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**BLUE HARVEST: A NEW SUSTAINABLE PRODUCTION MODEL  
FOR SMALL HOLDER COFFEE FARMERS  
(RG-M1285) (RG-X1252)**

**DONORS MEMORANDUM**

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## **PROJECT ABSTRACT**

### **BLUE HARVEST: A NEW SUSTAINABLE PRODUCTION MODEL FOR SMALL HOLDER COFFEE FARMERS**

**(RG-M1285) (RG-X1252)**

Coffee is one of Central America's most important exports to the countries of the European Union, the United States, and Canada. In addition to creating jobs and generating foreign currency, coffee leaves a positive mark on the areas where it is grown, especially areas primarily worked by groups of small farmers. Despite the tremendous social and economic importance of the coffee industry, factors such as climate change impacts, insufficient local capacity for natural resource management and the volatility of the global coffee market are seriously affecting production. In response, governments and private companies must develop innovative strategies to comprehensively address these problems based on environmentally and economically sustainable farm management.

Through this technical cooperation project the MIF, in association with Catholic Relief Services (CRS), Keurig Green Mountain (KGM), and the Howard G. Buffett Foundation, will implement "Blue Harvest," an innovative initiative that incorporates elements of soil and water conservation as well as mechanisms for managing price risks, in a comprehensive strategy that will enhance competitiveness and market access for small coffee farmers of the Central American region, which has been devastated by the recent coffee leaf rust crisis. The project will benefit directly some 3,500 farmers distributed across El Salvador, Honduras, and Nicaragua, and at the same time it will be of indirect benefit to more than 45,000 farmers, families and local government representatives through its work on watersheds, which have an effect on many rural communities.

The MIF intervention will expand the scope and depth of the program recently launched by these partners. A market access dimension will be introduced as the third basic pillar of the program for testing, scaling, and boosting the impact of new business practices with large, global coffee buyers and roasting companies, so as to influence the price received by farmers through economic recognition of environmentally friendly practices in the area of water use and soil protection.

This project will be closely coordinated with the Sustainable Agriculture, Food and the Environment (SAFE) Platform, another initiative recently approved by the MIF together with 13 international firms, to incentivize and promote the adoption of business models that take into account the current situation of small holder farmers, and to identify incentives to promote the long-term sustainability of this value chain.

Due to the high level of climate-related vulnerability to which the beneficiaries of this project are exposed, the PROADAPT facility will participate by providing financing for activities to strengthen the capacity of small holder farmers to adapt to the effects of climate change. The facility focuses especially on the development and implementation of climate-smart agriculture practices in the region's key economic sectors. PROADAPT is co-financed by the MIF and the Nordic Development Fund.

## ANNEXES

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Proposed resolution

## INFORMATION AVAILABLE IN THE TECHNICAL FILES

Annex IV	Itemized budget
Annex V	Diagnostic Needs Assessment (DNA) of the executive agency <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39730956">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39730956</a>
Annex VI	Project Status Reports (PSR), Fulfillment of Milestones, Fiduciary Agreements and Institutional Integrity <a href="http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39730966">http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39730966</a>
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**ABBREVIATIONS**

<b>ACUGOLFO</b>	Gulf of Fonseca Watershed Association
<b>ADDAC</b>	Communal Agriculture Diversification and Development Association
<b>AHROCAFE</b>	Honduran Association of Coffee Farmers
<b>ANDA</b>	National Administration of Aqueducts and Sewers
<b>ASOMAINCUPACO</b>	Association for the Integral Management of Watersheds of La Paz and Comayagua
<b>AWP</b>	Annual Work Plan
<b>IDB</b>	Inter-American Development Bank
<b>CACIL</b>	Savings and Loan Cooperative of the department of Intibucá
<b>CATIE</b>	Tropical Agricultural Research and Higher Education Center
<b>CECOCAFEN</b>	Association of Northern Coffee Cooperatives
<b>CENTA</b>	National Center for Agriculture and Forestry Technology
<b>CIAT</b>	International Center for Tropical Agriculture
<b>COCEPRADII</b>	Central Committee for Water and Integral Development
<b>CONACAFE</b>	National Coffee Council
<b>COSA</b>	Committee on Sustainability Assessment
<b>CRF</b>	Corporate Results Framework
<b>CRS</b>	Catholic Relief Services
<b>ADN</b>	Agency Diagnostic of Institutional Needs
<b>ECA</b>	Farmer field schools
<b>FUNDESYRAM</b>	Development and Environmental Restoration Foundation
<b>GIS</b>	Geographic information system
<b>ICF</b>	Forest Conservation Institute
<b>IHCAFE</b>	Honduran Coffee Institute
<b>INTA</b>	Nicaraguan Institute of Agricultural Technology
<b>KGM</b>	Keurig Green Mountain
<b>MIF</b>	Multilateral Investment Fund
<b>OAP</b>	Operative Annual Plan
<b>OR</b>	Operative Regulations
<b>PROCAFE</b>	Salvadoran Foundation for Coffee Research
<b>QED</b>	Quality for Effectiveness in Development
<b>SAFE</b>	Sustainable Agriculture, Food and the Environment Platform (RG M1269)

<b>SCAA</b>	Specialty Coffee Association of America
<b>SCAN</b>	Sustainable Commodity Assistance Network
<b>TOR</b>	Terms of Reference
<b>UCA Augusto C. Sandino</b>	Union of Agricultural Cooperatives Augusto C. Sandino

## EXECUTIVE SUMMARY

### BLUE HARVEST: A NEW SUSTAINABLE PRODUCTION MODEL FOR SMALL HOLDER COFFEE FARMERS

(RG-M1285) (RG-X1252)

<b>Country and geographic location:</b>	Regional project with 7 intervention zones in 3 countries: Nicaragua: San Ramón; Tuma La Dalia. Honduras: Opalaca Biological Reserve, El Jilguero Biological Reserve. El Salvador: Cordillera Cacahuatique /Arambala; Comasagua, Cordillera Bálsamo; Jujutla, Cordillera Apaneca.		
<b>Executing agency:</b>	Catholic Relief Services (CRS).		
<b>Access area:</b>	Access to Markets and Capabilities (AMC)		
<b>Agenda:</b>	Linking small producers to high-value agricultural markets		
<b>Coordination with other donors/Bank operations:</b>	<ol style="list-style-type: none"> <li>1. SAFE - Sustainable Agriculture, Food, and the Environment Platform (RG-M1269).</li> <li>2. The PROADAPT facility will provide technical cooperation funding to build the adaptation capacity of small coffee farmers.</li> <li>3. Reducing Environmental Impacts and Improving Efficiency in Coffee Processing (ATN/ME-14311-HO).</li> <li>4. Generations: Closing the Generation Gap between Youth and Adults in Rural Communities (ATN/ME-14608-RG).</li> </ol>		
<b>Direct beneficiaries:</b>	<i>3,500 farmers and local government representatives.</i> (of whom an estimated 40% are women) Nicaragua: 564 Honduras: 1,939 El Salvador: 997		
<b>Indirect beneficiaries:</b>	45,000 farmers, local government representatives; other members of beneficiary communities (50% are women)		
<b>Financing:</b>	Technical cooperation:	US\$1,240,372	21%
	PROADAPT facility:	US\$384,500	6%
	Investment:	n/a	

