users with pledges will be offered contracts. Meanwhile, the product will be marketed to other end-users who have not previously pledged usage.

- **Set Up**

The products that require setup and installation by your organization must be shipped and set up as soon as possible. This is especially true of products intended to improve harvests as the early users will provide critical data along with a more promising first harvest.

- **Receive First Harvest and Sell at Market**

Once farmers have harvested the produce, you should either have a buyer ready to pick the produce straight up from the farm or take the produce to the market yourself. All financial revenues go straight to your organization, who, based on the contract, shares the returns with the end-user.

- **Constant Demand Analysis**

Based on post-implementation use cases, you should update your usage and subscription projections and create growth projections as the more end-users are onboarded. The purpose for these projections is to update demand expectations, analyze the methods that are working and those that are not, and adjust accordingly.

4 Rent to Own

Rent/lease to own follows the regular long-term ownership of a product where the cycle ends with the end-user having the choice to purchase the product.

In this model, innovators act as the financier for the asset. End-users may or may not be asked to pay installation costs and are required to pay a fixed monthly fee. All payments are made directly to the innovator.

Key Parameters

Asset ownership	Yes - at the end of contract
Product amount covered	Full
Down-payment required	Depending on the item
Average cost of the product covered	\$200 to \$10000
Does the farmer payoff via money	Yes
Collateral required	No
Interest accrued	No
Interest rate	N/a
How does the farmer pay	Mobile Money or Cash
Total repayment tenure	6-36 months, occasionally up to 60 months
Repayment frequency	weekly/monthly
Action in case of delayed payment	Repossession or deferring payment
Who is funding the access to finance	Innovator

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> Farmer does not have to pay interest as the rent is inclusive of a service fee Financing is managed in a way that is easy to understand and navigate No collateral required Usage is not metered and only limited by system capacity 	<ul style="list-style-type: none"> Higher pricing than upfront ownership for farmer No asset ownership in the initial stage Farmer cannot rent out the asset for extra income before they own it
Innovators	<ul style="list-style-type: none"> Smaller payments could increase willingness to purchase by end-users Monthly payments could provide steady cash flow to the innovator Unsold innovations with a longer life could lose very little value when they are well maintained and repurposed 	<ul style="list-style-type: none"> Need for upfront capital to finance the solution for end-users Used asset returns to them if it is not sold
Investors	<ul style="list-style-type: none"> Financial projections may be easier to model because this model is implemented for asset-heavy solutions 	<ul style="list-style-type: none"> External factors may lead to skewed financial projections Returns are normally gradual and generally low - patient capital required

*The stakeholder analysis is based on inferred information from the case studies documented below.



SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Quality after sales service could be provided after installation for continuous high farmer satisfaction • “Try and then buy” model may reduce upfront risk for farmer and could be easy to pilot for the innovator • End-users may become owners of the asset in the long-term 	<ul style="list-style-type: none"> • Collaterals and guarantees to do not exist • Systems are often times expensive, leading to a long-term rent cycle before the farmer buys the asset • Your organization may charge more over the lifetime of the product, at the cost of lengthening the sales process • Your organization’s risk is much greater than the end-user’s risk
Opportunities	Threats
<ul style="list-style-type: none"> • Phone-based payment platforms (i.e., mobile money) integration could lead to efficient service delivery • If farmers fail to pay, systems may be repurposed to other users • After the asset ownership has been transferred to the end-user, farmer-to-farmer rental equipment could be integrated to increase farmers’ incomes and earn revenue for your organization 	<ul style="list-style-type: none"> • Asset repossession caused by failed payments could be a lengthy process • Risk of end-users not purchasing systems may lead to cash flow risks for your organization • Forcing end-users to pay may lead to negative brand perception in the wider local farming community

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Case Studies

Agrosolar (WE4F)

Agrosolar provides an affordable plug-and-play solar-powered irrigation system that provides a sustainable and affordable alternative to conventional fossil-fuel water pumps. Agrosolar leverages the use of flexible lease-to-own financing that matches the unique needs of smallholder farmers to the risk allocation of different lending/consumer financing institutions. While Agrosolar does not provide the financing themselves, they work closely with lenders and consumers to make sure a fair and realistic rent-to-own option is available to them. [Learn more here.](#)

Solynta Energy

Solynta Energy is one of Nigeria’s leading residential solar energy companies serving thousands of customers across 26 states in Nigeria. Their system offerings range from \$2200 for a 500-watt system to \$5700 for a 2 kilowatt, which can be financed with an initial down payment, followed by 6 monthly payments. Through the investment in solar panels, end-users are able to reduce their electricity costs to a fraction of what they previously were and have 24-hour electricity in their homes. The systems are expected to last up to 25 years and can be upgraded at a later time to add more capacity.

