

Pilot Program for Climate Resilience

Program Approval Request

1. Country/Region:	<i>Niger/Sub-Saharan Africa</i>		2. CIF Project ID#:	(Trustee will assign ID)
3. Source of Funding:	<input type="checkbox"/> FIP	<input checked="" type="checkbox"/> PPCR	<input type="checkbox"/> SREP	
4. Project/Program Title:	<i>PPCR Niger Irrigation Program</i>			
5. Type of CIF Investment:	<input type="checkbox"/> Public	<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Mixed	
6. Funding Request in million USD equivalent:	<i>Grant: US\$ 1,515,000 (for advisory services only)</i>		<i>Non-Grant:</i>	
7. Implementing MDB(s):	<i>IFC</i>			
8. National Implementing Agency:	<i>Private Sector</i>			
9. MDB Focal Point and Project/Program Task Team Leader (TTL):	<i>Headquarters- Focal Point:</i> <i>PPCR Focal Point:</i> <i>Joyita Mukherjee</i> <i>(jmukherjee1@ifc.org)</i>		<i>TTL:</i> <i>William Davies (WDavies@ifc.org)</i>	

10. Program Description:

I. Introduction

This Program Proposal responds to the advisory services/technical assistance component of the IFC-managed PPCR program “Sustainable Management and Control of Water Resources (PROMOVARE)” as listed in Niger’s Strategic Program for Climate Resilience (SPCR), endorsed by the PPCR Sub-Committee in November 2010.

In 2012, the IFC conducted an in-depth market study (hereafter referred to as the [IFC-PPCR study](#)¹) with PPCR grant finance to investigate opportunities for private sector investment in improved irrigation systems and climate resilient seeds in Niger. The proposed Niger Irrigation Program will test and implement the recommendations from the IFC-PPCR study in a two-phased approach.

Phase I comprises an Advisory Services (AS) program to demonstrate the financial viability of commercializing improved irrigation systems by the private sector in Niger. The Program will promote access to and utilization of affordable, efficient irrigation equipment to small and medium sized farmers. By helping farmers adopt and sustain improved irrigation technologies, the program aims to increase their agricultural productivity and

¹https://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/IFC_PPCR%20Niger%20Irrigation%20Seeds_Public_Full_English_9Dec2013.pdf

strengthen farmer's resilience to climate change.

This program approval request to the PPCR Sub-committee covers Phase I. Phase II will comprise investments to promote private sector investments in improved irrigation systems and in the agriculture sector in Niger. The analysis undertaken in the preparatory phase of this program has confirmed that there is a need to develop and implement an advisory services program which will pilot new concepts of climate adaptation in the traditional agricultural sector. The two-phased approach is needed given that market conditions do not currently exist to promote investments in the sector on a fully commercial basis. There is a need to first implement activities that will create an enabling environment and promote the preconditions for successful investment to happen. The results of Phase I will inform the investment needs that will be used in Phase II. A separate Program Approval Request will be developed for the Phase II follow-on work.

The objectives of the program are strongly aligned with two of the five SPCR priorities for Niger, namely: i) increasing investments in sustainable land use and water management; and ii) supporting the development of mechanisms to safeguard agricultural and pastoral production against climate change risks. The program is also aligned with several governmental initiatives such as "Nigeriens Nourish Nigeriens" (3N). The 3N initiative is a national strategy that addresses food security and sustainable agricultural development in Niger.

Improved irrigation technologies provide significant potential to increase water, fertilizer and energy use efficiencies and have been promoted by a range of international development agencies and research institutions. The IFC-PPCR program will build on the lessons of experience of various trials, including initiatives in Niger to introduce drip irrigation conducted by the International Fund for Agricultural Development (IFAD), and by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). Moreover, the Program activities will be coordinated with other initiatives promoting drip irrigation in the country which are implemented by the World Bank's irrigation infrastructure development Kandadji Project, and the RECA Niger (National Network of Chambers of Agriculture). The program will also build upon AfDB's SPCR Investment Project Two "Project Mobilization and Recovering of Water Resources" (PROMOVARE) which builds climate resilience in Niger by mobilizing water resources and promoting the adoption of climate resilient techniques and practices to manage agro-pastoral activities. The IFC-PPCR Irrigation Program aligns with AfDB's PROMOVARE in that it shares a strong focus on the technology of improved irrigation systems. Both the IFC and AfDB initiatives will increase productivity of agricultural and pastoral activities and improve availability of small-scale irrigation techniques to farmers, and they therefore complement one another. IFC's initiative is focusing on private sector mobilization in the irrigation sector, and the AfDB is implementing a public sector project. The IFC will collaborate closely with AfDB colleagues implementing the PROMOVARE project to ensure that lessons learned in the two initiatives are shared.

