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NICARAGUA

PROMOTING AN AGRICULTURAL ENTREPRENEURIAL MODEL FOR SMALL YUCCA FARMERS IN NICARAGUA

(NI-M1031)

DONORS MEMORANDUM

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Promoting an Agricultural Entrepreneurial Model for Small Yucca Farmers in Nicaragua (NI-M1031)

The Multilateral Investment Fund (MIF), working alongside Opportunity International, is launching an initiative to help yucca farmers access high-value markets both local and regional. The $2.8 million project will focus on implementing a model that not only allows small holder farmers to enter and maintain their position in high value markets but also to eventually profit share from a processing plant that sells to the global starch market. By partnering with Opportunity International, the MIF will contribute to improve and scale-up an agricultural program to convert fresh yucca to starch in a way that increases farm productivity, addresses environmental and social concerns, and allows small farmers to maintain a competitive position with national and regional buyers. In this regard, the project will: i) engage and build the capacity of small holder yucca farmers in four departments (Masaya, Granada, Leon and RAAS) to improve their cultivation techniques; ii) improve the processing plant's processes & industrial scale and provide opportunities for more value added by farmers; and iii) disseminate lessons learned from this project at the national level, as well as transfer knowledge acquired to a local farming school.

While the main product is yucca, the plant will diversify and process 6 local crops. Opportunity International, the executing agency, has made the initial investments in the processing plant and has started initial marketing efforts. Complementary to the processing plant operation, the project will **strengthen the association of small farmers "groups**". The project will contribute to organize farmer groups or *núcleos* to facilitate training on improved farm practices through the peer-to-peer exchange of information and lessons learned. The implementation of *núcleos* or farmer groups will also enable farmers to engage in production of semi-processed "yucca cake", which allows farmers from greater distances to become actors in the value chain as the semi-processed cake yucca can be transported long distances without oxidizing. This innovation will allow the project to eventually include farmers from throughout the entire country. The direct result of the project will be an estimated increase of 30% in farmer income mainly from value added processing and access to high value markets. The results of the project include a business model for co-ownership of the processing plant by small farmers which will sustain the activities well beyond the time frame of the project.

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ACRONYMS AND ABBREVIATIONS

CIAT	Centro Internacional de Agricultura Tropical
CIRAD	Agricultural Research for Developing Countries (in French)
CLAYUCA	Latin American and Caribbean Consortium to Support Cassava Research and Development
CODIPSA	Compañía de Desarrollo y de Industrialización de Productos Primarios, S.A
ESR	Environmental and Social Review
EU	European Union
FUDEMI	Fundacion para el Desarrollo de la Microempresa
HAACP	Hazard analysis and critical control points
IDB	Inter-American Development Bank
INTA	Instituto Tecnologico Agropecuario
MAGFOR	Ministerio de Agricultura y Foresteria
MEDA	Mennonite Economic Development Associates
MIF	Multilateral Investment Fund
NGO	Non-Governmental Organization
PSR	Project Status Report
SME	Small and Medium Enterprise
TOR	Terms of Reference
USAID	United States Agency for International Development

NICARAGUA: PROMOTING AN AGRICULTURAL ENTREPRENUERIAL MODEL FOR SMALL YUCCA FARMERS IN NICARAGUA
(NI-M1031)

I. EXECUTIVE SUMMARY

Country:	Nicaragua
Executing agency:	Opportunity International (OI) a non for profit corporation .
Beneficiaries:	*Direct beneficiaries*: The project is expected to directly benefit 1,100 yucca[1] growing families in rural parts of Nicaragua particularly the regions of Masaya, Granada, RAAS and Leon, although farmers of other regions will also benefit.
Objectives and Description:	The general objective of the project is to contribute to improve the sustainable economic growth of small yucca farmers in rural Nicaragua. The specific objective is to increase access to high value agricultural markets for high quality yucca farmers in the regions of Masaya, Leon, RAAS, and Granada, through an entrepreneurial agricultural model.
Amount and Source:	MIF (non reimbursable): US$ 1,485,366 Local Counterpart: US$ 1,315,407 **Total: US$ 2,800,773**
Terms:	Execution Period: 36 months Disbursement Period: 42 months
Exceptions to the Bank's policies:	None.
Special Contractual Conditions:	Conditions prior to the first disbursement: (i) selection of the Project Coordinator; (ii) approval of the Project's Operating Regulations; and (iii) signed agreement with the microfinance organizations that will provide loans to the farmers for their financial needs.
Environmental/ Social review:	ESG reviewed this operation on October 18, 2012, and there were no observations. The operation has been classified as category "C" operation.
Coordination with other official financing institutions of development:	There will be no coordination with other donor agencies for this particular project.

[1] The production system at the farm level will be based mainly on yucca, but also includes other crops like Hibicus flower and tamarind as a way of diversification of production and incomes at the farm level.

II. BACKGROUND

A. The Nicaraguan Small Farmer Sector

2.1 About 46% of Nicaragua's population lives in rural areas, which is where the country's highest level of poverty exists. Most of the poor, whether urban or rural, are engaged in the agricultural sector.

