

ADDRESSING POVERTY IN DOMINICA



APPLIED POLICY PROJECT

OLIVIA DAVIS

Frank Batten School of Leadership and Public Policy

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List of Acronyms and Abbreviations

Commonwealth Local Government Forum (CLGF)

Dominican Youth Business Trust (DYBT)

Emergency Cash Transfer program (ECT)

Minimum Food Basket (MFB)

Organization of American States (OAS)

Organization of Eastern Caribbean States (OECS)

Public Assistance Programme (PAP)

Small Island Developing States (SIDS)

Table of Contents

Acknowledgements	2
List of Acronyms and Abbreviations	3
Executive Summary	5
Problem Statement	6
Criteria	7
Alternatives	9
Outcomes Matrix	23
Tradeoffs	24
Recommendation	26
Implementation	28
References	30
Appendices	37

Executive Summary

In Dominica, nearly 30 percent of the population lived in poverty and an additional 11 percent were at risk of falling into poverty in 2002 (Caribbean Development Bank, 2012). Since this data became available, Hurricane Maria made landfall on the small island nation in 2017, devastating more than 90 percent of the resident's homes and businesses (The Commonwealth of Dominica et al, 2018). The damage inflicted by Hurricane Maria has severely exacerbated poverty on the island, leaving likely far more than 40 percent of Dominicans in poverty. The island remains in the midst of a humanitarian crisis that urgently requires attention.

This report provides the Delices Village Council with five alternatives aimed at alleviating poverty on the island.¹ The proposed policy alternatives are geared toward lifting the greatest number of Dominicans out of poverty in an economically feasible manner. The alternatives include:

1. Let Present Trends Continue
2. Invest in the Toloma Women in Action Cooperative
3. Create a Micro-Finance Program
4. Execute a Financial Analysis on the Jungle Bay Resort and Spa
5. Expand the Island's Unconditional Cash Transfer Program

I evaluated each policy alternative across five evaluative criteria. These include: cost effectiveness, Village Council capacity, equity, environmental durability and political feasibility. Based on this analysis, I recommend that the Village Council seek approximately \$60 thousand in grant funding to finance the Toloma Women in Action Cooperative's continued transition to organic production and its ultimate expansion. This alternative is projected to have a positive net present value generating between \$7.97 and \$9.55 million in revenue across the next five years, while costing only \$480 per Dominican who gains employment through the Cooperative's expansion. The alternative also ranks highest in terms of both Village Council capacity and political feasibility and is projected to be environmentally durable. In the long-term I also recommend the Village Council secure funding to conduct a financial analysis on the Jungle Bay Resort and Spa as a means to explore tourism as a potential avenue for continued poverty alleviation.

¹ The Delices Village Council is one of 42 local government bodies on the island.

Problem Statement

In 2002, 28.8 percent of Dominicans were poor (Caribbean Development Bank, 2012).² An additional 11 percent of the population was at risk of falling below the national poverty line that year (Caribbean Development Bank, 2012). More recently, in 2018, economic growth was measured at negative 4.3 percent compared to negative 0.7 in 2009 (Heritage Foundation, 2018; The World Bank, 2009).

Poverty on the island was exacerbated in 2017 by Hurricane Maria which inflicted \$1.3 billion in damage, more than 225 percent of the nation's GDP (Dominica News, 2018). The UN estimated more than 90 percent of the approximately 74,000 Dominican residents were impacted by the hurricane, "[suffering] direct damage to their housing and livelihoods" (The Commonwealth of Dominica et al, 2018). While more recent data on poverty levels is not available, devastation inflicted by the hurricane provides evidence that the decade-old poverty figures underestimate the true rate.

Prior to Hurricane Maria, only 6,600 residents (9% percent of the population), received direct government benefits. Unconditional cash transfers provided through the Public Assistance Programme (PAP) augmented income for the most impoverished citizens. Between December 2017 and February 2018, PAP was supplemented by the Emergency Cash Transfer (ECT) program, which extended benefits to approximately 18 thousand additional recipients (Appendix 1). During this period, all citizens living in poverty and about half the vulnerable population received cash benefits. Since February 2018, however, only those who initially qualified for PAP receive cash transfers. Nearly 20 percent of those living in poverty and all those considered vulnerable are left without benefits. Dominica needs a strategy to stimulate economic growth and lift citizens out of poverty. Additional background on Dominica's economic history can be found in Appendix 2.

² These figures are based on Dominica's national poverty line. This measure includes the minimum food basket (MFB) cost (calculated in 2002) for an adult eating 2,400 calories daily (Carrette, 2004). The MFB costs approximately \$2 USD per day or about \$700 USD annually (in 2019 dollars). In addition to the MFB, the measure includes the average annual spending by the poorest 40 percent of households on goods other than food (Carrette, 2004). This figure totals approximately \$500 USD annually. The poverty line in Dominica is approximately \$1,200 per person per year, or just over \$3 a day. Additionally, in 2009, 3.1 percent of the population, approximately 2300 people, were considered indigent, earning less than the MFB cost (Caribbean Development Bank, 2012). Poverty vulnerability includes those living just above the \$1,200 USD per year measure but a measure is not explicitly defined.

Criteria

I present five alternatives that address poverty in Dominica. These alternatives will be evaluated using the following five criteria.

1. **Cost Effectiveness in Alleviating Poverty**
2. **Village Council Capacity**
3. **Equitability Across Alternative Beneficiaries**
4. **Environmental Durability**
5. **Political Feasibility**

Criteria in each evaluation will either be quantified, scaled qualitatively or rank ordered. These specific measures are detailed below and are weighed based on their value to the Village Council.

1. **Cost Effectiveness in Alleviating Poverty:** The following criteria address each alternative's effectiveness in alleviating poverty through economic development on the island. These criteria will be evaluated quantitatively. Cost effectiveness is weighed at 30 percent given the emergent need to alleviate poverty and the importance of effectively using limited available funding.
 - a. **Cost:** I will evaluate each alternative's costs. This will provide a baseline for assessing cost effectiveness by comparing requisite funding for each alternative to the number of people projected to move above the poverty line.
 - b. **Revenue Generation:** I will calculate the revenue each alternative is projected to generate in the medium-term (5 years). This will allow for a net present value comparison across alternatives.
 - c. **Job Creation:** I will project the number of living wage³ jobs generated by projecting outcomes for each alternative.
2. **Village Council Capacity:** I will evaluate whether the alternative requires *low, medium or high* Village Council capacity. It is only feasible for the Village Council to pursue one alternative at a time. The Council includes only eight members who serve three year terms (CLGF, 2018). Additionally, the 42 councils comprising local government on the island are allocated very little by the national government, receiving less than one percent of total government expenditure in 2014 (CLGF, 2018).⁴ The Delices Village Council receives approximately \$50 thousand annually to cover council member salaries, project funding and administrative expenses (CLGF, 2018; Country Economy, 2016). Given these limitations, it is only feasible for the Village Council to pursue one alternative in the given time. I will project the time and resources required by each alternative. The alternatives I

³ A living wage in Dominica is approximately \$7.00 USD per hour (Numbeo, 2019).

⁴ Village councils spent approximately 0.9 percent of total government expenditure in 2014, or approximately \$2.2 million (USD) (CLGF, 2018; Country Economy, 2016). This allocation is divided across 38 village councils, the Roseau City Council, the Portsmouth Town Council, the Canefield Urban Council and the Carib Council. If the funds were evenly distributed, the Delices Village Council would receive approximately \$50 thousand (USD) annually.

present are mutually exclusive due to these capacity constraints. Village Council capacity is weighed at 15 percent because it is critical that the Council only pursue an alternative that makes effective use of available time and resources.

3. **Equitability Across Alternative Beneficiaries:** I will evaluate whether each alternative generates *low, medium or high* equitability across beneficiaries. I will assess equitability by projecting who is likely to receive jobs created and who will profit from generated revenue. Equitability is weighed at 30 percent. It is necessary from the Council's standpoint that any alternative implemented distribute benefits across as many Dominicans as possible.
4. **Environmental Durability:** I will assess the degree to which alternatives can withstand environmental disasters relative to one another. I will rank order alternatives *one through five*, one being high and five being low, in terms of environmental durability by projecting relative alternative infrastructural durability. Environmental durability is weighed at 15 percent given the damage inflicted by Hurricane Maria and the possibility that Dominica could be hit by other hurricanes in the future. It is imperative the time and resources dedicated to the recommended alternative are not wasted if the nation is struck by another environmental disaster.
5. **Political Feasibility:** I will evaluate whether each alternative ranks *low, medium or high* in terms of political feasibility. I will project feasibility based on discussions with Michael Etienne, the Delices Village Council Chairman, to assess Council interest qualitatively. I will also assess the likelihood of securing sufficient grant funding to pursue each policy option. Political feasibility is weighed at 10 percent. It is critical the recommended alternative is feasible given the local political environment and the need for broad support for the recommended initiative.

Alternatives

Alternative 1: *Let present trends continue.*

The Village Council should not allow present trends to continue in Dominica. While GDP is contracting (-4.3%), population has remained steady, portending worsening poverty (The World Bank, 2019). While PAP remains in place and the World Bank has recently invested in poverty alleviation initiatives on the island, these efforts alone are not sufficient to address the severe and worsening problem elucidated by falling GDP. Further intervention is required to alleviate poverty and ignite economic growth.

World Bank

As of 2018, Dominica was working with the World Bank on three separate projects connected to poverty alleviation. The Housing Recovery Project (\$40 million) team is tasked with rebuilding and improving infrastructural resilience (World Bank, 2018). The Emergency Agricultural Livelihoods and Climate Resilience Project (\$25 million) team is working with farmers and “fisherfolks” to improve their production systems and ensure new practices are aligned with the climate (World Bank, 2018). Finally, the Disaster Vulnerability Reduction Project (\$31 million) team is working with the Commonwealth on disaster preparedness through infrastructure improvements and data systems implementation (World Bank, 2018). It is necessary to evaluate project success to assess the viability of additional World Bank poverty alleviation projects.

