

## FIELD BRIEF No. 8

# Partnering to Improve Access to Irrigation in Rural Peru

A Case Study of CARE's Financing Water Irrigation System Pilot Activity

This "FIELD Brief" is the eighth in a series produced by the Financial Integration, Economic Leveraging and Broad-Based Dissemination (FIELD)-Support Program, and discusses the experience of CARE testing a partnership approach with MFIs, irrigation technology specialists, local government and small producers to improve water usage in rural Peru.

Managed by FHI 360, FIELD-Support represents a consortium of leading organizations committed to advancing the state-of-the-practice of microfinance and microenterprise development through innovation, learning and exploration. FIELD Briefs support this objective by sharing what we have learned and fostering dialogue on key issues. This brief was written by Alejandro Rojas Sarapura and Julio Nishikawa Menacho of CARE Peru with contributions from Christian Pennotti and Sybil Chidiac of CARE USA through the Financing Water for Productive Use pilot activity. For more, visit [www.microlinks.org/field](http://www.microlinks.org/field).

## Introduction

Pursuit of development strategies that simultaneously contribute to economic growth, reduce poverty and restore the global environment is a critical objective of the United Nations, who in 2000 established The Millennium Development Goals and outlined two targets by 2015: a 50 percent reduction in global poverty and a reversal of biodiversity loss.<sup>1</sup> Additionally, the Kyoto Protocol called

for action to rapidly improve environmental practices that would sustain the planet.<sup>2</sup>

In Peru, continued drought, influenced by global climate change and inefficient use of irrigated water, has led to soil loss by erosion and substantial declines in agricultural productivity. To address some of these issues, FIELD-Support partner CARE began implementing the *Financing Water for Productive Use* pilot activity in Peru to test a partnership approach that would bring together microfinance institutions, irrigation technology companies, local government offices, and small producers and traders to improve water usage, increase local farmer income and demonstrate opportunities for the local government to implement similar scalable initiatives.

Funded through USAID's FIELD-Support LWA which is managed by FHI 360, CARE's *Financing Water for Productive Use* pilot activity was designed to explore innovative ways to make technified irrigation more accessible to rural farmers, which would both reduce waste and contribute to increased yields as well as productivity. The pilot activity focused on the Department of Ayacucho, the capital city of the Huamanga Province in Peru, the second poorest in the country, with over 72 percent of the population living in poverty,<sup>3</sup> and spanned more than three years.

CARE Peru, which has operated in the country

<sup>1</sup> See: <http://www.un.org/millenniumgoals>

<sup>2</sup> See: [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

<sup>3</sup> See: <http://www.regionayacucho.gob.pe/portal>



since 1970, found that access to water represents the principle barrier to improved productivity across all of these activities, and developed a strategy to identify and partner the right mix of stakeholders to engage in the pilot. This FIELD Brief discusses the experiences of the project while working in Peru.

## Opportunity

Between 2002 and 2007, Peru experienced strong growth rates, in large part due to increased exports and high global prices for raw materials, and a reduction in the national poverty rate by 15 percent.<sup>4</sup> However, despite broader macroeconomic stability, more than 45 percent of the country continued to live below the poverty line and unemployment rates remained high.<sup>5</sup>



Situated 2,700 meters above sea level in the Andes Mountains, the Department of Ayacucho is located in the highlands of Peru. As agriculture provides the principle economy for this region, with production for both domestic and international markets, access to water presents a primary challenge to ensuring productivity during the single annual growing season. Additionally, deforestation and rapid tropical glacial retreat—two distinct but interrelated challenges—threaten the future productivity of the Peruvian highlands. Glaciers that provide much of Ayacucho’s water have retreated at an alarming rate of “200 meters over the past 10 years, with experts predicting that all Peruvian glaciers

below 5500 meters will disappear by 2015.”<sup>6</sup> Further, Ayacucho suffers from severe levels of deforestation wherein trees are felled to make room for illegal coca crops and informal mining and logging.

In the past, regional and municipal governments had worked with NGOs, international donors, water-user associations and local communities to build a series of canals that would enable farmers to significantly improve productivity and maximize limited water supply. These canals, however, were not equipped for en-mass use as they served only 5 percent of the area, or less than 30 percent of the arable land, resulting in low productivity in non-irrigated areas and massive water waste in areas with limited access to irrigation.