The context, market barriers, objectives and program description of Phase I of the Niger Irrigation Program are described below.

II. Context

Niger, one of the poorest countries in the world, is also one of the most vulnerable countries to climate change. The country – which lies partly in the Sahara desert – has in the past decade experienced an increase in both mean temperature and the frequency of multi-year droughts. In the last drought of 2010, agricultural output fell more than 12% below average while 32% of the population was affected by malnutrition.

Experts predict that there will be more frequent and severe droughts as a result of climate change. Such changes in climate pose a considerable threat to agricultural production and food security for the following

reasons:

- most agriculture (98%) in Niger is rain-fed;
- agriculture, including crops, livestock, fisheries and forestry, contributes to ~40% of Niger's GDP;
- ~80% of the Nigerien population relies on agriculture as a primary source of income; and
- ~50% of the population has been categorised as "food insecure".

Yet Niger need not be so vulnerable to the effects of climate change. The country has rich aquifers that are underutilized. Niger's renewable water resources total ~31 billion m³ of surface water and ~2.5 billion m³ of groundwater which – if used sustainably with improved irrigation systems – would enable Nigerien farmers to build resilience to climate change. The IFC-PPCR study found that improved irrigation systems like surface drip and sub-surface drip irrigation systems would be suitable for Niger.

The study also showed that farmers cultivating high value crops and cereals could recover their initial investment in irrigation equipment in 2.2–2.6 years as a result of increased yields and income. Current data from existing World Bank-funded irrigation projects² in the country show that yields for irrigated crops were 4–8 times higher than for farmers practicing rain-fed agriculture.

Despite two decades of numerous projects funded by international donor organizations to develop Niger's irrigation sector, adoption of improved irrigation techniques is still limited and currently only 2% of Niger's cultivated land – a total of 107,000 ha – is irrigated. There are a number of reasons for this situation as discussed in the sector below.

III. Market barriers

The main barriers to developing a large, irrigated agricultural sector in Niger that benefits smallholder farmers are:

1. *High cost of irrigation equipment:* The purchase of irrigation equipment is a capital investment and although it may be recouped in less than five years, many smallholder farmers are unable to amass the initial capital investment upfront. The high cost of the investment could be greatly reduced through decentralised construction of wells or boreholes and by introducing improved irrigation systems.

2. *Limited access to finance for irrigation equipment:* Local banks are reluctant to provide financing for agriculture in Niger mainly because they perceive it as too risky. Irrigation equipment finance is often a medium-term facility requiring collateral and good cash flows, which smallholder farmers are unable to provide. Irrigation equipment providers also have limited access to funding and have limited outlets for distribution.

3. *Limited awareness of the benefits of improved irrigation and minimal capacity to operate the equipment:* Current existing and previous irrigation development programs have focused on distributing irrigation equipment for free. Although they demonstrated immediate benefits to farmers, little effort has been invested in developing farmer training and capacity building which has resulted in low adoption rates.

4. *Limited private sector participation in irrigation schemes:* Current demand for irrigation equipment in Niger is mainly from government, donors and NGOs. Most of the irrigation schemes in the country have been

² Private Irrigation Project, PPIP, 1995-2000; Private Irrigation Promotion Project, PIP2, 2002-2008, The World Bank.

established through public sector interventions and are not sustainable once donor-sponsored projects come to a close.

The IFC-PPCR program seeks to address the above market barriers by promoting private sector investment and capacity building in irrigation in Niger. The program is intended as a demonstration to establish the commercial viability of a private sector-led irrigation initiative. Once the financial viability is demonstrated, Phase II is expected to scale up program impact and scope by investing IFC's own commercial finance together with (if necessary) PPCR concessional finance in the expansion of program's activities.

IV. Objectives

The overall goal of the Niger Irrigation Program is promote private sector investments in irrigation in Niger. The Program will promote access to affordable, efficient irrigation equipment to small and medium sized farmers in Niger. By helping farmers adopt and sustain improved irrigation technologies, the program aims to increase their agricultural productivity and strengthen farmer's resilience to climate change.