2.2 Nicaragua's large stretches of land have both agricultural potential and available water for irrigation. Nicaragua also has a large labor pool and tropical climate (either dry or wet) that are conducive to the growth and breeding of a wide variety of plants and crops. The country's major cultivated and exported crops include: coffee, bananas, sugarcane, cotton, rice, corn, tobacco, sesame, soya and beans. The country also has a thriving animal food products industry, producing vast amounts of beef, veal, pork, poultry, dairy products, shrimp and lobsters.

2.3 One product that is characteristic of small holder farmers in Nicaragua, but that has often been neglected or not taken into account by businesses as a commercially viable option for rural families, is yucca[2], a mainstay food source for Nicaraguans that has been grown in the Pacific South for generations. Now grown throughout the country, yucca is often referred to as an informal "savings product", a root that is easily sold in the local market at any time, in exchange for much needed cash. Data from MAGFOR (Ministerio de Agricultura y Foresteria) indicate that there are approximately 34,000 acres (20,000 manzanas) of yucca production in Nicaragua, representing about 7,000 farmers approximately. About 70% of this in the region of Nueva Guinea, where most of it is going to local consumption, local markets and a small percentage (15%) to export through informal channels to neighboring countries[3]. Yucca is a simple crop, of hard skin, comparable to potatoes, but of more nutritional value. Yucca is a main source of fiber, vitamins and iron, and is consumed heavily by rural families. On the production side, it requires little if any agrochemical inputs, and family labor is often used for its harvesting and care. And yet the fact that it has not been planted massively as a commercial alternative in Nicaragua, has resulted in production practices of yucca, that have not been adapted to optimize their chemical composition, compared to other countries such as Colombia and Brazil.

High Value Market Opportunities for Yucca

2.4 Opportunity International (OI) is a not for profit corporation based in the United States, and authorized to work in Nicaragua as an international organization. Opportunity International has been working in Nicaragua for almost twenty years, primarily in the field of microfinance[4]. It developed there a program that currently

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[2] Yucca or cassava is a root vegetable that is high in calories and very drought resistant. For this reason, it is a basic food for 85% of the world's poor.

[3] Information on yucca production and the markets has been taken from MAGFOR reports, Opportunity´s own research for five years since 2007, and CADENA AGROINDUSTRIAL DE LA YUCA, 2004, IICA-JICA-MAGFOR.

[4] The FOMIN is currently executing a successful investment project with Opportunity International in Colombia with its microfinance operations there ATN/ME-11881-CO and EQU/MS-11880-CO.

runs on its own as ASODENIC (Asociacion de Desarrollo Empresarial de Nicaragua), serving over 25,000 micro enterprises with small loans and savings products, primarily in urban areas. In the more recent years, OI has been working with small farmers to identify market opportunities for their traditional crops. In this regard, yucca has come out as a real potential for upgrading and expansion into a commercial level, with much needed value added for the farmers.

2.5 Being the traditional crop that it is, yucca was carefully selected as a key crop for this Project, because of the potential on growing yucca sales in the US as well as substantial domestic and regional demand for the product. The current focus for yucca sales is Nicaragua and Central American markets with future plans for export to the US. The opportunity to add value to yucca comes through some basic processing in the form of waxing. There are 3 classifications of yucca quality: A, B and C, and only Class A yucca can be processed for waxing[5] in order to obtain high prices in upscale supermarkets and/or international markets. While yucca cultivation is a time-honored practice, Nicaraguan farmers have limited knowledge of contemporary farm techniques to improve yields and crop quality. And success in the processing of yucca depends on the ability of the farmers to produce a high quality yucca which can be used as raw material for processing. In this context, Opportunity International has developed an agricultural farm program called "field to market", which is an integrated strategy to increase agricultural opportunities for farmer, combining farm and field training, with a loan product to enable small farmers to enhance their technical capacity to produce high yielding yucca.

2.6 At present, this strategy has enabled several hundred farmers in the Masaya and Granada region to increase their yucca yields from 130 quintals per manzana (local measure equivalent to about 7,000 square meters) to over 200. This has translated into an increase in income of about 100% in value, where farmers now make US$635 per manzana, compared to US$310 before the program.

2.7 At the same time, OI has built a processing plant in the city of Granada, as a central point, to buy the raw yucca from farmers and process it into waxed yucca and yucca flour or starch, at no cost to the farmer. Through this plant, OI has been able to quickly enter the local market for yucca flour and processed yucca, and it is currently selling to Nicaragua's largest animal feed company. It also sells its high value products to other buyers including supermarkets and chip and fast food manufacturers.

2.8 All this work has allowed small farmers to see how their traditional crop, can now enter high value markets with potential for ever larger expansion of their production. Issues of quality and sustainable supplies are now easier to relate to, and they are now committed to producing higher quality yucca.