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

You are required to research a large amount of the areas that your organization can reach, understand the potential demand for the product that you are providing, approach possible end-users about adoption, and understand reluctance toward their product.

- **Acquire Commitment Promises from End-Users**

Based on the market research, you should get commitments from end-users previously visited, set up a list of characteristics these end-users have, and attempt to reach more possible end-users who share similar characteristics. Furthermore, you must address any possible points of reluctance that could limit their business.

- **Conduct Financial Planning and Mapping**

You should examine the costs to your organization, the revenue you would make on an individual unit, and add interest to each system to make up for your risk. A practical repayment period should also be determined and be based on a monthly repayment amount that is similar to what end-users are currently paying for systems they use.

- **Explore Microfinancing Options in Rural Areas**

You should consider the option of microfinancing and partnering with some institutions. Through partnership and increased bargaining capacity, affordable financial support can be provided to end-users, with the system possibly acting as a collateral and reduced risk for your organization. This option is not always ideal though, especially with the potentially high interest rates that may be charged by MFIs.

- **Understand MFIs vs Investor Capital Funding**

After understanding the MFIs in the areas that you are targeting, what is offered, and if it is feasible, then you must consider all the options available to them. Traditional investment is oftentimes more difficult to acquire, but it allows your organization to have more control than working with MFIs. You must decide which option best suits your organization.

- **Decide Payment Method**

Phone-based payment methods (i.e., mobile money) are an increasingly prevalent tool for developing economies and you must choose how you will receive payments. This depends on banking prevalence in the end-users' regions, financial literacy in the communities, payment size, and whether mobile money has a pre-existing reach. You should always aim to select the payment tool/method that is easier to understand and is used by the end-user.

- **Prepare Projections and Investor Pitching**

If you decide to go the investment route for raising rent-to-own capital, you must prepare financial projections that use commitments from end-users, the unit economics of your innovation, expected repayment date, and the acute risk planning in case of end-user defaulting.

Implementation and Support

- **Go to Market**

If you take the MFI route, you will manage the matching of MFIs with end-users. You, with the previous intent notes from end-users, should seal contracts and explore new opportunities with end-users that have similar characteristics. If you are directly financing the end-users, then you must sign a contract/deal terms with the end-users before installation.

- **Set Up and Installation**

You will set up the systems where sales are made, preferably setting up several systems in the same area to save on costs. Installing and serving customers in a cluster would help innovators scale in an efficient manner.

- **Collect Rent**

When rent is due, you will collect the due amount from end-users through the previously agreed upon payment method. Failure to make payments will be followed up with warnings and the eventual reacquisition of the asset by your organization. You are required to deal with farmers in an empathetic manner, as one farmer's dissatisfaction can have an impact on the larger community - especially in rural settings.

- **Transfer of Ownership**

Once the contract is complete, depending on whether ownership is guaranteed or requires a final payment, end-users will have ownership of the asset transferred to them.

- **Provide Product Maintenance and After Sales Support**

You should lay out a clear, long-term plan on product maintenance and should either provide it themselves or train local partners to carry out the required maintenance. One efficient and cost-effective method is providing after-sales support service by phone/WhatsApp.



5 Donor-funded Access to Finance

Donor-led financing relies on nonprofit donors supporting lending to agricultural SMEs, either by lending directly to them or backing their loans from other lenders through guaranteed mechanisms.

In these models, end-users receive funds from donors to purchase the products from the innovators or apply for lending through the support of said donors' programs. Innovators who understand how to help end-users access donor funding can help positively impact the lives of end-users by providing access to innovations. Therefore, having innovators approach donors for end-user funding would bolster the case for financing the poorest end-users.

In the past, it is seen in multiple occurrences that most of the donor funded programs lay a huge impetus on gender integration and smallholder farmer integration and this has helped a lot of innovators/SMEs focus on these key developmental issues and achieve certain positive results over the years.