While an ongoing partnership with the World Bank could help alleviate poverty in the future, the Bank would be unlikely to allocate additional financial resources to Dominica in fiscal year 2019 or 2020. The existing World Bank projects alone are insufficient to address economic growth and poverty alleviation, and it is highly unlikely a new project will commence in the near future because the Bank has limits on lending for all countries, particularly small island economies. Allowing present trends to continue without further intervention does not sufficiently solve the problem I seek to address.

Evaluation:

Cost Effectiveness in Alleviating Poverty

It was not possible to conduct a cost, revenue or cost effectiveness analysis on this alternative because allowing present trends to continue does not require additional financing. Despite the benefit inherent in not needing funding, this alternative would not provide additional employment to Dominicans or lift people out of poverty. Allowing present trends to continue does not address the worsening poverty conditions on the island.

Village Council Capacity: *High*

Allowing present trends to continue would not require Village Council time or effort beyond its usual business.

Equitability Across Alternative Beneficiaries: *Medium*

Only Dominicans who currently benefit from existing projects would continue to do so without further intervention. Existing efforts target those who are worst off, but benefits do not extend to many other citizens who suffer under current conditions on the island and existing monetary benefits are too small to make a meaningful impact for those receiving them.

Environmental Durability: *5/5*

Without further intervention or action, the island remains highly vulnerable to damage from future environmental disasters.

Political Feasibility: *Low*

Delices residents and Dominicans more broadly are placing significant pressure on local and national government officials to take action to help those living in poverty, many of whom lack employment opportunities. It would not be feasible for the Council to allow present trends to continue given the existing political pressures.

Alternative 2: Invest in Toloma Women in Action to aid in the transition to organic production, marketing and international export.

The Delices Village Council should seek \$60 thousand dollars in grant funding to invest in Toloma Women in Action to allow for a complete transition to organic production. The Cooperative should then expand to include 20 to 30 additional farmers and market its product for export to neighboring islands and specialty stores in the United States.

Toloma Women in Action:

Toloma Women in Action is a female operated cooperative located in Delices since 2007. Currently composed of 28 farmers (27 female and 1 male), the association produces toloma, a root crop native to Dominica. Toloma is a starch that is currently sold in powder form in neighboring islands including Martinique, Guadalupe and St. Lucia, in addition to domestic sales, for approximately \$10 per pound (The Sun, 2017). Toloma is most commonly eaten in its porridge form, but can also be used as a thickening agent for soups and stews, prepared as a granola bar, or used to make tea or baby formula (The Sun, 2017; The Business Gateway, 2008). Toloma is known for its health benefits, particularly for infants and the elderly because of its easily digestible quality (Burnett, 2011).

The Cooperative's toloma packaging meets international labeling standards required to export pre-packaged foods (Pacquette-Anselm, 2014). Current production however, does not meet international organic food standards. In 2018 the cooperative received \$7,000 USD in grant funding from the Bernadette Francis Foundation which paid for 5 of the 28 toloma farmers to transition to all organic production. Approximately \$700 was used per farmer on the growth side and another \$700 will be used per farmer on the processing and packaging end. The following growth and production cycle will comply with international standards. As an organic product, toloma can be sold for roughly \$50 per pound on its neighboring islands, five times its market price when produced using chemical fertilizers.

Given additional funding, the Cooperative could expand to include between, at minimum, 20 to 30 farmers. Viable land abandoned following the banana industry decline in the early 2000s has left hundreds of acres of land unutilized. With additional grant funding, the Cooperative can complete its transition to organic production and expand to include additional farmers who would also produce organically.

Corn Starch

To assess toloma's market potential as an organic product, it is necessary to evaluate current market trends for a similar product. While toloma is native to Dominica, it is similar to corn starch, another starch commonly used for thickening, stabilizing, binding and emulsifying (Mordor, 2018). As of 2016, the global corn starch market was valued at \$22.1 billion USD (Transparency Market Research, 2018) and is projected to grow at 5.7 percent between 2018 and 2023 (Mordor, 2018). Corn starch industry giants have recently begun to introduce clean-label starch products which suggests there exists a gap in the market that could be filled by the Cooperative on a small scale in the US (Mordor, 2018).

Marketing Toloma

Organic Industry Benefits

The organic food industry has grown at a consistently rapid pace (6.4 percent in 2017) for more than the last decade and economists predict continued growth (Agricultural Marketing Resource Center, 2018; Poulston and Yiu, 2011). In the US specifically, organic food constitutes the fastest growing sector in the food industry (Organic Market Analysis, 2018). Health consciousness, in addition to social, economic and environmental sustainability concerns, has driven increased demand for organic food products, as well as price premiums (Poulston and Yiu, 2011; Shafie and Rennie, 2012).

More recently, there has also been an increased demand for smaller scale organic production (Adams and Salois, 2010). Consumers have begun to reject “corporate co-optation of the organic food market” and their profit-maximizing objectives (Adams and Salois, 2010). Toloma Women in Action can benefit from this trend owing to the Cooperative’s organizational structure and size, and capitalize on the accompanying price premiums.

Social Venture Benefits

Since the 1950s, corporations have been pressured to behave in a more socially responsible way (Carroll, 1999). In the last 50 plus years, corporate social responsibility has become increasingly prominent. Businesses are expected not only to be ethical in their operations, but to go further and be “a good corporate citizen” (Carroll, 1991). More recently, however, corporate social responsibility and social entrepreneurship concepts have begun to merge. Businesses can be good citizens while also maintaining profits and generating social value (Dees and Anderson, 2003).

Toloma Women in Action exists at the intersection of female empowerment, entrepreneurship and operational sustainability. A business that chooses to purchase toloma will benefit both in being able to market the product as a clean-label, certified-organic product for consumers and invest in a venture that is environmentally sustainable and empowers innovative female entrepreneurs. This joint benefit should be highlighted in marketing pitches to small-scale health food stores in the US. A marketing plan is presented in Appendix 11.

Evaluation:

Cost Effectiveness in Alleviating Poverty (Appendix 3)

Investing in the Cooperative’s continued transition to organic production would require roughly \$60 thousand in grant funding. Over five years it would cost approximately \$755 thousand dollars, but generate approximately \$7.97 million in revenue across that time period if 20 additional farmers join the cooperative or roughly \$9.55 million if 30 farmers join. The business would be financially sustainable within one year of operation. This is the only alternative that has a positive net present value. If implemented, it is projected to cost approximately \$480 per job created.

Village Council Capacity: High

The Village Council already works closely with the Cooperative. Council representatives are very familiar with toloma and the Cooperative’s operating model. The Council is already well-equipped to write grant proposals seeking additional funding given its representatives’ existing knowledge.

Equitability Across Alternative Beneficiaries: *Medium*

This alternative is projected to generate roughly 125 jobs. These jobs are projected to employ a significant number of both men and women. Importantly, the Cooperative is female-run and advances gender equity. Unfortunately, given that the women farmers work across all levels of production, there is limited outside labor needed. While 125 jobs may seem small, the alternative is projected to generate significant profits, between roughly \$7.21 and \$8.76 million in five years, that would ignite the local economy in Delice and more broadly across the island.

Environmental Durability: *2/5*

Toloma is a hurricane resilient crop. In years when Dominica is struck by environmental disasters, toloma production may be delayed, but output levels do not fall. Revenue levels are not projected to fall if Dominica is hit by another hurricane.

Political Feasibility: *High*

The Village Council has continually expressed interest in helping the Cooperative grow. Representatives have helped seek financing in the past and are extremely passionate about the enterprise's success going forward.

Alternative 3: Create a micro-finance program in collaboration with the Dominican Youth Business Trust and the national government

The Delices Village Council should partner with the Dominican Youth Business Trust (DYBT), the Government of the Commonwealth of Dominica, the Commonwealth Secretariat and the Organization of American States (OAS) to create a micro-finance program modeled after the Grameen Bank. The program should be piloted in St. Patrick Parish.

Micro-Finance

Micro-finance was first introduced in the 1970s and has since expanded to many developing nations (Ravallion, 2013). These programs follow a bottom-up approach that infuses capital into local communities to help alleviate poverty and foster economic development (Rankin, 2002). Ravallion (2013), a preeminent poverty economist, describes micro-finance as functioning as both a “protection” and a “promotion” anti-poverty policy. Protection policies target short-term poverty symptom alleviation, while promotion policies are aimed at ending cyclic poverty (Ravallion, 2013). Micro-finance programs offer small-scale loans with relaxed borrowing restrictions to impoverished, often landless, individuals, and have demonstrated success across protection and promotion measures (Ravallion, 2013).

Structurally, the most successful micro-finance programs function on a social collateral basis (Rankin, 2002). For example, the Grameen Bank in Bangladesh offers credit to impoverished women who are members of a borrower group (Rankin, 2002). In this system, “social capital helps correct for imperfect information about borrowers lacking in formal credit and employment histories and substitutes for collateral by ensuring against default through social sanction and peer enforcement” (Rankin, 2002). Women participants can both borrow money and receive support from other local women (Rankin, 2002). The Grameen Bank between 1976 and 1994 provided small-loans to more than 2 million individuals with a default rate less than ten percent, providing convincing evidence that the structure is effective in promoting a high recovery rate (Pitt and Khandker, 1998). Empirically, researchers have identified mixed micro-finance program impacts.