	Loan:	n/a	
	<b>TOTAL MIF CONTRIBUTION:</b>	<b>US\$1,624,872</b>	27%
	Counterpart contribution:	US\$4,318,618	73%
	Cofinancing (if any):	n/a	
	<b>TOTAL PROJECT BUDGET:</b>	<b>US\$5,943,490</b>	100%
<b>Execution and disbursement timetable:</b>	Execution period 36 months and 42 months for disbursements		
<b>Special contractual clauses:</b>	Conditions precedent to the first disbursement: (i) approval by the Bank of the project Operating Regulations, which will contain milestones previously agreed upon with the executing agency for triggering program disbursements; (ii) approval by the Bank of the annual work plan (AWP) for the first year of the project, in each country; and (iii) selection of the project coordinator.		
<b>Environmental and social review:</b>	This operation has been pre-evaluated and classified in accordance with the requirements of the IDB Environment and Safeguards Compliance Policy (OP-703). Given the limited impacts and risks, it is proposed for classification as a category C operation.		
<b>Unit responsible for disbursement:</b>	MIF/CHO		



## I. BACKGROUND AND RATIONALE

### A. Problem to be addressed by the project

- 1.1 Coffee is one of Central America's most important exports to the countries of the European Union, the United States, and Canada. In addition to creating jobs and generating foreign currency, coffee has a positive impact as the primary income-generating activity for a majority of the region's rural families. However, the sustainability of the industry is threatened by the effects of climate change and lack of capacity at the local level for natural resource management. In response, governments and private companies must develop innovative strategies to comprehensively address these problems based fundamentally on environmentally and economically sustainable farm management.
- 1.2 Blue Harvest is an innovative initiative that has been working for just over a year in the Dry Corridor region, which includes parts of El Salvador, Honduras, and Nicaragua, incorporating soil and water conservation elements as a strategy to enhance competitiveness and market access for small coffee farmers. The important relationship between water conservation and the market is gaining recognition among agrifood companies—especially coffee and cocoa operations—in which water is a key input in the final product. A clear example of this commitment to finding solutions with coffee farmers to manage water at source can be seen in Blue Harvest with the technical and financial support of the coffee company Keurig Green Mountain (KGM), the Howard G. Buffett Foundation, and Catholic Relief Services (CRS).
- 1.3 This initiative systematizes resources and knowledge around coffee agroforestry and sustainable water management systems, basically through two fundamental pillars: an agroforestry management pillar and a pillar to strengthen local governance of water resources. The MIF project will expand the scope and depth of the program and introduce a third fundamental pillar to promote market access practices with global coffee roasters and buyers that recognize the value of water and soil conservation practices and reflect that value in the prices they pay to farmers. Thus, factors described initially as problems can become windows of opportunity and market access if mechanisms for collaborating with the main actors in the coffee value chain are identified and if environmentally resilient agricultural practices are implemented.
- 1.4 The main problem addressed by the Blue Harvest initiative is weak capacity among small farmers to manage their farms as profitable businesses with effective water and soil management practices. The causes of the problem are as follows:
- 1.5 **Lack of explicit commercial linkages and incentives to encourage farmers to adopt more efficient soil and water management practices.** The coffee industry suffers from extremely volatile prices and yields, with unpredictable ups and downs that hit small holder farmers particularly hard, leaving them in most cases in the red.<sup>1</sup> As yet, there is no clear business model for running a small coffee farm: small farmers are not using tools to calculate their production costs, which limit their ability to analyze investment options, negotiate with buyers and brokers, and set

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<sup>1</sup> Coffee prices are expected to continue to fall during the 2015-2016 season, according to the International Coffee Organization <http://dev.ico.org/documents/cy2014-15/cmr-0515-c.pdf>.

up mechanisms for collaborating with the main actors in the value chain. In turn, companies interested in long-term agreements are unaware of the production costs incurred by the farmers in their value chains. According to recent studies conducted by the International Center for Tropical Agriculture (CIAT) in Colombia, coffee-growing regions are characterized by various types of farmers who depend in different ways on coffee production for their income.<sup>2</sup> This suggests that, depending on the type of producer, production costs and returns on investment vary from one case to the next. Information of this kind is not yet available in the project's intervention zones, yet it is essential for firms and farmers so as to ensure that the value chain will be sustainable over time. It is also quite difficult to promote succession planning for younger farmers if the case cannot be made that coffee farming is a means to a decent standard of living.

- 1.6 **Lack of awareness of the implications of current agricultural practices and strategies for resilience to climate change.** In the project intervention area, the soil has almost no capacity to hold water, which has led to more frequent flooding, increased contamination, and surface runoff during the rainy season. Historic yields of around 42 quintals per hectare are now at 3 to 16 quintals per hectare, and coffee plantations have become much more vulnerable to pests and disease, such as coffee rust.
- 1.7 Furthermore, farmers are currently using large volumes of fresh water for processing their harvest and drying the coffee, then dumping that highly contaminated, untreated water into nearby creeks and rivers. These discharges not only pollute the drinking water for communities downstream but also destroy aquatic flora and fauna. On the other hand, a shift in production to other crops and livestock activities is expanding the productive area at the expense of shade trees and perennial coffee bushes, thus leaving the soil directly exposed to rain and heat, leading to erosion and exacerbating the risk of landslides. Farmers have no strategies for adapting to the effects of climate change, nor do they have resilient technologies available.
- 1.8 **Weak local governance for developing an integrated approach that encompasses the market, farm production, and sustainable water management.** Each country has its own national agency responsible for managing water supply, as well as a different set of organizations responsible for agriculture at the regional level, and sometimes at the local level. This results in weak planning of comprehensive water resource management in line with producer and consumer needs in rural areas. There are a great variety of projects with infrastructure investments that are underused and/or poorly evaluated, which has led to a continuous deterioration in watersheds.
- 1.9 Water user committees have limited technical capacity to efficiently manage resources and few connections with municipalities to coordinate actions and improvement plans. In most cases, there is virtually no watershed management plan. There is a critical need to build necessary management capacities at the local level to promote sustainable production and protect water sources to meet the current and future demand of rural communities.