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Key Parameters

Asset ownership	Yes
Product amount covered	Full/Partial
Down-payment required	No
Average cost of the product covered	Under \$1000
Does the farmer payoff via money	Yes
Collateral required	No
Interest accrued	Yes
Interest rate	Depends on the lender
How does the farmer pay	Cash/Mobile Money
Total repayment tenure	12-36 months
Repayment frequency	None
Action in case of delayed payment	Donors settle the guarantee with the lenders
Who takes the financial risk	Donors
Who is funding the access to finance	Donor-funded organizations

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Innovators may help farmers seek financing • Donor funding is often bundled with capacity building 	<ul style="list-style-type: none"> • Donor funding may require farmers/innovators to provide regular progress reports • Donor funding cycles may be irregular and often take months to deploy • Lengthy applications and processes are the norm
Innovators	<ul style="list-style-type: none"> • Receiving donor funding may provide a boost to innovators' reputation • Donor funding may allow for high impact investing to follow suit and increase their risk appetite • Acquiring donor funding can, potentially, validate the viability and sustainability of the solution and its market because of strict due diligence 	<ul style="list-style-type: none"> • Donor funding may take months or years to acquire • Funding may be heavily affected by economic downturn • Innovator is normally responsible to abide by reporting requirements • Sales margins with donor funding may be slimmer due to accessibility being a key selling point
Donors	<ul style="list-style-type: none"> • Donor organizations may have the opportunity to fund non-traditional solutions that can be financially sustainable in the long term • Donors could work in tandem with private sector to scale the impact of their initiatives • Donors could translate their vision on gender integration and BoP focus to implementing partner organizations • Donors could be at the forefront of innovative and transformative approaches to help poor and ultra-end-users access much needed financing 	<ul style="list-style-type: none"> • Donor's funding smaller organizations may need to spend more time on capacity building and management, compared to larger enterprises • The success rate of such projects may be small in scale in the short term

*The stakeholder analysis is based on inferred information from the case studies documented below.

SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Donors could actively look for projects to fund • Donor funding is often grouped with education and capacity building of end-users and innovators • Receiving funding could provide positive marketing and validates innovators • Innovators seeking funding for end-users could act as a mass application and streamlines the process for a large number of end-users 	<ul style="list-style-type: none"> • Donor funding may not be a repeatable method for receiving financing • Funds may not be always available • Application processes may be lengthy and require adherence to a strict set of rules
Opportunities	Threats
<ul style="list-style-type: none"> • Donor funding may help unlock catalytic private capital for innovators as they take the first loss risk • Collaborating with donors who provide capacity building support for end-users as well as innovators may help businesses scale sustainably • Potentially increased collaboration between public and private sector • Combining donor funding with loans to create guarantee mechanisms may be a scalable way to create credit histories for end-users and support innovators in the long run 	<ul style="list-style-type: none"> • Donor funding may dry up in times of economic distress • Changes in diplomatic relations between countries may be uncondusive to sustainable donor funding for longer period

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Case Studies

Aceli Africa

Founded in 2020, Aceli Africa aims to fill the 75% financing gap by creating market incentives that make lending to agricultural SMEs more enticing for lenders, while using data-driven approaches to achieve lenders' development goals. While commercial banking has traditionally served large enterprises with well-established value chains, Aceli's goal is to guide traditional lenders towards agricultural SMEs that have been historically underserved. By working with lenders, Aceli acts as a matching entity, as well as a guarantor, for agricultural SMEs, reducing their risk profile and improving their lending profiles.

By helping SMEs scale their businesses through reliable financing solutions, a trickle-down effect will be achieved with these businesses purchasing goods through more smallholder farmers, bolstering local economies, and working in an environmentally sustainable manner.

Aceli Africa is currently working on mobilizing \$600 million private sector lending by 2025 with the goal of demonstrating models that can be scaled up to serve businesses across Africa. [Learn more here.](#)

One Acre Fund

Since 2006, One Acre Fund has been working with small-scale, subsistence farming families, most of which are led by women. Oftentimes, the farms focus on staple crops and are disconnected from the value chains. One Acre Fund's interventions allow these farmers to access a large bundle of services including financing for inputs, education, and improved access to post-harvest markets.

One Acre Fund's support has allowed farmers to significantly improve their income, typically by 40-45%, and improved the farm families' chances of making sustainable and long-term improvements to their financial situation. Their most recent tool, mobile payments, allows farmers to acquire credit at the beginning of the farming season, then slowly pay it back in very small increments until harvest, when the farmers pay back the remaining amount in one lump sum. [Learn more here.](#) [And here.](#)

Innovator's Perspective: How to Implement

Design and Planning

- **Gather a Possible End-User Base**

In the scenario where you will be helping end-users seek donor funding, it is paramount that you establish a committed base of possible end-users before approaching possible donors. You must communicate to end-users what would be required of them in terms of usage and reporting.

- **Understand the Characteristics of End-Users and Due Diligence**

You must understand the conditions under which your end-users operate and how the product will affect their specific use cases. The impact of your products on end-users' work is an important factor. Furthermore, you should try to examine end-users' past performances and determine whether supporting them has merit.