Effective for Poverty Alleviation

Pitt and Khandker’s (1998) landmark micro-finance study evaluates program effectiveness at three Bangladesh banks and finds programs lead to increased household expenditure, even more so among female loan recipients (Pitt and Khandker, 1998). Additionally, women beneficiaries were more likely to enroll their children in school and participate in the labor force (Pitt and Khandker, 1998). More recently, Angelucci, Karlan and Zinman (2013) found similarly positive effects from a micro-finance program in Mexico (Angelucci et al, 2013). Using a clustered, randomized trial experimental design, the authors evaluated households and identified “that businesses grow” and “that households are better able to manage liquidity and risk” (Angelucci et al, 2013). This study is methodologically stronger than other similar studies in its data coverage and long-term analysis time period.

Neutral Effects on Poverty

Despite these positive findings, two landmark studies, Banerjee and colleagues (2013) and Banerjee and colleagues (2015), identify potential program shortcomings. They find in India that only the top 5 percent of existing small businesses were more profitable among loan recipients

business owners (Banerjee et al., 2009) and failed to identify positive effects on health, education or women's empowerment (Banerjee et al., 2015). Even without secondary benefits, micro-finance programs demonstrate increased expenditure on lasting products, signaling poverty alleviation benefits. Secondary benefits generated by the Grameen Bank illustrate that its design can potentially serve as a model for a successful micro-finance program in Dominica.

The Dominican Youth Business Trust

The Dominican Youth Business Trust is a government funded organization that currently provides a four-week Entrepreneurship Development Program (EDP) that educates aspiring entrepreneurs, ages 18 to 35, on business fundamentals and provides start-up loans (DYBT, 2019). Following program completion, the entrepreneurs work with the Business Plan Assessment Committee (BPAC) to complete loan applications. Funding from the Government of the Commonwealth of Dominica, the Commonwealth Secretariat and the Organization of American States (OAS) provides up to \$20,000 EC (approximately \$7,400 USD), though often far less, to those who completed the program, designed a business model and received approval from the BPAC (DYBT, 2019). The program is successful but dissimilar in target population to the micro-finance programs in Bangladesh, Mexico and India.

The Village Council should work with the Government of the Commonwealth of Dominica, the Commonwealth Secretariat and OAS to secure funding for much smaller-scale loans, \$1100 EC (approximately \$400 USD), to a target population in St. Patrick Parish that mirrors those in Bangladesh, Mexico and India. In Dominica \$100 USD monthly is considered sufficient to cover a minimum basic needs basket including food, clothes, hygiene and education for a single person (Carrette, 2004). I estimate loans totally approximately four times the basic needs basket would be sufficient to cover durable goods and allow for investment in small-businesses.

In line with the Grameen Bank model, recipients would be required to join a borrower group to both ensure a sufficiently high recovery rate and foster social capital. The pilot program borrower group would be required to partake in a DYBT led week long training program that would instruct participants on entrepreneurship and basic business models. The training would serve as a condensed EDP course during which participants would meet the other members of their borrower group. Collaborating for a week would generate social bonds to promote collective loan repayment. Trainees would complete a DYBT approved spending and repayment plan. The program would initially target 80 participants, approximately 1 percent of the St. Patrick Parish population, who live below, or just above, the poverty line (Revolvy, 2011). Selections would be made using a lottery system. The small size will foster social bonds while also keeping costs low prior to program evaluation after its first year. The program should expand to an additional 80 participants each year should the evaluation prove favorable.

Evaluation:

Cost Effectiveness in Alleviating Poverty (Appendix 4)

The Micro-Finance program is projected to cost approximately \$184 thousand over the next five years if the program is successful in its first year. I conservatively estimate that approximately 30 percent of participants will default on their loans based on the preminent Grameen Bank's 10 percent rate. While this program would be well-designed, micro-finance can be complicated and the program is unlikely to perform as well as the highest functioning model currently in practice.

Given this estimate and a modest 3 percent interest rate, the initiative would generate roughly \$104 thousand in revenue over the time period, for a net present value of approximately negative \$80 thousand. This alternative would lift 400 people out of poverty and employ an additional 5 for a roughly \$454 per person cost effectiveness measure.

Village Council Capacity: *Low*

Micro-finance programs are relatively complicated to initiate. They require significant operational knowledge, financing and a low default rate. Given the Council's limited time and resources, it would be cumbersome to operate effectively. A micro-finance program that is poorly resourced could fail.

Equitability Across Alternative Beneficiaries: *Medium*

The program would be open to all interested in the pilot program area, but would initially only be available for 80 participants. The lottery program promotes equity, but the alternative only ranks as medium given the small number of people who can participate.

Environmental Durability: *4/5*

While program operations would at worst be delayed by environmental disasters, participants would be significantly impacted in their ability to use their loans. The small businesses that participants create or grow, using their loans, could be devastated by hurricanes. Given the small size of the loans and infrastructural fragility in Dominica, it is possible many businesses would not survive if the island was hit by another hurricane.

Political Feasibility: *Medium*

The Village Council is interested in learning more about potential development initiatives and it is possible to secure the needed funding for this program. It would be more difficult to identifying willing investors however, given the lack of experience the Council has with this type of initiative and its complicated nature.

Alternative 4: Conduct a thorough financial analysis on the Jungle Bay Resort and Spa.

The Delices Village Council should conduct a detailed financial analysis on Jungle Bay Resort and Spa to determine whether the government of the Commonwealth of Dominica should seek funding to invest in a similar resort in St. Patrick Parish.

Tourism

In 2010, tourism constituted approximately 18 percent of GDP in Dominica (Barbados and the OECS, 2010).⁵ Cruise tourism however, one of the least profitable forms for visited nations, generated a significant portion of overall tourism revenue for the island (CBI Ministry of Foreign Affairs, 2010; Weeden, 2018). The existing literature on poverty alleviation through tourism in developing countries has mixed findings with regard to outcomes in different locations.

Effective for Poverty Alleviation

In the past twenty years, many authors have found tourism to be an effective economic growth and poverty alleviation mechanism in developing countries. Extant tourism literature builds upon work first developed by Goodwin in 1998. While 20 years old, Goodwin's work remains relevant and has shaped more recent literature on the topic. Goodwin (1998) argued tourism should be utilized to help eradicate poverty in developing countries by capitalizing on the already growing industry. Roe and colleagues (2002) supported Goodwin's initial claim citing job opportunities for low-income, low-education individuals who could meet non-technical, labor-intensive demands. Industry jobs were open to women, could incorporate the informal sector and serve as an economic growth platform in rural areas where there were few viable jobs (Roe, et. al, 2002). Gunter and colleague (2017) support these findings using data between 1995 and 2012 from seven central American and Caribbean countries. The authors identify that tourism significantly increased real GDP per capita, with citizens from lower and medium income deciles benefiting most (Gunter et. al, 2017). Roudi and colleagues (2018) confirm Gunter's (2017) findings related to tourism-induced growth, specifically in SIDS (Roudi, et. al, 2018).

Uncertain Effects on Poverty Alleviation

Goodwin (2009) evaluated pro-poor tourism, a term coined in 1999 that means "encouragement of economic growth to benefit the poor," and found there was insufficient data to determine if it led to poverty reductions. Scheyvens (2007) identified tourism was "the 'only major sector in international trade services in which developing countries have consistently had surpluses,'" but found surpluses only when specific government structures existed. He identified revenue leakage to other nations when governance was weak (Scheyvens, 2007). In South Africa, Scheyvens (2007) identified government supports for locals, as opposed to industry giants, was critical in blocking lobbying efforts by large hotel associations. Sharpley and Ussi (2014) similarly found poor governance impeded tourism success in Zanzibar. Tourism could alleviate poverty more effectively with improved governance structures.

⁵ While current data is unavailable, this figure likely overestimates tourism's role in Dominica's economy following Hurricane Maria because people are not visiting as much.

Ineffective for Poverty Alleviation

Goodwin and colleagues (1997) find communities surrounding national parks in India, Indonesia and Zimbabwe, did not benefit from tourism (Goodwin, et. al, 1997). Weaver (1998) reaches this same finding. Akama and Kieti (2007) find no tourism related poverty alleviation benefits in Kenya. Locals did not benefit due to high revenue leakage rates (Akama and Kieti, 2007). Lee and colleagues (2015) find no poverty alleviation benefits in the Seychelles. Despite increasing tourist volume, local communities were not integrated, available jobs offered low pay and many employees were hired from other nearby nations (Lee et. al, 2015). Overall, the literature suggests a need for additional data analysis and strong governance structures to support tourism as a poverty alleviation mechanism in SIDS.

Tourism in Dominica

To determine whether the Delices Village Council and the Commonwealth should seek financial support to invest in sustainable tourism, it is necessary to gather more data and conduct thorough analyses. While most existing studies are location-specific to nations far from Dominica, Gunter and colleagues (2017) provide empirically strong evidence supporting tourism rooted poverty alleviation benefits in the Caribbean. With additional Dominica-specific information and strong government support, it is possible to effectively develop the island's tourism industry.

Jungle Bay Resort

Jungle Bay Resort and Spa was established by Samuel and Glenda Rafael in Dominica's southeast region as an ecotourism destination. The resort was named by Forbes as one of the 10 best luxury EcoResorts and was selected for the World Saver Award for "poverty reduction by a small resort category" by Condé Nast (Jungle Bay, 2019). Jungle Bay operates based on National Geographic's Center for Sustainable Destination principles which focus on successful geotourism, defined as "tourism that sustains or enhances the geographical character of a place – its environment, culture, aesthetics, heritage, and the well-being of its residents" (Jungle Bay, 2019; National Geographic, 2016). In line with these principles, Jungle Bay's owners have taken action to protect and enhance the environment, aid the local economy and preserve Dominica's unique culture. These efforts include employing Dominican residents, sourcing only local food, materials and furniture, and helping mentor other entrepreneurs (Jungle Bay, 2019). Appendix 5 details all efforts the Rafaels have taken to advance sustainable tourism.