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<sup>2</sup> Costs of production: field data from Colombia. CIAT. <http://coffeelands.crs.org/2015/05/costs-of-production/>

- 1.10 This is the first project within the Sustainable Agriculture Food and Environment (SAFE) Platform (RG-M1269), a collective initiative by industry, farmers, and specialized agencies with the objective of incentivizing and promoting the adoption of commercial models for sustainable agriculture focused on the resilience of small holder farmers. The coffee company KGM, a founding partner of SAFE, will provide significant resources for the project counterpart contribution and will endeavor to incorporate the project's beneficiaries into its supply chain. The effects of climate change on small holder farmers and their access to high-value markets requires efforts across the industry in the form of collective and collaborative action to unleash the economic and environmental potential of small holder farmers for the region. KGM, through its participation in this project, is seeking to establish a model that will generate fresh incentives for small holder farmers and encourage other actors in the chain to follow suit.
- 1.11 This project will also receive funding from the facility "PROADAPT: Regional Facility on Building Climate Resilience in MSMEs in Latin America and the Caribbean" (RG-M1223 and RG-X1167), approved by resolution MIF/DE-3/13 on January 30, 2013 ("PROADAPT"). PROADAPT is co-financed by the MIF and the Nordic Development Fund and supports solutions for enhancing climate resilience capacity in micro, small and medium sized enterprises firms in the region, which focuses on the development and implementation of climate-smart agriculture practices in the region's key economic sectors. The funding support from this facility will finance activities to strengthen the capacity of small holder farmers to adapt to the effects of climate change, and sustainable farm management practices will be implemented to promote the development of tools that will make this approach a more attainable reality for small-scale farmers. The General Manager of the MIF has the delegation of authority to approve the PROADAPT funds that are chargeable to the resources of the Nordic Development Fund, and would approve such funds after approval by the Donors Committee of the technical cooperation in the amount of \$1,240,372 chargeable to the resources of the MIF.

## **B. Project beneficiaries**

- 1.12 The project will be of direct benefit to 3,500 small-scale farmers in seven target zones distributed as follows: El Salvador: Cordillera de Apaneca, targeting the hydrographic regions of Cara Sucia and La Paz, specifically in the municipalities of Tacuba, Jujutla, and Concepción de Ataco, including El Imposible National Park. (ii) Honduras: the Opalaca Biological Reserve and the Jilguero (Marcala) departments of Lempira, Intibucá, and La Paz in the southwestern portion of the country. These areas form the headwaters of the major tributaries of the Lempa River and they are the source of water for a collection of local communities with a total population of some 100,000. (iii) Nicaragua: municipalities of Tuma la Dalia and San Ramón (located in the department of Matagalpa), and the micro-basins of San Rafael and La Pita.<sup>3</sup> Given the impacts that this project will have on areas that supply water, the total indirect beneficiary population is estimated at some 45,000 people.
- 1.13 The majority of the project intervention areas are characterized by extreme or moderate poverty, with rates averaging between 50% and 70%. At the same time, they are water recharge areas as well as areas where coffee production is the

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<sup>3</sup> See the map of intervention zones (Annex VIII).

principal economic activity for the majority of families in the community. The average income of these farmers from coffee production is approximately US\$140 per month.

- 1.14 The project will work with small holder farmers with one to three hectares of arable land, around 40% of whom are women. These female beneficiaries basically perform three broad groups of functions: coffee production, participation and support in various tasks during production, harvesting and care of the farm's plantations, and participation and leadership in water user committees. For each of these broad groups, different activities have been planned to address specific needs.
- 1.15 While coffee production is still seen as a male-dominated activity, one of the ongoing challenges is to identify opportunities and barriers that women face in gaining access to services that support their performance and at the same time enhance coordination and upgrading of their roles in the coffee value chain as a whole. As part of the collaboration with the SAFE Platform, the project will coordinate with HIVOS (the executing agency that runs this platform) so that local technicians can have a value chain mapping toolbox available that takes into consideration gender issues when methodologically identifying value chain activities in which women participate to identify action plans that strengthen their roles.<sup>4</sup>
- 1.16 With respect to fieldwork, the executing agency will rely on local organizations with which it has been working for several years now to coordinate project activities and install capacities in these areas to promote sustainability after project funding ends. To this end, it will work in El Salvador with the Asociación de la Cuenca del Golfo de Fonseca [Gulf of Fonseca Watershed Association] (ACUGOLFO), the Fundación del Desarrollo y la Restauración Ambiental [Development and Environmental Restoration Foundation] (FUNDESYRAM), and Caritas Diocese of Santa Ana; in Honduras, with the Comité Central Pro Agua y Desarrollo Integral de Intibucá [Central Committee for Water and Integral Development] (COCEPRADII), Asociación para la Gestión integrada de las Cuencas de La Paz y Comayagua [Association for the Integral Management of Watersheds of La Paz and Comayagua] (ASOMAINCUPACO) and the Cooperativa de Ahorro y Crédito [Savings and Loan Cooperative] of the department of Intibucá (CACIL); and in Nicaragua, with the Unión de Cooperativas Agrícolas Augusto C. Sandino [Union of Agricultural Cooperatives Augusto C. Sandino] (UCA) and the Asociación para la Diversificación y Desarrollo Agrícola Comunal [Communal Agriculture Diversification and Development Association] (ADDAC).

### **C. Contribution to the MIF mandate, Access Framework, and IDB strategy**

- 1.17 **Link to the agenda for linking small producers to high-value agricultural markets.** The project will contribute to the knowledge outcomes and outputs of the agenda by providing knowledge and lessons learned with respect to: (i) innovative models within value chains, in this case for sustainable coffee farming with an emphasis on water and soil management; and (ii) effectiveness of MIF

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<sup>4</sup> The Coffee Toolkit was developed by SCP, Agri-ProFocus, Fair & Sustainable Advisory Services, IDH, and Hivos for the coffee industry, in response to the demand for knowledge on how best to integrate women and youth in the coffee value chain. It provides practical approaches and tools for stakeholders and service providers. <https://hivos.org/focal-area/sustainable-producer-entrepreneurship-and-markets?snid=24748>.

