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JAMAICA

**PROJECT GROW: ACCELERATING THE INCLUSION OF SMALL SCALE FARMERS AND YOUTH INTO THE
COMMERCIAL CASSAVA VALUE CHAIN**

(JA-M1035)

DONORS MEMORANDUM

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PROJECT SUMMARY

PROJECT GROW: ACCELERATING THE INCLUSION OF SMALL SCALE FARMERS AND YOUTH INTO THE COMMERCIAL CASSAVA VALUE CHAIN

(JA-M1035)

Studies suggest that cassava was first cultivated, as many as 9,000 years ago, on the southern edge of the Brazilian Amazon, making it one of agriculture's oldest crops. Today its importance in agriculture has changed dramatically and according to the United Nations Food and Agricultural Organization, global cassava production is likely to accelerate over the current decade. Booming demand for starch and other related products offers millions of cassava growers the opportunity to intensify production, earn higher incomes, and increase food security.

In Jamaica, the use of cassava in agro processing is rapidly emerging. Red Stripe, one of the largest breweries in Jamaica, is pioneering a local sourcing supply chain model to substitute imported high maltose corn syrup (HMCS) with locally produced cassava starch in their brewing process. The company aims to substitute 40 percent of its HMCS imports with cassava starch by 2019. This 40 percent level substitution requires a significant expansion in cassava production to 65,000 metric tons of tubers (roots) annually, well above the current national production level of 17,300 metric tons.

Project Grow is an endeavor by Red Stripe and its partners to drive innovation in agro processing and to translate this into an opportunity for both social and commercial value creation throughout the local cassava supply chain. The project seeks to create a network of 200 small and medium farms as year-round suppliers of cassava tubers for industrial processing. Through a market-driven approach, the project will increase farmers' yields and incomes by testing and introducing new varieties, providing training on climate-smart production and facilitating access to finance for farmers through a dedicated credit facility. The direct result will be to generate 24,000 metric tons and \$6.2 million in annual sales from small-scale cassava farms at the end of four years.

In collaboration with the NEO Jamaica Alliance, the project will also provide technical training, life skills, job placement, and employment opportunities for 1,000 vulnerable youth to develop a qualified workforce to support the industry. The aim is to build a value chain that is not only sustainable, but also equitable and that will provide social and economic benefits to farmers and young people within the value chain through the provision of a secure market.

The project will be executed by the Desnoes & Geddes Foundation, Red Stripe's corporate foundation with contributions of international and local technical experts from the Center for International Tropical Agriculture and the Ministry of Agriculture and Fisheries.

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ACRONYMS AND ABBREVIATIONS

AOP	Annual Operating Plan
CARDI	Caribbean Agricultural Research and Development Institute
CIAT	Center for International Tropical Agriculture
CLAYUCA	Latin America and Caribbean Consortium to Support Cassava Research and Development
DL4L	Diageo Learning for Life Program
DNA	Diagnostic of Executing Agency Needs
FAO	United Nations Food and Agricultural Organization
HEART Trust/NTA	Human Employment and Resource Training Trust, National Training Agency
HMCS	High Maltose Corn Syrup
IDB	Inter-American Development Bank
IIC	Inter-American Investment Corporation
MoAF	Ministry of Agriculture and Fisheries
MIF	Multilateral Investment Fund
MLSS	Ministry of Labour and Social Security
NEO	New Employment Opportunities for Youth
OR	Operating Regulations
PCU	Project Coordination Unit
PSR	Project Status Report
RADA	Jamaica Rural Agricultural Development Authority
SMASH	Scaling Up the Smallholder Alliance for Sorghum in Haiti
TOR	Terms of Reference

PROJECT INFORMATION

**PROJECT GROW: ACCELERATING THE INCLUSION OF SMALL SCALE FARMERS AND YOUTH INTO THE COMMERCIAL
CASSAVA VALUE CHAIN
(JA-M1035)**

Country and Geographic Location:	Jamaica. The project will be implemented in 5 of the 14 parishes on the island: St. Catherine, Clarendon, St. Mary, St. Thomas and St. Ann.		
Executing Agency:	Desnoes & Geddes Foundation		
Strategic Pillar:	Climate Smart Agriculture		
Coordination with Other Donors/Bank Operations:	New Employment Opportunities for Youth (NEO) Jamaica (JA-M1036); and IIC's Climate-Smart Agriculture Program		
Direct Beneficiaries:	200 small and medium farms ¹ 1,000 vulnerable youth trained to provide services in the value chain		
Indirect Beneficiaries:	3,170 indirect beneficiaries (families of direct beneficiaries, given that the average household size in Jamaica is 3.64)		
Financing:	Technical Cooperation:	US\$ 814,417	
	Investment:	-	
	Loan:	-	
	TOTAL MIF FUNDING:	US\$ 814,417	17%
	Counterpart:	US\$ 4,012,814	83%
	Co-financing (if available):	-	
	TOTAL PROJECT BUDGET:	US\$ 4,827,231	100%
Execution and Disbursement Period:	48 months of execution and 54 months of disbursement.		
Special Contractual Conditions:	Conditions prior to first disbursement will be, to the Bank's satisfaction: (i) hiring of the Project Coordinator; and (ii) establishment of the Steering Committee; (iii) executed agreements between the Executing Agency and (a) Red Stripe for project implementation; (b) MoAF/RADA confirming its in-kind contributions to the project; and (c) the NEO Jamaica Alliance for youth insertion in the value chain.		
Environmental and Social Impact Review:	This operation was screened and classified as required by the IDB's safeguard policy (OP-703). Given the limited impacts and risks, the proposed category for the project is C.		
Unit with Disbursement Responsibility:	MIF/CJA		

¹ Red Stripe has created the following categories for the 200 farms according to their size. Micro farms: 0.5 – 5 acres; Small farms: 5-35 acres; Medium farms: 36-100 acres. The project will work with micro, small, and medium farms.