- **Examine the Donor Funding Landscape**

Once you understand your end-users and the extent of funding needed, you must then look at which organizations are funding projects in their area and the donors' focus. Funding greatly differs between donor organizations and not all innovators' projects may get funding.

- **Understand the Application Process**

You need to carefully examine what is required of your organization, when applying for funding from donor organizations. This includes the application, pitching, and post grant reporting requirements.

Implementation and Support

- **Apply for Donor Funding**

Once you have your applications ready, you will apply to donor organizations through the required methods and wait for a response. Application processing times often vary and will regularly be accompanied by an interview or a pitching round.

- **Distribute the Product to End-Users**

Following a successful application process and acquisition of funding, you are required to distribute your product to end-users, with a report documenting every step of the process. Donor organizations require reports and documents because they have to prove that the funding is being used for the right purpose.

- **Write Progress Reports and Data Collection**

Your organization, in accordance with donor requests, needs to regularly prepare progress reports to determine the effect of the funding on end-users' livelihoods. Collecting data is an important part of this process as it helps validate the information being presented. Donors use these reports to create their own reports, which are used to assess the successes and underline the outcomes of a project.



6 Value Chain Financing

Value chain financing models rely on stakeholders within any ecosystems' value chains to provide financing to the end-users either directly or via intermediaries. An example of this may be a seed supplier providing a loan to its distributors/retailers for selling their seeds. In this model, the value chain members (commonly distributors and retailers) purchase products on the behalf of end-users, then finance the product to them. The role of innovators is to provide the solution and maintain the product quality, while value chain members reach out to end-users and confirm sales. Loans follow the traditional schemes for credit and are repaid either straight from end-users to value chain financiers or via the intermediaries.

Key Parameters

Product amount covered	Full/Partial
Down-payment required	No
Average cost of the product covered	\$200-\$5000
Does the farmer payoff via money	Yes
Collateral required	Yes
Interest accrued	Yes
Interest rate	Generally, 2.5% to 6%
How does the farmer pay	Cash
Total repayment tenure	6 to 12 months
Repayment frequency	Monthly or Single Payment at Harvest
Action in case of delayed payment	Collection of collateral
Who takes the financial risk	Value chain members

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Stakeholder Perspective

Stakeholders	Advantages	Disadvantages
Farmers	<ul style="list-style-type: none"> • Could establish relationships throughout the value chain • Can access to finance that is provided by a trusted source whom they may personally, like local retailers • Solutions can be accessible to farmers through a point of sale, even in remote areas 	<ul style="list-style-type: none"> • Full maintenance is not available at point of sale • Warranty claim issues and technical issues often take a long time to solve • The interest rates may not be in favor of farmers since the lending is often carried out on informal level
Innovators	<ul style="list-style-type: none"> • Financial management and payment collection can be handled by a local value chain partner • No need for in-house sales staff • Can access value chain members' relationships 	<ul style="list-style-type: none"> • Providing direct after sales service can be costly • Poor after sales service can lead to brand deterioration • Limited control and transparency over last mile financing scheme implementation • Value chain members may not be able to support a larger end-user base
Value Chain Partners	<ul style="list-style-type: none"> • Can conduct their own market research and sales • Value chain members may set their own terms and conditions • Can have the ability to share knowledge with both end-users and innovators, reflecting positively on members 	<ul style="list-style-type: none"> • Product risks may affect payoffs • Potential for risks associated with financing farmers • May face sales pressure on point of sale from value chain members above them

*The stakeholder analysis is based on inferred information from the case studies documented below.



SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> • Could have easy access to financing from known people/organizations • Demand for end-users' crops is often established before harvest • Value chain relations may be strengthened through specialized private sector financing and may help with market access • Value chain members may help innovators by involving farmers they have previously worked with and onboarding new farmers • Sales and after sales may be provided by the value chain partner, on behalf of innovator 	<ul style="list-style-type: none"> • Value chain members may have limited financing abilities and cash on hand • Education and management costs for value chain creditors toward end-users may increase for smaller and more primary farming operations • Value chain members may already have established markets for purchasing commodity goods at predictable prices
Opportunities	Threats
<ul style="list-style-type: none"> • Larger value chain members could take on debt to finance a larger group of end-users • End-users and value chain members may agree to a pay by produce model • Members of the value chain may be matched with local cooperatives where end-users have similar characteristics 	<ul style="list-style-type: none"> • Value chain financing may contribute to unfair competition due to strong interpersonal relationship of the local value chain actors with farmers • Private lending and financing has special regulations, and may need to be approached with care to location-specific laws

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Case Studies

Bon Marche in North Kivu

Launched as part of a joint effort to improve food security for more than 44,000 households, Mercy Corps and the Dutch Embassy in the Democratic Republic of the Congo's pilot program used existing supply chain relationships to help smallholder farmers in North Kivu. While previous efforts to provide credit to producer organizations had resulted in higher loan delinquency and defaults, the program found success in partnering with Bon Marche, a private maize processing plant in the region.

