



The World Bank

Nicaragua Dry Corridor Nutrition-Sensitive Agriculture Project

Project Information Document/ Identification/Concept Stage (PID)

Concept Stage | Date Prepared/Updated: 23-Jun-2020 | Report No: PIDC118950

**BASIC INFORMATION****A. Basic Project Data**

Project ID	Parent Project ID (if any)	Environmental and Social Risk Classification Substantial	Project Name
P164134			Nicaragua Dry Corridor Nutrition-Sensitive Agriculture Project
Region	Country	Date PID Prepared	Estimated Date of Approval
LATIN AMERICA AND CARIBBEAN	Nicaragua	23-Jun-2020	
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	Fundación para el Desarrollo Tecnológico Agropecuario y Forestal de Nicaragua	Fundación para el Desarrollo Tecnológico Agropecuario y Forestal de Nicaragua	

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	2.74
Total Financing	2.74
Financing Gap	0.00

DETAILS**Non-World Bank Group Financing**

Trust Funds	2.74
Japan Social Development Fund	2.74

B. Introduction and Context

Country Context

Nicaragua experienced a significant economic turnaround in the 20 years from 1998 to 2018, but since mid-2018 has experienced an economic recession amid social and political unrest. From 1999 to 2018, Gross Domestic Product (GDP) growth in the country averaged over three and a half percent per year. Key factors



included prudent macroeconomic management, a demographic dividend, and recovery from a very low base. More recently however, the index of economic activity declined for 10 consecutive months since April 2018, registering a 7.5 percent year-on-year contraction in February 2019.

In an already challenging context, especially for the poor in Nicaragua, on March 11, 2020 the World Health Organization (WHO) declared the novel coronavirus 2019 (COVID-19) a pandemic. Due to the speed of its spread and extent of its scale, the COVID-19 pandemic is posing dire consequences to individuals and communities, including across countries in Latin America and the Caribbean (LAC). The secondary impacts of the pandemic are starting to result in unparalleled and widespread economic hardship and uncertainty, simultaneously on both the demand and supply sides; the former arises through the income effects of an economic slowdown and impact on jobs and incomes, and the latter through supply chain and/or trade disruptions for farmers, and SMEs, especially in less connected and rural areas. In the case of Nicaragua, the expected toll of the pandemic on poorer and vulnerable segments of society, such as the Dry Corridor, are expected to be several times worse (IMF). This is even more true as the limited resources of the government will be funneled for other more critical priorities such as national social protection programs rather than for sustainable long-term investments, making this project critical.

Poverty reduction had gone hand-in-hand with growth prior to 2018 driven by agricultural growth and incomes, but the recent crisis has halted the progress achieved in poverty reduction since 2005. Previously the Government's pro-poor agenda had emphasized the delivery of infrastructure and services, particularly in the predominately poor rural areas. Over the period between 2005 and 2014, Nicaragua saw a dramatic drop in poverty with the poverty headcount rate – defined as living with an income below \$3.2 per person per day in 2011 PPP – plummeting from 27 percent in 2005 to 9.5 percent in 2017. The extreme poverty rate decreased from 36.3% in 1993 to 2.1% in 2017. Growth has been pro poor with per capita household income for the bottom 40 percent of the population growing at an annualized rate of four percent between 2005 and 2014, outpacing average income growth (3 percent) over the same period (Nicaragua Strategic Country Diagnostic – SCD). The ongoing crisis in Nicaragua is affecting the strong and sustained efforts to reduce poverty moving forward. Poverty is estimated to rise to around 11 percent in 2018 with almost 93,000 people being added into poverty. Output and employment contraction in labor intensive sectors like agriculture and tourism, along with stagnating wages explains most of the increase in poverty.

Nicaragua remains one of the poorest countries in the region and progress remains highly fragile. However, the way forward includes improving productivity, and access to infrastructure and innovation for the poorest. With a GDP per capita of about US\$ 5,500 (PPP, current international \$) in 2018, Nicaragua ranked second to last within its region after Haiti. Its headcount rate is the fourth highest in the region. Over 70 percent of the poor are concentrated in rural areas, where about half of the population live in poverty and 16.3 percent live in extreme poverty. i.e. Inequality levels are very high, and Nicaragua's middle class is one of the smallest in the region. The country's largest economic group consists of individuals who are not poor but remain at risk of falling back into poverty if hit by shocks—i.e., "the vulnerable". Given this, providing opportunities to move out or stay out of poverty for informal, rural workers is critical.



The recent increase in poverty risks a further breakdown of socio-economic welfare, especially for those in the Dry Corridor. A strip of land of approximately 18,600 square kilometers (14 percent of the national territory) that runs across 50 Municipalities, with a population of approximately one million people, of which approximately 550,000 (55 percent) are rural inhabitants; the Dry Corridor comprises most of the central region of Nicaragua where overall poverty affects 44.4 percent of population (National Development Information Institute, INIDE (2014): Living Standards Measurement Survey). It covers important portions of the following departments: *Chinandega, Leon, Esteli, Matagalpa, Managua, Madriz and Nueva Segovia*. It is estimated that 25 percent of the population in this corridor live with two or more unmet basic needs. This population continues to lag behind in social and economic development and remain caught in a poverty and inequity trap.