1. BACKGROUND AND JUSTIFICATION

A. Diagnosis of the Problem to be Addressed by the Project

- 1.1. **Background.** Cassava, a crop native to Latin America and the Caribbean, is highly versatile and with adequate processing, can be transformed for use as flour, bread, confectionary, starch, and animal feed. Once seen as the “food of the poor”, cassava has emerged as a multipurpose crop for the 21st century – one that responds to the priorities of developing countries, to trends in the global economy, as well as to the challenges of climate change – as it is recognized by the United Nations Food and Agricultural Organization (FAO) as a climate resilient staple crop².
- 1.2. In Jamaica, a new commercial supply chain for cassava production is emerging with the backing of Red Stripe, one of the country’s leading beverage manufacturers. As part of its local sourcing strategy, Red Stripe aims to increase usage of local raw materials in its beverage products and is using Jamaican cassava as a key ingredient for brewing beer. It has successfully experimented with the use of cassava starch as a substitute for imported high maltose corn syrup (HMCS) in the brewing process. To this end, by 2019, the company aims to substitute 40 percent of the HMCS that it currently imports with locally produced cassava starch. A 40 percent level substitution would require up to 65,000 metric tons of cassava tubers (roots) annually, a three to fourfold increase over current national production levels.³
- 1.3. To ensure a consistent supply of tubers for its newly built 20-root-ton cassava starch factory, Red Stripe operates two nucleus farms in St. Catherine, a 36-acre pilot farm at Bernard Lodge and a 250-acre farm at Wallen. Red Stripe is also in the process of expanding its operations in Bernard Lodge and establishing other farms in the parishes of Clarendon and St. Mary. However, additional clusters of private farms are needed across the island to address demand and achieve a sustainable supply. Eventually, the company intends to source 80 percent of its cassava from contract farms and 20 percent from its own nucleus farms. As more companies are tapping into smallholder value chains to secure a sustainable supply for their products, small-scale farmers can play an important role in meeting the demand for commodities in local and global markets.
- 1.4. Today in Jamaica, cassava is grown mainly as a peripheral crop by some 11,000 smallholder farmers who cultivate on family-owned lands of five acres or less. Typically the crop is marketed locally, mainly as fresh roots at municipal markets or sold to a

² Cassava’s tolerance to erratic weather conditions, including drought, makes it all important in climate change adaptation strategies. FAO. 2013. Regional Conference on Cassava in the Caribbean and Latin America Report, 2014. <http://www.fao.org/3/a-i4548e.pdf>

³ Red Stripe is seeking to quadruple cassava yields from the current 10 to 15 tons per hectare to 30 to 40 tons per hectare. The company’s projected demand at full capacity will be 4,000 acres at 30-40 ton/ha or 49,000-65,000 metric tons/year.

number of industrial processors who produce cassava flat bread (bammy), cassava flour, and cassava chips. Uneven domestic demand has caused fluctuations in production over the past 25 years (from as low as 15,000 to as high as 30,000 metric tons/year at its peak) making it very difficult for farmers to earn a reliable income from the crop. According to the FAO, national production in 2013 was approximately 17,300 tons, well below the 65,000 tons required annually by Red Stripe⁴.

- 1.5. However, Red Stripe's commitment to local sourcing is creating a reliable and secure market for cassava and related products. In order to develop a local industry with the capacity to sustainably supply cassava on a commercial scale, the company launched Project Grow⁵ in 2014 with the support of the Ministry of Agriculture and Fisheries (MoAF). Project Grow aims to build both the capacity of small-scale producers and to create a pool of skilled and semi-skilled workers to fill the approximately 480 jobs Red Stripe estimates will be created around cassava production and processing in the next four years. The expected impact is two-fold: First, contribute to greater productivity, quality, market access, and incomes for small-scale farms. Second, generate the human capital needed to drive the value chain by giving young people (in the 17-29 age range) access to the job opportunities as well as equipping them with cross-cutting skills for the growing agro-processing sector. Red Stripe is a member of the New Economic Opportunities for Youth Alliance (NEO Jamaica Alliance), a multi-stakeholder partnership to increase job opportunities for poor and vulnerable youth.
- 1.6. To this end, Red Stripe is building on its existing experience with youth skills training through the Diageo Learning for Life (DL4L) Program⁶, run by the Desnoes & Geddes Foundation, Red Stripe's corporate foundation. Under Project Grow, the Foundation has adapted the design of the DL4L program to provide youth with training and certification in cassava production and agro processing. Training will be directly aligned with the company's core business and will prepare graduates for job opportunities being created within Red Stripe's value chain and the broader agro-processing sector. In 2015, the Foundation initiated a pilot phase for youth training in cassava cultivation and related technical areas in the value chain, which has trained a total of 67 youth to date. Under Project Grow, the objective is to scale this program and equip 1,000 young people with skills and experience to fill jobs in the value chain.
- 1.7. By partnering with Red Stripe on Project Grow, the MIF seeks to promote social innovation in Jamaica through strategic engagement with a company that is integrating social and environmental concerns into their core business strategy. Increasingly this has been referred to as corporate venturing for social innovation. Corporate venturing is

⁴ Food and Agriculture Organization of the United Nations, Statistics Division. www.faostat.fao.org

⁵ To date, the company has invested roughly US\$2.5 million in creating a sustainable cassava supply chain, which includes the establishment of the 36-acre pilot farm at Bernard Lodge, a 180-acre farm at Wallen, and the construction of a 20-root ton cassava starch factory at the Kingston brewery, in addition to initiating the DL4L youth skills training pilot.

⁶ DL4L has trained over 21,000 youth in Jamaica for jobs in hospitality, entertainment, and merchandizing since 2008, in partnership with the public national training agency HEART Trust/NTA.

the act of leveraging people, ideas, technology, and business assets to drive new forms of value creation.⁷ Project Grow embodies this, by translating a product innovation (e.g. substituting imported HMCS for locally sourced cassava in its beer brewing) into an opportunity for both social and commercial value creation and growth throughout the local supply chain. The aim is to build a value chain that is not only sustainable, but also equitable and that will provide social and economic benefits to farmers and young people within the value chain through the provision of a secure market.