2.9 For the past three years, OI has been working in the yucca value chain, and in this process it has also engaged various partners in both the private and public sector. In order for their field to market program to be successful, OI engaged a microfinance

[5] Yucca waxing is a method that enables the fruit to remain fresh for about a month after its been harvested therefore extending its shelf life and overall value.

organization that has developed effective models and mechanisms for reaching small farmers with adequate financial services. On the agricultural extension side, in order to reach a larger number of small farmers, Opportunity has trained extension agents from the Ministry of Agriculture and Forestry (MAGFOR), sharing agricultural best practices and yucca production techniques. They have also worked with INTUR (Tourism Ministry) and MINED (Ministry of Education) to assure compliance and successful execution of related environmental and education projects. On the commercial side, OI was able to secure a contract with Cargill Corporation in Nicaragua, to sell the processed yucca as part of their animal feed program, as well as with other private sector companies who have expressed an interest in being involved in the Project or with the farmers participating in the Project.

B. Problem Statement and Potential Impact

2.10 In order for this initial engagement with yucca farmers to scale up and reach hundreds of more families in Nicaragua, improved efficiencies and investments need to occur at both the processing level, and the farm. Specifically, the following needs to be addressed: (i) First, **better quality yucca is needed**. When harvesting yucca, the root must be pulled from the ground to determine its class, meaning the whole lot must be purchased from the farmer pre-harvest, using a small sample as the basis for quality. Prices are then determined after the yucca's class is assessed. The project will provide focused technical services to improve farming techniques in order to increase yields and quality of yucca. By establishing loyal relationships with yucca producers that consistently produce high yields of yucca, the project will ensure better pricing and high quality product for export. (ii) Second, **infrastructure investments are needed**. Class B/C yucca can be processed as a starch ingredient for animal feed or be pulverized for other goods, depending on the quality of powder. Currently, the OI plant mills its Class B/C yucca and sells it to a large feed company as a starch for animal feed. Processing and sale of A, B and C yucca must be all part of the same project, and therefore key infrastructure improvements must be made to allow for maximum production. Yucca can be further processed beyond current capacity to create a very high value product known as High Quality Yucca Flour (HQYF). Currently no business is offering this product in Nicaragua. Therefore, the project will enable the production of "high quality" flour with improvements in equipment and plant expansion. In this way, the plant will be able to consistently process all grades of yucca and guarantee a steady form of income for farmers from their yucca plantations. (iii) Finally, **farm diversification is imperative**. Local assessment identified two additional farm products that can be processed at the existing OI plant with market opportunities, and the growing requirements match local capacity of low income farmers: tamarind seeds and hibiscus flower (flor de jamaica).[6] By adding these two crops, the project will also be promoting a business perspective that incorporates long-term vision, ongoing investment and perseverance to achieve sustainable economic benefits. Farm diversification is what allows this long term perspective, as it avoids farmers being dependent on one crop and also enables for a more sustainable model for farm management.

[6] Flor de Jamaica is the hibiscus flower, which is dried and sold to make tea or juice.

2.11 For the diversification need, tamarind and hibiscus flower offer a great potential for expanded commercialization. No records exist on tamarind marketing and production, but since the year 2000, the tamarind seeds have begun to be sold commercially. There is little information on yields and harvest practice. However OI interviewed local farmers and traders and found that 600 to 700 quintals of peeled tamarind are purchased daily during harvest months. The local market and Costa Rica are the main destination of the end product. And a clear increase in demand is evident by the growing number of traders and market outlets. The same is with hibiscus flower, which was introduced in the last five years by a Belgian not for profit organization. Increase demand has been evident by the installation of three private sector producers. And the fact that it is a low cost annual crop, farmers have started to produce and harvest for the local market of tea, drinks, and juices. And yet harvest and drying methods need to be improved on in order to get the yields from 1,000 lbs of dry flower per manzana, that currently is the standard, to at least 2,000 lbs per manzana.

C. Proposed Project

2.12 The project aims to position yucca produced in rural Nicaragua in high value markets through the development of an entrepreneurial agricultural model to improve productivity and foster participation of the yucca farmers (as shareholders) in a small enterprise to process high quality yucca flour. The project will support further investments and operations of the pilot processing plant which will provide farmers entry into higher value markets for their improved crops. While the main product is yucca, the plant has already diversified and processes 2 additional local crops. Opportunity International, the executing agency, has made the initial investments in this plant and has started initial marketing efforts. Complementary to the plant operation, the project will **strengthen the association of small farmers "groups**", inexistent at present for this crop. The project will contribute to organize farmer groups or *núcleos* to facilitate training on improved farm practices through the peer-to-peer exchange of information and lessons learned. The implementation of *núcleos* or farmer groups will also enable farmers to engage in production of semi-processed "yucca cake", which allows farmers from greater distances to become actors in the value chain as the semi-processed yucca cake can be transported long distances without oxidizing. This innovation will allow the project to eventually include farmers from throughout the entire country, rather than being limited to the specific geographic area near the Granada processing plant. The impact of the project will be an estimated increase of 30% in farmer income from yucca sales. The project also aims to establish a business owned partly by small farmers which will sustain the activities well beyond the time frame of the project.

2.13 Smallholder farmers in Nicaragua are typically comprised of families with 4-5 members that depend on 1 to 9 acres of land for their income[7]. In most cases they rent the land and do not have many options to diversify their income because they lack access to market. Although most farmers plant a variety of vegetables for self-

[7] The poverty map reveals that two of the main regions of the project intervention are classified as poor (RAAS and Leon), while Granada and Masaya are classified as non poor.

consumption, better diversification of crops is needed to promote a year round income stream. Nicaraguan farmers have experience with yucca, as it is consumed by the family and typically sold sack by sack to the local market.