The partnership with Bon Marche meant that farmers would receive credit for their inputs (i.e., seeds and machinery), go through with their harvest, and then pay back Bon Marche once they had sold their produce. The partnerships between the farmers and Bon Marche also materialized in better access to markets for farmers and guidance for smallholder farmers on their processes. Bon Marche charged about 1.5% interest on the loans, with ticket sizes going up to \$5000, and repayment expected as a lump sum at the end of harvest. Bon Marche also conducted its own background checks on their debtors and reserved the right to choose which farmers to work with.

Innovator's Perspective: How to Implement Design and Planning

- **Conduct Market Research and Map Potential Markets**

You should map out the areas that you are looking to market the product to and gather feedback from end-users on the potential adoption of your solution. Feedback will consist of what the end-users think of the product, how likely they would be to adopt it, and their current partners within their value chains.

- **Understand the Local Value Chains**

Based on the information you have acquired, your organization should approach current partners within the value chain, understand the strength of their relationship with end-users, and look into new relationships that the actors can help them foster.

- **Generate Interest with Members of the Value Chain**

You are tasked with contacting existing value chain members and explaining what your product is, how it would help the farmers, and what advantages that would give to members, specifically focusing on the point at which that specific member is located (e.g., telling a dried mango manufacturer how they would benefit from an innovation that improves mango processing).

- **Design Financial Models with the Help of Value Chain Members**

Once specific members of the value chain have agreed to look into financing your products for end-users, your organization and the specific value chain members should collaborate to understand the costs of financing through a model that is a win-win for everyone associated, including farmers.

- **Pitch Value-Chain Financing Models to Board Members/Investors [Optional]**

Once all of the financial models are constructed, research is finalized, and the internal teams within the specific value chain members are satisfied with the results, you will need to address and communicate their pitch to investors, if any, and convince them to take up the project of financing the solution for end-users.

Implementation and Support

- **Go to Market**

Once pitching is finalized, you are tasked with exploring value chain contacts that fit the criteria to help implement the financing schemes for the farmers. Similarly, you should use farmer contacts that have been previously established by the specific value-chain member as they are more likely to want to be first adopters.

- **Set Up**

Once agreements are signed, you will receive the payment from the specific value chain member for the product (if they are acting as retailer of someone else's products) or you will disburse payments to value chain partners below them. Then, the product will be sent to the end-user for setup. End-users will pay the local value chain member, with no innovator involvement. You might be tasked with after sales support and training, depending on the previously agreed upon contract.

- **Constant Demand Analysis and Expansion**

When possible, data collection and maintaining a close relationship with the specific value chain members are important tools. You should use these to refine your product and create demand opportunities. A previously successful relationship also could be used as a case study, or proof of concept, as innovators' reach expands.



INSIGHT MATRIX FOR INNOVATIVE END-USER FINANCING MODELS

	Pay As You Go	Crowd-funding	Pay by Produce	Rent to Own	Donor Funding	Value Chain Financing
Farmers organized in larger groups and geographic proximity	✓		✓		✓	✓
Cluster cropping			✓			✓
Regions with strong agribusiness partnerships across supply chains			✓			✓
Areas with high mobile money penetration	✓					
Areas with established storage facilities/cold value chain			✓			✓
Proximity to processing plants			✓			✓
Countries where agricultural donors have established programs					✓	
Strong individual donor ecosystem and protective legal regulations		✓		✓		
Strong internet/mobile network infrastructure	✓	✓				
Countries/region having crop insurance schemes for farmers		✓	✓	✓		✓
End-users and innovators are in geographic proximity to each other		✓		✓	✓	
Local financial institutions willing to partner with donor organizations					✓	
Strong distributor/retailer network of agri products			✓	✓	✓	✓
Strong linkages to export market for selling produce		✓	✓			✓

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The Water and Energy for Food (WE4F) Grand Challenge was established to expand the scale of innovations that impact the food and water sectors, food and energy sectors, or all three sectors of the nexus (food, water, energy) to increase the sustainability of agricultural food value chains and address climate change in developing countries and emerging markets – with a particular focus on the poor and women.