## Partnership & Innovation

With CARE leading, the *Financing Water* project created an approach that aligned the interests and capabilities of microfinance institutions, government offices, technical service companies and small

<sup>4</sup> Inter-American Development Bank, *IDB Country Strategy with Peru 2007-2011*

<sup>5</sup> See: <https://www.cia.gov/library/publications/the-world-factbook/print/pe.html>

<sup>6</sup> See: <https://news.bbc.co.uk/1/hi/world/americas/4720621.stm>

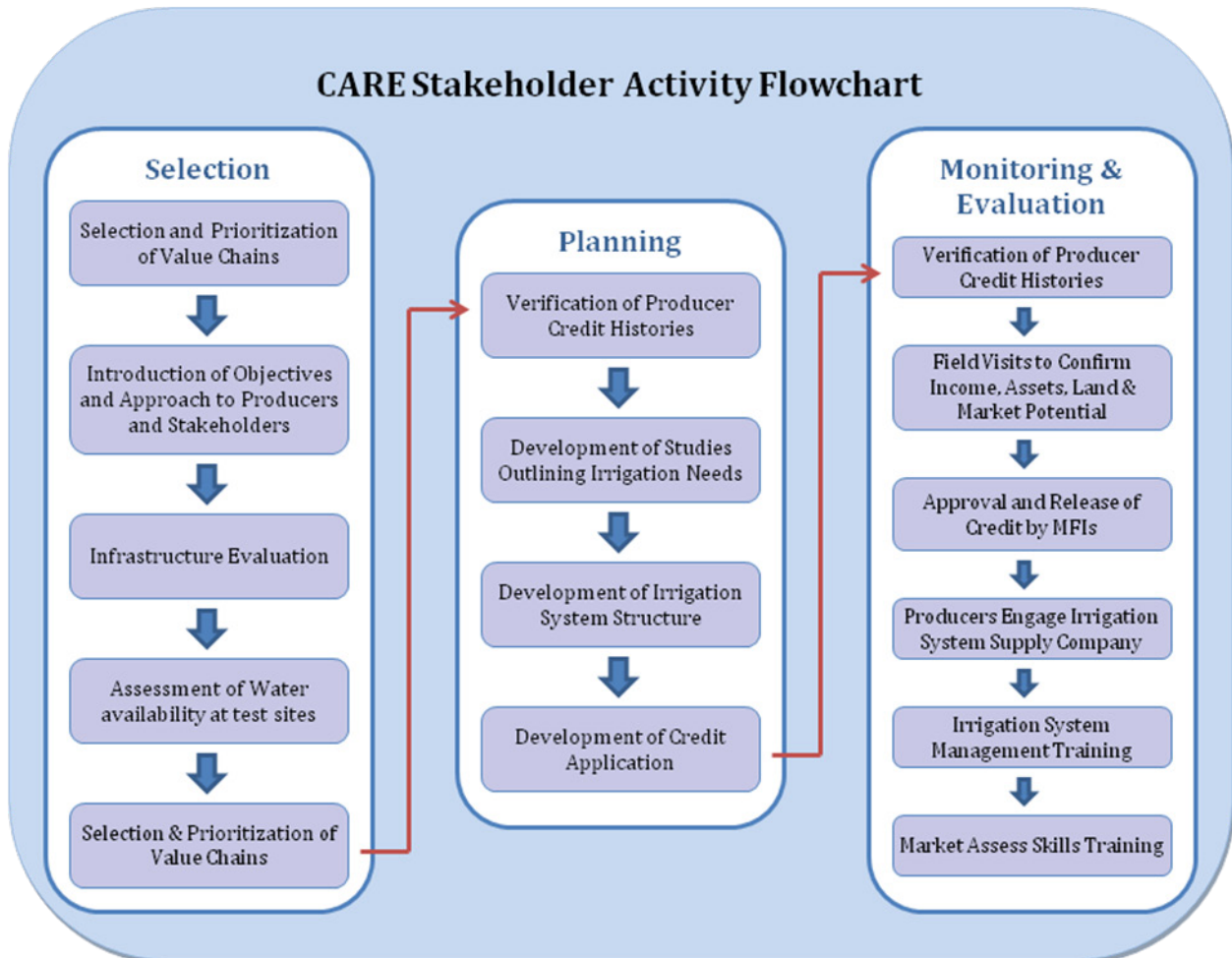
producers to improve crop irrigation and increase household income and security. The team included:

- **CARE Peru**, an affiliate of CARE USA, focused its interventions on economic development, maternal health and climate change with a goal of identifying opportunities for change through the establishment of strong pilot initiatives and subsequent advocacy within the private and local non-profit sectors;
- **EDYFICAR**, a microfinance institution established by CARE Peru in 1997 and operating in Ayacucho since 2002, was focused on providing services to micro-entrepreneurs and small businesses with limited economic resources;
- **Cajas Rural Los Libertados**, a private financial company, offered a range of savings and credit products that targeted low-income clients in both rural and urban areas;
- **Agrobanco**, a national agriculture bank based in Ayacucho, offered both direct and indirect credit designed to improve access to finance among SMEs;
- **The Directorate of Agrarian Promotion in the Ministry of Agriculture (DPA-MINAG)**, a regional government office responsible for coordination of support of value chain development worked across 12 value chains and maintained offices in each of Ayacucho's 11 provinces;
- **The National Sub-sector Irrigation Program**, supported by the World Bank and Japanese Bank for International Cooperation and operated by MINAG, led national efforts to increase the profitability of agribusiness through improvements to water usage efficiency and improved irrigation systems; and
- **Tecsagro**, a private Peruvian company active in the water technology sector, provided a range of adaptable products and services focused on improving water efficiency for both consumption and irrigation.