- 1.8. The proposed project is particularly innovative in a local context, in that the concept of a market-driven production model with long-term purchasing contracts for small-scale farmers is a new approach for Jamaica. Additionally, the project's dual focus on building the capacity of small-scale farmers at the production level and on youth workforce development to address the skills mismatch facing the sector is an innovative way to pursue comprehensive value chain development.
- 1.9. **Problem analysis.** The main problem to be addressed by this project is twofold, centering on both the production and workforce development aspects of strengthening the commercial cassava value chain. First, the cassava production of smallholder farmers in Jamaica does not meet the supply needs of commercial buyers in terms of volumes, quality (starch content), and consistency of supply. Second, the local workforce is not trained to fill the skilled and semi-skilled farm worker positions⁸ being created in the cassava supply chain and the broader agro-processing sector. The primary causes of these problems include:
 - 1.10. **Uncertain market demand for cassava and its products.** The market for cassava is subject to gluts and scarcity. There are a number of domestic companies that buy cassava tubers for processing into bammies, and to a lesser extent into cassava flour, but demand and prices vary. Farmers often leave the cassava fields fallow because they have no consistent market. For people whose livelihoods depend mainly on agriculture, volatility in output prices means fluctuations in income and greater risk. Guaranteeing farmers a reasonable price for their crops will encourage them to invest in production. Without consistent demand and stable farm gate prices, farmers transition away from cassava to other crops.
 - 1.11. **A supply chain focused on subsistence rather than commercial production.** Farmers mostly produce cassava along with other cash crops according to subsistence practices using manual labor, basic inputs and methods, and without the need to meet specific buyer requirements (e.g. starch content). Currently very little technology is used in cassava production. Most farmers cultivate using manual labor for land preparation and planting. Cassava farms are generally rain-fed with no fertilizer and weed management. Currently, the average farmer yield is about 9-15 tons per hectare, far below the potential yields of 30-40 tons per hectare targeted by Red Stripe. Commercial cassava

⁷ Corporate Venturing for Social Innovation. MIF-Bridges Impact+ Concept Note, November 2015.

⁸ These positions include agricultural related "green jobs" in areas such as irrigation and water management, sustainable land management, organic agriculture, agro-eco tourism etc.)

farming requires the use of improved inputs (such as fertilizers, varieties suited to industrial uses), water management systems, weed management, and higher plant density, which together are able to improve yields and farm profitability. Moreover, most farmers have limited experience in implementing farm protocols, traceability, record keeping, and other quality requirements that result in high barriers to entry for small farms.

- 1.12. **Low access to formal sources of finance for capital investment in cassava farms.** Farmers require both investment to upgrade their farms and working capital to maintain commercial production. This includes long-term investments in irrigation systems, as well as seasonable outlays such as land preparation, inputs, and harvesting costs. Despite the wide array of traditional financial institutions and the proliferation of specialized micro lending institutions, access to credit remains a key issue for small farms in rural parts of the country. The microenterprise sector in Jamaica is served by distinct financial service providers: credit unions, government-sponsored programs, consumer loan companies, and microfinance institutions. However, the percentage of actual small-scale agricultural and rural enterprises served by this sector is low since in the absence of good credit information and a sound understanding of agricultural markets, banks and other financial institutions protect themselves through high collateral requirements. For small scale farms, the difficulty of gaining access to credit is compounded by a lack of collateral. Generally, the degree of access to farm credit is directly related to farm size, with larger farmers having greater access to credit than small farmers.
- 1.13. **Mismatch between the skills required for employment in the cassava value chain and the current skills of vulnerable youth⁹.** For vulnerable youth, limited access to quality technical training and life skills are a major obstacle to finding employment in the agro-processing sector. The cassava value chain is expected to create employment opportunities for both skilled and semi-skilled workers. For example, knowledge and skills in tractor operations, planting, crop fertilization, composting, harvesting, integrated pest and disease control, waste management, and basic knowledge of agro ecosystems are important for environmentally sustainable farm production. Similarly, farm management and administration, extension work, irrigation and water management, equipment maintenance, and factory operations are additional areas in which there is a skill deficit among youth. These types of jobs are becoming increasingly important in the transition to a green economy which promotes environmental sustainability while improving human welfare¹⁰. In a 2012 study from the Ministry of Labour and Social Security (MLSS), which surveyed 606 firms from different sectors, over 50% of employers with vacancies cited the inability to find the skills needed for the position. Moreover, employers consider the lack of soft skills among youth to be an important gap in the workforce.

⁹ As defined by NEO Jamaica, “vulnerable” refers to youth who are over the poverty line, but are at risk of falling back into poverty.

¹⁰ FAO, Youth and Agriculture: Key Challenges and Concrete Solutions, 2014. <http://www.fao.org/3/a-i3947e.pdf>

B. Project Beneficiaries

- 1.14. The project will be implemented initially in the parishes of St. Catherine, Clarendon, St. Mary, St. Thomas and St. Ann, which provide good agro climatic conditions for the growth and cultivation of cassava in Jamaica. The project may be expanded to include other parishes as the value chain develops. The latest poverty report released by the Jamaica Survey of Living Conditions, suggests that these parishes also represent the most impoverished areas in the country. The data indicate that St. Thomas accounts for the highest incidence of poverty with a 32.5 percent prevalence followed by St. Catherine (24 percent), Clarendon (19.3 percent), St. Ann (18.4 percent), and St. Mary (9.4 percent)¹¹.
- 1.15. The income generated from small-scale farming in Jamaica is generally low, accounting for less than 25 percent of the household expenditure from farming activities. The typical small-scale farmer in Caribbean countries such as Jamaica is predominantly male between 41 and 54 years of age with primary or secondary level education.
- 1.16. The selection of these parishes presents an opportunity to increase economic growth at the local level and to increase youth employment. The project will directly benefit 200 small and medium farmers, 1,000 vulnerable youth, and is expected to reach 3,170 indirect beneficiaries.