2.14 The project belongs to the agenda "Linking Small Producers to High Value Agricultural Markets". The project will test the field to market model of technical assistance to enable small farmers to improve the quality of their product and therefore access higher value markets. The project will contribute to better understanding of the efficacy of the model and its potential for scaling up.

2.15 MIF/PES has successfully financed a yucca processing plant in Paraguay[8]. By MIF recommendation, Opportunity International visited two processing plants in Paraguay: MEDA (Mennonite Economic Development Associates) and CODIPSA (Compañía de Desarrollo y de Industrialización de Productos Primarios, S.A). This visit was a key knowledge sharing activity which helped OI to improve its business plan based on the best practices and lessons identified in Paraguay. Two of the most salient lessons learned from the exchange are: (i) projects to assist farmers with yucca production should include farm diversification as their strategy, not to rely only on yucca. Strategies must be in place to achieve a healthy combination of short, mid-term and long term income streams from other crops: and, (ii) use of a more resource efficient and environmental friendly water-based technology for yucca production (less water), currently available on the market.

III. OBJECTIVES, COMPONENTS AND EXPECTED RESULTS

A. Objectives

3.1 The general objective of the proposed project is to contribute to improve the sustainable economic growth of small holders farmers in rural Nicaragua.

3.2 The specific objective is to increase access to high value agricultural markets for high quality yucca farmers in the regions of Masaya, Leon, RAAS, and Granada, through an entrepreneurial agricultural model. To this end, the project is structured into three components geared at: (i) group formation and technical assistance; (ii) value added processing with small holder farmers in a Small and Medium Enterprise model; and (iii) profit sharing through a farmer co ownership model. The project will also finance activities and knowledge products to capture and disseminate knowledge generated.

B. Components and Activities

Component 1: Group Formation and Technical Assistance for Small Holder Farmers (MIF: US$353,529; Counterpart: US$110,889)

3.3 The main objective of this component is to form a successful network of Farmer's Groups throughout the 4 yucca growing areas of Nicaragua to function as a base for farmer training, financing, and development and/or ownership of the processing enterprise. The network of "núcleos" or farmer groups, will serve numerous functions. It is the first phase of developing the capacity, interest and skills of farmers

[8] ATN/SF-9599-PR Proyecto de Industrialización de Mandioca de los Pequeños Productores del Paraguay.

to share profits and eventually co-own the agricultural processing plant where they sell their product. The núcleo concept depends on each group having a leader that is trained and who returns to assist in training the rest of the members of the group thus sharing information from peers. In this way, the núcleo concept becomes an effective way to share information in a traditional and culturally appropriate way, through peer-to-peer trust. Lastly, the núcleo structure is a cost effective way to deliver technical assistance, financing and to provide on-going follow up to farmers in their fields. In this sense, for the financing needs of the núcleos and its members, through small loans, OI has been working successfully with microfinance institutions in Nicaragua which have been providing short term loans for technology implementation at the farm level.

3.4 The second goal of Component 1 is to develop and deliver technical assistance to 1,100 farmers to increase the quality and production volumes of yucca allowing Nicaraguan farmers to compete internationally. This component will develop training manuals for the field as well as for the processing plant, covering all aspects of value chain development. The technical guide for growing will include the development of a seed bank with INTA to assure the expansion of the best and highest yielding varieties of yucca throughout the 4 growing zones. CLAYUCA[9] will be involved to assure the latest research and testing of varieties is available for use and adaptation in Nicaragua.

3.5 The expected outputs of this component are (i) 1,100 farmers trained and engaged in the project; (ii) 30% increase in farmer´s income due to execution of technical recommendations and access to high value markets; (iii) 50% of farmers trained purchase seed from seed bank and plant them; (iv) at least 50% of farmers trained utilizing the strategies from the Farm Productive Systems in their yearly planting; and (v) the seed bank sells 3 new varieties of yucca seed throughout Nicaragua, fostering increased yields and competitive quality of Nicaragua's yucca; and (vi) at least 40 núcleos have been formed.

Component II: Value added processing with small holder farmers in a Small and Medium Enterprise model (MIF: US$417,180; Counterpart US$975,326) his component will invest in a Small and Medium Enterprise (SME) model that will develop a central processing plant for yucca, and other crops. The plant is operating currently under OI management, and it will be industrialized to allow for year round production, through and expansion that will include thousands of farmers throughout Nicaragua and to become sustainable. The industrialization of the processing plant requires the development of small units in remote areas to semi-process yucca into a "cake" that can be transported safely without deterioration. The development of these semi-processor units provides a solution to inclusion of small holder farmers from remote areas in the yucca value chain. Without the semi-processing technology, yucca can only be harvested within a specific radius of the processing plant because

[9] CLAYUCA is the Latin American and Caribbean Consortium to Support Cassava Research and Development. It is formed by four countries and well known research entities CIAT and CIRAD. The objective of CLAYUCA is to finance and support research in cassava as well as exchange of technologies. Each CLAYUCA is housed within the state or regional agricultural research entities of each of the member countries.

the raw material will oxidize within 24 hours limiting participation by small holder farmers in remote regions with limited infrastructure. Semi-processed yucca cakes remain intact for up to 7 days allowing for transportation to the central processing plant. The development of this industrial model also provides opportunities for núcleos or farm cooperatives to invest in a semi-processor as a business, thus increasing their income and position in the yucca value chain.