The specific objectives of the program are:

1. Identification of a lead agricultural input firm(s) to provide irrigation equipment to small and medium sized farmers in Niger, and provision of support to the firm in the expansion of its irrigation business in the country to reach farmers.
2. Support the roll-out of financing schemes for smallholder farmers. This will include identification of appropriate delivery channels such as distributors, traders and micro-finance institutions (MFIs) which could facilitate farmers' access to affordable finance for purchasing irrigation equipment.
3. Increase the impact of providing finance by providing training to farmers on financial management as well as on the installation and use of improved irrigation systems and associated inputs (e.g. greenhouses, hybrid seeds, fertilizers and pesticides).
4. Increase the amount of land under improved irrigation systems in Niger.
5. Facilitate increased access to markets for farmers participating in the program.

V. Program description

This program consists of three components described below. Information from the IFC-PPCR study in Niger has informed the design of these components. In addition, IFC will include some real-time feedback/learning loop as part of program implementation to make adjustments as needed.

COMPONENT 1. IDENTIFICATION OF APPROPRIATE CLIENT

A client (a private firm, the winning bidder) that is interested to conduct business in the agriculture/irrigation sector in Niger will be selected through a competitive bidding process. Farmers will be trained by the client to firstly use the improved irrigation equipment and to secondly manage their finances with regards to the

purchase of the irrigation equipment. The IFC will work with the client to design appropriate training systems as well as appropriate private sector financing structures for purchase of the irrigation equipment by the farmers. In this way, the program will facilitate access to irrigation equipment for Nigerien farmers through private sector financing.

The winning bidder (client) will need to have a presence on the ground in Niger and will need to collaborate, as appropriate, with other national or international entities (e.g. agribusinesses, banks, development finance institutions (DFIs), aggregators, export agencies, farmer's cooperatives, and other potential offtakers such as retail outlets) in order to: i) provide training and demonstration pilots to marketed irrigation equipment; ii) based on the demonstration pilots, identify and sell improved irrigation systems; iii) provide credit facilities to farmers to purchase these irrigation and/or improved agri-input systems; and iv) provide relevant agricultural extension services to farmers.

COMPONENT 2. CAPACITY BUILDING OF FARMERS ON IMPROVED IRRIGATION SYSTEMS AND FINANCIAL MANAGEMENT.

The client will provide initial training on relevant technology, agronomy and finance to a group of select farmers. Farmers will be selected for training and will receive finance based on their skills and commitment to the program.

Topics to be included in the training will include: i) the installation, operation and maintenance of the irrigation equipment; ii) crop selection and planning; and iii) financial literacy. It is anticipated that the locations for the improved irrigation systems will need to have relatively shallow groundwater levels, proximity to appropriately-sized markets/offtakers and access to paved roads.

COMPONENT 3. MONITORING AND EVALUATION (M&E)

M&E will be embedded into the program to ensure that lessons learned are documented regularly and at early stage, and program activities are adjusted accordingly, if necessary. The outcomes of each of the program activities will be closely monitored and evaluated by a third party and the IFC's M&E team. Factors to be assessed will include: (1) How will program activities impact crop yields? (2) What are the actual water savings from improved irrigation techniques? (3) What is the size of credit provided to farmers? (4) What are the farmers' repayment rates? (5) What are the actual IRRs on investment for the farmer?

This component will include developing baseline data (before implementation) for beneficiary and control-group households, and an end-line four years after implementation. It will also include a mid-period evaluation follow-up 2 years into the program implementation.

The results of this evidence-based learning exercise will provide much needed information on the commercial viability of the program and its replicability potential. This information will be used to determine IFC's engagement in for Phase II that would comprise investing IFC's own commercial finance together with () PPCR concessional finance to scale up the program scope and impact. Component Three is particularly important for the agri-business sector and local banks in Niger who are interested in developing new credit products and services to farmers, yet who currently perceive the risks associated to this new business to be too high. The

evaluation of farmer crop yields, adoption of improved practices, and repayment of credit will help advise and mobilize many actors in the agri-business sector in Niger to adopt climate resilient technologies and practices.