The project's innovation was its ability to actively engage all key stakeholders to outline a sustainable approach to implementation that addressed water security issues from the environmental, technical, and social sectors, including the creation of improved access to term-financed products for small producers, enhanced access to and use of farm-level irrigation systems, increased interest among regional buyers in products produced on pilot farms, and a well defined and clearly articulated role and process of collaboration for each stakeholder. Despite previous partnerships between the Ayacucho regional government and small producers on water issues, no prior activity had successfully connected with the private sector to enhance access to farm-level irrigation systems and entice regional buyers in products produced on pilot farms.

Particular relationships with key partners, including Edyficar, who agreed to allow clients to access credit for irrigation systems through an *ad hoc* loan product, was critical in establishing a sound opportunity for clients to access credit. Additionally, *Cajas Rural Los Libertados'* willingness to offer a microfinance product for irrigation without the need for a guarantee fund as an alternative model for financing irrigation systems enhanced the program's opportunity for impact.

Below is a step-by-step illustration of pilot activities which outline the implementation process:



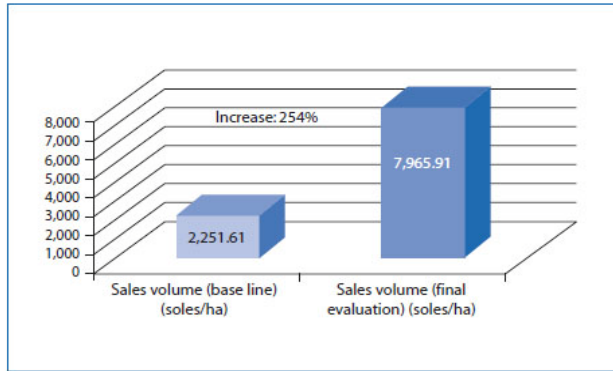
## Results

### *Economic Gains and Increased Crop Production*

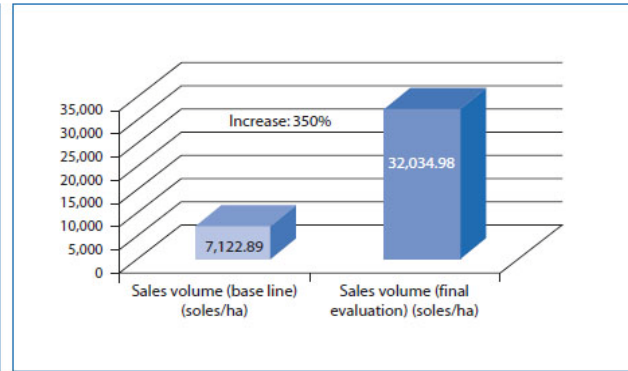
Improved crop growth and quality garnered immediate economic gains and increased outputs, in both domestic and international markets, for producers involved in the project. Following installation of the irrigation systems, producers were able to sell Hass and Huerte avocados, common in the region, at 2.80 soles/kilo and 2.40 soles/kilo, respectively, while sales were previously 2.60 and 2.20 soles/kilo, representing a 9% increase over sales the previous year. Overall sales values of peas and avocado crops have soared, with increased increments of 253.79 and 349.74 percent respectively (see Figure 2 below).

**Figure 1 and 2: Evolution of Peas and Avocados Sales**

**Figure 1**  
Evolution of the sales of peas (Soles/ha)



**Figure 2**  
Evolution of the sales of avocados (Soles/ha)



Installation of the new irrigation systems, assisted by regular access to water and electronic timers that effectively managed water usage, allowed producers to increase their monthly incomes by an average of 20 soles, or 6% per month. Consequently, rapid growth of crop fields prompted many producers to hire additional staff to assist with crop cultivation, thereby increasing their income and employment opportunities.

Realization of significant increased gains in both the pea and avocado value chains were significant examples of the opportunity presented by improving on-farm irrigation. The project's work with 50 producer clients to improve crop yields and increase revenue became a highly marketable tool that encouraged other once-reluctant producers, like avocado producers in the Secellas community of Huanta District, to become involved. By the end of the project, 50 clients have received support in completion of irrigation technical studies, while nine additional producers are awaiting loan approval from EDYFICAR.

### **Microfinance Repayment Rates**

Through the pilot, 50 clients received support to carry out technical studies of irrigation, 37 of whom have received loans for irrigation equipment and installation and another nine of which are currently awaiting approval. The repayment of 100% of the loans by the 37 producers was the most important achievement of this initiative. Not one of the payments was late, and the producers took full responsibility for the loans.