C. Contribution to MIF Mandate, Access Framework and IDB Strategy

- 1.17. Overall this project will contribute to both poverty reduction and private sector development by increasing the competitiveness of cassava farmers in Jamaica. This will be achieved by implementing a sustainable farming model that strengthens technical and managerial capacities at the farm level and links smallholders to the commercial cassava value chain. In addition, the project's focus on youth training will help to build the skills young people need for employment within the value chain and the growing agro-processing sector more broadly.
- 1.18. This project is aligned with the MIF's Climate Smart Agriculture area of focus and contributes to reducing the productivity gap for small and medium-sized agricultural enterprises in Latin America and the Caribbean. The project will promote the adoption of climate-smart practices to reduce vulnerability of small-scale farms to changing weather patterns and to improve resilience in the supply chain.
- 1.19. Jamaica's agriculture sector is highly vulnerable to climate change and its impact. According to the 2012 State of the Jamaican Climate Report, a summary of these impacts include, decreased precipitation and its effects on agro biodiversity, increasing temperature and its role in the breeding of pests and diseases, and also the role of extreme events on agricultural infrastructure, livelihoods and assets. Further complicating matters, the rainy season is projected to shorten while the dry season is forecast to lengthen, thereby intensifying drought conditions and driving scarcity of

¹¹ Jamaica Survey of Living Conditions (2012).

water. Given this dynamic and to better respond to this reality, Project Grow will finance training in climate smart practices, test and improve varieties for drought and pest resistance, and facilitate investments in technologies, such as drip irrigation to make farmers less vulnerable to climate threats.

- 1.20. By addressing the issue of value chain finance, the project will facilitate access to long-term credit for farmers to finance startup costs as well as to purchase inputs. Furthermore, Project Grow promotes innovation in the agricultural sector through its contract farming model and long-term purchasing arrangement, which is new to the cassava value chain Jamaica.
- 1.21. **Collaboration with the Bank Group.** This project aligns with the IIC's Climate Smart Agriculture Program which aims to accelerate private sector investments in agriculture through long-term funding schemes. With the expected growth of the cassava value chain in the medium term, the IIC would be well positioned to finance additional investments by Red Stripe or other companies in the sector in the future.

2. PROJECT DESCRIPTION

A. Objectives

- 2.1. The project objective at the **impact** level is to increase the incomes of small-scale cassava farmers, as well as generate sustainable employment opportunities for vulnerable youth in Jamaica. The project objective at the **results** level is to enhance the capacity of small-scale producers to supply quality cassava to commercial buyers and to build youth skills to foster their insertion into the cassava value chain as farm workers, processors, and service providers.

B. Description of Model/Solution/Intervention

- 2.2. In order to develop a new supply chain of cassava tubers for processing into starch and other products, the project will focus both on the production and workforce development (e.g. youth training) "links" in this chain, in partnership with the lead company, Red Stripe. The intervention model is based on a contract farming model in which Red Stripe operates its own nucleus farms and contracts with small and medium-sized farms across the island. The nucleus farms will provide 20 percent its cassava tuber needs, serve as research and development sites for varietal and production system testing, and function as training hubs for farmers.
- 2.3. Red Stripe will provide a secure market in the form of three-year purchasing contracts with small and medium-sized farms who meet the company's requirements for cassava production¹². The contractual arrangement will allow farmers to access a starter package of inputs including, irrigation technology, plant material, fertilizer, and crop

¹² To be eligible, farmers must have access to land, be located in an area suitable to cassava cultivation, must successfully complete the farmer training program, and must adhere to Red Stripe's production and contract requirements.

protocols that have been tested and validated on the company's own farms. This secure market access through buyer commitment and price stability, combined with improved access to credit, training, and inputs will provide the right incentives for farmers to intensify production, improve quality, and fulfill their contracts.

- 2.4. The contract farming model presents a sustainable win-win approach. Red Stripe ensures an agreed price to farmers and provides technical services in return for growers' commitment to deliver all or a significant portion of production. It provides start-up technical advice, a guaranteed floor price, and a marketing agreement that covers product quality and volumes.
- 2.5. This expansion of production will not only increase income-generating opportunities for farmers, but will also open up employment opportunities in processing and support services throughout the value chain, such as jobs for extension agents, machinery technicians, irrigation specialists, and factory workers, etc. It is also expected that the development of the value chain will give rise to value-added activities in agro-processing such as the production of cassava flour for bakeries and the use of the cassava leaves and fibers as animal feed¹³. Specifically, the intervention model is based on the following four key elements:
- 2.6. **Access to agronomic and business training for small scale farms to transition to commercial cassava cultivation:** The project will equip farmers with the business planning, financial literacy, and management skills needed for commercial farm operations and value chain insertion. Agronomic support will include training in commercial cassava farming, particularly sustainable land preparation and water management, crop nutrition, farm diversification, and pest and disease management, among other areas. Trainings will be done in the four regional clusters and Red Stripe will use its own farms to serve as demonstration plots and conduct farmer training. This work will be done in collaboration with technical experts at the Center for International Tropical Agriculture (CIAT)¹⁴, as well as local specialists from the Ministry of Agriculture and Fisheries (MoAF) and the Rural Agricultural Development Authority (RADA).
- 2.7. **Access to improved technologies and inputs to boost farm productivity:** The project will support the transition of subsistence farms to small commercial farming enterprises by developing a package of inputs designed to maximize the productivity and income of small-scale farms. Once farmers have successfully completed the agronomic and business skills training, they will be assessed for eligibility to take up contracts with Red Stripe which would include a "starter package" of inputs, containing the planting material, irrigation equipment, agro-chemicals, training and support services needed to produce at the quality and yield required. Farmers will be given technical guidance

¹³ In Jamaica, other large buyers of cassava include cassava flat bread (bammy) processors such as Jamaica Producers Group Ltd.