11. Consistency with Investment Criteria:

Phase I of the Niger Irrigation Program is consistent with the PPCR investment criteria in the following ways:

Niger is a dry country that is predicted to get drier with climate change. Increased access to improved irrigation technology will make Niger's agricultural sector more resilient to changes in climate and will contribute to food security for the country. Improved irrigation will lead to the efficient use of the country's water resources and result in increased productivity. It will also enable Nigerien farmers to protect their crops and livelihoods despite longer dry seasons and unexpected weather events (such as heat waves).

There have been prior efforts by donors and NGOs to develop irrigation in Niger. However these efforts did not catalyse long-term private sector investment and thus only resulted in limited scope and sustainability. The proposed program will strengthen the capacity of private actors in Niger (firms and farmers) to implement climate resilient agriculture practices that will contribute to the country's adaptation to climate change. The program will employ a learning-by-doing approach and will draw from lessons of what has been tried in Niger as well as regional and global lessons.

Moreover, the program aims to prove the commercial viability, adoption and sustainability of improved irrigation systems that will consequently mobilize many actors in the agri-business in Niger to finance and adopt climate resilience technologies and practices. This program will be of particular importance for the local banks who are interested in developing new credit products and services to farmers, but who currently perceive risks to be too high. Once the program concept is proven, it will help channel private sector resources for climate resilience agriculture.

12. Stakeholder Engagement:

The development of the program interventions was built on the initial work of the IFC-PPCR study, namely an in-depth market study to investigate opportunities for private sector investment in improved irrigation systems and climate resilient seeds in Niger. This work comprised comprehensive literature review and interviews with 180 farmers in seven different districts in Niger. Numerous interviews were also conducted with the private sector, farmer organizations, government and NGOs. Moreover, IFC carried out further identification missions and discussions with key market players, government, PPCR partners and communities to develop the program interventions. This program will continue to actively engage with key stakeholders at the governmental, private sector and community levels. Furthermore, the IFC will work closely with other development agencies and PPCR partners to leverage their best-practices and network.

Governmental Level

The IFC team has been in dialogue and working in coordination with the Government of Niger (GoN) via the PPCR coordinators at the Ministry of Planning. Other relevant ministries were also consulted during the development of the IFC-PPCR market study. They include: Ministry of Planning, Ministry of Agriculture, National Meteorology Department, Ministry of Finance, Department of Hydraulics, Ministry of Livestock, and the National Council for the Environment and Sustainable Development. Moreover, IFC team is committed to continue cooperation with the GoN during program implementation.

Private Sector Level

During program preparation, the IFC team engaged with local banks, insurance companies, agri-input distributors, and large international agri-input suppliers. The program will continue to engage with various private sector players throughout its implementation. Moreover, It is expected that during program implementation, the client may work closely with other agribusinesses, banks, DFIs, aggregators, export agencies and other potential offtakers such as ASI Niger, Société de Commercialisation D'Oignon du Niger, Société Nigerienne Des Produits Alimentaires, Marina Market, Supermarket Haddad and Minimarket Azar.

Community Level

Group farming is common in Niger and, consequently, many farmers belong to local farmers' cooperatives. Farmer's cooperatives help farmers to access funds, technical support and other resources. These cooperatives are aggregated into farmers' federations at the national level. The client will actively work with farmer cooperatives and federations (such as SOCOPOP SA, MOORIBEN and FCMN-Niya) and other types of organizations (such as Association of Women of Niger) to engage with small and medium sized farmers, enabling the client to reach a broader basis of candidate farmers to undertake the program activities.

The IFC's Performance Standards will be applied to the program and consequently stakeholder engagement will continue as the basis for building strong, constructive and responsive relationships. Such relationships are essential for the successful management of the program³.

³ For information on the IFC's Performance Standards see: www.ifc.org/sustainabilityframework

13. Gender considerations:

Rural women play a critical and potentially transformative role in the agricultural sector of most – if not all – developing countries. Additionally, women in rural areas tend to be disproportionately affected by climate change because they: i) experience a greater incidence of poverty than men; ii) are more dependent on natural resources for livelihoods; iii) have unequal access to resources and decision-making processes; and iv) have limited mobility⁴. Patriarchal social structures and problems of *inter alia* sexual violence and exploitation in Niger⁵ further exacerbate vulnerabilities of Nigerien women. It is therefore important to mainstream gender as part of the program activities to ensure that women are included in measures designed to improve their capacity to adapt to climate change.