- interventions in achieving the proposed socioeconomic and environmental impacts through the measurement of results, development of economic data, and tests to estimate the value of the investments for restoring watersheds in coffee-growing regions. The Country Offices will share outputs and outcomes and will work in coordination with two projects that are presently in execution: (i) Reducing Environmental Impacts and Improving Efficiency in Coffee Processing (ATN/ME-14311-HO), executed by SNV<sup>5</sup>; and (ii) Generations: Closing the Generation Gap between Youth and Adults in Rural Communities (ATN/ME-14608-RG), executed by the Hans Neumann Foundation.<sup>6</sup>
- 1.18 Collaboration with the IDB Group. Honduras. The project is aligned with the Bank's country strategy with Honduras 2015-2018, specifically in the area of social inclusion. Coffee is one of the prime generators of employment and incomes, accounting for at least 100,000 jobs directly and up to one million jobs indirectly during harvest time. The importance of coffee for Honduras is so great that it can affect the country's macroeconomic stability. Consequently, this project is of considerable significance in terms of ensuring sustained income and minimum levels of consumption for families in western Honduras. In addition, as mentioned in the country strategy, Non-Sovereign Guaranteed operations will take advantage of opportunities to provide technical assistance in other areas that affect development, as in the case of production activities.
- 1.19 Nicaragua. The project is aligned with the Bank's country strategy with Nicaragua 2012-2017, which identifies rural development/value chains as one of the sectors for deeper analysis, through a multisectoral approach based on strengthening value chains of rural origin, by increasing the value added of production and the inclusion of small farmers/firms, in order to boost their incomes.<sup>7</sup> One of the cross-cutting action areas in the initiative supported by the Bank is climate change vulnerability reduction, adaptation, and mitigation.
- 1.20 El Salvador. The project is also consistent with the country strategy in preparation by the Bank with El Salvador for 2015-2019, which, among its cross-cutting action areas, calls for measures to reduce vulnerability to natural disasters and environmental degradation, and to promote adaptation to climate change and regional Mesoamerican integration.

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<sup>5</sup> The objective of this project is to improve coffee processing to reduce its environmental impact and use waste to generate biofuel and produce organic fertilizers. The project and Blue Harvest work in the department of La Paz but benefit different municipalities (Marcala for the biogas project and Opatoro and Santa Ana in the case of Blue Harvest).

<sup>6</sup> This project targets the Trifinio border region and the region of Olancho and La Paraíso in Honduras. Its objective is to promote the inclusion of rural youth in the coffee value chain and improve their opportunities to obtain formal education and employment.

<sup>7</sup> Coordination efforts will also be carried out with operations from the Country Office in Nicaragua: Innovative Model for Long-term Financing for Coffee Farmers (NI-M1038), which will provide long-term financing for coffee farmers to restore plantations affected by the recent outbreak of coffee rust disease; Helping Small Producers to Diversify Crops in Northern Nicaragua (NI-M1034), which is helping rural families in Jinotega to diversify their crops and reduce their reliance on coffee as a monoculture; and Linking Small Producers to High-value Financial Structures (RG-M1153), with Root Capital.

## II. PROJECT OBJECTIVES AND COMPONENTS

### A. Objectives

- 2.1 At the impact level, the objective will be to increase the income of beneficiary farmers and raise water levels in recharge zones. At the outcome level, the objective is to establish commercial links with firms that recognize the sustainable agroforestry practices of coffee farms in seven areas of the Dry Corridor.

### B. Description of the model/solutions/intervention

- 2.2 As mentioned in paragraph 1.2, the Blue Harvest initiative has been under way for a little over a year and has already yielded significant results, such as the issuance and approval of four municipal ordinances governing land use and protecting water resources, some 700 hectares that are being managed under better agricultural practices and benefiting from the restoration of water resources, and 2,100 farmers of the total expected number of 3,500 that are already receiving specialized technical assistance.<sup>8</sup> This intervention model has proved to be an important tool for delivering technical support to farmers affected by coffee rust and encouraging them to continue to farm in a sustainable manner.
- 2.3 The MIF intervention will expand the scope and depth of the program recently launched by these partners. In addition to continuing to provide technical training to farmers and improving local governance, the MIF will introduce the market access dimension, which will serve all beneficiaries of the initiative by introducing innovative mechanisms for managing price risk and creating additional opportunities for growth in activities with greater value added over the long term (such as, for example, establishing plant nurseries and diversifying into complementary crops such as cocoa, plantains, bananas, fruit trees and timber species). In turn, the emphasis on soil and water conservation will allow for protection and efficient management of approximately 38 water sources, thus promising a better quality of life in those communities for which these represent the main source of drinking water.
- 2.4 Basically, the project calls for establishing a direct relationship between agroforestry coffee systems, water sources, and access to high-value markets, based on three main pillars:
- 2.5 **Promoting sustainable coffee production.** The program calls for developing local farmers' capacities in technical and organizational aspects through the horizontal learning methodology or farmer field schools (ECAs). The ECAs include support for planning, training on model farms, and field visits with groups of farmers to analyze and share results and learning. Blue Harvest uses this methodology as a working platform, as it integrates into the learning process all components of the farm (soil, water resource management, crop diversification, and gender and family issues). The training model is also designed to instruct farmers in practices relating to climate change adaptation and resilience and to

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<sup>8</sup> The municipal government of San Juan, in Honduras, has issued three municipal ordinances regulating the handling of coffee byproducts (pulp and wastewater) and deforestation and prohibiting slash and burn farming techniques within the Opalaca Biological Reserve. Meanwhile, in Tuma La Dalia, Nicaragua, an approved ordinance establishes, *inter alia*, a 200-meter buffer zone to protect water sources (springs, creeks, and rivers), prohibiting the cleaning of backpack sprayers and the preparation of agrochemicals near water sources, and protecting forested areas that have not been used for agriculture.

train a new generation of extension workers. To move forward with these activities and to promote the wider adoption of these practices, coordination is being arranged, in the case of Honduras for example, with the Honduran Coffee Institute (IHCAFE), the Forest Conservation Institute (ICF) and the Tropical Agricultural Research and Higher Education Center (CATIE).