¹⁴ This work may also include collaboration with CLAYUCA Corporation, a CIAT affiliate which promotes technological innovation the development of eco-efficient, sustainable and competitive cassava production systems in tropical regions of the world.

through a field team of agricultural extension officers. In order to facilitate efficiency and transparency, Red Stripe will implement a robust quality control program, including on-farm food safety and quality standards, pest and disease control, and a process for establishing starch content in tubers through a mobile laboratory and starch testing facility.

- 2.8. **Access to finance to facilitate the adoption of improved technologies:** The project will address the critical need for investment capital by establishing a farmer credit facility to finance the cost of “starter kits”. The facility will be established for a duration of four years to unlock financing in the supply chain for the 200 small and medium farms, to catalyze the adoption of new technologies (the starter kits), and to help the model to reach scale and sustainability. The facility will provide loans of up to three years for small and medium sized farms that have received purchase contracts from Red Stripe. The credit facility will be established with capital from Red Stripe’s own resources and will be managed by a licensed Jamaican financial institution with a track record in SME and agricultural lending.
- 2.9. **Development of qualified pool of young skilled agricultural workers to support value chain consolidation:** To support growth of the value chain, the project will create a pool of skilled and semi-skilled young workers to fill the jobs to be generated in cassava tuber production, processing, production facilities and technical and logistic support services. By adapting its existing youth training program, Diageo Learning for Life (DL4L), Red Stripe’s Foundation has designed a nine-week training program that builds both the technical and life skills needed for employment in the agro processing sector. Technical training will be accompanied by practical job training, mentoring, and job placement activities. The youth skills and training program will be implemented in coordination with HEART Trust/NTA, a leading institute for technical and vocational training in Jamaica and with the NEO Jamaica program.

C. Components

Component I: Enhancing Technical and Agronomic Capacity for Cassava Production. (MIF: US\$404,400); Counterpart: US\$1,064,800).

- 2.10. The objective of this component is to improve the productivity and business skills of farms through training, extension services, and business advisory services. In order for commercial cassava farming to become economically viable for small and medium farms, the project will promote a sustainable intensification approach aimed at achieving higher yields on the same land. This ensures the application of improved practices and more efficient use of inputs which is expected to result in greater yields. In addition, this component will strengthen the capacity of farms for business planning and financial management in order to improve their ability to manage credit and fulfill supply contracts as part of the contract farming system.
- 2.11. The main activities linked to this component include: (i) developing an ecosystem-based approach to cassava production (with leading technical experts from CIAT) that is both highly productive and environmentally sustainable; (ii) developing and publishing of

technical manuals and modules for farmer training; (iii) training field staff and extension officers; (iv) conducting farmer training and field school activities for farms; (iv) providing farmers with targeted extension support in partnership with RADA; (v) developing an agribusiness curriculum for cassava cultivation; and (vi) providing agribusiness training and advisory services to farmers through workshops and business coaching.

- 2.12. The expected outputs of this component include: (i) one farmer training curriculum and a technical manual for climate-smart cassava production (ii) 15 Project Grow field staff and technicians trained in climate-smart cassava production; and (iii) 200 farmers trained in climate-smart cassava production, agro-entrepreneurship, record keeping financial literacy and business planning.

Component II: Developing a Climate Smart Production System. (MIF: US\$100,000); Counterpart: US\$70,000).

- 2.13. The objective of this component is to develop a modern and climate-smart agricultural system for smallholder cassava producers and facilitate the timely availability of affordable inputs and services. The component will facilitate the development of high yielding and adapted cassava varieties that deliver high quality and meet market requirements for starch content. It will also promote a mixed cropping system (e.g. sorghum, peas and peanuts) that maintains soil fertility, reduces crop specific pests and disease, and helps farmers to reduce risk and adapt to external shocks, including climate threats. Activities include: (i) research and field trials for testing high yielding cassava varieties to determine performance under different conditions (rain fed, irrigated, etc.); (ii) propagation of high yielding planting materials through a system of nurseries to assure availability to farmers; and (iii) identifying and testing complementary crops for inter cropping and rotation.
- 2.14. The expected outputs of this component include: (i) 8 high yielding climate-smart cassava varieties tested (ii) 6 complementary crops tested for crop rotation; and (iii) 3 nurseries established to propagate high yielding plant material.

Component III: Scaling Up Youth Training in Agriculture and Cassava Production. (MIF: US\$12,000); Counterpart: US\$726,000).

- 2.15. The objective of this component is to build youth skills to foster their insertion into the cassava value chain and broader agro-processing sector as farm workers, factory workers, and service providers. This component will be implemented in coordination with the NEO Jamaica Alliance and the HEART Trust/NTA. It will focus on providing a combination of technical skills and life and leadership skills through a nine-week training program specially adapted for opportunities in cassava production and agro-processing. The training will be complemented by mentorship, career coaching and job placement supported by NEO Jamaica. Activities under this component include: (i) the recruitment, selection and training of youth ages 17-29 in cassava production and agro entrepreneurship; (ii) implementation of and intensive coaching and mentoring

program to build skills in conflict resolution, financial literacy, leadership, presentation and speaking; and (iii) job placement services to match Project Grow graduates with employment opportunities in agro-processing and related sectors.

- 2.16. The expected outputs of this component include: (i) 1,000 youth trained in farm management and cassava production; (ii) 1,000 youth trained in leadership and life skills; and (iii) 1,000 youth receiving job placement assistance from NEO.

Component IV: Improving Access to Finance for Smallholders in the Cassava Value Chain. (MIF US\$0; Counterpart US\$1,630,635).