3.6 An important part of this component will also be design of the expansion of the plant for production flow, cost efficiencies and MAGFOR requirements. With investment funds from OI, the expansion of the processing plant and installation of all equipment will be done in the first semester of the project. As part of the management of the plant, a Crop Forecasting System will be designed and tested to assist in production planning. It is expected that the plant will update its process and quality control procedures to obtain HACCP certification.

3.7 This component will also result in market research being conducted to explore additional industries where processed yucca flour or starch can be utilized. There are numerous opportunities in Nicaragua and Central America to develop derivative yucca products for local industries. This component will develop at least two additional buyers in a new industry due to research on demand and markets and development of new derivative products to meet buyer needs.

3.8 The expected outputs are: (i) processing plant industrialization and expansion completed; (ii) crop forecasting system developed; (iii) production costs reduced 10% due to plant improvement; (iv) the processing plant obtains HACCP certification; (v) 1 split-process technology built and tested in one region; (vi) biofuel option developed for dryer to reduce production costs and water usage; (vii) at least 2 split processor's developed and housed within farmer owned SMEs; and (viii) the processing plant reaches sales of 2000 tons and $1.25 Million during the period of execution of the project.

Component III: Implementing profit sharing through a co ownership model (MIF: US$163,506; Counterpart US$36,963)

3.9 This component will define the steps to execute a co-ownership model with farmers. The model will track 6 critical elements for success of an enterprise and develop key measures to verify that at each phase of enterprise development, the farmers and employees have mastered the skills necessary to manage each element and move forward toward greater ownership and responsibility. These specific elements will allow the Project to plan a gradual transfer of ownership to farmers based on competency, experience and readiness. The key elements to consider will be: (i) ownership and structure; (ii) investment and financing; (iii) governance and distribution of benefits; (iv) supply management and farmer relations; (v) management and staffing; and (vi) profitability, profits & markets.

3.10 While not all farmers will be looking to own shares in the processing plant, the Project will provide other shared benefits, offering a continuum of profit sharing and ownership options for the diversity of farmers. The Project will define those alternative options so that profit can be obtained at various levels of engagement and risk.

3.11 The expected outputs for this component are: (i) Defined and tested Profit Sharing model, documented and approved, that aligns with culture and interest of smallholder farmers; (ii) Four Farmer groups engaged in designing ownership options; and (iii) At least four farmer groups provided with options to invest.

Component IV: Capturing and Disseminating Knowledge (MIF: US$46,866; Counterpart US$0)

3.12 This component will focus on capturing information and lessons learned from the execution of the Project for two specific audiences: (i) youth, in general, and a younger generation of farmers in Nicaragua, in particular those attending the technical school run by Opportunity International (see below); and (ii) the government's agricultural agency (MAGFOR) and INTA. Opportunity International manages a technical school for young adults living in rural areas, next to the processing plant. The technical school has been authorized by the National Institute of Technology (INATEC, public institution of technical education) and is used to pilot yucca production best practices, and irrigation systems. The main knowledge product would be a "package" of all the knowledge and experience gained through the Project that will be transferred to the school in an instructive format and that will benefit young students interested in learning about farming and access to higher value markets. The project will also promote knowledge exchange with other agricultural technical schools in the country working with INATEC. On the other hand, MAGFOR and INTA will benefit from the methodologies and approach proposed by the project on how to work with small farmers and new technologies for processing and production. The project will systematize technical guides for small farmers on yucca production, quality and financial approaches; as well as a case-study, showcasing the story of the project, lessons learned and best practices.

3.13 Expected outputs from this component are: (i) training manuals developed for forming and managing farmer groups and delivered to INTA and MAGFOR for broad utilization; (ii) agreements with MAGFOR/INTA to share information and promote knowledge/practice of value added yucca opportunities for smallholder farmers; (iii) a case study documenting the experience and the impact in farmers groups and lessons learned; a (iv) Technical High School curriculum created and utilized in classroom with students; and (v) at least 250 persons go through the training in the technical school.

C. Expected Results

3.14 The following indicators will be used to measure project results: (i) Two new high value markets accessed with Nicaraguan yucca product or its derivatives; (ii) at least 2000 tons of yucca sold equivalent to $1.25 Million in sales from the processing plant during the project; (iii) increase of 20% in yields/acre of yucca in the four target regions; (iv) 80% of participant farmers express high level of satisfaction with project intervention; (v) 40% of yucca farmers involved in the program receive shared benefits due to profit sharing model; (vi) and 3 new high quality yucca varieties are sold by seed bank throughout Nicaragua.

3.15 In terms of impact, the project aims to develop a yucca value added industry in Nicaragua. Currently little if any value added is given to yucca in the country. A real business opportunity exists in the matter, and the project will enable OI to implement a model where farmers can actually take advantage of this opportunity with their own production capacity. It is expected that not only the planned 1,100 farmers and their families benefit, but indirectly, a few thousand more farmers will benefit, with a demonstration effect and the possible entering of other private firms in this space with a similar farmer inclusion model. There exist in Nicaragua other agricultural firms who could engage in yucca processing, and this would be a national impact effect.

