



DEVELOPMENT CONSTRAINTS & OPPORTUNITIES:

ÎLE-À-VACHE, HAITI

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Ancito Etienne and Katie Wesdyk,
MPP Candidates 2021

Faculty Advisor: Janina Matuszeski,
Harvard Kennedy School

Faculty Advisor: Matt Andrews,
Harvard Kennedy School

Client: Patrick Lucien,
EDEM Foundation

This PAE reflects the views of the authors and should not be viewed as representing the views of the EDEM Foundation, nor those of Harvard University or any of its faculty.

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We express our sincerest gratitude for Patrick Lucien’s dedication to his work, the many hours he spent sharing his insights, and the connections he helped us form with community members. Patrick Lucien and his wife, Bernadette Lucien, founded the foundation in 2003, and now will have their hard work come to fruition with the grand opening of the Village for Innovation, Technology, Education, and Sport on May 8, 2021. We dedicate this research to the legacy of Bernadette Lucien, whose impact will never be lost on the many lives she touched.

We would also like to thank the community members who shared their voices and helped us to tell their story. Under the guidance of Professors Matt Andrews and Janina Matuszeski, we hope to highlight the strength and beauty of Île-à-Vache.



EDEM FOUNDATION

PEOPLE – NATURE - LIFE

Executive Summary

Research Question

Île-à-Vache, Haiti is a small island home to 15,000 residents off the southern coast of mainland Haiti. Across the past century, Haitian residents have come to the island for sustenance farming and fishing, creating a beautiful landscape and peaceful community. However, Île-à-Vache has struggled to develop economically, and residents continue to live in poverty. The structure of the local government lacks a sufficient budget, capacity, and support from the central government to provide universal access to many basic services, including the provision of safe drinking water, roads, electricity, educational institutions, and healthcare. Working together with a non-profit active on the island, the EDEM Foundation, the objective of this research was to answer:

- 1) **The *binding constraint(s)* of economic growth on Île-à-Vache,**
- 2) **The *knowhow* which already exists on Île-à-Vache, and**
- 3) **The future Île-à-Vache residents aspire for.**

The framework of this research provides a process for moving forward with people as the focal point for economic development on the island.

Methodology

The methodology combined two development models to analyze literature, case studies, and interviews:

- ***Growth Diagnostics***: Identifies areas of economic opportunity by determining the limiting constraint(s) on growth. Though this model traditionally analyzes substantial market data, we adopted a narrative-based approach given the lack of data common in development contexts.
- ***Problem Driven Iterative Adaptation (PDIA)***: Breaks down problems into smaller components and iterates on different ideas to resolve them. This approach requires *collective learning*, where we then brought together these key community representatives to share their perspectives.

Key Findings

A variety of initiatives led by the state and local government, non-governmental organizations (NGOs), and international organizations have attempted to develop Île-à-Vache. These case studies demonstrated thematic failures largely around coordination. This strongly suggests that before larger-scale operations—such as a comprehensive tourist plan—can be successful, the local population must have its basic needs met.

The binding constraints to further growth are the most essential public services—safe drinking water, electricity, and transportation routes. Despite these obstacles, there is substantial *knowhow* already present on the island to leverage: community leadership, partnerships with NGOs, natural beauty, entrepreneurship, Haitian Diaspora, connections to the central government, and access to mainland *knowhow*. The future Île-à-Vache aspires for is one of opportunity, independence, and growth. By leveraging its strengths, the community can achieve and spearhead this prosperous future.

Recommendations

To address the binding constraints, Île-à-Vache must first improve internal coordination capabilities. We believe the best initial step forward is to strengthen the local population’s ability to coordinate, and the confidence in their ability to do so. The problem of distrust between the islanders and the structure of the local government can be rebuilt by accomplishing *something* together. We believe the path forward for Île-à-Vache is to deepen a “Sense of Us,” reinforcing its identity as the self-made island filled with entrepreneurial spirit and opportunity. The objective is to strengthen the connections on the island first, which will later build the foundation for strengthening external relationships with outside stakeholders. In brief, the local government must:

- 1) ***Provide in-depth stakeholder analysis to all partners active on the island. The local population must be the top stakeholder.***
 - The common denominator across stakeholders must be a shared commitment to serving the people of Île-à-Vache.
 - All initiatives must go through the mayor’s office.
 - The mayor’s office can and should say no. If stakeholders are not willing to work within the established authority structure of the island or to prioritize the community, a partnership is not worth pursuing.

- 2) ***For the short term, focus on developing internal coordination capabilities through small-scale, community-led projects.***
 - Document *everything*.
 - Communicate *everything*.

- 3) ***For the long term, focus on developing key external partnerships for larger-scale operations.***
 - Business plans help to make development goals a reality.
 - Reports maintain momentum towards an increasingly prosperous future.