- 2.6 **Building local capacities for effective and sustainable water resource management.** In the intervention zones already identified, Blue Harvest will train and strengthen water user committees to protect and take responsibility for managing this natural resource. To this end, it will promote training in supervision and evaluation techniques that will allow communities to identify the main causes of water shortage in the region. In many cases, current water sources (springs and rivers) are capable of supplying the population, but the main causes of scarcity lie in leakage from current infrastructure, waste, and poor farming practices. Consequently, the project will continue to pursue coordination with municipal governments to redirect investments and increase financing for the restoration of watersheds when necessary. Watershed management plans will be developed, for example, with expert consultants and with the participation of the local population so as to give the watershed committees more tools for land use supervision and regulation that will protect quality and control flow levels so as to meet demand throughout the year.
- 2.7 **Improving access to high-value markets.** The program will identify practices for improving market access and terms of trade for small holder farmers. Farmers will receive support in the form of consulting services and training to help them calculate their production costs in order to achieve efficiencies in their processes and gain negotiating power with their buyers. In addition, consulting services will be engaged to identify bottlenecks within each local value chain, with market experts hired to negotiate and support agreements between farmers, cooperatives, and buyers. As part of these activities, efforts will be made to coordinate with credit institutions to give the farmers greater access to available sources of financing. At present, farmers do not have access to small loans that would allow them to restore their plantations, purchase technology, or improve their farm infrastructure because they do not meet the minimum requirements or have business plans that would demonstrate the medium-term profitability of their operations. In addition, as part of collaboration with firms, a study will be conducted with local cooperatives and the major coffee buyers and roasters (including KGM, International FC Stone, Origin Inc., FairTrade, Volcafe, and ECOM) to identify pilot mechanisms for managing price risk. Marketing activities will also be undertaken to promote the Blue Harvest production model with other firms and to support the creation of a special coffee blend that will bear the “Blue Harvest” name. Lastly, steps will be taken to update standards and certifications to recognize the importance of protecting water sources for the production of specialty coffees, with this becoming one of the requirements of these certifications.

## C. Components

### **Component I. Sustainable coffee-based agroforestry in watersheds (MIF-PROADAPT: US\$384,500; Counterpart: US\$1,278,928)**

- 2.8 The objective of this component is to develop and implement agroforestry systems as resilience measures in the efficient use of water and ecological care of the soil. The PROADAPT facility will be responsible for this component, drawing on lessons

learned and networks of specialists in the area of climate-smart agriculture. Implementation of these resilient farming practices will improve per-hectare yields and harvest quality, which will provide greater access to high-value markets. This will promote a sustainable approach to farming, enabling farmers to meet escalating and demanding market requirements.

- 2.9 There are two major groups of specific activities for this component. The first involves training and technical assistance for farmers, including: (i) hiring agronomists for the training to be provided at the ECAs for sustainable farm planning and post-harvest techniques, including identification of high quality varieties. Because improving genetic quality is key to increasing the productivity and quality of coffee, farmers (mainly women) will be trained to develop plant nurseries for the production of coffee varieties that are resistant to disease such as coffee rust; and (ii) trainings that focus on practices relating to climate change adaptation and resilience, stressing the importance of diversified production systems, supporting the inclusion of other commercial crops such as plantain, citrus, pineapples, yucca, beans, and timber trees.
- 2.10 The second group of activities under this component involves organizing exchange visits within and between countries to facilitate learning between farmers, community leaders, and government officials. So far, this activity has proven fundamental for achieving agreements, improving policies, leveraging funds, and disseminating the model for integrated agricultural production and water resource management.
- 2.11 Implementation of these farming practices will improve per-hectare yields and harvest quality. And plant nurseries will serve as small business units for producer associations, lowering production costs across the board.

**Component II. Strengthening of local governance for water resource management (MIF: US\$224,368; Counterpart: US\$1,139,130)**

- 2.12 The objective of this component is to build and strengthen institutional mechanisms at the local level to protect and restore water sources in line with production needs. This component will strengthen governance of water resources, in coordination with local governments and water user committees, in order to promote more efficient water use. The coffee industry is increasingly concerned about the long-term sustainable management of water and feels it is important to work in coordination with local governments.
- 2.13 The principal activities under this component are: (i) training workshops for farmers and water committees to strengthen their organizational and technical capacities for water resource management, which includes the organization of local forums to share experience with resource management; (ii) development of watershed management plans, with the diagnostic assessment of water systems so that local authorities can identify the main problems and support the design and implementation of effective solutions through water resource management plans; (iii) consulting services to develop water protection strategies, review of existing legal mechanisms to avoid overlapping instruments, and identification of mechanisms for effective protection, such as through the legal designation of protected areas; and (iv) consulting services to provide technical support for water infrastructure investments and identification of leaks with training for local water service providers.



- 2.14 The main outputs of this component are at least seven agreements that will be negotiated between water user committees and local governments for water resource management and protection, and fifteen committees will be strengthened in areas related to water use control and troubleshooting.

**Component III. Improved access to high-value markets (MIF: US\$443,421; Counterpart: US\$687,600)**

- 2.15 The objective of this component is to establish relationships and agreements between coffee farmers and buyers to facilitate access to national and international markets and identify economic incentives for both coffee farmers and buyers to invest strategically in sustainable production with efficient water use and ecological care of the soil. The project has preliminarily identified value chain actors in the intervention zones that have demonstrated interest in participating in project activities, as part of their approaches and strategies for a sustainable supply.
- 2.16 The main activities under this component will include: (i) consulting assignments to develop a methodology that enables farmers to determine production costs of coffee farms; (ii) value chain training plans where a marketing manager will be hired in each country who will be responsible for implementing a cost and sales strategy, boosting the visibility of women's activities in production, and promoting coordination between firms and cooperatives. The marketing manager will also facilitate greater access to available sources of financing for small holder farmers at the local level; (iii) consulting assignments to develop price risk management mechanisms involving buyers, roasters, and farmers; and (iv) consulting assignments to review existing coffee certifications and propose adjustments that focus explicitly on water and soil management. To this end, workshops will be held to discuss the proposals with stakeholders in the sector (Rainforest, Utz, FairTrade USA, among others), in the framework of the world's largest specialty coffee event, sponsored by the Specialty Coffee Association of America.
- 2.17 The main outputs of this component include at least six marketing agreements that will be negotiated with coffee roasters and/or buyers following the price risk management methodology, 3,500 farmers will maintain records of production costs, and at least two private certification standards will be developed that consider water and soil management mechanisms as part of the evaluation criteria for labeling requirements.