- 2.17. The objective of this component is to promote access to affordable finance for small and medium farmers with purchase contracts from Red Stripe. The Project Grow Credit Facility will be established to provide loans to approved farmers to finance the cost of a “starter kit” of inputs (irrigation equipment, chemical fertilizers etc.) required to produce cassava according to the specifications and protocols developed by Red Stripe. The farmer credit facility will be financed by Red Stripe and a qualified financial institution will be selected to administer the program.
- 2.18. Approved farmers will receive financing in the form of vouchers which will be used to purchase starter kits from approved suppliers. The loans will be secured by purchase contracts and repayment will be made over a three-year period through the delivery of each cassava harvest.
- 2.19. The selected financial institution will sign an administration agreement with Red Stripe and will be responsible for the following key activities: (i) developing credit products tailored to the needs of small and medium farms; (ii) undertaking a credit assessment and financial due diligence for each applicant; (iii) administering loan agreements with each farmer; (iv) acting as the clearing house to remit payment to input suppliers; (v) monitoring loan disbursements and repayments from farmers; (vi) making final payment to farmers at the end of harvest; and (vii) reporting to Red Stripe/DG Foundation on performance of the fund on a quarterly basis.
- 2.20. The expected outputs of this component include: (i) 2 specially adapted credit products developed for cassava farms (ii) 200 farms receiving credit; and (iii) US\$1.6 million disbursed in credit to Project Grow Farms.

Component V: Knowledge and Strategic Communications. (MIF US\$40,000; Counterpart US\$2,000).

- 2.21. The objective of this component is to systematize, document, and disseminate the experience and knowledge generated by the project. Local sourcing is emerging as a profitable and sustainable business model that benefits both companies and their local suppliers. This project is unique in that it aims to create a new value chain, anchored by a local company and largely supported by smallholder production. The project will generate knowledge that can be adopted not only by large food and beverage companies and retailers, but increasingly also by small and medium sized enterprises.

- 2.22. The strategic audiences of the project for scaling up and replicating the model are: (i) leading agro-processors; (ii) the Ministry of Agriculture and Fisheries; (iii) local banks and financial institutions with an interest in agricultural lending; (iv) technical partners such as CIAT and CARDI; (v) the Environment, Rural Development and Natural Resources Disaster Risk Management Division at the IDB; and (vi) other development partners and multilateral entities.
- 2.23. In order to meet the knowledge needs of these audiences, a case study to document knowledge and replicate the experience of the project in local sourcing and accompanying video to convey the essential story will be developed. The project will also finance participation of project staff in two knowledge events to communicate results and lessons learned.
- 2.24. **Link to the knowledge needs/interests of other stakeholders.** This project's knowledge contribution will provide guidance and good practice for companies and development institutions on how to develop partnerships among lead firms, farmers, and other stakeholders, as well as on how to increase the capabilities of farmers and other actors in the value chain, and effective mechanisms for providing financing for farmers.

D. Project Governance and Execution Mechanism

- 2.25. The project will be executed by the Desnoes & Geddes (D&G) Foundation, Red Stripe's corporate foundation based in Kingston. D&G Foundation will establish a project execution unit which will be staffed by a Project Manager, and an Administrative Assistant/Accountant. The Project Manager will be responsible for the implementation of the work program and management of the project staff. He/she will be supported by a field-based technical team of Extension Officers, an Agricultural Consultant, and a Business Advisor. The entire project execution unit will be under the joint supervision of Red Stripe's Local Raw Material Manager and the Executive Director of D&G Foundation.
- 2.26. A Steering Committee will be established to provide strategic oversight and guidance on project implementation. Its role will involve overseeing the delivery of the project outputs and the achievement of results. The committee will consist of representatives from the project's financial sponsors and key partners including: MIF, Red Stripe, D&G Foundation, Ministry of Agriculture and Fisheries (MoAF), and technical partners such as CIAT. Other members may be invited to participate on an ad-hoc basis. The committee will meet quarterly to align with the milestones and reporting schedule of the project.
- 2.27. One year before the project ends, a sustainability workshop will be held with all key stakeholders to identify specific actions needed to ensure the continuity of the project's activities after the project funding has been expended. The workshop will be organized by the executing agency.

E. Sustainability

- 2.28. Sustainability will be ensured by several key factors. First, the project focuses on building an effective and sustainable local sourcing business model which provides farmers with the opportunity to integrate into the commercial cassava value chain and improve their incomes. Another guarantee of the sustainability of Project Grow is the secure market and price stability arrangement which has the potential to create favorable and long-term prospects for the development of the market. As markets develop and demand grows, farmers have an incentive to increase cassava production. Third, by building farmers' credit history through the Project Grow financing facility, the project will increase the ability of smallholder farms to access formal sources of finance and capital investment to upgrade their farms for commercial production. Finally, the project will support agronomic and life skills development of vulnerable youth, helping to build their employability skills and develop a qualified workforce to support the industry.

F. Experience and Lessons Learned from MIF or other Institutions

- 2.29. In general, the MIF has learned that access to markets and value chain projects are more effective when they identify markets suitable for small businesses and when there is a clear understanding of how the particular market functions. Therefore, the project is working closely with Red Stripe to understand demand, market forces, and quality requirements needed to create a new value chain. More specifically, the following lessons learned from both the MIF's and Red Stripe's experience are being incorporated into the project's design:
- 2.30. **Transitioning to commercial farming requires intensive support.** An early lesson learned in the implementation of the "Scaling Up the Smallholder Alliance for Sorghum in Haiti (SMASH)" (HA-M1050) project, in which the beer company Brasserie National d'Haiti will source locally from sorghum producers, is that working with subsistence farmers with limited exposure to commercial agriculture requires a high degree of attention to bring about cultural change. The project will work closely with producers to foster changes in outlook and behavior in order to facilitate their successful participation in a more organized and commercially-oriented value chain.
- 2.31. **Farm diversification is key.** Lessons from both the Social Entrepreneurship Program (SEP) and MIF cassava value chain projects (PR-S1006 and NI-M1031) and the FAO report on Sustainable Cassava Intensification¹⁵ point to the importance of farm diversification for small-scale farms. Strategies must be in place to achieve a healthy combination of short, mid, and long-term income streams from other crops. This project will promote crop diversification by identifying complementary crops based on their marketability and compatibility with cassava.

¹⁵ FAO, Save and Grow Cassava. A Guide to Sustainable Production Intensification, 2013.