Jungle Bay's success, measured by its receipt of numerous awards since its opening in 2005, provides a basis to evaluate potential tourism benefits more broadly in Dominica. The resort serves as a promising model that could be expanded by the national government, in partnership with the Rafaels. Before taking action to implement any such expansion, it is necessary to closely evaluate Jungle Bay's financials, the number of people it employs and its impact on the local economy. This information will allow for a cost effectiveness analysis and can help determine whether expanding the Jungle Bay model in Dominica can help alleviate poverty.

Evaluation:

Cost Effectiveness in Alleviating Poverty (Appendix 6)

A complete 6-month financial analysis of the Jungle Bay Resort and Spa would cost approximately \$34 thousand. Without this analysis, it is not possible to determine further projected costs and benefits from building and operating a similar resort. In the short-term this alternative neither

provides jobs nor lifts Dominicans out of poverty and therefore has no cost effectiveness measure reported.

Village Council Capacity: *Medium*

The Village Council Chairman has a close relationship with the Rafael's, but is currently unfamiliar with the operational model used at Jungle Bay. It would require time and effort to gain sufficient knowledge regarding operations to be able to advocate in favor of scaling the Jungle Bay model.

Equitability Across Alternative Beneficiaries: *Medium*

If the Jungle Bay model was replicated in Delices, it would provide significant employment opportunities for all residents. Many Dominicans would benefit from this alternative, but profits would likely accrue to the national government, and representatives would then be responsible for distributing profits to employees and citizens more broadly. At this point it is not possible to determine whether this distribution would be equitable or not.

Environmental Durability: *1/5*

The financial analysis on Jungle Bay would not be impacted by environmental disasters. Furthermore, if the analysis proved favorable and the national government, in partnership with the Delices Village Council, elected to move forward, the resort would be built using hurricane impact materials to avoid potential future damage, making it the most environmentally durable of the five alternatives presented.

Political Feasibility: *Low*

While the financial analysis requires a relatively small investment, it would be difficult to convince the national government to develop the tourism industry. It would be extremely costly and challenging to secure a funding stream, with benefits not materializing for many years.

Alternative 5: Seek grant funding to expand Dominica's unconditional cash transfer program in Delices and develop a data management system to enhance impact evaluation.

The Delices Village Council should seek grant funding to expand unconditional cash transfers in St. Patrick Parish. Additional, funding can help smooth household consumption and alleviate poverty.

Cash Transfers

There exists broad consensus in the literature regarding the positive impacts derived from cash transfers. Stampini and Tornarolli (2013) evaluated 18 Caribbean and Latin American countries and found that the poverty headcount index would be 13 percent higher, on average, if the nations did not have conditional cash transfer programs. Using data from 75 reports and 35 studies, Baird and colleagues (2014) find cash transfers, whether conditional or unconditional, help alleviate poverty in the long-term by improving school enrollment and attendance. Haushofer and Shapiro (2016) furthermore find unconditional cash transfers improve economic outcomes and recipients' psychological well-being in Kenya. Molina-Millan (2016) confirm the positive long-term effects on schooling generated by conditional cash transfers. The author also finds enhanced cognitive and socioemotional skills, in addition to higher non-agricultural employment rates and income for young adults whose families received conditional cash transfers when they were children (Molina-Millan et al., 2016). Bastagli and colleagues (2016) evaluated existing empirical studies on cash transfers and identified 35 that found programs result in increased recipient expenditure and 31 that specifically found increased food expenditure. Data-driven analyses across numerous widely cited studies provide convincing evidence that cash transfers are an effective tool for improving well-being and reducing poverty.

Blattman and Niehaus (2014) and Aker (2016) identify benefits generated by cash transfers, but also note potential program shortcomings. Blattman and Niehaus identify scaling and corruption concerns when programs expand beyond a few thousand recipients. Aker (2016) identifies cost effectiveness uncertainties. Compared to the extensive work supporting cash transfer programs' effectiveness, these concerns are negligible. The studies evaluate less data and are location specific, suggesting greater weight should be placed on the previously identified studies.

Public Assistance Programme & the Emergency Cash Transfer Program

Between December 2017 and February 2018, the Emergency Cash Transfer (ECT) program, a joint venture between the World Food Program, UNICEF and the government of the Commonwealth of Dominica, operated to supplement PAP to support families following Hurricane Maria (Gonzalez, 2017). The program assisted 25,000 people (34 percent of the population), providing unconditional cash transfers to those most impacted by the hurricane (UNICEF, 2018). ECT beneficiaries included the 6,600 people already receiving unconditional cash transfers, between \$55.50 USD and \$140 USD monthly, from PAP (Appendix 1 provides PAP and ECT eligibility and benefit specifics) (The Commonwealth of Dominica et al, 2018). The horizontal expansion allowed for assistance to households that qualified as vulnerable based on household characteristics and disaster related indicators (The Commonwealth of Dominica et al, 2018). Appendix 7 provides further detail on household eligibility. ECT beneficiaries received \$90

USD per household plus \$50 per child (up to three children) monthly (Appendix 1) (The Commonwealth of Dominica et al, 2018). The transfer value was calculated by “taking into consideration the average family size, the monthly cost of the minimum food basket as well as the cost of providing children with sufficient and nutritious food, as well as clothes, hygiene, education and any other basic need” (The Commonwealth of Dominica et al, 2018).

Village councils across Dominica conducted follow-up surveys with benefit recipients and found more than 70 percent of recipients agreed “the ECT programme assisted those who were most in need” and allowed households to purchase basic needs, smoothing consumption (The Commonwealth of Dominica et al, 2018). The follow-up report cites that “92% of beneficiaries...used part of their entitlement to buy food and over 70% of the beneficiaries reported that food was the main expenditure. Household repairs, debt repayment and ordinary bills were among the most frequent expenditure. For [families] with children education was the second highest expenditure” (The Commonwealth of Dominica et al, 2018).

Delices Expanded Cash Transfer Program

The Delices Village Council should seek grant funding to expand unconditional cash transfers in the area. PAP transfers coupled with the ECT program led to increased expenditure on food and other essential goods, helping alleviate poverty and promote economic development. However, data limitations, caused by pressure to meet emergent needs, impeded a thorough poverty impact analysis. The new program should provide additional funding to PAP recipients in St. Patrick Parish. As of 2011, St. Patrick Parish⁶ was home to approximately 8,350 people (Revolv, 2011). The program should expand PAP transfers by 50 percent. PAP transfers currently supplement income to reach \$140 USD, varying in amount based on recipient need (The Commonwealth of Dominica et al, 2018). The program should expand PAP transfers by 50 percent so the total amount of available funds equal \$210 USD at the high end and \$83.25 USD at the low end. A 50 percent increase in funding would bring transfer totals closer to the amount available while ECT operated, allowing recipients to spend more on essential goods. The Delices Village Council should utilize grant funding to create a database using unique IDs for recipient households and track weekly beneficiary expenditure. Using expenditure data and interviewing recipients will allow the Village Council to evaluate whether the program generates benefits beyond increased expenditure on basic needs. By assessing program outcomes through consistent data collection, the Village Council can recommend whether the program should be expanded beyond St. Patrick Parish. The Village Council should extend the expanded cash transfer program to all PAP recipients across Dominica (6,600 people) in five years if the evaluation across the first four proves favorable.

Evaluation:

Cost Effectiveness in Alleviating Poverty (Appendix 8)

The expanded cash transfer program is projected to cost roughly \$7.13 million over the next 5 years and lift 6.6 thousand people out of poverty. This alternative is projected to cost roughly \$1.2 thousand per person lifted out of poverty. This is the most expensive alternative evaluated, but also most extensively addresses the problem this report seeks to ameliorate.

⁶ It is possible this may generate resentment among Dominicans who do not live in St. Patrick Parish, but it is important to consider Village Council Capacity which limits the ability for the Council to effectively operate a large program and evaluate collected data each year. It is critical the program is run effectively and if it is successful should be expanded across the island to all PAP recipients, but should be operated through other village councils.

Village Council Capacity: *Medium*

The Village Council and national government more broadly are very familiar with unconditional cash transfer programs. However, expanding transfer values for thousands of people would pose logistical and operational challenges without the assistance provided by the World Food Program, UNICEF and the national government while the ECT program operated.

Equitability Across Alternative Beneficiaries: *High*

Expanding this program would provide additional monetary resources to nearly 9 percent of the population living on Dominica. Recipients would include only the poorest 6.6 thousand citizens, individuals who are in great need of financial assistance. The additional resources this alternative provides would help alleviate poverty for a wide range of Dominicans.

Environmental Durability: *3/5*

This alternative would require people to deliver payments to recipients or allow recipients to pick up their transfers in person. Given the few transportation options and the infrastructural limitations of roads on the island, this would be challenging. Additionally, even if recipients were able to access their transfers, the effects from environmental disasters would severely restrict whether beneficiaries could spend the money they receive.

Political Feasibility: *Low*

Expanding the unconditional cash transfer program is extremely costly at the program and individual level. It is unlikely the Village Council would be successful in securing adequate funding to consistently deliver transfers to recipients.

Outcomes Matrix⁷

<i>Alternatives</i>	<i>Criteria</i>				
	Cost Effectiveness (30%)	Village Council Capacity (15%)	Equity (30%)	Environmental Durability (15%)	Political Feasibility (10%)
Present Trends	N/A	High	Medium	5	Low
Toloma	Cost: \$755 thousand Revenue: \$7.97 million NPV: \$7.22 million Cost Effectiveness: \$480	High	Medium	2	High
Micro-Finance	Cost: \$184 thousand Revenue: \$104 thousand NPV: -\$80 thousand Cost Effectiveness: \$454	Low	Medium	4	Medium
Tourism	Cost: \$34 thousand Revenue: \$0 NPV: -\$34 thousand Cost Effectiveness: N/A	Medium	Medium	1	Low
Cash Transfer	Cost: \$7.13 million Revenue: \$0 NPV: -\$7.13 million Cost Effectiveness: \$1.2 thousand	Medium	High	3	Low

⁷ High is positive, low is negative. Cost effectiveness is money spent divided by the number of people employed or lifted out of poverty—it is the cost per output.