To sustain economic growth rates and address poverty and equity challenges, Nicaragua is implementing a concerted and integrated effort. In its National Human Development Program (PNDH), the Government of Nicaragua (GON) has stressed the importance of Agriculture for economic growth, poverty reduction and equity. Priorities to develop Agriculture include, inter alia: (i) alliances with the private sector; (ii) increased agricultural production and productivity, while adapting to climate change; and (iii) value addition and support to value chains, prioritizing family farming and small and medium enterprises (SME). The proposed Project will contribute to implement these priorities of the PNDH by directly supporting the poorest in the Dry Corridor, including women and youth.

Nicaragua is highly vulnerable to extreme weather events including hurricanes, tropical storms, droughts, and seismic activity. The country ranks 4 out of 177 countries most affected by extreme weather events (Global Climate Risk Index, 2014). The Caribbean coast is most vulnerable to hydro-meteorological events, and the Pacific and Central regions are typically more exposed to floods and landslides. Drought risk is concentrated in the Dry Corridor, which includes many departments of the Central region, and covers about 28 percent of the territory. Climate variability will continue to have a large impact on vulnerable rural poor in these areas concentrated in agricultural labor, due to impacts on productivity through to crop loss, loss of assets, impacts on household and child nutrition, child development and human capital accumulation.

Sectoral and Institutional Context

Agriculture in Nicaragua remains the main engine of economic growth and poverty reduction. The sector represents 17 percent of GDP, in contrast to the LAC average of 5.5 percent of the GDP, and 70 percent of total exports are of primary products (Nicaragua SCD, 2017). Per a recent study of the Nicaragua agricultural sector, the contribution of agriculture to GDP reaches 27 percent if forward and backward linkages are considered (Agriculture in Nicaragua: Performance, Challenges, and Options, November 2015, World Bank). The sector accounts for 30 percent of total labor force employment, double the regional average of 15 percent, and is the main source of livelihoods for 80 percent of rural households. Agriculture also accounts for roughly 80 percent of poverty reduction in rural areas. A sectoral decomposition of the contribution to poverty reduction in the 2017 Nicaragua SCD showed that the increase in agriculture earnings explained most of the decline in rural poverty between 2005 and 2014. Subsistence and transitional family farms make up 81 percent of total



farms and contribute 49 percent of agricultural Gross Production Value (GPV); they are largely poor, small-scale producers, with limited access to means of production (Agriculture in Nicaragua: Performance, Challenges, and Options, November 2015, World Bank). Family Agriculture is defined as smallholders' productive systems of less than 50 ha for cattle-farming, or less than 15 ha for primary agricultural production, which basically rely on the labor of family members.

The COVID-19 pandemic is starting to have a major impact on Nicaragua's agriculture. In the agriculture sector, the effects of the coronavirus pandemic will be felt on both the demand and supply sides. According to the Union of Agricultural Producers in Nicaragua (UPANIC) it is likely that the country will go begin the 2020 – 2021 agricultural planting cycle in one of the worst scenarios of recent times due to economic limitations faced by producers. At the producer level, as the planting season approaches, production costs are likely to increase sharply due to limited availability of inputs. Sub-sectors that are very labor-intensive and/or that employ a higher share of older workers are likely to experience diminished labor productivity, although the size of such impacts is difficult to predict. Further, demand for agricultural commodities and agri-food products are projected to decline significantly given job and income losses of the population, and associated losses in purchasing power. Reduced demand in the service sectors from declines in tourism will also reduce demand for farm products. Support to producers and agri-food processors, especially in very vulnerable areas, to maintain and sustain production, that is also climate smart is crucial at this time. Better and more efficient supply chain linkages that allow producers to operate through shorter supply chains and better link to consumers in new ways is also necessary in the COVID era, but also to address existing structural issues.

Low agricultural productivity among smallholders presents a challenge to growth within sector and to household food security. The Dry Corridor comprises approximately 67,000 farms of which 98 percent are poor family farms of less than 40 hectares; 46 percent or approximately 31,000 farms have less than two hectares and practice subsistence agriculture. The remaining 52 percent of farms have between 20 and 40 hectares and are run by poor smallholders with some potential or very incipient orientation to commercial agriculture. Compared to the total areas cultivated nationwide of the key crops, the Dry Corridor accounts for 78 percent of rice; 41 percent of tobacco; 10 percent of basic grains (maize, sorghum, and beans); 7 percent of coffee; and 39 percent of vegetables and tubers. Most food insecurity in Nicaragua is concentrated in the Dry Corridor. The highest rates of chronic malnutrition occur in the departments of Madriz—30 percent—and Jinotega and Nueva Segovia—28 percent—all located in the northern Dry Corridor (WFP, 2017).

