

**PROJECT INFORMATION DOCUMENT (PID)
IDENTIFICATION/CONCEPT STAGE**

Report No.: PIDC62093

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| Project Name | Burkina Faso access to irrigation for cotton farming |
| Region | AFRICA |
| Country | Burkina Faso |
| Sector(s) | Agricultural extension and research (20%), Irrigation and drainage (80%) |
| Theme(s) | Micro, Small and Medium Enterprise support (5%), Nutrition and food security (10%), Climate change (20%), Water resource management (65%) |
| Lending Instrument | IPF |
| Project ID | P159754 |
| Borrower Name | SOFITEX |
| Implementing Agency | SOFITEX |
| Environment Category | B - Partial Assessment |
| Date PID Prepared | 12-May-2016 |
| Estimated Date of Approval | 10-Oct-2016 |
| Initiation Note Review Decision | The review did authorize the preparation to continue |

I. Introduction and Context

Country Context

Burkina Faso is one of the world's poorest countries, with a GNI per capita of USD 670 (2013), and with 40% of the population below the poverty line (2014) . A land-locked country, its climate is tropical with Sahelian (desert) dominance. Burkina Faso is well below the United Nations water scarcity threshold, largely resting on a crystalline surface that does not support productive aquifers. The country relies exclusively on surface water, and up to 49 percent of its renewable annual freshwater resources are consumed by evaporation and, to a lesser extent, water sharing agreements. Thus, water collection, treatment, and distribution are critical. Water variability is also a major challenge. Rainfall from year to year varies as much as 50 percent, causing ongoing droughts that affect food security. Seasonal rainfall fills reservoirs and rivers, but they systematically run dry in the dry season. The timing of rain is a determining factor: if too much time elapses between rainfalls, crops fail, even in abundant rain years.

Burkina Faso's water challenges impose significant constraints on growth and social outcomes, with significant fiscal costs. The main channel of impact on growth is the agricultural sector, which employs a large majority of the population (70 percent of the labor force), provides a significant contribution to growth (25 percent), and is highly dependent on annual rainfall. In the face of its considerable water challenges, Burkina Faso has developed a widely praised approach to water management. Two aspects of its strategy are particularly notable: (i) water access in urban areas; and (ii) investments in agricultural productivity and water storage and irrigation. These investments

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have coincided with a sustained increase in growth and a concurrent drop in its variability . The benefits have largely accrued to larger scale farmers, whereas access to small scale irrigation technologies are still lacking.

Sectoral and Institutional Context

Cotton is the country's second largest source of export revenue after gold. The bulk of cotton is grown by small holder farmers who supply the crop to government owned processing and export companies. Cotton growing in Burkina Faso is currently rain-fed, and as a result, the crop is vulnerable to the periods of drought that occur during the rainy season. Climate change is making rainfall patterns increasingly uncertain, yet communities in Burkina Faso have not, in general, taken responsibility to address the impacts of climate change. Lack of rain during critical growth periods for the plant can decrease crop quality and yield and, in some cases, can even destroy an entire crop. This is especially problematic for the cotton seed crop, which is also grown by small-scale farmers.

The cotton sector provides an opportunity to develop irrigation in Burkina Faso at scale, as it features a reliable off-taker, sector-based transport to market, a well-honed farmer credit mechanism, an active farmers' association that delivers training, and a well-organized system of farmer cooperatives. Soci t  Burkina des Fibres Textiles (SOFITEX), a client of IFC, is Burkina Faso's largest cotton processor and has a supply chain consisting of some 160,000 smallholder farmers, grouped into approximately 10,000 cooperatives. Most of these farmers depend on a reliable cotton crop sales income from SOFITEX for their livelihood. Nearly all cotton farmers in Burkina are poor. Net revenues from cotton are roughly \$350/ha; with typical holdings ranging from 2-6 ha, cotton income is around \$700-\$2,100 per farming family, which can include several adults, as well as children. Rotational and off-season crops provide food and may generate a small additional income.

SOFITEX purchases cotton through a longstanding and highly structured system of cooperatives. Under an agreement with Ecobank, also an IFC client, Ecobank provides financing to the cooperatives for the purchase of inputs at the start of the growing season (seeds, fertilizer, pesticides). At harvest time, SOFITEX collects the harvest, gins and packages the cotton, and sells it in the export market. SOFITEX deducts what the cooperatives owe Ecobank for the input financing and makes direct payment to Ecobank for the input financing, before paying the net proceeds to the farmers through the cooperatives. SOFITEX manages the entire supply chain and Ecobank holds accounts for 80% of the farmer cooperatives. The supply chain structure also facilitates training and outreach for farmers.