Tradeoffs

The following section contextualizes the above outcomes matrix by discussing the pros and cons associated with pursuing each alternative. The tradeoffs presented here detail why alternatives were ultimately ruled out as possible courses of action for the Village Council in the short-term.

Let Present Trends Continue

Allowing present trends to continue ranks positively in terms of Village Council capacity and equity. Given the poor evaluation across environmental durability and political feasibility, there are very few benefits gained from pursuing this alternative. While it would not require financial investment, it also not projected to lift any Dominicans out of poverty. Given that it does not address the root problem this analysis seeks to solve, allowing present trends to continue is not a viable option.

Toloma

Seeking grant funding to invest in the Toloma Women in Action generates the only positive net present value across the five alternatives. Over the next five years, investing in toloma is projected to accrue roughly \$7.22 million in profit for the Cooperative. It also is the only alternative to rank high in terms of both Village Council capacity and political feasibility. Pursuing the toloma alternative however, means fewer people, only 125, gain employment and subsequently rise above the national poverty line. Given the requisite \$60 thousand in initial grant funding however, this results in \$480 spent per individual employed, the second most cost effective across the alternatives.

Micro-Finance

The micro-finance alternative is the most cost effective across the five alternatives evaluated, requiring only roughly \$454 per person lifted out of poverty. Despite its low cost per output, this alternative has a negative net present value and importantly, is ranked as low in terms of Village Council capacity. While creating a micro-finance program would help Dominicans move above the poverty line for the least funding, it is not possible given the Village Council's current constraints. Micro-finance programs can easily fail without proper participant training, which necessitates time and resources the Village Council does not currently have to offer. A new micro-finance program could not effectively be initiated at this time.

Tourism

The tourism alternative is the least expensive in the short-term and is projected to be the most environmentally durable. Despite these benefits, it fails to address the urgent poverty problem in Dominica. Pursuing a resort modeled after Jungle Bay could in the future provide a highly effective and equitable poverty alleviation mechanism for the island. However, this alternative is not currently politically feasible given the significant financial resources needed to advance beyond the financial analysis this report outlines.

Cash Transfer

The cash transfer alternative is projected to lift the greatest number of Dominicans out of poverty and would be highly equitable given it targets those who are worst off. Expanding the unconditional cash transfer program on the island however, requires a significant investment, roughly \$7.13 million, that is not politically feasible to secure at this time. For cash transfer programs to succeed it is critical that transfers remain consistent, which requires a steady funding stream that is currently not realistic to acquire.

Recommendation

Short-term

Given the projected outcomes calculated in this analysis, I recommend that the Delices Village Council seek approximately \$60 thousand in grant funding to finance the Toloma Women in Action Cooperative's continued transition to organic production (Alternative 2). Across the alternatives I evaluated, Toloma is the only one to generate a positive net present value. The enterprise will be financially sustainable within one year and would serve as a stimulant for the local economy in Delices and beyond throughout the island. Qualitatively, this alternative also ranks highest in terms of both Village Council capacity and political feasibility, is environmentally durable and is moderately equitable.

On the low-end, investing in Toloma is projected to generate roughly \$7.22 million in profits over the next five years if 20 additional farmers join the Cooperative (See Appendix 9 for expense and revenue projects between 2019 and 2024). On the high-end, if 30 additional farmers join, the Cooperative is projected to earn approximately \$9.55 million in profit (Appendices 3 and 10 provide details on projected profits and this sensitivity analysis). This would provide a significant revenue stream for the Cooperative and provide jobs for approximately 125 people over the next 5 years. This alternative is projected to cost roughly \$480 per job created using the initial \$60 thousand needed in grant funding. These jobs would provide employment to many who are eager to work but have no existing opportunities. The primary tradeoff to pursuing the toloma alternative is that more people are projected to be lifted out of poverty through the cash transfer alternative. Expanding cash transfers however, is financially too costly and politically infeasible.

Investing in the Cooperative will promote female empowerment, providing positive messaging to the Delices community and to the Dominican people more broadly. The Cooperative exists as an emblem of female business success given its all-female leadership and operation representatives.

In the next 5 years, the Cooperative is projected to grow to include between 48 and 58 farmers, at least. Overtime, however it is possible for the Cooperative to grow larger and for toloma to become the new national crop in Dominica, allowing it to drive the island nation's economy. Investing in toloma has the potential to lift hundreds of citizens out of poverty and promote the nation on an international scale as a country committed to supporting female-run businesses and environmentally sustainable ventures. See Appendix 11 for a one-page graphic illustrating this recommendation.

Long-term

Once the Cooperative secures funding and establishes connections with buyers in the United States, the Village Council should work toward financing the financial analysis on the Jungle Bay Resort and Spa. The Cooperative it is projected to be financially sustainable within one year after which it will be able to expand. During this growth phase, the Village Council will have greater flexibility to pursue an additional poverty alleviation strategy, which at this time it is unable to due to capacity constraints. While the Council will likely always be constrained financially, it would

have the personnel time needed to secure funding for the financial analysis on the Jungle Bay Resort model (Alternative 4).

Assessing Jungle Bay's financial viability is currently not politically feasible given it does not address the urgent nature of the poverty problem in Dominica. However, in the long-term it has the potential to alleviate poverty on a nation-wide scale. Conducting the needed financial analysis on Jungle Bay is projected to require only approximately \$34 thousand and take roughly 6 months to complete. It is further projected to promote equity and is ranked as the most environmentally durable across the five alternatives presented. Given Jungle Bay's unprecedented success, both in Dominica, and more broadly in the Caribbean, it is likely the analysis proves favorable for expanding the Rafael's model.

While prior to Hurricane Maria tourism constituted roughly 18 percent of GDP, Dominica remained one of the ten least visited islands in the Caribbean, which together make up only 3 percent of total overnight visits to the Caribbean region (Barzey, 2018). Dominica is the 7th least visited island with only roughly 80 thousand "stay-over" tourists in 2017 (Barzey, 2018). The nation currently lacks the luxury accommodations required to generate demand for stay-over tourists, but is well-endowed with the natural beauty that draws visitors to neighboring islands, even more so given Dominica is relatively untouched. Investing in an additional eco-style resort could capitalize on a niche facet within the tourism industry and ignite the nation's economy.

Implementation

TOLOMA

Secure Grant Funding

The Village Council in partnership with the Toloma Women in Action Cooperative must seek grant funding in order to finance the continued transition to organic production. Given the Council's limited capacity, they should minimize time spent on grant writing. The Council and Cooperative should look first to three potential funding sources chosen because of existing relationships between one or both parties and the financier. These include the Bernadette Francis Foundation which provided the Cooperative's most recent grant for \$7 thousand, the Small Grants Project within the United Nations which provided a \$30 thousand grant to the Cooperative in 2013 and the Acumen Fund because of the Village Council Chairman's relationship with the organization. Given the Cooperatives small size and the Council's limited resources it is important to focus time and effort on the most likely funding sources. The missions advanced by these three organizations are committed to combatting poverty either locally, by targeting entrepreneurs or through the "Patient Capital" model. Additional information on the potential funding bodies and their missions can be found in Appendix 12.

Connect with Potential Buyers in the US

In order to grow the enterprise beyond its current export buyers in Martinique, Guadalupe and St. Lucia, the Cooperative must identify potential customers in the United States. Miami, Florida and Charlottesville, Virginia make the most logistical sense to investigate. Miami is geographically closed to Dominica, requiring low shipping costs, and is known for its health-conscious population. Charlottesville is home to Bevin Etienne, the Village Council Chairman's brother, who has many local connections. In either location, the Cooperative should target a single, or a few separate, health food store(s) to sell its product. The options listed in Appendix 13 reflect market research used to identify prospective partnerships for the Cooperative in these two cities.

Cooperative Expansion

Once the Cooperative secures funding and forms relationships with buyers in the United States, the enterprise will be well-positioned to expand. While growing the size of the Cooperative will allow for significant financial returns, it is important to carefully evaluate who to include given the enterprise runs on a cooperative model. It is critical the Cooperative consider the possibility it will have to transition to a different operating model if it grows beyond the projected 48-58 total members.

TOURISM

Secure Funding

Once the Village Council completes its work helping the Cooperative on its transition to organic production and expansion, it should next seek funding to conduct the financial analysis on Jungle Bay. The Council however, should not dedicate time or resources to securing a financier to explore the possibility of expanding Jungle Bay while pursuing the Toloma alternative given the

alternative's less immediate returns in addressing poverty in Dominica. Once the Council is less constrained, it should work directly with the Rafael's to identify potential development investors and collaborators who are willing to begin exploring tourism as a mechanism for poverty alleviation and economic development on the island.