3.16 **Alignment with the Bank's country strategy**. This initiative falls under strategic area number IV in the Bank´s Nicaragua Country Strategy 2008-2012, Productive Development, specifically in the strategic line, (i) "Promoting agricultural programs to generate income-employment, gender opportunity and economic development at rural areas, with integral models of intervention that include technical assistance, training, institutional strengthening, international quality and standards fulfillment, access to credit, among others". Specifically, through this initiative, the MIF will complement ongoing IDB Group initiatives in the agricultural sector in Nicaragua.

IV. PROJECT COST AND FINANCING

4.1 **Cost and financing**. The cost of the Project is estimated at US$2,800,773. The MIF will contribute US$1,485,366 on a non-reimbursable basis and the executing agency will be responsible for providing the remaining US$1,315,407.

DESCRIPTION	MIF US$	Local Counterpart US$	TOTAL US$
Component 1 *Group formation and technical assistance*	353,529	110,889	464,418
Component 2 *Value added processing and SME development*	417,180	975,326	1,392,506
Component 3 *Implementing profit sharing through co ownership model*	163,506	36,963	200,469
Component 4 *Capturing and disseminating knowledge*	46,866		46,866
Project Administration	256,800	192,229	449,029
Baseline, Monitoring and Evaluation system	79,134		79,134
Ex post reviews	20,000		20,000
Contingencies	30,000		30,000
SUBTOTAL	**1,367,015**	**1,315,407**	**2,682,422**
% of Financing			
Institutional Strengthening (Financial Management and/or Procurement Training)	20,000		20,000
Impact Evaluation Account (5%)	68,350		68,350
Agenda Account	30,000		30,000
GRAND TOTAL	**1,485,366**	**1,315,407**	**2,800,773**

4.2 **Sustainability.** The project has an emphasis on facilitating market linkages and capacity building to maximize the sustainability of results. This will be achieved by the development of a processing plant to be initially run by Opportunity International and later on selling some of the shares and ownership of this plant to the farmers. This is a new model being tested in Nicaragua, but one that promises to deliver on a new way of thinking for small farmers. The exact format of the business co ownership model is still not defined, but the Project will help in this process. At the same time, farmers who engage in improved varieties and production methods of yucca farming, will have reached and maintained increased yields and incomes even after the project is over. OI's commitment to this investment and long term plans to work in Nicaragua, will ensure that the plant and the farmers can capitalize on this market opportunity, even if it means investing beyond the project.

V. EXECUTING AGENCY AND EXECUTION MECHANISM

A. Executing Agency

5.1 The Project will be executed by Opportunity International Inc. , a not for profit corporation, based in Illinois, United States, and authorized to operate in Nicaragua as an international organization. Opportunity's mission is to improve economic activity and the lives of disadvantaged families.

5.2 Opportunity International´s work in Nicaragua is governed by a Board of Directors made up of Nicaraguan and American business leaders, bankers, community economic development specialists and representatives from Opportunity International´s headquarters in the United States. Key decisions regarding operational issues and hiring are made by two key managers, one of them based in Nicaragua, and the other at headquarters in Chicago.

5.3 The Country Director (CD) in Nicaragua oversees all operations in country. There are currently 4 programs operating in Nicaragua: Agricultural Program, Artisan Support Program, Community Leadership/Infrastructure and Technical High School. The CD assists with development of innovations in the agricultural program and in the processing plant. The CD also supervises staff in country. CD is responsible to achieve all program goals set for each program.

5.4 The second key manager is the Director for Community Economic Development (CED) Program for Opportunity International and member of the International Business Development Team at Opportunity International USA. The Director for CED oversees the development of the CED program, policies and investments. She is responsible for pre-operational development of programs, staff training and fundraising. She works with the CD as programs are developed to provide support as needed on-the-ground. The Director of CED oversees documentation of all manuals and training materials to assure CED replication and scaling is possible. She develops the materials for the CED Institute to share with other community economic development professionals, NGOs, Universities or other interested parties.

5.5 Opportunity International developed in 1995 a micro credit program that currently runs on its own as ASODENIC (Asociación de Desarrollo Empresarial de Nicaragua), one of the leading microfinance organizations in the country, serving over 25,000 micro enterprises with small loans and savings products, primarily in urban areas.

B. Execution mechanism

5.6 The project will be managed by a Project Coordinator, who reports directly to the Country Manager. Currently the staff of Opportunity's agricultural programs are more technical than managerial. So with the implementing of the project, OI will hire a full time Project Coordinator who will be responsible for all related work and results of the project, and a Responsible for project fiduciary and procurement management. OI will also designate an accountant to support the executing unit. A TOR will be included in the Operations Manual detailing responsibilities and decision making mechanism.

5.7 **Project Execution Unit**. Opportunity International will house the project-execution unit (PEU) comprised of the Project Coordinator, the responsible for fiduciary and acquisitions management, and an accountant. Key project staff from OI will be collaborating closely with the PEU in project execution, OI Country Director,, and the Director for CED.