Some 3,000 SOFITEX farmers grow the cotton seed used within the supply chain. Seed farmers tend to be the more productive farmers, with higher levels of cultivation practice and improved economic returns. Supplemental irrigation in seed farming can play a vital role in improving productivity of the entire sector: irrigation can improve the quantity and quality of seed, and can give farmers the ability to control production for optimal timing of seed availability. Constraints to adoption of irrigation include limited credit availability, poor performance of government subsidy schemes, limited government budgets and capacity to construct the necessary infrastructure; lack of awareness about irrigation technologies and their usage; and unfavorable customs duties and taxes.

SOFITEX competes in a global cotton market in which about half of production is irrigated. Given

global markets, climate change, and relatively low yields, the sector must improve water management if its farmers are to thrive in the long term. Farming practices to increase soil water retention can enhance plant resilience and farmer productivity, but these active practices are still not common in Burkina Faso, where cotton farmers have been relying on passive water management for decades. While SOFITEX understands the benefits of active water management practices, it does not have staff capacity to train the thousands of farmers in its supply chain.

Relationship to CAS/CPS/CPF

The proposed project aligns with the World Bank Country Partnership Strategy (CPS) for 2013-2016, contributing in particular to the objectives of (i) accelerating inclusive and sustained economic growth, and (ii) reducing social, economic and environmental vulnerabilities. The project will help develop agricultural value chains and promote private sector development through improved access to financing, both strategic objectives of the CPS.

The project is aligned with the Sahel Irrigation Initiative, a multi stakeholder task force coordinated by the World Bank Group, seeking to support the expansion of irrigated surfaces in the Sahel countries from 400,000 hectares to 1 million hectares by 2020. The Sahel Irrigation Initiative aims to facilitate complementary interventions from private and public sectors to increase irrigation adoption and use, put in place the necessary hard and soft infrastructure, and build awareness and attract the appropriate technology providers to Sahelian markets.

Links to IFC activities

The project supports the IFC's Agribusiness Special Initiative in Africa, and provides parallel financing to support implementation of the IFC Advisory Services project: Burkina Faso Smallholder Irrigation Program (ID 601113). The implementing agency, SOFITEX, is an IFC Investment client, currently with a working capital facility from the IFC. The IFC-advisory services project will provide technical support to SOFITEX to improve the quantity, quality, and reliability of the company's cotton supply, and increase the opportunities for farmers in the supply chain, by supporting the adoption of improved water management practices, technologies, and services.

IFC will also explore means to improve selected farmers' access to finance. This may include improving the business management skills of farmers, the financial governance of cooperatives, or providing training to financial institutions. The business model and access to finance activities will be developed by IFC in coordination with the World Bank under the Sahel Irrigation Initiative.

II. Project Development Objective(s)

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve access to basic irrigation services for cotton farmers in Burkina Faso.

Key Results

The indicative target results at concept stage are:

1. 5,000 farmers trained in soil moisture retention practices and using the practices effectively
2. Training for 3,000 farmers in the effective use of irrigation equipment
3. 2,500 farmers install irrigation equipment and use it effectively
4. 480 farmers in about 24 communities access solar-power irrigation pumps

III. Preliminary Description

Concept Description

Description

The project will have two components, the first to support the training of farmers to adopt new technology and the second to support the acquisition of irrigation equipment. The project will be implemented by SOFITEX, a government owned parastatal that is the largest cotton buyer and processor in Burkina Faso. The project will be implemented in regions selected from the company's current area under production including Houet, Koudougou, Mouhoun, Kossi, Sourou and Comoé Bougouriba. Other organizations playing a key role in implementation are Ecobank, which will provide financing for irrigation equipment, and the national cotton farmers association (UNPC-B), which has extensive experience in delivering training to farmers.

Component 1 (US\$900,000): Output based training for farmers. Under this component, the project will provide technical capacity strengthening for 5,000 farmers on good agricultural practices for soil and water, such as mulching or land forming for rainfall harvesting. Such practices are low-cost ways to manage soil water to increase yields, and allow effective use of the irrigation technologies. The project will also provide further training to 3,000 farmers who will benefit from irrigation equipment subsidies on the operations and maintenance of equipment supported by the project. Training materials will be tailored to the needs of farmers, who are often illiterate.