With less than 800 mm/year of rainfall, intermittent precipitation and prolonged dry seasons, the Dry Corridor faces constant challenges in its agricultural systems. Agricultural production of the Dry Corridor is of critical importance to the national economy. However, climate variability significantly impacts the availability of water resources for crop production resulting in substantial economic losses to agricultural production and productivity. Average annual precipitation in the Dry Corridor is usually below 800 millimeters per year and in some areas, can drop to 500 to 600 millimeters per year. During frequent El Niño Southern Oscillation (ENSO) years, for example, precipitation can drop by 30- 40 percent, with long periods of heatwaves during which there is hardly any rainfall. In such years, the Dry Corridor area can expand to additional 8,000 square kilometers in approximately 60 Municipalities. Poor rural families in the Dry Corridor are impacted by irregular and short rainy seasons with average evapotranspiration of 200 millimeters per month, and by dry seasons of more than



six months. Climate variability has devastating consequences on the cultivation of basic grain crops, which are part of the region's subsistence agriculture, as well as on other smallholder semi-commercially oriented agriculture and cattle-farming activities.

The Dry Corridor is increasingly vulnerable to climate change and climate variability. Historical climate data analyzed by the International Center for Tropical Agriculture (CIAT by its acronym in Spanish) found that, for instance, there is a strong warming trend across the country, manifested through diurnal temperature increases (~0.40 °C per decade) in deforested areas. These rates are more than five percent higher than average temperature change rates in tropical areas. Rising temperatures and more frequent droughts and floods will present a major challenge for the country's production systems by 2030[1]. This broader trend in climate affects climate variability, which significantly reduces the availability of water resources for crop and livestock production resulting in substantial economic losses to agricultural production and productivity [2].

Water resources are abundant throughout Nicaragua, however weak water management and inadequate infrastructure for water regulation and irrigation are negatively impacting agricultural productivity. Overall, the eastern slopes flowing towards the Caribbean coast are the wettest areas in the country, compared to the dryer western slopes (Dry Corridor) flowing towards the Pacific coast where most population live. Agriculture is the largest user of water in Nicaragua, consuming 79 percent of the total. At present, only five percent of permanent cropland, about 99,400 hectares (ha) out of two million hectares is irrigated (Barzev, Radoslav: Nicaragua: *Uso, manejo y valoración del agua en el sector agropecuario nacional*; 2013).

Women and female youth in Nicaragua are often disadvantaged in terms of access to inputs, control of outputs, and decision making despite managing a large share of agricultural activities. According to a study by the World Bank, 'A Gender (R)Evolution in the Making? Expanding Women's Economic Opportunities in Central America: A Decade in Review' (2012), women largely work in the informal sector and are overrepresented relative to men. Herrera et al (2019) find that the earnings gap between men and women in Nicaragua is much larger in informal sectors like agriculture with low to no renumeration for women, and a substantial part of the gap is attributable to the prevalence of patriarchal gender norms. A recent analysis of the socio-economic context of women in Nicaragua's Dry Corridor shows that roughly 22-23 percent of agricultural holdings are led by women in Nicaragua. However, only 30 percent of women in agriculture are remunerated, relative to 70 percent of men. Data also shows that 87% of rural women in the Nicaragua Dry corridor are not organized in any productive or commercial association. Only 26% of rural properties in the Dry Corridor are registered-owned by women. In addition, women's ownership of agricultural assets and use of credit are very low. In general, only 8% of all households have access to financing for productive activities, and this is much lower among female led households. Further, only 39 percent of rural women in Nicaragua have completed primary education. Young women, especially those between 26 and 35 years, in rural areas tend to have negative outcomes due to low levels of education, higher illiteracy and very early pregnancy. The median age of pregnancy for a woman in Nicaragua is 19.5.

The country's National Food Security Policy emphasizes the production of and access to safe and nutritious food for poor families. There is a general lack of awareness in Nicaragua about the integration of nutrition into agriculture decisions and consumption behavior for the improvement of nutritional security (the Nutrition-



Smart Agriculture approach). Agriculture, particularly smallholder agriculture, plays a significant role in food and nutritional security of rural households. Specific nutrition-sensitive actions such as growing bio fortified crops, climate-smart agriculture (e.g. drought resistant seeds, nurseries and seedlings, improved irrigation and water management systems), post-harvest management techniques, and improving nutrition knowledge to enhance dietary diversity must continue to be pursued to achieve food security, including nutrition security.

In the target municipalities proposed for the project, households' face severe shortfalls in many aspects including agricultural productivity, nutrition, food security and poverty, relative to national averages, according to field research carried out by The Foundation for Agricultural and Forestry Technological Development of Nicaragua (*La Fundación para el Desarrollo Tecnológico Agropecuario y Forestal de Nicaragua, FUNICA*). In the target areas, average productivity of the principal crops like maize is 648 kg/ha, beans is 486 kg/ha. National averages for these two crops are 50 percent and 44 percent higher respectively[3]. Three out of ten children in the target area are undernourished compared to 19 percent at the national level[4], approximately 47 percent of households' face food insecurity and 16.3 percent of households live in extreme poverty.

