CLIMATE INVESTMENT FUNDS

SEEDING A CLIMATE-RESILIENT FUTURE: CREATING MARKETS FOR IRRIGATION TECHNOLOGIES IN NIGER

CASE STUDY SUMMARY - JUNE 2020

DEVELOPMENT CONTEXT

Farming in Niger, one of the poorest countries in the world, is extremely labor intensive. The country, which lays partly in the Sahara Desert, has seen increases in mean temperatures multi-year droughts over the last two decades. Nigerien farmers rely on rain to grow their crops. However, insufficient and variable rainfall has led to limited agricultural productivity for the agricultural sector, which accounts for over 40 percent of Niger's GDP. Lack of an appropriate irrigation technology meant that farmers could not tap into the vast and underutilized water held in underground aquifers and ease their dependence on traditional rainfed farming methods during the prolonged dry season which spans seven-eight months of the year. Women, who mostly do not own land, are disproportionately affected by shortage of rainwater for farming. They resort to wells, which are labor-intensive, time-consuming, and unsafe.[1] Small and medium-sized farmers in Niger are also impacted by financing challenges, such as limited access to credit to purchase effective agricultural inputs and equipment. They also lack extension services to transfer knowledge and technical capacity to farmers.

NIGER IRRIGATION PROJECT (NIP)

The Niger Irrigation Project (NIP) was one of four projects identified in Niger's Strategic Program for Climate Resilience (SPCR) funded by the CIF's Pilot Program for Climate Resilience (PPCR). The purpose of the NIP was to test new small-scale irrigation techniques through the private sector that would engender beneficiary acceptance and support, and promote sustainable agriculture, while creating conditions for private sector involvement in the agricultural sector through potential public-private partnerships (see Figure 1).

The NIP seeks to utilize both underground and surface water resources to pilot private sector-led small-scale irrigation schemes in local communities in Niger. USD 1.5 million in PPCR concessional financing was used to support these schemes, which could be replicated in the future without further subsidies. IFC, as the implementing entity of the NIP, provided a PPCR grant to a competitively selected a private sector company, Netafim, to provide drip irrigation equipment to farmers and to create the foundation for irrigation market development in Niger.

1 USAID Land Links (July, 2010) Niger country profile https://www.land-links.org/country-profile/niger/

NIGER IRRIGATION PROJECT

PROJECT COST
USD 1.5 million

PARTNER ORGANIZATION
World Bank Group's International Finance Cooperation (IFC)

PROJECT DURATION
2014-2020

COUNTRY SERVED
Niger

Figure 1.
OVERVIEW OF THE NIGER IRRIGATION PROGRAM

DELIVERY CHALLENGES AND SOLUTIONS

CHALLENGE 1: MISCONCEPTIONS ABOUT DRIP IRRIGATION

Local communities and beneficiary stakeholders in Niger were skeptical about drip irrigation because of the previous negative experiences with small-scale irrigation in past interventions led by the government and other development partners. To address this challenge, the private sector firm hired a local project coordinator, provided multiple hands-on trainings, and engaged with communities formally, through local community gatherings like mosques, markets, and other locations.

CHALLENGE 2: LIMITED LAST-MILE SUPPORT TO FARMERS IN LOCAL COMMUNITIES

Past interventions did not provide consistent day-to-day technical support, termed as "last-mile support," to farmers. To resolve this, the NIP assigned Community Field Assistants (CFAs) to each community plot or privately-owned project site. The locally grown talent pool of CFAs provided iterative training, support with day-to-day maintenance, linkage with buyers for farmed produce, fertilization, pesticides and other services.

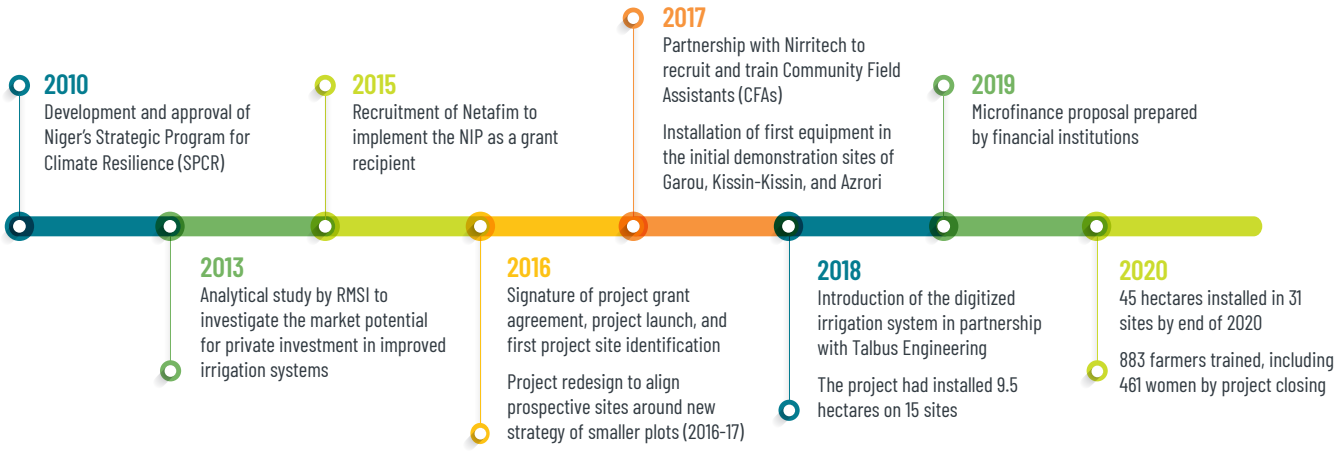
CHALLENGE 3: FINANCING CONSTRAINTS FOR RURAL FARMERS

Smallholder farmers, particularly women, could not independently access finance for agricultural activities. As a solution, the NIP would demonstrate financial viability of drip irrigation and set the framework to identify the right financing mechanism tailored to male and female farmers seeking finance to purchase drip irrigation technology.