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Appendices

Appendix 1: Public Assistance Program and Emergency Cash Transfer Program Eligibility and Benefits

Public Assistance Program:

Category	Monthly transfer (EC\$)	Monthly transfer (US\$)
Single adult	150	55.5
One employed adult with one child	127.50	47
Two adults or one person with disability	300	111
Maximum allowance (households grant)	375	139
Foster families 1 child	220	81.4

Emergency Cash Transfer Program:

	<i>PAP beneficiaries</i>	<i>"non-PAP"* beneficiaries</i>
<i>PAP entitlement</i>	US\$ as per regular scheme	-
<i>ECT household grant</i>	US\$ 90/household/month	US\$ 90/household/month
<i>ECT child grant**</i>	US\$ 50/child/month (up to 3 children)	US\$ 50/child/month (up to 3 children)

Source: (The Commonwealth of Dominica et al, 2018)

Appendix 2: Economic Conditions in Dominica

Agriculture is a significant economic driver in Dominica, constituting approximately 18 percent of GDP (Revord, 2017). The banana industry existed as the primary crop for more than 50 years until Bill Clinton's presidency in the United States in the 1990s (Revord, 2017). Former President Clinton, in support of major campaign donors, lobbied to end duty free banana imports to the European Union (Revord, 2017). Clinton's success in addition to global political economy changes to the banana industry more broadly devastated the Dominican banana industry and to this day it has not recovered (Payne, 2008). During this same time period, unemployment in Dominica increased from approximately 16 percent in 1999, to about 25 percent in 2002 (Barbados and the OECS). The economic decline became too severe for Dominica to cope with independently in 2002, leading the nation to seek financial support from the International Monetary Fund (IMF) (Payne, 2008). Dominica continues to benefit from IMF support today.

Since the early 2000s, Dominica has worked to generate diversified strategies for economic development outside the banana industry, in order to combat the nation's high poverty rate (Payne, 2008). While efforts were somewhat successful, leading to four years of economic growth between 2003 and 2006, 2007 once again saw growth slow (Barbados and the OECS). Economy strategy in the last ten years has focused on diversifying agricultural outputs to include coffee, patchouli, aloe vera, exotic fruits, and cut flowers and an increased drive to promote eco-tourism in the nation (Heritage Foundation, 2018). Additional revenue streams have included Dominica's citizenship by investment program by which passports are awarded to other foreign nationals in return for investments in Dominica (Heritage Foundation, 2018).

Hurricane Maria significantly impeded existing development efforts. The IMF has projected Dominica's economic output will decline by 14 percent in 2018 due to damage inflicted by the hurricane (Dominica News, 2018). The IMF projects it will take at least five years to recover economically to pre-hurricane levels (Barbados and the OECS). Coupled with the nation's significant debt, which nearly equals GDP, economic recovery and poverty alleviation difficult are difficult challenges to address (Barbados and the OECS).

Appendix 3: Toloma Alternative Assumptions & Costing

Costs	2019	2020	2021	2022	2023	2024
Transition 23 Farmers to Organic	\$16,100.00					
Processing Expenses	\$16,100.00	\$19,600.00	\$33,600.00	\$33,600.00	\$33,600.00	\$33,600.00
Marketing Expenses	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00
Export Costs to the US		\$30,240.00	\$84,240.00	\$84,240.00	\$84,240.00	\$84,240.00
Fund New Farmers in Yr 1 (20)		\$14,000.00				
Employees to Clear Land		\$16,000.00	\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
		FV 2020 Dollars	FV 2021 Dollars	FV 2022 Dollars	FV 2023 Dollars	FV 2024 Dollars
Total Cost by Year	\$60,200.00	\$111,075.20	\$175,939.66	\$181,217.85	\$186,654.38	\$192,254.01
Total Cost						
	NPV of Costs	\$755,168.25				

Benefits	2019	2020	2021	2022	2023	2024
Revenue (80% of Yield)		\$1,008,000.00	\$1,008,000.00	\$1,008,000.00	\$1,008,000.00	\$1,008,000.00
Revenue in Dominica (20% of Yield)		\$75,600.00	\$75,600.00	\$75,600.00	\$75,600.00	\$75,600.00
New Farmer Revenue			\$900,000.00	\$900,000.00	\$900,000.00	\$900,000.00
		FV 2020 Dollars	FV 2021 Dollars	FV 2022 Dollars	FV 2023 Dollars	FV 2024 Dollars
		\$1,038,240.00	2104401.24	2167533.277	2232559.276	\$2,299,536.05
	NPV of Benefits	\$7,971,379.39				
	NPV	\$7,216,211.14				

Assumptions & Acknowledgements:

- 3 percent discount rate
- Minimum living wage calculated at approximately \$7.00 USD⁸
- The transitioning the 23 farmers to organic cost includes payment to local people to clear land
- Processing costs assumes a \$700 per person cost based on the \$3,500 from the original grant used to fund the first 5 farmers processing and packaging expenses
- Assuming 80 percent of the tolima produced will be exported to the US or neighboring islands, $900 \times 28 \text{ farmers} \times .8 = 20,160$ pounds, assume 40 percent will be exported to the US, 40 percent to neighboring islands and 20 percent will be sold domestically
- All tolima produced by the new 20-30 farmers will be exported
- Marketing expenses account for 2 people employed fulltime for the first year, 50 weeks per year for 14 dollars per hour
- Shipping costs 60 dollars for 20 pounds, sending 10,080 pounds to the US each year starting in year 1, expense includes $504 \text{ containers} \times 60 = \$30,240$ ⁹
- Cost to hire people to clear land is included in \$700 transition cost for farmers in first year, subsequently 15 people will be hired for 2 weeks at 10 dollars per hour in year 1, then 25 people will be hired in subsequent years
- Sell in the US and neighboring French Islands for approximately \$50; farmers get \$10 for non-organic version of product
- Sell remaining 20 percent of tolima from original 28 farmers in Dominica at \$15, instead of \$10, due to organic certification
- **Cost effectiveness: Initial grant funding \$60 thousand divided by 125 people employed over 5 years = \$480 per person**

⁸ Numbeo. (2019, March). Cost of living in Dominica. Retrieved March 20, 2019, from https://www.numbeo.com/cost-of-living/country_result.jsp?country=Dominica

⁹ Caribbean Shipping Freight. (2001). The best in Caribbean shipping. Retrieved March 20, 2019, from <http://caribbeanshippingfreight.com/price.html>

Appendix 4: Micro-Finance Alternative Costing

Costs	2019	2020	2021	2022	2023	2024
80 Participants Pilot Program	\$32,560.00	\$32,560.00	\$32,560.00	\$32,560.00	\$32,560.00	\$32,560.00
Training Program	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00
		2020 Dollars	2021 Dollars	2022 Dollars	2023 Dollars	2024 Dollars
	\$33,960.00	\$34,978.80	\$36,028.16	\$37,109.01	\$38,222.28	\$39,368.95
	NPV of Costs	\$183,967.82				

Benefits	2019	2020	2021	2022	2023	2024
70 percent Loan Re-Payment		\$23,475.76	\$23,475.76	\$23,475.76	\$23,475.76	\$23,475.76
		2020 Dollars	2021 Dollars	2022 Dollars	2023 Dollars	2024 Dollars
			\$24,905.43	\$25,652.60	\$26,422.17	\$27,214.84
		NPV Benefits	\$104,380.69			
		NPV	-\$79,587.14			

Assumptions & Acknowledgements:

- 3 percent discount rate
- Training program employs 5 DYBT employees for 1 week at 7 dollars an hour
- Minimum living wage calculated at approximately \$7.00 USD¹⁰
- Participants receive 1100 EC (\$407 USD)
- Assuming program expansion for an additional 80 participants annually

¹⁰ Numbeo. (2019, March). Cost of living in Dominica. Retrieved March 20, 2019, from https://www.numbeo.com/cost-of-living/country_result.jsp?country=Dominica

- Default rate based on literature, top performing Grameen Bank's default rate is 10 percent, here I assume 70 percent return rate
- **Cost Effectiveness: Cost roughly \$184,000 divided by 405 people employed or provided loans through this program = \$454 per person**

Appendix 5: Jungle Bay Sustainability Efforts and Initiatives

Environmental Efforts

- ✓ The resort's design is very creative in utilizing local materials and preserving the local landscape. Furniture is handmade on-site by local craftspeople using bamboo.
- ✓ Jungle Bay reduces its carbon footprint by approximately 30-40% compared with traditional resorts.
- ✓ Jungle Bay overlooks the Soufriere Scotts Head Marine Sanctuary so is active in biodiversity conservation of this fragile marine ecosystem.
- ✓ One of many examples of stewardship is being a major contributor to a book of "Plants of Dominica's Southeast" published in partnership with the South East Tourism Development Committee (SETDC), UNESCO and local botanists.
- ✓ Works with community members to facilitate trails to be stewards of the environment and run beach cleanups to reduce the chance of sea turtles being strangled by trash while educating communities about sea turtle conservation.
- ✓ Guests receive a re-usable water bottle decreasing our use of disposable bottles.
- ✓ The resort strives to manage waste, energy use, and other techniques ensuring limited disturbance of the ecosystem – reducing environmental and social impacts in all areas of the operation – through continuous monitoring and evaluation.
- ✓ Jungle Bay is one of the few properties certified at the highest level for sustainable tourism & quality standards with Dominica's Nature Island Standards of Excellence (NISE)

Socio-Economic & Cultural Heritage Preservation Efforts

- ✓ Purchase of food is from nearby organic farmers and small scale fisheries supporting local, increasing freshness and quality of food versus importing and it creates more local jobs.
- ✓ Jungle Bay has been mentoring entrepreneurs since the first property opened in 2005. All the products for our restaurant like honey, fruits, vegetables, eggs, fish and coffee come from local producers who we mentor in organic techniques to help deliver high quality products for our guests while also helping them make meaningful income for their families and communities. We also mentor artisans, spa product producers and more so we can offer local fair trade products in our gift shop.
- ✓ The property which Jungle Bay sits on is called Morne Acouma. It has a rich history and today still features interesting artifacts located near the spa. In the late 1800s Morne Acouma was a famous lime plantation. Lauchlan Rose in the UK devised a method for preserving juice without alcohol and so he invented the world's first concentrated fruit drink patented in 1867. During that time all merchant ships were required to travel with lemon or lime on board and thus Rose's Lime Cordial was an important commodity which still lives on today as a refreshing beverage. The lime would be harvested from Morne Acouma, placed in buckets then travel down a series of pulley systems (in essence a zip line) to the waterfront below in Soufriere Bay where merchant ships would take the citrus fruit to London, England. When you visit Jungle Bay we invite you to stop and visit this fascinating heritage site and afterwards enjoy some refreshing fresh lime juice in the Pavillion Restaurant.