Based on a consultative process using a JSDF seed grant, the team developed a proposal to help change the current reality of the Dry Corridor of Nicaragua through a bottom up process. The main activities of the project will be to promote CSA technologies accompanied by water technologies to improve producer's resilience to climate vulnerability. The specific activities will be determined through a beneficiary demand-driven process. This will be accompanied by a subcomponent designed to build new locally based agribusinesses made up of local experts who will be helped with starting the business (registration, access to technology and business acumen) and trained on CSA technologies to provide agricultural extension services to producers being supported by the project. This approach pilots an innovative method for promoting long term sustainability through facilitating the development of local extension services that are closer to producers and partner with them in a farm innovation system. The aim for developing local extension agribusiness is to empower the local beneficiaries. The agribusiness startups will draw on local youth from local universities. Both recipients of CSA investments and agribusinesses will include a large share (TBD) of women to empower this group in the Dry Corridor. The agribusiness startups will foster the capacity of producers to take good decisions in crop production, postharvest management and promote market linkages. Another innovation of the project will be the promotion of nutrition education and other Nutrition-Smart Agriculture activities to accompany the physical investments for beneficiaries.

Lessons learned from past projects

The WBG has supported projects in Nicaragua in the past from which lessons are drawn for the design of this project. The Caribbean Coast Food Security Project (P148809) that is most aligned with this project, aimed to increase food and nutritional security in the Caribbean Coast. This project presents some lessons learn that the JSDF project will adapt for the Dry Corridor context.

In the Food Security project, addressing enhanced food and nutrition security based on an integrated strategy proved a successful approach. The project combined key elements appealing to the targeted families (such as



increased production volume, of improved quality) and facilitated the engagement of the families' members (through a targeted participatory methodology). The approach of the project is highly relevant for this JSDF project given similar objectives. This project will use a similar demand driven approach with participatory engagement among smallholders and their families.

Another lesson learned in Food Security project was that investments in post-harvest practices, such as threshers and dryers, had a major impact in allowing women who traditionally performed these tasks manually, to save time to dedicate to other activities. This project will include a sub-component for investments in small post-harvest technologies.

The success of using investment development plans (IDPs) subproject approach in the Food Security project in the Caribbean Coast, to plan, design, and implement a community-driven approach for agricultural and nutrition interventions provides a valuable lesson for the development of this project. Organized groups agree on the ideal development intervention to increase their productivity and nutritional levels. The IDP-Subproject approach will be used in the JSDF intervention as a part of the planning process with the producers.

Government authorities, the World Bank and development partners prioritize Nicaragua's agricultural sector because a large share of the population is dependent on the sector for livelihoods. One of the main priorities for these stakeholders is to improve agricultural productivity and nutritional security for vulnerable groups in the poorest regions of Nicaragua. These are mainly located in the Caribbean region and the Dry Corridor of Nicaragua. The World Bank, IFAD, Swiss Cooperation (Cosude) are relevant actors with important operations addressing gaps in agriculture and nutritional security in the Country.

Even though these organization have projects that support the Dry Corridor, most of them, are in specific zones where the JSDF project will not work. These projects are mostly oriented to development of infrastructure to harvest water like dams and produce staple foods, whereas this project will focus on alternative climate smart investments and post-harvest investments. This JSDF project will also use two approaches not commonly used in similar projects: the livelihood Improvement Approach and the SHEP approach both from JICA, combined with farmer field school and enterprise schools. Further details are provided in the project description.

[1] Climate Smart Agriculture in Nicaragua. International Center for Tropical Agriculture (CIAT), 2016.

[2] In 1994-2013, total agricultural production losses due to unmanaged production risks –from both losses in area planted and decline in yields for export crops and basic grains— was estimated at about US\$107M annually (or 6.1 percent of agricultural GDP)



[3] Calculation was based on *Plan Nacional de Producción Consumo y Comercio 2019-2020*

[4] www.minsa.gob.ni

Relationship to CPF

The proposed Project is consistent with the World Bank Country Partnership Framework (CPF) for the period of FY2018-2022 (Report No. 123026-NI). The Project will contribute to the second Pillar of the CPF: Enabling private investment for job creation, under its Objective 4: Improved Business Productivity and Financial Inclusion for Urban and Rural SMEs and Female Entrepreneurs, which aims at increasing agricultural productivity among targeted beneficiaries in the Dry Corridor region. Also, the Project will contribute to the third Pillar of the CPF: Improving institutions for resilience and sustainability, under its Objective 6: Improved natural resource management (water, forest, and land) and reduced vulnerability to natural hazards. The Project will contribute to link smallholder producers to market-based agriculture and to expand and strengthen value chains and value-added activities, while improving climate resilience of productive systems and their contribution to nutrition goals. Moreover, by focusing in the Dry Corridor and working with poor smallholders, the Project directly contributes to the Bank's Twin Goals of eradicating extreme poverty by 2030 and promoting shared prosperity by fostering the income growth of the bottom 40 percent, as the proposed Project targets municipalities in the Nicaragua's Dry Corridor with high levels of poverty and malnutrition.

C. Project Development Objective(s)

Proposed Development Objective(s)

To strengthen agricultural productivity, climate resilience, and nutritional security in the Dry Corridor of Nicaragua.

The project will (i) strengthen agricultural productivity, climate resilience and nutritional security of 1,590 farmers and small agri-food value-addition businesses, and (ii) support the organization of small local start-up firms to provide extension services to farmers in six municipalities of the Dry Corridor. The six selected municipalities are: Condega, Pueblo Nuevo, San Juan de Limay, San Juan de Cinco Pinos, San Francisco del Norte, and Totogalpa.