- 2.32. **Youth training must be linked to jobs.** This is particularly important in the case of technical education, which involves preparing students for a trade so that, once they graduate, they can enter the job market. To ensure an effective transition, courses must be relevant to demand, and ongoing feedback must be provided. In addition, research has shown that employers value life skills (motivation, work attitude, responsibility, and commitment) even more than technical skills. Several studies have demonstrated the impact of life skills on the success of interpersonal relationships, in the school environment, and in the job market.

G. MIF Additionality

- 2.33. Non-Financial Additionality. The project will benefit from the MIF's experience in working with agricultural value chains and with value chain finance for small farmers. This is the first time Red Stripe is creating a financing mechanism for small farmers and the MIF's experience and technical know-how has been particularly beneficial with fund structuring. In addition, the MIF's deep experience with youth skills training and the technical leverage to be provided through NEO also bring great value to this intervention.
- 2.34. Financial Additionality. The MIF's financial support for increasing farmer productivity and climate-smart production is expected to accelerate the productivity and integration of farms into the supply chain. In the medium term, it will create space for future investments in the expansion and the cassava sector as a whole.

H. Project Results

- 2.35. The project is expected to achieve the following **results** by the end of the four-year implementation period: (i) 800 youth (80%) graduate from the Project Grow training program; (ii) 200 farms adopt new practices or technologies (CRF 230100); (iii) average yields for Project Grow farms reach 30 tons per hectare; (iv) 2,000 acres of land sustainably managed (CRF 240100); and (v) average starch content of cassava tubers supplied by Project Grow farms increases to 28%.

I. Project Impact

- 2.36. The project is expected to achieve the following **impacts** by the end of the four-year implementation period: (i) 480 Project Grow graduates placed in jobs; (ii) US\$6.2 million of annual sales to new domestic or export markets by Project Grow farms; (iii) 200 Project Grow farms selling to new domestic or export markets (CRF 330601); and (iv) 24 million kilograms (24,000 MT) of cassava supplied to the Red Stripe processing plant by Project Grow farms.

J. Systemic Impact

- 2.37. The project aims to create a new commercial cassava market in Jamaica that will be worth US\$6.2 million per year by the end of the project. Furthermore, the successful development of the cassava value chain is expected to catalyze new markets for cassava-based products, such as cassava flour for bakeries and cassava leaves and

fibers for animal feed, which small-scale producers can also supply. The project can also be used as a model to promote local sourcing, shared value, and similar contract arrangements for other crops in Jamaica or the broader Caribbean. There is potential for Red Stripe to transfer the value chain approach developed in Jamaica to other countries where its parent company, Heineken¹⁶, is implementing local sourcing commitments in similar contexts. Systemic impact indicator: one new market or value chain that emerged with MIF support.

3. MONITORING AND EVALUATION STRATEGY

- 3.1. The project execution unit will be responsible for establishing the project's monitoring systems, ensuring the collection of baseline, mid-term and end line data, contributing to progress reports, and ensuring the completion of mid-term and final evaluations. Red Stripe is considering the use of an open-source mobile platform to manage its cassava supply chain logistics. The core functions of the system will include product traceability and supplier management. Beyond managing the core logistics of the supply chain, the mobile platform will host Project Grow's M&E system. Key performance indicators related to field agent and farmer activity will also be tracked and reported through the platform.
- 3.2. Baseline: Baseline data will be collected for all farmers and youth upon their recruitment and registration in Project Grow. For individual producers, the baseline survey will include data on hectares under cultivation, cassava production, yields, sales, access to credit, agricultural practices, and access to agricultural equipment. This information will be gathered by extension agents. All baseline findings will be disaggregated by sex where appropriate and for measuring results in the project's annual report and final evaluations.
- 3.3. Monitoring: All farmers participating in the project will be registered with a unique identifying code. This identifying code will be used to track all training and services each farmer receives from the project e.g. attendance at training events, extension visits, credit etc. Similarly, it will track key production data such as yields and sales. Data will be gender disaggregated where relevant. All Project Grow extension agents will be trained and equipped with tools to capture data and complete field reports. Data on each farmer is expected to be updated with each harvest/training season. Monitoring for the youth training program will leverage systems already established by NEO and Heart Trust.
- 3.4. Evaluation: The project will have both a mid-term and final evaluation. The mid-term evaluation will be conducted at the mid-point of the project or when 50% of the resources have been disbursed. The midterm evaluation will cover, among other issues:

¹⁶ In October 2015, Heineken bought Red Stripe from Diageo, acquiring a majority stake in Desnoes & Geddes Ltd., the operating company for Red Stripe. The MIF has a letter of commitment from Red Stripe confirming their ongoing commitment to the project under the new ownership structure.

- (i) the efficacy of farmer training and the degree to which farmers are adopting improved production practices; (ii) progress in meeting production and sourcing targets; and (iii) progress related to improving access to finance for producers.
- 3.5. The final evaluation will be conducted upon project completion and will compare the baseline against the endline data to determine the extent of the impact in the program's targeted areas. The project will employ a mixed quantitative and qualitative evaluation methodology using data from the mobile platform and interviews with producers, youth and other project stakeholders. The project team will develop an evaluation plan for both the final and mid-term evaluations to determine the specific methods and resources as appropriate. Key evaluation questions for the final assessment may include: (i) to what extent did this model result in sustainable and economic benefits for small-scale farms? (ii) Did the livelihoods of beneficiaries improve through the contract farming model? Did the farms fulfill their contracts and how long did it take for them to perceive economic benefits? (iii) how sustainable are the linkages between beneficiary farms and the anchor firm? (iv) How can the effectiveness and sustainability of the Red Stripe local sourcing business model be enhanced? (v) Can the model be replicated in other clusters? and; (vi) How successful was the project in training and employing youth within the value chain?
- 3.6. Closing Workshop. The executing agency will organize a closing workshop at the appropriate time to assess along with other key stakeholder the outcomes achieved, identify additional tasks to guarantee sustainability and identify and disseminate lessons learned and best practices.

4. COST AND FINANCING

- 4.1. The project has a total cost of US\$4,827,231, of which US\$814,417 (17%) will be provided by the MIF, and US\$4,012,814 (83%) by the counterpart. The execution period will be 48 months and the disbursement period will be 54 months.