Source: (Jungle Bay, 2019)

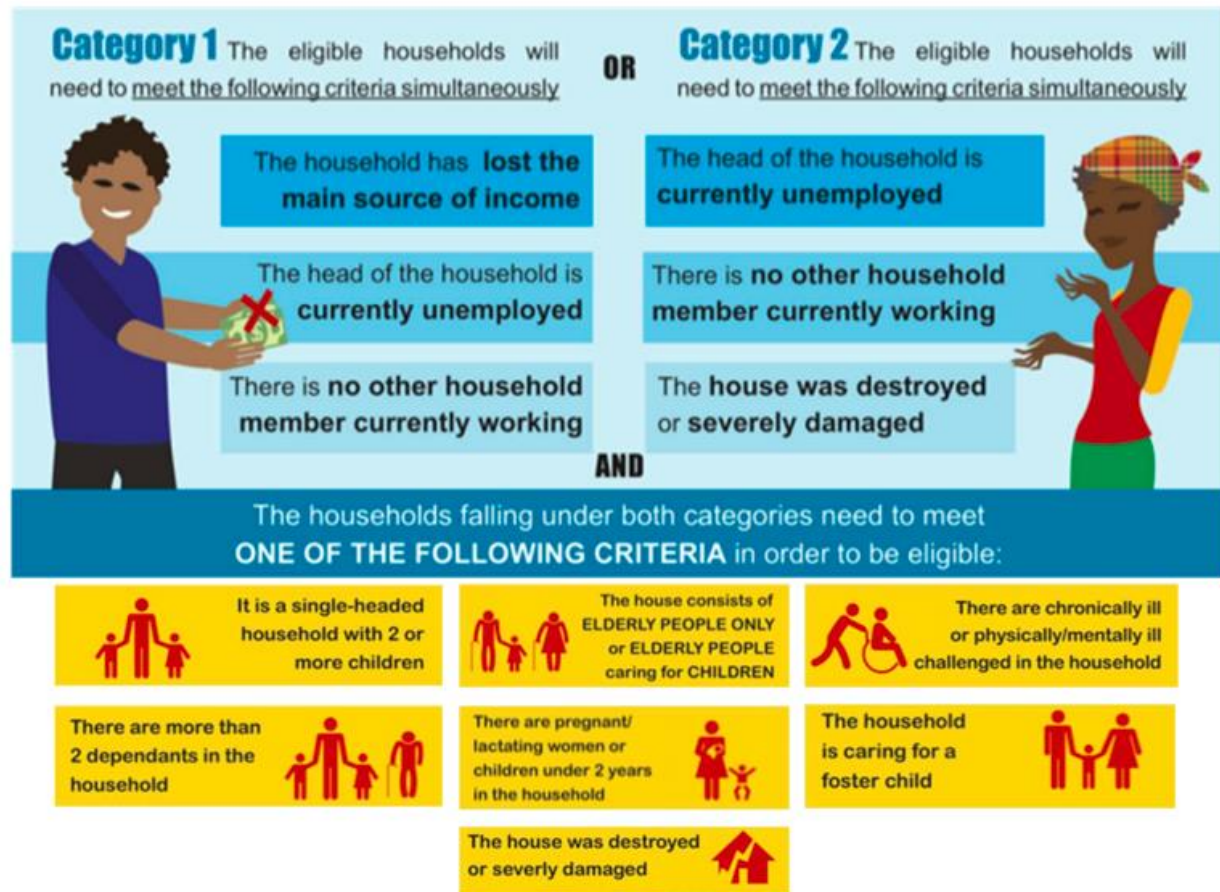
Appendix 6: Tourism Alternative Costing

Costs	2019
Financial Analysts	\$30,000.00
Village Council Evaluator	\$4,000.00

Assumptions & Acknowledgements:

- 2 financial analysts needed for 6 months paid 30 dollars an hour
- 1 Council evaluator at one day a week for 6 months at 20 dollars an hour

Appendix 7: ECT Program Eligibility



Source: (The Commonwealth of Dominica et al, 2018)

Appendix 8: Cash-Transfer Alternative Costing

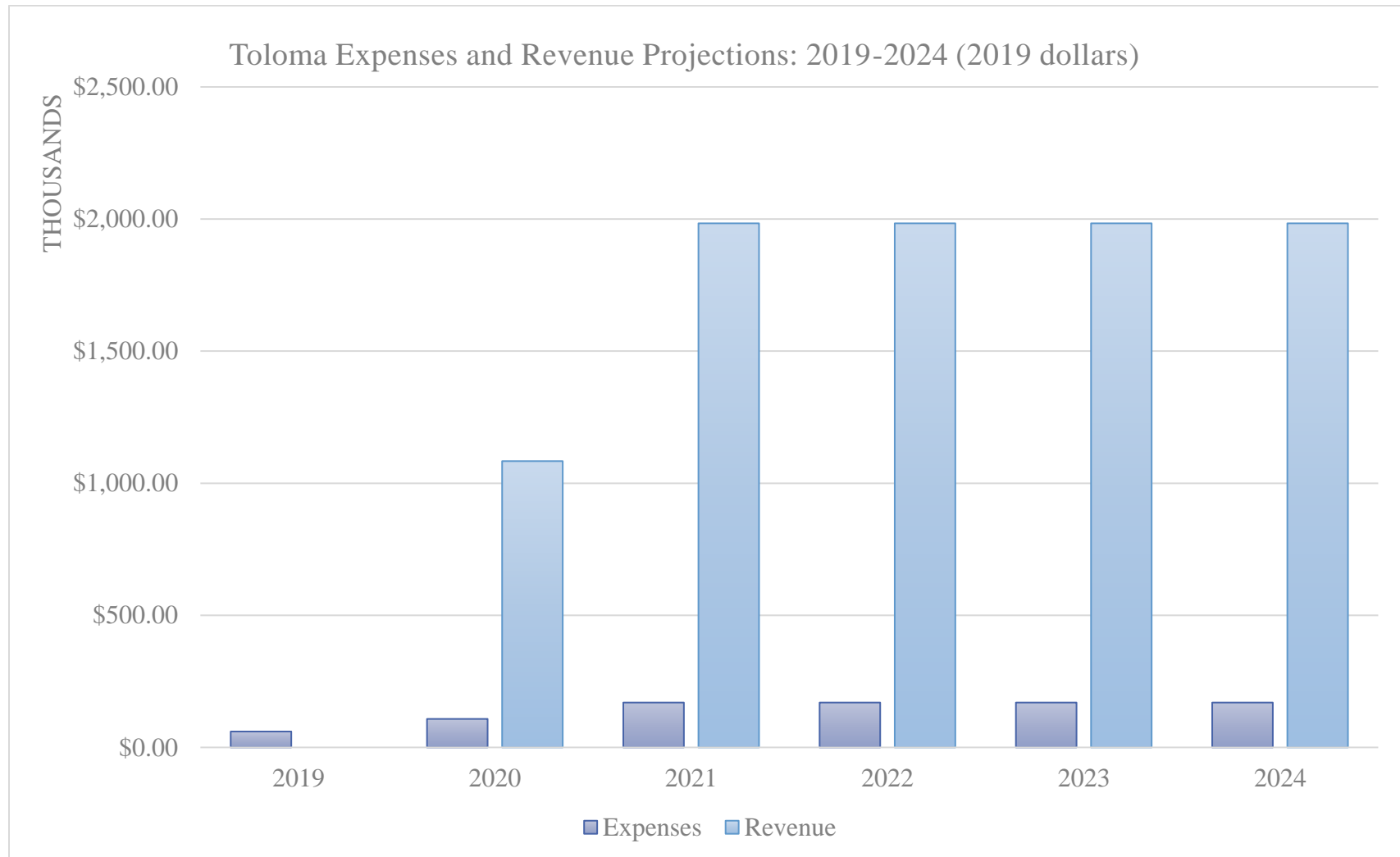
Costs	2019	2020	2021	2022	2023	2024
Pilot Program Payments	\$564,750.00	\$564,750.00	\$564,750.00	\$564,750.00	\$564,750.00	\$564,750.00
Program Expansion Year 5						\$4,405,050.00
Program Operators	\$56,000.00	\$56,000.00	\$56,000.00	\$56,000.00	\$56,000.00	\$56,000.00
Administrative Employees	\$14,000.00	\$14,000.00	\$14,000.00	\$14,000.00	\$14,000.00	\$14,000.00
		2020 Dollars	2021 Dollars	2022 Dollars	2023 Dollars	2024 Dollars
	\$634,750.00	\$653,792.50	\$673,406.28	\$693,608.46	\$714,416.72	\$5,842,509.48
	NPV of Costs	\$7,127,722.29				

Assumptions & Acknowledgements:

- 3 percent discount rate
- Approximately 9 percent of the population receives PAP, so I assume roughly 9 percent of St. Patrick Parish does as well (roughly 750 people), I average the low and high-end transfer values for this calculation on a monthly basis and multiply by 12 for an annual cost = \$62.75 added per person per month
- Expansion to all PAP recipients in year 5, 6,600 people minus the 750 already receiving benefits
- Program operators include 4 employees year-round making \$7 an hour working full-time
- Minimum living wage calculated at approximately \$7.00 USD¹¹
- Cash transfer administration requires 2 employees year-round making \$7 an hour working full-time