Key Results

The proposed project will pilot a new and integral approach in one of the poorest areas of the Dry Corridor. It will be implemented through sub-projects for the provision of access to enhanced technologies, information and practices. This project seeks to contribute to improve food and nutritional security of the targeted agricultural producers, small agri-food processors and their households.

The results of the proposed Project will be measured through the following set of indicators[1]:



1. Number of project beneficiary farmers adopting improved climate-smart, nutrition-sensitive agricultural technologies, baseline – 0, endline - 1590 (disaggregated by gender – 30% women - 477),
2. Jobs created through registered local start-up firms providing agricultural extension services, baseline – 0, endline – 8.
3. At least 10% of beneficiary families enhance their nutrition habits; integrating at least 3 local food groups and 2 healthy nutrition practices, baseline – 0, endline - 159.

At least 10% of women and children of direct beneficiary families increase Dietary Diversity Score (DDS), baseline- 0, endline – 159.

[1] Full results framework will be provided during project appraisal.

D. Preliminary Description

Activities/Components

The proposed project envisions four years of implementation and includes three components: (i) strengthening productive capacities of farmers and small agri-food processors through Climate Smart Agriculture (CSA) technologies[1] and agricultural extension services managed through the development of agribusiness startups; (ii) promotion of improved food security and nutrition practices through Nutrition-Smart Agriculture (NSA) approach; (iii) project management, monitoring and evaluation.

Component 1: Strengthening productive capacities of farmers and small agri-food processors through CSA and renewable energy technologies (US\$ 2.168 million)

The objective of this component is to improve agricultural productivity and resilience to climate change at farm level. This will be achieved by supporting the adoption of climate-smart productivity enhancing technologies, with accompanying water technologies as a package through demand-driven subprojects and technical agribusiness services. This component will be implemented by two sub-components:

1. Investments in goods related to CSA and NSA technologies with accompanying water technologies.
2. Agricultural extension services through creating new locally registered agribusiness startups.

Subcomponent 1.1 Physical Investments that bundle CSA technologies with accompanying water technologies.

The objective of the subcomponent is to introduce CSA technologies, together with basic or solar powered water technologies (whenever feasible) in the target area according to the context and climate vulnerability. The subcomponent will finance subprojects (matching grants to include



consultancy services, goods, small works, training, and operational costs) to finance activities for strengthening productive capacities and climate change resilience.

The matching grants proposal will be submitted by a cooperative or producer organization working with the target group in each municipality and will be reviewed by a technical committee who will approve the subproject and verify potential environmental and social impact. Each proposal must have in kind participation by the beneficiary to complement the investment and to promote commitment to the investment. The required level of participation of the beneficiary will be tiered based on some indicators of income/status of the household and will be determined at implementation. The technical committee will be overseen by the project coordination unit and a steering committee within FUNICA that will provide the final approval. The criteria with which each subproject will be selected include: i) relevance of the proposal to solve the target problem with a sustainable solution, ii) coherence within objective and result, iii) innovative proposal, iv) youth and women participation, v) potential to link to market and vi) capacities of producer organization. After the matching grant is approved, the organization will enter into a formal agreement with FUNICA. As outlined in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 1,640,000.

The list of potential activities was selected through an early consultation process using a JSDF seed grant but may change based on actual producer and agri-food processor demand as part of the formulation of business plans to inform subproject approval.

All investments will be carried out through Sub Projects selected via a demand-driven process from beneficiaries, considering (i) climate vulnerability of existing crops; (ii) potential for crop diversification/ adaptation of alternative CSA technologies to mitigate climate vulnerability. Besides on-farm CSA technologies, potential investments could also include innovative technologies to establish small agri-food processors with processing and value-addition capacity (like solar powered chillers, solar powered processing units, and others).

Subproject ideas will be selected through a call for proposals within selected municipalities. Subproject screening and selection will specially consider female and youth applicants. As discussed in the beneficiary's selection section (c.f. P16 and 17 for a rationale of targeting poorest and most vulnerable of the Dry Corridor) project locations were selected based on a range of poverty, climate vulnerability, malnutrition, and producer characteristics. These coupled with the previously provided rationale of women's particularly lower access to investment inputs in these areas implies that women and youth will also be prioritized amongst the most vulnerable.

All subprojects will be evaluated by a technical committee using criteria related to objectives of the JSDF project that will be defined in the project operations manual. Selected Sub Project ideas will be



converted into business plans, with technical support from the Project. The Project Steering Committee will assess viability and approve the selected subprojects.