**Component IV. Knowledge and communication management strategy (MIF: US\$145,000; counterpart contribution: US\$65,000)**

- 2.18 The knowledge objective of the project is to systematize, document, and disseminate the sustainable coffee-growing model with an emphasis on water and soil management, for strategic audiences, in particular: (i) local governments and organizations interested in scaling up sustainable coffee growing, with special attention to those located in water recharge zones or basins (e.g. IHCAFE, ICF, CATIE, AHROCAFE, the agriculture ministries in the three countries, the Salvadoran Coffee Council, ANDA, INTA, and CONACAFE in Nicaragua; and (ii) coffee buyers and brokers interested in promoting sustainable strategies along their value chain (e.g. KGM, International FC Stone, Origin Inc., FairTrade, Volcafe, ECOM, and Starbucks).
- 2.19 This project will help reduce knowledge gaps by generating knowledge and lessons learned in terms of: (i) innovative models that exist within the sustainable

- coffee value chain with an emphasis on management of water sources and ecological care of the soil; and (ii) price risk mechanism methodologies that allow farms to develop longer-term business plans.
- 2.20 In order to meet the knowledge needs of the audiences identified, the following knowledge products will be developed:
- (i) A methodological guide outlining the steps for establishing a price risk management mechanism that provides stability and allows farmers to make investments and generate acceptable earnings. These mechanisms should also give buyers assurances of certain levels of quantity and quality at the end of the harvest. Workshops will be organized in the framework of the SAFE initiative to replicate this model, so it can be promoted among the partners and disseminated to other networks along the entire value chain.
  - (ii) A methodological guide for calculating water benefits: this tool will be designed to calculate the benefits of conservation works and farming practices in terms of water volumes. At present, the firm Limnotech is developing a pilot phase in which the Blue Harvest team enters data on soil use, precipitation, evaporation and transpiration, and other variables, for testing in a couple of representative watersheds. The MIF will finance the design of the guide and the development of an online tool for public use.<sup>9</sup>
  - (iii) A visual tool that is accessible online: the Blue Harvest team has already developed a pilot experiment with a geographic information system (GIS) to estimate the number of people in Central America who depend on coffee growing zones for their drinking water, using three layers of information: coffee producing zones, geo-referenced water sources, and population censuses in each country. With MIF funding, CATIE will be contracted to refine and improve the GIS so as to develop an interactive online map. This tool will serve to: (a) identify water sources in coffee growing zones that require immediate attention (high risk); (b) allow coffee roasters and buyers to identify their supply zones with the sources and rivers affected by coffee production and processing; and (c) enable cooperatives, local governments, and government agencies to visualize how coffee affects water resources.
  - (iv) At the end of the project, a closing event will be held to share knowledge and lessons learned with the key stakeholders involved in the project, and with potential adopters.
- 2.21 Each year the executing agency will update the project fact sheet (provided by the MIF), which contains basic information on the project, its challenges, the intervention strategy, and results.
- D. Project governance and execution mechanism**
- 2.22 To ensure proper governance of the project, an advisory council will be created consisting of representatives from the MIF, the executing agency, Keurig, the

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<sup>9</sup> Limnotech is a firm based in the state of Michigan, in the United States, with over 40 years of experience developing sustainable hydrologic models. It has launched the pilot tool, which is specially adapted to the Blue Harvest model and has been designed in an Excel spreadsheet, using the Soil and Water Assessment Tool (SWAT) and the Modified Universal Soil Loss Equation (MUSLE). MIF funds will finance the design of an online version of the tool, enabling users to estimate water recharge and runoff reduction volumes under various scenarios.

government at the local level, national coffee institutions, and other corporate partners.<sup>10</sup> The council will meet semiannually and will serve as a forum for dialogue and coordination with relevant actors to guarantee project sustainability by taking steps to ensure effective management, fulfillment of objectives, and operational transparency, to achieve sustainability once grant funding ends. The executing agency will report on project progress during the meetings and will seek support and general advice for its successful implementation.

- 2.23 Catholic Relief Services (CRS) will be responsible for promoting and ensuring effective coordination of the principal stakeholders in the project, including corporate partners, the SAFE platform, financial institutions, local organizations and governments, and other private sector partners.

#### **E. Sustainability**

- 2.24 Strengthening the commercial competitiveness of the beneficiary farmers and their organizations so they can become relevant actors in the specialty coffee market is the key thrust of the economic and financial sustainability strategy. Farmers will have the knowledge and experience needed to evaluate risks throughout the value chain, to identify and overcome any obstacles that may arise, and to evaluate new business opportunities beyond the life of the project. The project will also allow Blue Harvest to raise other funds to expand its approach, likely through its cooperation with the SAFE platform of the MIF, to enhance access to financing for beneficiary organizations, and to become an important player in the specialty coffee market. Increasing production and enhancing the positioning of small farmers in high-value markets will not only ensure their economic sustainability but will also drive the social and environmental transformation of some of the most vulnerable communities in Honduras, El Salvador, and Nicaragua. The various workshops and training courses financed by this project will be fully replicable by other actors in the global coffee value chain.

- 2.25 One year before the end of project execution, a sustainability workshop will be held with all the entities involved in order to identify the measures needed to ensure continuity of project activities once funding ends.

#### **F. Lessons learned by the MIF and other institutions in the design of the project**

- 2.26 Best agricultural practices. The results and recommendations of a report commissioned by CRS on best farming practices will be integrated into the project, specifically: (i) terraced agriculture, use of improved varieties, establishment of vegetation cover, and effective soil management; (ii) protection of slopes and soil, particularly in areas close to highways, so as to avoid storm runoff and make farms more resistant during the rainy season. Nevertheless, it is equally important to quantify the economic benefits of introducing good agricultural practices. This project will make an explicit connection between these practices and access to international markets, as training of this kind has facilitated swifter and broader adoption in the past.

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<sup>10</sup> Preliminarily, possible members could include IHCAFE, the firm Molinos de Honduras, ICF, PROCAFE, the Salvadoran Coffee Council, El Salvador's Ministry of Agriculture, CENTA, CONACAFE, INTA, and CECOCAFEN.