### **Substantial Government Buy-In**

The ultimate success of this effort, however, may be instilled in the agreement by the national regulatory authority of irrigation technologies, the Subsectoral Irrigation Program (SIP), to sign an agreement with CARE Peru to provide advisory services during the implementation of a new national program called PSI III. In addition, the Regional Department of Agriculture has now committed nearly US\$1 million to implement similar irrigation techniques in six provinces of the department of Ayacucho. CARE will be working with DPA-MINAG in Ayacucho to roll out these new initiatives building on the success and tools generated by the pilot.



#### *One Participant's Story from CARE Peru:*

"In our community there is a great water shortage; our turn to irrigate crops was every 3 months, but with the project we fruit growers have built a collective reservoir and installed technified irrigation systems in our plots that allow us to irrigate every 15 days and to improve our production. We learned to operate and maintain our systems and EDYFICAR lent us the money to buy technified irrigation materials and equipment. There are conformists in our community, however, who, instead of moving ahead with these opportunities, are waiting for gifts and donations from some institution to install their technified irrigation systems."

Source: Agricultural Producer Ruben Huapaya Vargas – Seccllas Alto

## Lessons Learned

Overcoming financial institution risk was the most challenging aspect of this project. Despite several risk-reducing initiatives by the project, including the establishment of a guarantee fund with EDYFICAR, business planning with each small producer, and the completion of technical studies on the land to be used for the irrigation systems, all three of the financial institutions engaged remain hesitant to continue with the agriculture loan program due to inherent financial risk.

In order to access credit, each producer was required to submit a demonstrated credit history and title of their land, complete technical studies of their land, become organized into a producer association, and present a history of their compliance with improving their value chain through increased crop production.

Though financial institutions are usually less reluctant to provide small producers with financial services with a guarantee fund in place, this fund does not automatically equal an approval. Rather, farmers increased credit worthiness was due to a combination of factors including the guarantee fund, CARE's capacity-building work with each producer, and business plans that articulate increased crop viability using irrigation systems.

Other key lessons include:

- **Reduce operational costs and risk:** By transferring funds directly into the irrigation-technology supplier accounts, financial institutions significantly reduced operational costs and risk by largely eliminating transportation costs which proved advantageous to small producers now able to participate.
- **Government's role is critical in cultivating a credit culture:** Active government participation is especially significant when educating loan recipients about loans and repayment responsibilities. Previously, the Peruvian government forgave loans for clients unable to repay, thereby undermining the meaning of credit.

- **NGO's should be mediators and conveners:** NGO's can be powerful actors in new initiatives when employed to effectively mitigating constraints that would otherwise thwart project implementation. An NGO's primary role is to assist in clarifying other stakeholders' roles and responsibilities, thereby facilitation open communication between all partners.
- **Cast a wide net for stakeholders and potential partners:** Establish a large pool of potential partners by identifying those have the incentive to both support or obstruct this effort. By taking a broad approach to potential partnerships and analyzing the activities and opportunities of many stakeholders, projects increase their opportunity to match the needs of all beneficiaries while positioning themselves to better facilitate changes or make improvements in the system.
- **Producers, like financial institutions, are risk adverse:** Even with technical support, training and sound irrigation methods, producers hesitate to take on credit. To instill confidence in the loan products and foster a culture of borrowing and lending, the project identified "Producer –Leaders" who served as role models by beng early adopters of the irrigation technology and demonstrating improved crop yields and increased profits.
- **Build on previous activities and opportunities:** This pilot integrated new methodologies and partnerships to build on and enhance existing physical and social infrastructure, such as water channels that had already been constructed by other players. In addition, by involving other major stakeholders, including the regional government, the project was able to sidestep a significant challenge faced by previous projects—access to a main water connection and ultimately allowed producers to successfully irrigate their crops.

## Conclusion

The Financing Water for Productive Use pilot project has successfully demonstrated the potential for smallholder Peruvian farmers in one of the poorest regions of the country to benefit substantially from improved access to irrigation. By working through partnerships and focusing from the beginning on both sustainability and scale, the effort is now leading to growth within the region, facilitated in part by the engagement of the government and CARE's effective role in leveraging the pilot outcomes to affect the policies of key government programs. Constraints remain to be overcome in developing a truly scalable model that local actors, including the private sector can adopt and manage without external assistance from CARE but the effort to date has significantly advanced CARE's own objective of benefitting poor households and enhancing the environment creating a positive example that will be built upon in the years ahead.

For more information on this pilot initiative, see: the Productive Water Video: [Part 1](#) | [Part 2](#) or access a case study and the systemization protocols for accessing financing for water irrigation systems on CARE's project website: <http://www.care.org.pe/>.