1. Investments in climate-resilient, nutrition-sensitive agriculture may include (but not limited to):
 - i. Community seed banks for drought resistant and biofortified seeds: which will provide small scale silo infrastructure for storage and production of local varieties of seed, for easy access and use, to increase agricultural productivity and yields, to provide *food security* during planting seasons. While helping communities protect against community-level food insecurity shocks, seed banks also provide conservation and resilience of local genetic resources of the best varieties of locally grown crops. Seed banks provide access to high quality seeds that in turn can improve productivity and sale of surpluses of production, as the target population does not have the capacity to purchase certified seeds. The collection, storage, multiplication and distribution of biofortified seeds can also function as a form of collateral, for accessing microfinance, for groups of subsistence and transitioning family farmers. To this end, technical service providers (TSP) will train producers in techniques including plant breeding of native varieties, soil conservation, and plant disease management, amongst others.
 - ii. Biointensive gardens (patios saludables): which are 30x30 meter plots that use biointensive farming methodology, with drip irrigation systems, seed and fertilizer to produce fruits and vegetables to improve household *food security and nutrition*. These systems also improve yield per unit of land and increase farmer potential to produce surplus for small sales in local markets.
 - iii. Organic honey production: honey producers will be equipped with beehives, honeybee equipment and technical advice to produce higher value organic honey, at higher productivity, to improve household incomes and thereby ensure resources for *food security*.
2. Accompanying water technologies including renewable energy pilot technology for producers may include (but not limited to):
 - i. Tanks for rainwater collection: rainwater, will fill up tanks that will be part of irrigation systems that allow for optimal water use where there is seasonal scarcity.
 - ii. Drip irrigation systems: which will be used in areas of low water availability through sustainable use and control of the available rainfall and or surface water that is available and feasible to manage with small catching and distribution systems, to speed up plant growth, yields and quality of output. Such systems are both low cost and low pressure and can minimize the impacts of water as a stressor during critical plant growth periods.
3. Investments in small agri-food processing technologies: small scale (i.e., solar powered) equipment or machinery for agri-food processing (i.e., drying beds, mills, or milk chillers). These would enhance the profitability, value-addition and productive capacity of small agri-food processors in the area.

**Subcomponent 1.2 Creation of locally registered agribusiness startups for the provision of agricultural extension services.**

The objective of this subcomponent is to improve adoption of CSA technologies by the beneficiaries, focusing on the promotion of farm innovations that are adapted to the conditions of the Nicaragua Dry Corridor. The subcomponent will finance subprojects (including consultancy services, training, and operational costs) to promote the organization of local technicians into local enterprises that will provide agricultural extension services and technical assistance to the subprojects to be financed by subcomponent 1.1, and to other producers in the target area. The project will select the groups of local extensionists eligible for startup creation through a competitive process within the selected municipalities. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 528,000. This amount includes technical assistance costs, operation costs and specialists of project implemented unit.

The idea is to select in each zone at least one small existing/new enterprise that offers technical agricultural services and promotes CSA technologies. Through this process, local agricultural extensionists will be invited to offer their proposals for the provision of extension services for Subprojects beneficiaries. The selection criteria will be: i) confirmed experience in agricultural extension services, ii) preferably local resident, iii) capacity to provide the desired services and iv) competitive cost of services[1]. At FUNICA level, the institutional steering committee will select the proposal under the consideration of the project coordinator unit. Once the group of extensionists has been selected, it will sign a contract with FUNICA to provide the service and receive strengthening capacities to offer quality of services and technologies dealer.

To enhance the provision of technical assistance, FUNICA will strengthen the capacity of local startup firms comprised of extensionists through (i) development of a first stage business plans; (ii) provision of resources and support for firm creation and registration; (iii) provision of technology, (iv) training and resources for extension methodologies; (v) plan for extension services to beneficiaries of subcomponent 1.1, including for the adoption of CSA technologies, NSA technologies, water management technologies, and agri-food processing technologies, as well as technical support to promote access to markets for all beneficiaries. FUNICA will facilitate the development of linkages between CSA/NSA technology providers (including public sector agencies) and local startup firms supported by this subcomponent.

The proposed project is in line with some of JICAs assistance to rural and agricultural development in the country, and it is possible to seek synergy for greater impact of the projects.

For example, the provision of technical assistance via startup agribusinesses will use the Farmer Field and Business School Model (FFBS). The FFBS will consider the Livelihood Improvement Approach ("Seikatsu Kaizen") that has been promoted in the country by JICA, for its application at farm and agri-food processor level to strengthening their capacities, for which the project will seek support from Alumni Association, Universities and other JICAs cooperation modalities. The proposed project will



also learn from experiences of JICA in Nicaragua, specifically from their technical cooperation projects in rural areas. The proposed project expects to complement the current JICA SHEP[2] approach that promotes changes in small local farmers' mindsets and behaviors to enable them to produce for markets (market-oriented production). In addition the office of JICA Nicaragua will consider the possibility of coordinating with local Universities like UNI, UNAN and others to participate in SHEP training courses held in this Universities at the beginning of the project to enhance their knowledge and skills on said approach, and thus it can be effectively incorporated in the project execution.

Additionally, the agribusiness startups will be trained to provide extension services through ICT technologies and other social media commonly accessible to farmers.

In addition, in order to facilitate market linkages, FUNICA will build relationships between the agribusiness startups and large farmers organizations, such as *Union de Productores Agropecuarios de Nicaragua* (Federation of Agricultural Producers of Nicaragua, UPANIC), *Unión Nacional de Agricultores y Ganaderos de Nicaragua* (National Federation of Farmers and Cattle-ranchers of Nicaragua, UNAG) and other key stakeholders in the agricultural sector and related markets.