US\$	MIF	Red Stripe	In-kind	Total
Project Components				
Component 1: Enhancing Technical and Agronomic Capacity for Cassava Production	\$404,400	\$834,400	\$230,400	\$1,469,200
Component 2: Developing a Climate-Smart Production System	100,000	70,000	0	170,000
Component 3: Developing and Scaling Youth Training Program in Agriculture and Cassava Production	12,000	462,000	264,000	738,000
Component 4: Improving Access to Finance for Smallholders in the Cassava Value Chain	0	1,630,635	0	1,630,635
Component 5: Knowledge and Strategic Communications	40,000	2,000		42,000
Execution and Supervision				
Executing Agency/ Administrative	169,500	393,600	24,000	587,100
Baseline	6,000	0	0	6,000
Monitoring System	14,000	0	0	14,000
Mid-Term Evaluation	10,000	0	0	10,000
Final Evaluation	14,000	0	0	14,000
Ex post reviews	16,000	0	0	16,000
Contingencies	23,517	101,779	0	125,296
Sub-total	\$809,417	\$3,494,414	\$518,400	\$4,822,231
% of Financing	17%	72%	11%	100%
Institutional Strengthening (Financial Management and/or Procurement Training, if applicable)	5,000	0	0	5,000
Grand Total	\$814,417	\$3,494,414	\$518,400	\$4,827,231

5. EXECUTING AGENCY

- 5.1. The Desnoes & Geddes Foundation will be the Executing Agency of this project and will sign the agreement with the Bank. Incorporated in 2006, it is Red Stripe's corporate foundation, which carries out projects aimed at relieving poverty and improving lives for Jamaicans. The Foundation, which is managed by a six-member board of trustees, is currently implementing and managing the Diageo Learning for Life Program (DL4L), which provides education and skills to give disadvantaged people a chance to find employment, and become valued and respected contributors to their communities. DL4L programs, which are implemented in partnership with established educational and training organizations, focus on four broad areas of competency, providing

education and skills for graduates to find work in tourism, retailing, the arts and/or hospitality. These four initial areas align with the company's existing capabilities, and where opportunities exist to work with its on-and-off-trade customers, leverage its marketing sponsorships and supplier base, and as a result bring scale to project execution.

- 5.2. The execution of Project Grow is an opportunity for the Foundation to expand its existing youth cassava training pilot project, which is fully aligned with the company's core business. Although the Foundation's expertise is on the youth training side, it will consolidate its capacity in agricultural and value chain development through alliances with key strategic partners.
- 5.3. The Desnoes & Geddes Foundation will establish an executing unit and the necessary structure to effectively and efficiently execute project activities and manage project resources. The Desnoes & Geddes Foundation will also be responsible for providing progress reports on project implementation. Details on the structure of the execution unit and reporting requirements are in Annex X in the project technical files.

6. PROJECT RISKS

- 6.1. The project team has identified the following risks:
- 6.2. **Behavioral risk:** Farmers may be reluctant to adopt new methods and technologies and may not apply protocols and standards taught in training. **Mitigation action:** Contract farmers will be selected through a rigorous screening process, checking their potential commitment to comply with new production methods and with quality standards. In addition, the field technical team will be performing regular supervision visits to contract farms and training modalities will be appropriate for the targeted training population (literacy, availability etc.). Furthermore, the contract farming arrangement will provide incentives for compliance through a pricing structure under which higher starch content will receive a higher market price.
- 6.3. **Financial Risk:** The partnering financial institution has lower than expected capacity to develop new products and administer the credit facility for farmers. **Mitigating action:** The MIF has worked with Red Stripe to develop specific TORs in order to select a financial institution with the capacity, experience and track record to manage the credit facility. The MIF will advise on the selection of financial institution and on the operation of the credit facility. The MIF is also prepared to share its expertise in farmer financing to ensure the successful execution of the fund.
- 6.4. **Credit risk:** Farmers are unable to repay the loans for starter kits. **Mitigating action:** Farmers selected for purchase contracts will be carefully screened by both Red Stripe and the financial institution to determine their capacity to produce cassava and repay the loan. The credit program has been designed to reduce risk to Red Stripe and the financial institution through the use of input supply vouchers rather than cash. Furthermore, the farmer will make repayments in the form of cassava tubers at

harvest. The timeframe, quantity and quality will be specified in the purchase contract. This model minimizes the potential for non payment and misuse of funds. The potential for side selling is also low given that transport of cassava to other buyers is costly.

- 6.5. **Environmental or Climate Change Risk:** Jamaica, like most small island developing countries, is vulnerable to the impact of climate change, particularly extreme drought, flooding and storm events which could negatively affect the cassava harvest. **Mitigating action:** The promotion and use of high-yielding climate resilient cassava varieties could help to mitigate the risk of crop losses. Further to this, the geographical dispersion of the cassava clusters across the island will also mitigate against this risk.

7. ENVIRONMENTAL AND SOCIAL EFFECTS

- 7.1. The project is not expected to cause adverse environmental or social impacts. On the contrary, it is expected to have positive social and environmental externalities. First, the promotion and cultivation of high-yielding and climate resilient varieties of cassava will aid in improving the resilience of smallholder farmers. Second, the creation of a new supply chain provides farmers with secure access to market, finance and training which will improve their income-generation and capacity to move further up the value chain. Third, the project will promote environmentally sustainable growing practices. Finally, through combined technical and life skills training, the project will help to build a qualified pool of youth to fill jobs within the growing cassava value chain and broader agricultural sector.

8. COMPLIANCE WITH MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

- 8.1. **Disbursement by Results and Fiduciary Arrangements.** The Executing Agency will adhere to the standard MIF disbursement by results, procurement and financial management arrangements specified in Annex VII.

9. INFORMATION DISCLOSURE AND INTELLECTUAL PROPERTY

- 9.1 **Information Disclosure.** This project is categorized as public for the purpose of the Bank's information disclosure policy.