5.8 The Project Coordinator will oversee field operations, including, but not limited to project set-up and implementation, logistics coordination, financial planning and monitoring, staff recruitment and training, and coordination with other partners and stakeholders in the project. Also, the Project Coordinator will have the following specific responsibilities: (i) preparation of an annual work plan; (ii) supervision of the activities under the different components; and (iii) periodic review of the progress of the Project fulfillment of the contractual obligations. The Project Coordinator will report to the OI Country Director.

5.9 **Disbursements by results**. Project disbursements will be contingent upon verification of the achievement of the milestones agreed with the MIF. These milestones will be verified using the means agreed upon between the Executing Agency and the MIF. Achievement of milestones does not exempt the Executing Agency from the responsibility of reaching the logical framework indicators and project's objectives.

5.10 According to the Performance and Risk-based Project Management approach, project disbursement amounts will be based on the project's liquidity needs, for a maximum period of 6 months. These needs must be agreed upon between MIF and the Executing Agency and will reflect the activities and costs scheduled in the annual planning exercise. The first disbursement will be contingent on fulfillment to the Bank´s satisfaction of the conditions precedent Subsequent disbursements will be issued as long as the following two conditions are met: i) MIF has verified that milestones have been achieved, as agreed to in the annual plan; and ii) that the Executing Agency has justified 80% of all cumulative advances.

5.11 **Procurement and Contracting.** For the procurement of goods and contracting of consulting services, the Executing Agency will follow as applicable the IDB Policies (GN-2349-9 and GN-2350-9). Given that the Diagnostic of Executing Agency Needs

(DNA)[10] generated a high **level of need/risk** classification, the project team has determined as stipulated in Appendix 4 of the IDB Policies, that the Executing Agency, a private sector agency, will follow private sector procurement methods specified in Annex 1 of the Operational Guidelines for Technical Cooperation Projects (OP-639). In addition, the review of procurement and contracting processes for the project will be conducted **ex-post** and on a semi-**annual** basis and only after conducting the first three processes ex-ante. Before project contracting and procurement begins, the Executing Agency must submit the project Procurement Plan for the IDB/MIF´s approval which should be updated annually and when there are changes in the methods or goods or services to be procured.

5.12 As it was mentioned on 3.4 in this document, CLAYUCA, the Latin American and Caribbean Consortium to Support Cassava Research and Development, is going to be hired by the Executing Agency to provide very specialized technical assistance to do an agricultural study to test soil conditions, yucca varieties and to develop yucca seed banks in the four regions of the project intervention. The direct contracting is based on the OP-639, on the best interest of the project having the only one institution specialized in yucca research and agricultural techniques in Latin America. As it was previously mentioned, CLAYUCA has as its members the lead agricultural research entities like CIAT and CIRAD. The objective of CLAYUCA is to finance and support research in cassava as well as exchange of technologies.

5.13 **Financial Management and Supervision.** The Executing Agency will establish and will be responsible for maintaining adequate accounts of its finances, internal controls, and project files according to the financial management policy of the IDB/MIF. Given that the Diagnostic of Executing Agency Needs (http://mif.iadb.org/projects/prjrissummary.aspx?proj=NI-M1031) generated a **medium level of need/risk in financial management**, the review of supporting documentation for disbursements will be conducted ex-post and on an semi-annual basis. With project resources, the IDB/MIF will contract consultancy services to support and train the Executing Agency in financial management areas that require further strengthening as identified through the DNA.

5.14 The IDB/MIF will contract independent auditors to carry out the ex-post reviews of procurement processes and of supporting documentation for disbursements. Ex post reviews will include an analysis of the Financial Statements that the Executing Agency should prepare as part of its financial management. The costs associated with this contract will be financed with the MIF contribution resources according to IDB procedures.

5.15 During Project´s execution, the frequency of ex post reviews for procurement processes and supporting documentation for disbursements as well as the need for additional financial reports can be modified by the MIF based on the results of the ex post review reports conducted by external auditors.

[10] http://mif.iadb.org/projects/prjrissummary.aspx?proj=NI-M1031

VI. MONITORING AND EVALUATION

6.1 **Project status reports (PSRs)**. The Executing Agency will be responsible for presenting Project Status Reports (PSRs) to the MIF within thirty (30) days after the end of each semester, or more frequently as determined by the MIF. The PSR will contain information on the progress of project execution, achievement of milestones, and completion of project objectives as stated in the logical framework and other operational planning tools. The PSR will also describe issues encountered during execution and outline possible solutions. Within ninety (90) days after the end of the execution term, the Executing Agency will submit to the MIF a Final Project Status Report (Final PSR) which will highlight results achieved, project sustainability, evaluation findings, and lessons learned.

6.2 **Baseline, M&E system**. The Executing Agency will be responsible for establishing a monitoring and evaluation system for the project, that will include gender-disaggregated baseline data on the relevant economic and social indicators for the beneficiary population, including income, revenues, sales, etc. as established in the Logical Framework.