¹¹ Numbeo. (2019, March). Cost of living in Dominica. Retrieved March 20, 2019, from https://www.numbeo.com/cost-of-living/country_result.jsp?country=Dominica

Appendix 9: Toloma Expense and Revenue Projects: 2019 – 2024

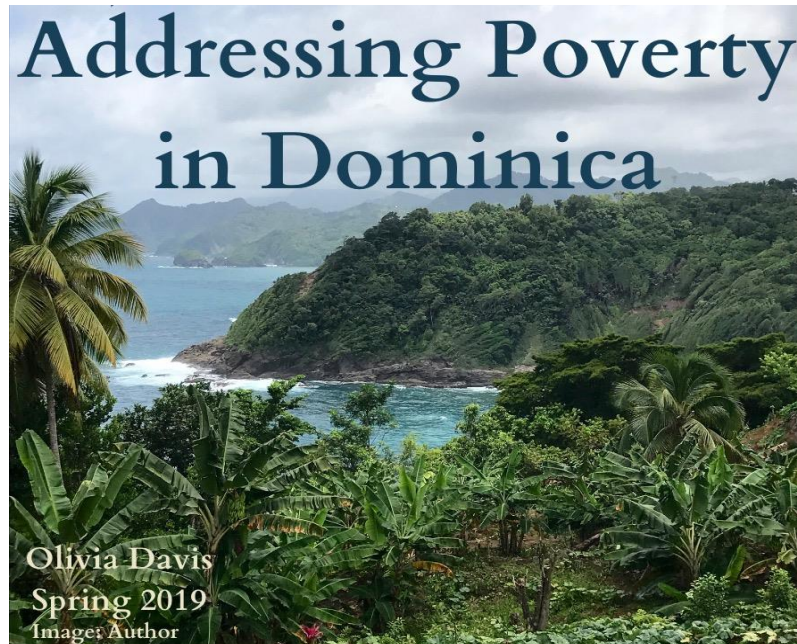


Appendix 10: Toloma Alternative Sensitivity Analysis (Costing including 30 additional farmers as opposed to 20)

Costs	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Transition 23 Farmers to Organic	\$16,100.00					
Processing Expenses	\$16,100.00	\$19,600.00	\$40,600.00	\$40,600.00	\$40,600.00	\$40,600.00
Marketing Expenses	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00	\$28,000.00
Export Costs to the US		\$30,240.00	\$84,240.00	\$84,240.00	\$84,240.00	\$84,240.00
Fund New Farmers in Yr 1 (30)		\$21,000.00				
Employees to Clear Land		\$16,000.00	\$24,000.00	\$24,000.00	\$24,000.00	\$24,000.00
		FV 2020 Dollars	FV 2021 Dollars	FV 2022 Dollars	FV 2023 Dollars	FV 2024 Dollars
Total Cost by Year	\$60,200.00	\$118,285.20	\$187,609.56	\$193,237.84	\$199,034.98	\$205,006.03
	NPV of Costs	\$786,292.47				

Benefits	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue (80% of Yield)		\$1,008,000.00	\$1,008,000.00	\$1,008,000.00	\$1,008,000.00	\$1,008,000.00
Revenue in Dominica (20% of Yield)		\$75,600.00	\$75,600.00	\$75,600.00	\$75,600.00	\$75,600.00
New Farmer Revenue			\$1,350,000.00	\$1,350,000.00	\$1,350,000.00	\$1,350,000.00
		FV 2020 Dollars	FV 2021 Dollars	FV 2022 Dollars	FV 2023 Dollars	FV 2024 Dollars
		\$1,038,240.00	2581806.24	2659260.427	2739038.24	\$2,821,209.39
	NPV of Benefits	\$9,548,054.17				
	NPV	\$8,761,761.70				

Appendix 11: Recommendation Graphic



CURRENT PROBLEM
In 2009, 30,000 Dominicans, 40 percent of the population, lived in poverty or were at risk of falling into poverty.

EVALUATIVE CRITERIA



ALTERNATIVES



RECOMMENDATION



Toloma Women in Action



Left: harvested in root form
Right: packaged in powder form

The Delices Village Council should seek 60 thousand (usd) in grant funding to finance the Toloma Women in Action Cooperative's transition to all organic production. This capital would allow the women to sell toloma for 5 times its current market price of 10 dollars and reach financial sustainability within one year.

Appendix 12: Potential Grant Funding Streams

The Bernadette Francis Foundation¹²

OUR STORY

BFF is a 501(c)(3) foundation dedicated to the memory of Bernadette Francis. Bernadette was born in 1906 in Delices, at the time a small remote coastal village on the island of Dominica. She and her husband Romé recognized the importance of education and did all they could to get their eight children the best education available to them. As a testament to their dedication and sacrifice, several of their children attended high school in the city – a very rare occurrence for rural children during colonial rule in the 1940s and 1950s. These sacrifices paid off and eventually lifted the family out of poverty. At some point in their lives, many of her children became teachers – with some of them becoming school principals and assistant principals. All of her children have either directly or indirectly been motivators for young people seeking a better future through education.

With this foundation, our mission is to offer a helping hand to a new generation of young people who may be facing financial hurdles as they strive to achieve their goals – including, but not limited to school supplies, tuition and grants. We have sometimes assisted with medical assistance for children with serious emergent illnesses that impact their academic progress.

What We Do

The foundation was founded in 2013 and to date we have provided small grants to children in several countries including:

- Delices, Dominica – tuition, school supplies, medical emergency assistance
- Roseau, Dominica – text books, medical emergency assistance
- Boston, MA USA – tuition, computer
- Silver Spring, MD USA – computer
- Zambia – school fees
- Cameroon – school fees
- Clearwater, FL USA – back to school supplies; computer

We believe that we can all make a difference. We provide grants through an application process. A student must provide evidence of a financial need along with recommendations from teachers.

¹² BFF. (2013). Bernadette Francis Foundation. Retrieved April 10, 2019, from <https://bernadettefrancisfoundation.org/about-us/>

The Small Grants Project (United Nations)¹³

Mission

[Print](#)

Established in 1992, the year of the Rio Earth Summit, the GEF Small Grants Programme embodies the very essence of sustainable development by "thinking globally acting locally". By providing financial and technical support to projects that conserve and restore the environment while enhancing people's well-being and livelihoods, SGP demonstrates that community action can maintain the fine balance between human needs and environmental imperatives.

SGP recognizes that environmental degradation such as the destruction of ecosystems and the species that depend upon them, increasing levels of carbon dioxide and other greenhouse gases in our atmosphere, pollution of international waters, land degradation and the spread of persistent organic pollutants are life-threatening challenges that endanger us all. However, poor and vulnerable communities –SGP's primary stakeholders- are most at risk because they depend on access to natural resources for their livelihoods and often live in fragile ecosystems.

The programme provides grants of up to \$50,000 directly to local communities including indigenous people, community-based organizations and other non-governmental groups for projects in Biodiversity, Climate Change Mitigation and Adaptation, Land Degradation and Sustainable Forest Management, International Waters and Chemicals.

History

SGP has evolved significantly as a global programme over the past twenty years (1992-2012). Its history can be traced through a pilot and five subsequent operational phases, which correspond to funding replenishments from the GEF, as a process of global and local adaptive management. During the pilot phase (1992–1996), the first SGP country programmes were established in 33 countries and hosting arrangements were made in UNDP Country Offices (CO) or nongovernmental national host institutions (NHI). The maximum grant amount was set at \$US 50,000 – which has proven to be an appropriate ceiling for NGO and CBO funding over the next twenty years – with average grant amounts of well under \$US 20,000 in these phases.

¹³ United Nations. (2012). "Mission and History." *The GEF Small Grants Programme*. Retrieved April 10, 2019 from, sgp.undp.org/about-us-157.html.

OUR STORY

Acumen was incorporated on April 1, 2001, with seed capital from the Rockefeller Foundation, Cisco Systems Foundation and three individual philanthropists. Our desire was to transform the world of philanthropy by looking at all human beings as members of a single, global community where everyone had the opportunity to build a life of dignity. The organization would invest “Patient Capital,” capital that bridges the gap between the efficiency and scale of market-based approaches and the social impact of pure philanthropy, in entrepreneurs bringing sustainable solutions to big problems of poverty.

OUR VISION

Neither the markets nor aid alone can solve the problems of poverty. More than two billion people around the world lack access to basic goods and services—from clean water and electricity to an education and the freedom to participate in the economy. We’re here to change that. Our vision is a world based on dignity, where every human being has the same opportunity. Rather than giving philanthropy away, we invest it in companies and change makers.

¹⁴ Acumen Fund. (2001). About Acumen. Retrieved April 10, 2019, from <https://acumen.org/about/>

Appendix 13: Prospective US Market Buyers

Miami, Florida:

Apple A Day Miami

Located in Miami Beach, Apple A Day Miami is a small, organic health foods grocery store. The store includes products ranging from juices and smoothies to organic supplements and herbs (Kenzap, 2018).

Life Natural Foods

Life Natural Foods is the oldest health food store in Miami (Lamb, 2011). The store sells products like essential oils, herbs, protein powders and other food items than can help promote a healthy lifestyle.

Charlottesville Virginia:

Feast

Feast is a single-location health foods grocery store in downtown Charlottesville. It sells products crafted at 10 locally-owned stores (Feast Charlottesville, 2019). The store is known selling responsibly sourced products.

Foods of All Nations

Foods of All Nations is another single-location grocery store in Charlottesville. For the last 50 years it has “[provided] Charlottesville and the surrounding areas with imported, local and exceptional domestic foods” (Foods of All Nations, 2019). Foods of All Nations is a strong option given that it already imports a wide variety of products.