- 2.27 The value chain approach to making the intervention effective. In MIF experience, better results are obtained when the intervention has clear objectives with respect to strengthening the value chain, i.e. when steps are taken to strengthen the relationships and linkages between actors in the chain. Component 3 will include these lessons and will test new models for management and coordination between actors in the specialty coffee value chain.
- 2.28 Learning by doing. Transferring knowledge via such methods as designating farmer leaders, interaction with extension workers, and ECA agricultural schools has been shown to improve the understanding and the long-term adoption of sound agricultural practices by farmers. Components 1 and 2 of this project incorporate these lessons and will coordinate adoption of these methodologies by the institutions and local governments as a way of training local workers in the modernized production of coffee.
- 2.29 MIF experience in regional economic development and in working with small farmers highlights the fact that projects are more effective when they enlist participation by key public and private local actors in the functioning of the chain. In addition to Keurig and CRS participation, the project will in this case add a regional development perspective by involving local organizations and representatives in local management of the water resource. This will allow the development of public-private partnerships for promoting regional development and implementing comprehensive solutions.
- 2.30 In 2008, the MIF financed a project in El Salvador, “Supporting small holder farmers to commercialize Fair Trade specialty coffee” (ES-M1021). Components 1 and 2 of this project incorporate the following lessons learned: individualized technical training, together with the mitigating role of coffee certification, were two important factors in enhancing the efficiency of agricultural management and offsetting the volatility of coffee prices. During implementation of the project, El Salvador suffered from major natural disasters that highlighted the need to integrate mechanisms for climate change adaptation and mitigation as an integral part of MIF interventions. The design of this project has been coordinated with the regional technical assistance platform PROADAPT, which will cofinance adaptation activities under this project.

#### **G. MIF additionality**

- 2.31 Nonfinancial additionality. Blue Harvest is an innovative initiative with a complex intervention approach that treats coffee as a conservation tool in its own right. There are few organizations, like the MIF, that are capable of offering technical expertise (in agriculture, climate change adaptation, and market access) and the complementarity needed to add value to the intervention.
- 2.32 The project is part of the SAFE Platform, which, with its broad membership base, will offer an opportunity for continuous improvement of the model, the sharing of experience and recommendations, and potential adoption of the model to expand its impact to other regions.
- 2.33 Financial additionality. With MIF funding, Blue Harvest will be able to continue its normal operations while expanding the number of beneficiaries and deepening its market access intervention. MIF financing is expected to catalyze additional funding, for example in the case of Honduras, where CRS is in discussions with the United States Agency for International Development.

- 2.34 Given the high level of climate-related vulnerability to which the beneficiaries of this project are exposed, a contribution will be provided from the PROADAPT facility,<sup>11</sup> which focuses on strengthening the adaptive capacities of key economic sectors in the region. The facility will contribute funds to finance climate resilience activities, focusing on: (i) raising awareness about the growing impacts of climate change; (ii) training farmers in techniques that give their farms greater climate resilience; (iii) developing environmentally sustainable watershed management plans; and (iv) coordinating with the project “PROADAPT Nicaragua: Building climate resilience in the cocoa and honey sectors”, in order to share lessons learned and explore opportunities for collaboration.

#### **H. Project outcomes**

- 2.35 The project is expected to establish commercial ties with firms that recognize sustainable agroforestry management of coffee farms in seven zones of the Dry Corridor.
- 2.36 The following outcomes are expected by the end of the project:
- (i) 20% increase in the average price for coffee received by project farmers compared with the national FOB price or the market benchmark price.
  - (ii) 2,300 farmers adopt new practices or technologies (disaggregated by sex) (CRF 230100).
  - (iii) 3,500 hectares under sustainable management (CRF 240100).
  - (iv) 300 coffee mills have made their water use and treatment more efficient.
  - (v) 30% increase in coffee yields (quintals per hectare).
  - (vi) 20 organizations/institutions/firms adopt the Blue Harvest model.

#### **I. Project impact**

- 2.37 At the impact level, the objective is to increase the income of beneficiary farmers and raise water levels in recharge zones.
- 2.38 The following impacts are expected by the end of the project:
- (i) 30% increase in net income margins per kilogram produced in the intervention areas.
  - (ii) For 38 water sources, no reduction in flow or volume compared with the baseline.
  - (iii) 50% average increase in vegetation cover in recharge zones for priority sources.
  - (iv) Two million liters of water saved annually during processing.
  - (v) 30,000 people with improved living conditions (disaggregated by sex) (CRF 310401).
  - (vi) 1,000 farmers with links to strategic partners (CRF 230200) (disaggregated by sex).

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<sup>11</sup> PROADAPT is cofinanced by the MIF and the Nordic Development Fund.

## J. Systemic impact

- 2.39 The project will help bring about a systemic change by promoting expansion of sustainably managed agroforestry systems, with a focus on efficient water use that will not only involve farmers but will also require the creation and strengthening of local partnerships (development agencies, municipal governments, donors) to ensure comprehensive and coordinated management of agriculture and natural resource management issues by local authorities.
- 2.40 The project is expected to contribute to the following indicators of systemic impact:
- (i) Key actors adopt new practices based on projects or knowledge products (CRF 450300).
  - (ii) Number of new or improved policies, regulations, or legal frameworks (CRF 450200).

## III. MONITORING AND EVALUATION STRATEGY

- 3.1 **Baseline.** CRS will update the baseline that has already been established with funding from Keurig Green Mountain to increase the indicators under component 3 and to monitor activities related to development of the specialty coffee value chain.
- 3.2 For the baseline, specific sites have been defined and monitoring evaluations are being performed on the basis of key information that includes general characteristics of the population (incomes, geographic distribution, family size, farm size, type of coffee grown, etc.), description of coffee production (volume produced, area under cultivation, processing characteristics, etc.) and analysis of water quality and quantity.
- 3.3 Work is also underway with the Committee on Sustainability Assessment (COSA) to make the indicators defined for Blue Harvest compatible with those that will be used for all projects that are part of the SAFE Platform.
- 3.4 **Monitoring.** Blue Harvest has developed a set of indicators for monitoring many variables in terms of water flow and soil conservation. It is technically very difficult to establish measurable goals with these indicators, but they can be used to evaluate performance and to assess the influence that farming practices may have on resource conservation. This information will provide strategic input for specifying the quantitative benefits and enlisting the commitment of more actors (large-scale producers, governments, donors, and other private sector actors).
- 3.5 **Evaluation.** There will be two project evaluations: a midterm evaluation and a final evaluation.
- 3.6 **Main questions for evaluation.** What impact has the project had on the development of regulations related to the protection of water sources? How effective have the practices developed by the project been for increasing producer incomes and enhancing their resilience to climate change? What features should be included in a sustainable coffee production model that takes into account water conservation and soil use? How effective have the price risk mechanisms been?

What concrete results has the Blue Harvest model had in terms of market recognition? Other questions deemed relevant will be added as the project progresses.

- 3.7 **Closing workshop.** In due course, the executing agency – in coordination with other entities involved - will organize a closing workshop for the purpose of evaluating the results achieved, identifying additional tasks that guarantee the sustainability of the actions initiated by the project, and identifying and disseminating lessons learned and best practices.