6.3 **Evaluation:** The IDB/MIF will use resources from the contribution to hire independent consultants to conduct two process evaluations. A midterm evaluation will be conducted once 50% of resources have been disbursed or 18 months after Project commencement, whichever occurs first; The midterm evaluation will cover, among other issues: (i) the efficacy of the actions undertaken so far; (ii) the degree to which programmed activities were carried out and mid-term targets met; (iii), the progress and trends with regard to logical framework indicators; (ii)effectiveness of Annual Operating Plan and compliance with project execution; (iii) difficulties, risks, challenges in project execution, and recommendations for effective implementation.

6.4 The final evaluation will be conducted within three months of the end of the execution period, and the following factors will be analyzed: (i) the level of achievement of result and impact indicators established for the end of the project; (ii) effectiveness of the agricultural model and the processing plant to include small farmers in the value chain; (iii) level of knowledge acquired by the beneficiaries from the núcleos and experiential learning activities; (iii) effectiveness of project's activities (new cultivation techniques to improve quality of production to reach high value markets and new yucca varieties); (iv) degree of effectiveness of tools developed within the project such as the crop forecasting system. Evaluation questions include: to what extent did the Project have an impact in the farmer´s income increase? To what extent did the quality and volume of the yucca production contribute to accessing high value markets? Did the intervention´s efforts to train small farmers in productive system techniques made a difference? To what extent was the Profit Sharing Model successful?

6.5 A closing workshop will be organized by the executing agency at least three months prior to the end of the Project's execution period, so that the executing agency, Bank personnel, and any other interested persons agreed upon with the Bank can jointly evaluate the outcomes achieved, identify additional tasks to ensure the sustainability of project-initiated actions, and identify lessons learned. A sustainability workshop will also be organized with the executing agency and other project stakeholders at

least one year before project completion to evaluate progress achieved in ensuring projects' actions sustain after MIF funds are exhausted.

VII. BENEFITS AND RISKS

A. Benefits

7.1 The project targets the smallholder yucca farmers that depend on 1 to 9 acres of land for their income. The majority of these farmers rent land which is used both for feeding their families as well as generating income through sales at the local market. Many farmers in Nicaragua rely on traditional planting techniques which include minimal crop diversification and little to no use of agro inputs such as fertilizers. Yucca is a perfect example of a well-known crop in Nicaragua that can increase farmers' incomes significantly through the implementation of agricultural best practices. Furthermore, yucca in combination with other crops like Hibiscus and Flor de Jamaica can provide farmers with a year round income stream and better cash flow management. Nicaraguan smallholder farmers invest on average $175 per acre of land. This investment is used for renting, preparing, planting the land. One acre produces approximately 5,000 to 7,000 pounds of yucca, which gives the farmer an income between $200 to $300 per acre. This yields on average return on their investment of $90 to $115 in profit.

B. Risks

7.2 The following risks have been identified. (i) **Risk 1:** Market risk: yucca prices have been quite stable in the past few years, with a slight increase at the farm gate level. The project proposes value added to yucca and therefore it is assuming that prices will remain the same or at least not suffer major downturns that would discourage farmers altogether. There is also a risk of uncertainty in the price of raw yucca. If the price for fresh yucca does go up substantially, farmer will prefer to sell in the local traditional markets, as opposed to the plant for value added. **Mitigating Action 1:** The project will support the professionalization and improvement in the capacity of the plant. With financial support, the plant and the project staff will be able to work closely with farmers to ensure that the benefits of improved growing techniques translate into better quality differentiation, therefore better pricing for quality products. (ii) **Risk 2**: Profit sharing model: The project proposes a new "profit sharing" model where small farmers will have access to shares in the company that operates the plant. This is a new approach to seeking farmer benefits beyond improved yields. Because of its innovation, it may seem unfamiliar to many farmers and there may not be enough interest in "joining" the model. **Mitigating Action 2:** The project will have component 3 specially directed to training, and disseminating the advantages of forming part of the company. It will take best practice from other similar experiences to demonstrate that being part of a value chain as owners of the plant, can significantly enhance their prospects for better income and market access. **Risk 3:** Climatic risk. As in most agricultural projects, adverse climatic conditions could affect yucca production and farmer's perceived risk of continued production and expansion of yucca farming. **Mitigating Action 3:** The project will work in four diverse regions to make sure that there is diversification of production climates. This also will allow to test through the project, the adequate varieties of yucca that should be grown in each region. As a result of the project, there will also be a better

understanding of yucca production patterns in each of these regions. Additionally, it is expected that the crop forecasting tool developed under Component II will help with statistics and historical information in the planning and prevention in the cases of adverse climatic conditions.

VIII. ENVIRONMENTAL AND SOCIAL STRATEGY

8.1 This project will work with existing yucca producers to improve production practices and reduce negative impact on the environment. It includes training and technical assistance in sustainable agricultural practices and well known production methods which have been tested and validated by regional agricultural research entities such as CIAT and CIRAD. In accordance with the Bank's toolkit, this project has been classified as a category "C" operation.

8.2 The project must comply with applicable local environmental legislation. The project will take into account and comply with the exclusion lists of the Stockholm Convention on Persistent Organic Pollutants (POP), the Rotterdam Convention on Hazardous Chemicals and Pesticides as well as that of the Bank.