Component 2: Promoting improved food security and nutrition through information campaign (US\$ 156,000)

The objective of this component is to improve food security and nutrition practices and nutrition in the households of project beneficiaries. This component will finance technical assistance (consultancy services), training, and operational costs to develop and promote the use of communication tools, such as information campaigns, training materials, workshops, focus group to promote food and nutritional security. These include: i) helping households in the Dry Corridor to identify nutritional deficiencies and how to meet minimum nutritional demands of the family, ii) promoting intake of food varieties and/or groups with high nutritional value, iii) promoting crops and livestock production that complement nutrient deficiency, iv) identifying improved post-harvest management practices that improve the quantity and nutritional quality of agricultural produce v) identifying bio-safe foods. The communication methodologies, materials and activities will target the beneficiaries and their families and will promote short-term behavioral change in food and nutrition security. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 156,000.

Component 3: Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination (US\$ 415,800)

The objective of this component is to support a project implementation unit (PIU) that will oversee project coordination, administration (including procurement and financial management), implementation (planning, monitoring and evaluation, and knowledge management), and social and environmental management.



The component will finance consultancy services, non-consultancy services, goods, training and operational costs. It will (i) ensure the quality of project outputs, intermediate outcomes and final outcomes required to achieve the project development objective (PDO) and (ii) promote knowledge dissemination (KD). In order to improve KD, this component will systematize experiences and lessons learned that may contribute to project's replication of scale-up by other public and private institutions, in geographic areas with similar conditions. To develop the monitoring and evaluation system, the project will use the ex-ante knowledge gathered through the JSDF seed grant for project preparation. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 415,800. This amount includes project coordination costs, financial management, knowledge management and dissemination of lessons learned.

3.1. Project Management and Administration.

This function will ensure project implementation, effectiveness, and efficiency as outlined in the PDO. This will be achieved through planning processes and decision-making to improve project performance. Project efficiency will be achieved through development and consistent updates to a Project Operations Manual (POM) which includes: i) institutional arrangements, planning, monitoring, procurement process to obtain goods and services, human resources management, disbursement processes, personnel management, audits and transport. Additionally, the project will organize monthly technical-finance meetings in order to evaluate project performance and provide reports to the Project Steering Committee, and to the World Bank. Project Progress Reports will be prepared every six months. Annual audits will be undertaken during the life cycle of the project.

For PMA the following personnel are required: i) 1 financial management specialist, ii) 1 procurement specialist, iii) 1 accountant. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 200,400.

3.2. Monitoring and Evaluation.

This function will monitor and evaluate project outputs and outcomes vis-a-vis key PDO and intermediate level indicators in order to provide information and knowledge for proper and timely decision-making on operational and strategic issues. The project will create an information platform to monitor the key results, as well as project disbursements, financial and procurement management, on a six-monthly basis.

An Impact Evaluation, with baseline survey and follow-ups (mid-term and final) will be carried out with properly defined control and treatment groups. Monitoring and evaluation activities will include the stakeholders and other public and private actors.

The project implemented agency for this project has sufficient personnel with experience in monitoring and evaluation, also with the previous JSDF resources a monitoring and evaluation strategy and system which were developed for this project. For monitoring and evaluation activities,



the following personnel is required: i) 1 Monitoring an evaluation specialist. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 173,400.

3.3. Knowledge Dissemination.

This function will disseminate lessons learned and good practices of the project, using them to inform opportunities to scale-up the project with support by the World Bank or by other development partners. The strategy for knowledge disseminations will mostly be through (i) web page; (ii) project reports and policy briefs; and (iii) forums, symposiums and workshops with members of FUNICA who represents 22 agricultural institutions in Nicaragua. Through the above channels the project will share its result and overall impact. As referred in the JSDF proposal Cost Table, the budget for this subcomponent is US\$ 42,000.

Implementation Arrangements

Subproject implementation. Activities under subprojects will be implemented by eligible organizations of beneficiaries, which will strengthen their business and organizational skills. However, to reflect the broad range of implementation capacities among the targeted beneficiaries, the project will carry out a capacity analysis of each beneficiary group or organization at early stages of subproject preparation, and will decide amongst three different mechanisms to channel fiduciary support to these Subprojects: (i) fiduciary administration of subprojects by the project's implementing agency (or "delegated administration") on behalf of the beneficiaries; (ii) shared administration, in which the procurement process/decisions will be taken by the beneficiary groups, but payments will be done by the Project/FUNICA; and (iii) direct transfer of funds to formalized/legalized groups of beneficiaries (cooperatives, associations, community-based organizations, and others) with enough capacity to implement the subproject by themselves and report expenses to the implementing agency as required in the POM. These arrangements will be detailed in the POM. The project will build on the experience of the World Bank with similar implementation arrangements in recent operations in Nicaragua.

The implementing agency will oversee key fiduciary functions under the project and most subprojects. Those functions include: procurement and payments related to activities under the subprojects (Delegated Administration, and Shared Administration), follow-up on subprojects' fiduciary management, including "*rendiciones*" (Statements of Expenses-SOE), and direct transfer of funds to beneficiary organization when required. To adequately fulfill these responsibilities, the PIU at the implementing agency will include a Financial Management Specialist, Procurement Specialist, Disbursement Officer and an Accountant at Central level. As project implementation advances, and within the first year of project implementation, sufficiency of fiduciary staff would be assessed and strengthened as needed.