The delivery mechanism for the training, contracting of trainers and selection of beneficiaries will be determined during preparation, and is expected to involve SOFITEX, the national cotton farmers association (UNPC-B), which has extensive experience delivering training to farmers, and other local actors who can play a long-term role in building farmer capacity for water management. In order to ensure sustainability, the project will support the training of trainers.

All training will be output-based. A practical certification method will be defined during preparation in consultation with project stakeholders. The training provider will be reimbursed for training costs after independent verification by the independent verification agent (IVA) that training was carried out in accordance with the rules of the project.

Component 2 (US\$3,100,000) OBA subsidies to support acquisition of irrigation technology by cotton farmers in the SOFITEX supply chain. Under this component, the project will support 2,500 farmers and 24 communities to acquire irrigation technology for supplementary irrigation. These farmers are expected to be drawn from the set of 5,000 farmers trained under Component 1. The irrigation is not meant to replace rain fed cotton farming but to help farmers supply water to the cotton crop during critical dry periods when there is a high risk of crop failure, which will help build resilience to climate change impacts. Technologies to be supported are likely to include:

- a) Improved local wells, to enhance availability of water from subsurface sources. Typical wells have a limited diameter and recharge capacity; lining and enlarging the wells will significantly improve performance (200-300% increased flow rates, estimated cost \$ 250 - \$ 400 per well)
- b) Motorized pumps to increase access to water. The need to manually access and carry water is a major constraint to the adoption of supplementary irrigation. The introduction of locally available and maintained diesel and gasoline pumps (capital cost \$430 per ha plus \$31 annual O&M) will create greater access to irrigation water at an affordable cost. Solar powered pumps will

also be assessed as a way to introduce high-capital low-O&M options (Capital cost \$ 16,000 / 12 ha, or \$660 per half-hectare plot).

- c) Community-based solar irrigation systems. The system will allow a group of farmers within a cooperative to share larger capital costs and output. Solar power reduces reliance on fossil fuels and has the advantage of eliminating most of the O&M costs that have historically created problems for the long-term sustainability of community-based irrigation systems.
- d) Improved water distribution and storage via piping and water storage structures, to improve efficient utilization of water. This leverages the costly infrastructure already promoted and supplied by government and donors, and will allow for organized and coordinated access to water where such structures exist (costs tbc on-site).

Component 3 (US\$400,000) Partial Risk Fund to support access to loan finance. The project is proposing a partial risk fund to be accessed by the lender in the event that farmers default on their loan repayment obligations to Ecobank. This would encourage the lender to make loans in what is clearly a high-risk operating environment. Key risks include: fragile state with limited legal options to settle disputes; absence of liquid collateral that can be provided by borrowers; and, pilot investment in irrigation technology for low-income farmers not familiar with the concept. The partial risk sharing structure, including limits of coverage and cover for principal payments or interest and principal will be negotiated during preparation. The initial estimate has been set at approximately 50% of the farmer contributions for equipment purchases under the project. Any funds not called on from the partial risk fund shall be reallocated to Component 2.

IV. Safeguard Policies that Might Apply

| Safeguard Policies Triggered by the Project | Yes | No | TBD |
|--|-----|----|-----|
| Environmental Assessment OP/BP 4.01 | | x | |
| Natural Habitats OP/BP 4.04 | | x | |
| Forests OP/BP 4.36 | | x | |
| Pest Management OP 4.09 | | x | |
| Physical Cultural Resources OP/BP 4.11 | | x | |
| Indigenous Peoples OP/BP 4.10 | | x | |
| Involuntary Resettlement OP/BP 4.12 | | x | |
| Safety of Dams OP/BP 4.37 | | x | |
| Projects on International Waterways OP/BP 7.50 | | x | |
| Projects in Disputed Areas OP/BP 7.60 | | x | |

V. Financing (in USD Million)

| | | | |
|--|-----------|-----------------------|---------------|
| Total Project Cost: | 0.0000049 | Total Bank Financing: | 0 |
| Financing Gap: | 0 | | |
| Financing Source | | | Amount |
| Global Partnership on Output-based Aid | | | 0.0000044 |
| LOCAL BENEFICIARIES | | | 0.0000005 |

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