The IFC has a track record of incorporating women in agri-business projects. As a result of the lessons learned from these and other successful projects, the IFC understands the market barriers and is able to provide solutions to increase participation of women in agri-business. The program will use a variety of methods to engage rural Nigerien women. Female farmer associations are a means of accessing women working in small-scale agriculture. Women's NGOs and organizations – such as the Association of Women of Niger – will also be consulted during program implementation in order to ensure that the needs of rural Nigerien women are taken into account. The Ministry of Population, Women's Promotion and Child Protection may also be a source of information regarding other means to communicate with rural Nigerien women.

The IFC has found that – for various social and cultural reasons – rural women tend to be reluctant to engage in training activities unless they are specifically targeted. By targeting Nigerien women living in rural areas, the program will help to improve the wellbeing of rural Nigerien families. The program will work with the client to explore ways to engage women in order to enhance its development impacts. Specifically, at least 20% of the farmers targeted for capacity building will be women. The resources of the Gender Team at the IFC will be made available to the client, helping them to develop a strategy to reach or exceed this target. Additionally, the program will: i) consult with women during the design of project activities ii) the develop targets for female participation in financing schemes and related training, (linked to a strategy for encouraging female participation⁶); and iii) deliver of gender-sensitive training and use of gender-responsive materials.

⁴ Lambrou, Y., & Piana, G. (2006). *Gender: the missing component of the response to climate change*. Food and Agriculture Organisation, Gender and Population Division.

⁵ Bureau of Democracy Human Rights and Labor, US Department of State. (2013). *Niger 2013 Human Rights Report*.

⁶ The IFC's experience indicates that involving both husband and wife in training activities helps families allocate resources to start new agri-businesses and to increase family income streams.

14. Indicators and Targets (consistent with results framework):	
Indicator	Target ⁷
a) Extent to which the training of farmers in improved irrigation techniques and extension work is successful.	<p><i>Outputs</i></p> <ul style="list-style-type: none"> • Up to 1,000 farmers introduced to climate resilient technologies and practices through workshops, training events, seminars, conferences, etc. • At least 200 rural women farmers trained on improved irrigation techniques. . • Up to 20 workshops, training events, seminars, conferences held. <p><i>Outcomes</i></p> <ul style="list-style-type: none"> • Up to 1,000 farmers trained in climate resilient agricultural technologies/practices (e.g. stress tolerant and high yielding seed varieties, improved irrigation systems, soil management practices, etc); (at least 20% will be women). • Irrigation company provides training and supply improved agricultural equipment/technologies to farmers. <p><i>Impacts</i></p> <ul style="list-style-type: none"> • Up to 460 farmers purchase irrigation equipment and/or adopts improved agricultural practices. • Up to 115 hectares of land used utilizing improved irrigation techniques in a sustainable manner.
b) Extent to which farmers are able to gain access to credit.	<p><i>Outputs</i></p> <ul style="list-style-type: none"> • Up to 1000 participants in workshops receive farm management and/or financial literacy/ management training (at least 20% will be women). • Up to 460 farmers are offered partial credit to purchase agricultural input/equipment (at least 20% will be women). <p><i>Outcomes</i></p> <ul style="list-style-type: none"> • Up to 250 farmers accessing credit to purchase agricultural input. • Up to 90% of farmers make payments toward credit repayment.

⁷ The final number of farmers participating in trainings and purchasing drip irrigation will depend on the final agreement between IFC and the private sector client. The figures provided in this column are therefore conditional upon a client agreeing to the targets. The prefix 'up to' is therefore required at this stage in the process.

15. Budget:	
Expenditures⁸	PPCR Amount (US\$) – estimates
Total Cost	US\$ 1,515,000
Co-Financing Total	Up to US\$ 1,230,000
Other	US\$200,000
TOTAL	US\$ 2,945,000
16. Project/Program Timeframe:	
Expected Board/MDB Management Approval Date: June 2014	
Expected Mid-Term Review Date: December 2015	
Expected Project closure Date: June 2018	
17. Other:	
Exit Strategy	
The program will run for four years and then based on the results a decision will be taken as to whether a Phase II investment is warranted. In other words, there will be a clear exit strategy if results from Phase I are not are not met or not up to satisfactory standards for IFC.	

⁸ Expenditure categories should be provided by the MDBs based on own procedures.