The project will include a Technical Committee which will be in charge of subproject screening and selection for further preparation of business plans. The Technical Committee will be comprised of technical specialists of the implementing agency and of the PIU. Also, the project will include a



Steering Committee which will review/approve the subprojects (business plans) considering the recommendations of the Technical Committee. The Steering Committee will also approve the project's operational plans and budgets and will be comprised of representatives of the Directorate of the implementing agency and one delegate from the beneficiary organizations.

Coordination with other partners: Whenever needed, the project will coordinate with the Ministry of Family Economy (MEFCCA, *Ministerio de Economía Familiar, Comunitaria, Cooperativa y Asociativa*), the National Institute for Agricultural Technology (*Instituto Nacional de Tecnología Agrícola*, INTA), and the Ministry of Health (*Ministerio de Salud*, MINSA) to leverage the support of these and other public sector institutions in the field. Similarly, the project will coordinate with local universities, anchor agribusinesses^[1] and other NGOs to attract support and create synergy with project activities and beneficiaries.

[1] CSA Options Implemented and Evaluated Across the CCAFS.

[2] SHEP. JICA Smallholder Horticulture Empowerment & Promotion

[1] Anchor agribusinesses refer to enterprises that connect dispersed small farms to the agricultural markets in an inclusive business commitment

[1] Detailed selection criteria would be defined at appraisal stage.

Environmental and Social Standards Relevance

E. Relevant Standards

ESS Standards	Relevance
ESS 1 Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10 Stakeholder Engagement and Information Disclosure	Relevant
ESS 2 Labor and Working Conditions	Relevant
ESS 3 Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4 Community Health and Safety	Relevant
ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Currently Relevant
ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant



ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
ESS 8	Cultural Heritage	Relevant
ESS 9	Financial Intermediaries	Not Currently Relevant

Legal Operational Policies

Safeguard Policies	Triggered	Explanation (Optional)
Projects on International Waterways OP 7.50	No	OP7.50 will not be triggered as project activities are not expected to affect any transboundary rivers or basins of the neighboring countries (Honduras and Costa Rica).
Projects in Disputed Areas OP 7.60	No	The Project will not have activities in disputed areas.

Summary of Screening of Environmental and Social Risks and Impacts

The proposed Development Objective of the project is to strengthen agricultural productivity and climate resilience in six municipalities of the Dry Corridor of Nicaragua. The Dry corridor, which is a tropical dry forest, is highly vulnerable to natural hazards, particularly to prolonged droughts, floods, hurricanes, and tropical storms. According to World Bank data, climate variability has been significantly impacting the availability of water resources for crop production resulting in substantial economic losses to agricultural production and productivity in this region since 2012. The Dry Corridor region is crucial to the country's economy, with its agricultural production supporting the entire country. The Environmental Risk classification of the project is moderate. The project will include technical assistance and investment activities in sustainable agricultural practices, organic honey production, and small-scale civil works. All subproject activities are expected to be small scale in nature and are not expected to have significant negative environmental impacts. Possible negative impacts are expected to be site-specific, short-term, and reversible and are related to agricultural activities and small-scale infrastructure works (seed banks, irrigation systems, and PV water pumps). The project is not expected to cause any forest and soil degradation activities. The Social Risk Classification of the project is ?substantial ? after considering that there are potential social risks of elite capture or Inequitable distribution of project benefits; disproportionate impacts on women, and indigenous groups, who, because of their circumstances, may be disadvantaged or vulnerable, and may not have equal access to project?s benefits, exacerbating existing pattern of social exclusion. Women and female youth in the project?s area of influence are often disadvantaged in terms of access to inputs, control of outputs, and decision making despite managing a large share of agricultural activities. The assessment of the risks also recognizes the context of the Indigenous community of Totogalpa, whose identity and production cultural practices are distinct from mainstream groups of the country. Totogalpa has the highest rate of extreme poverty among the six selected municipalities selected. Other risks are associated with the unstable political context of the country, characterized by a high level of polarization, and that can contribute to the exclusion of certain groups and persons. The Borrower will prepare, consult, and disclose prior to appraisal an Environmental and Social Management Framework (ESMF), a project-level Environmental and Social Assessment (ESA), screening checklists and procedures to classify specific subprojects according to their environmental and social risks and impacts, a generic Environmental and Social Management Plan (ESMP).



The project will engage in participatory monitoring and will develop and implement a robust Stakeholder Engagement Plan (SEP) with its Grievance Redress Mechanism (GRM); a Labor Management Procedure (LMP) with its GRM for Workers, an Occupational Health and Safety Plan (OHSP); and an Indigenous Peoples Plan (IPP) for Totogalpa with its GRM. The project will ensure that WB standards are properly incorporated in each of the sub-projects and that co-implementers or partners receive capacity building to strengthen their social risk management capacity. The project will work towards a collaborative approach free of manipulation, interference, coercion, discrimination, and intimidation. The E&S specialists of the project will make sure that social inclusion, consultation, Citizen Engagement, and participatory approaches are conducted ? as the WB policies and ESF indicate.

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