#### IV. COST AND FINANCING

- 4.1 The project has a total cost of US\$5,943,490, of which US\$1,240,372 (21%) will be provided by the MIF, US\$ 384,500 will be contributed by PROADAPT, and US\$4,318,618 (74%) will come from the counterpart contribution. The execution period will be 36 months, and the disbursement period will be 42 months.

Project Components	MIF	PROADAPT	Counterpart	Total
Component I. Sustainable coffee-based agroforestry in watersheds	0	384,500	1,278,928	1,663,428
Component II. Strengthening of local governance for water resource management	224,368	0	1,139,130	1,363,499
Component III. Improved access to high-value markets	443,421	0	687,600	1,131,021
Component IV. Knowledge and communication management strategy	145,000	0	65,000	210,000
<b>Execution and Supervision Components</b>				0
Executing agency/ Administration	228,080	0	1,071,807	1,299,887
Baseline	25,000	0	0	25,000
Monitoring system	16,152	0	76,152	92,304
Midterm evaluation	25,000	0	0	25,000
Final evaluation	25,000	0	0	25,000
Ex post reviews	20,000	0	0	20,000
Contingencies	15,000	0	0	15,000
<b>Sub-total</b>	<b>1,167,021</b>	<b>384,500</b>	<b>4,318,618</b>	<b>5,870,139</b>
<b>% of Financing</b>	<b>21%</b>	<b>6%</b>	<b>74%</b>	<b>100%</b>
Impact Evaluation Account (5%)	58,351	0	0	59,159
Agenda Account	15,000	0	0	15,000
<b>Grand Total</b>	<b>1,240,372</b>	<b>384,500</b>	<b>4,318,618</b>	<b>5,943,490</b>

#### V. EXECUTING AGENCY

- 5.1 Catholic Relief Services (CRS) will be the executing agency for the project and will sign the resolution with the Bank. CRS has been working for more than 10 years in Central America on soil and watershed management with complementary initiatives, such as the ProSoil program financed by the Howard G. Buffett Foundation and the Global Water Initiative in Central America. Blue Harvest is built on lessons learned from these programs to effectively promote community-based

- initiatives to protect and manage water resources and other support programs for small coffee farmers, such as the Borderlands program in Colombia.<sup>12</sup>
- 5.2 CRS is a nonprofit organization founded in 1943 by Catholic bishops in the United States to assist World War II survivors in Europe. It has expanded its activities to provide services to some 100 million people, and it has a presence in 93 countries on five continents. It has a team totaling around 5,000 persons, with a small core staff that works out of the organization's headquarters in Baltimore, Maryland. The annual operating budget for 2015 is US\$693 million.
  - 5.3 CRS is currently implementing a MIF project to strengthen the competitiveness of small-scale cocoa farmers in Haiti (HA-M1019), and it recently signed an agreement to begin execution of the "Pathways for Youth" project (ES-M1049) in El Salvador.
  - 5.4 For the proposed project, the executing agency will establish an executing unit comprising: (i) a project manager, who will be responsible for regional coordination of Blue Harvest; (ii) three program officers in each country, who will support coordination and implementation of activities in the value chain and will coordinate actions at the regional level to ensure the strengthening of that approach; and (iii) a financial and administrative assistant for the project. These positions will have the support of national and regional CRS personnel, for example: (i) a monitoring and evaluation officer who will make the program monitoring system compatible with the monitoring and evaluation structure of SAFE; and (ii) a regional specialist in water issues and access to financial markets.
  - 5.5 CRS will also submit status reports on project implementation. The details of the executing unit's structure and the progress reporting requirements are found in Annex 6 of the technical files for this operation. For the procurement of goods and consulting services, as well as for financial supervision and management, the Bank's policies will be followed using the modalities described in this annex.

## VI. PROJECT RISKS

- 6.1 **Sector risks.** Farmers may abandon the proposed practices for efficient water use and soil protection. To mitigate this risk, the project will work with other actors in the value chain to incorporate water management and soil protection as a dimension to be taken into account both in certifications and in commercial contracts. A second risk is a lack of capacity on the part of local entities to manage water resources. The coaching provided by Blue Harvest will empower local partners from the outset to ensure their commitment and active participation in carrying out the management plans already defined.
- 6.2 **External risks.** (i) The adoption of water-efficient agroforestry systems depends in part on the financial capacity of farmers, which in turn is tied to fluctuations in market prices. An unexpected fall in prices may be a disincentive to farmers. To mitigate this risk, the project will work to facilitate risk-sharing agreements and/or to connect farmers with appropriate financing sources. (ii) There is a risk of a lack of interest among entities responsible for water and local governments in implementing watershed management plans in a coordinated manner. Since improving water resource management requires adjustments in regulatory

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<sup>12</sup> CRS Borderlands program: <http://www.crsespanol.org/cafe-borderlands-los-caficultores-de-colombia/>.



frameworks, institutional aspects at public agencies, budgeting for works, maintenance, and other activities, the local authorities may not have the political interest and/or resources to carry out such actions. To mitigate this risk, the executing agency will request letters of commitment from the local governments as an expression of their willingness to implement the action plan agreed upon with the water user boards.

- 6.3 **Climate change risks.** Droughts, floods, or pests and disease could affect the project to varying degrees, depending on their severity. To mitigate these risks, the project will train farmers to treat the soil so as to enhance its absorption capacity and to reduce runoff, as well as to diversify crops and re-forest their farms.

## VII. ENVIRONMENTAL AND SOCIAL IMPACT

- 7.1 The project will also have a significant environmental and social impact, in terms of enhancing the quality, accessibility, and management of water resources for neighboring communities and consumers of this vital natural resource. The establishment of sustainable agroforestry management systems is expected to have the following positive environmental impacts: (i) increase in water flows during the dry months of the year; (ii) increase in vegetation cover; (iii) decrease in the contamination of rivers and creeks; (iv) recovery and protection of key watersheds; and (v) maintenance of land under cultivation, by improving its management with complementary crops and shade trees.
- 7.2 As to the positive social effects, the model is expected to yield the following benefits: (i) greater social and economic development in intervention zones; and (ii) solid structures of local governance that can reconcile productive development with the coordinated management of natural resources.

## VIII. FULFILLMENT OF MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

- 8.1 Results-based disbursements and fiduciary arrangements. The executing agency will commit to the MIF's standard arrangements concerning results-based disbursements, procurement, and financial management, as set forth in Annex 7, as well as the following special arrangements specific to this operation.

## IX. ACCESS TO INFORMATION

- 9.1 Access to information. This project will be made available to the public in accordance with the Bank's Access to Information Policy.