TRACING THE IMPLEMENTATION PROCESS

To achieve the NIP goal of increasing private sector participation in agriculture, the IFC team engaged with a variety of public and private stakeholders, selected an experienced private sector firm, Netafim, identified sites, recruited and trained Community Field Assistants (CFAs), installed demonstration farms, and trained beneficiaries. They also worked to ensure that a sustainable ecosystem of Nigerien companies was built to provide drip irrigation services to Nigerien farmers and establish the platform for scale up. Figure 2 highlights milestones along the implementation timeline.

Figure 2.
TRACING THE NIP IMPLEMENTATION TIMELINE



PROGRAM RESULTS

The NIP demonstrated that private sector participation in the agricultural sector, specifically in drip irrigation, in Niger was feasible, and paved the way to build Nigerien farmers' climate resilience using irrigation technology. Netafim plans to stay engaged in Niger beyond the scope of the NIP. As of December 2019, the company had received requests to install 1,500 ha of additional irrigation equipment in partnership with the government of Niger, and a pipeline of commercial requests, including a commercial farm with upgrades to net houses[2] and other irrigation technologies, in addition to drip irrigation.

The IFC team expressed pride that in piloting the NIP approach: with just USD 1.5 million they were able to take risks that might not have been acceptable to a larger project. The project attracted the interest of other Development Finance Institutions that wanted to scale up the successes of the NIP. "The team faced multiple setbacks and had to learn from a few failures on the outputs side, but it has succeeded in delivering the outcomes and supported our clients and the government to change the way irrigation technology is delivered to farmers," Richard Colback, the IFC team leader, said.[3]

LESSONS LEARNED

Effective engagement with local communities helps to bridge the knowledge gap

Innovation and out-of-the-box thinking are necessary to bridge the knowledge gaps in projects that introduce new technologies, systems, or practices. Teams should be open to engage innovatively with communities in their own language and in their local space where web and technology-based options are scarce. Taking the latter into consideration, the NIP team targeted locations frequented by Nigeriens to promote the project. They used religious gatherings and market days to demonstrate the advantages and viability of drip irrigation technology and to allow potential beneficiaries to experience the "look and feel" of the irrigation equipment and to pose questions.


Photo: CIF Administrative Unit

2 A net-house is a naturally ventilated climate-controlled net structure held in place by galvanized steel, which allows required sunlight, moisture, and air to pass through the gaps. The nets provide protection from insects and are used to grow fruits, flowers, and vegetables. Combined with drip irrigation, they are especially suitable for cultivating in hot areas with low rains, like Niger.

3 Interview with Richard Colback, November 15, 2019

Photo: CIF Administrative Unit

Last-mile support is an essential practice to ensure sustained use of new technology

In a developing country context, providing daily maintenance and service support is critical to ensure diffusion and sustainable use of new technology and guarantee ongoing maintenance and functionality of the infrastructure. When beneficiaries have a community-based project focal point, such as the CFAs, who work and lived in the communities, speaks their language and who is available to provide assistance, maintenance, and daily support, they feel empowered to learn better and faster. "Train the trainer" initiatives should not only focus on technical capacity building, but also on the softer aspects of relationship building.

The importance of continued collaboration with the government and other development partners

In rural agriculture, coordination with government agencies and other development partners throughout the project lifespan ensures critical buy-in and coordination of development efforts to achieve maximum benefit for the local populace. It is even more critical to work with the government in the project design phase to confirm assumptions, obtain relevant approvals, and anticipate potential issues in working with a private sector firm.

In-country management improves the flow of communication, knowledge, and decision making

A key lesson for projects like the NIP, which involved continuous coordination with several actors in both the private and public space, is to have staff on the ground throughout the project cycle, but importantly during project implementation. By hiring a field-based coordinator, IFC signaled deepening relations with the government of Niger, strengthened coordination and synergy with project teams of other development agencies, and allowed for timely and efficient decision making.

The Global Delivery Initiative is a collaborative effort to create a collective and cumulative evidence base of delivery know-how.

The GDI and its partners support practitioners on the ground to adapt to dynamic contexts and solve stubborn delivery challenges. Its flagship products aim to improve delivery effectiveness by connecting practitioners, supporting operations and establishing a common language.

Delivery case studies aim to help practitioners identify and learn from underexplored and unexpected complex delivery problems throughout the implementation process.

http://www.globaldeliveryinitiative.org/

This Case Study is part of

GDI GLOBAL DELIVERY INITIATIVE
KNOW-HOW THAT WORKS

IFC International Finance Corporation WORLD BANK GROUP
Creating Markets, Creating Opportunities

CIF CLIMATE INVESTMENT FUNDS