Acronyms

ASECs: Administrative Council of Communal Sections

BIM: Motorized Intervention Brigades

BLTS: Bureau of International Law Enforcement

CASECs: Communal Section Assembly

DGI: General Tax Office

DINEPA: National Service for Potable Water and Sanitation

EDEM: Development Space for the Emancipation of Municipalities

EDH: Electricity of Haiti

FGDCT: Local Government Development Fund

HTG: Haitian Gourde

KOFASI: Gathering of the Women of the South, Île-à-Vache

KOPI: Organization of Île-à-Vache Farmers

NGOs: Non-Governmental Organizations

PDIA: Problem Driven Iterative Adaptation

SELF: Solar Electric Light Fund

UDMO: Departmental Maintenance of Order Units

UNICEF: United Nations International Children's Emergency Fund

USAID: United States Agency for International Development

WASH: Water, Sanitation, and Hygiene

WHO: World Health Organization

VITES: Village for Innovation, Technology, Education, and Sport

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Section I: Introduction

Île-à-Vache is a small island off the southern coast of mainland Haiti and is home to about 15,000 residents. Île-à-Vache, translating to “Island of the Cows,” boasts beautiful beaches, green landscapes, and a peaceful community sharing the traditions and culture of mainland Haiti. However, this rural community has faced substantial challenges to development. Limited resources and natural disasters have inhibited growth. The island faces gaps in public services including safe water, electricity, transportation routes, educational institutions, and healthcare.

Development challenges are further exacerbated in rural areas, especially those farthest from the capital, Port-au-Prince. The local government on the island lacks a sufficient budget, capacity, and support from the central government to implement necessary reforms. However, the challenge of development is much more complex than merely a lack of finances. Île-à-Vache has seen various non-governmental organizations and foreign investors come and go, but this cycle of unsustainable aid has underperformed. Despite many people caring about these problems, they remain prevalent. We hope to learn why previous attempts have fallen short on delivery.

The primary question we seek to answer is the greatest opportunity for development growth. To reach this answer, we will explore:

- 1) The *binding constraint(s)* of economic development on Île-à-Vache.
- 2) The *knowhow* which already exists on Île-à-Vache.
- 3) The future Île-à-Vache residents aspire for.

Section II: Background

Île-à-Vache is a relatively young community, founded around 1930 when Haitians from nearby towns on the mainland—such as Saint Louis de Sud, Saint Jean de Sud, and Torbeck—were attracted to the island to cultivate the land and to fish. The island was not previously forested until Senator Louis Desjoies arrived and rented the land from the state in the 1930s. He began planting lemongrass, lemons, millet, corn, and other agricultural crops, attracting people in large numbers.¹ In 1940, Father Robert Magron arrived and built the first city center and Catholic Church leading to further migration and Île-à-Vache becoming a district of Les Cayes.

¹ Dady Chery, “Jean Matulnes Lamy: Haiti’s ‘Peasants Built Ile a Vache!’ – Part I,” *Haiti Chery*, Apr. 3, 2014, <http://www.dadychery.org/2014/04/03/jean-maltunes-lamy-haitis-peasants-built-ile-a-vache-part-i/>.

Beginning in the 1950s, people received farming rights and rural grants from the central government to become landowner. People brought vegetation to plant—such as coconut trees and mango trees, and residents take great pride in having created the notable landscape and scenery.² The island was featured by Cable News Network in 2017 as having the world’s 57th most beautiful beach, Abaka Bay.³

The small island is primarily accessed by boat, located south of the mainland about 6.5 miles from the port of Les Cayes. In 1976, Île-à-Vache officially became a commune (municipality) of the Les Cayes Arrondissement (district), which is part of the South Department of Haiti (one of ten national departments). Les Cayes is the capital of the South Department and thus provides jurisdiction over Île-à-Vache, in addition to serving as the main economic and cultural center influence.⁴

The island is approximately 8 miles long and 2 miles wide with a total area of 4601 hectares, equivalent to 17.8 square miles. The 15,000 population is spread amongst 2,700 households (household density of 5.5 people), with a gender distribution of 46% female and 54% male. Île-à-Vache is a commune consists of 26 localities and is the third most densely populated island of Haiti, with the densest localities being Madame Bernard, Bois Bouton, La Hatte, Kakok, and La Fortune.

Table 1: Population densities of the largest communities.⁵

Localities	Households	People	% of Population	Area (hectares)	Density (population/hectares)
Madame Bernard	300	1644	10.4%	85	1934
Bois Bouton	260	1425	9.0%	231	617
La Hatte	229	1255	7.9%	241	521
Kakok	227	1244	7.8%	306	407
La Fortune	226	1238	7.8%	224	553
Trou Milieu	154	844	5.3%	188	4.49
Pointe de l Est	133	729	4.6%	568	128
Grand Plaine	133	729	4.6%	123	593
Soulette	129	707	4.5%	128	552
Gros Morne	122	669	4.2%	112	597

² Chery, “Jean Matulnes Lamy: Haiti’s ‘Peasants Built Ile a Vache!’ – Part I,” 2014.

³ “100 best beaches around the world,” *Cable News Network*, Jul. 10, 2017, <https://www.cnn.com/travel/article/100-best-beaches/index.html>.

⁴ “Daily Life and Infrastructure in Ile-a-Vache,” *Massachusetts Maritime Academy*, https://12ad5109-6f89-54cf-0f9f-c37ad96372dd.filesusr.com/ugd/608284_7e66c736d0a37c5b3c53c7a72cec9bd7.pdf.

⁵ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

A distribution of the population density can be observed below in Figure 1.

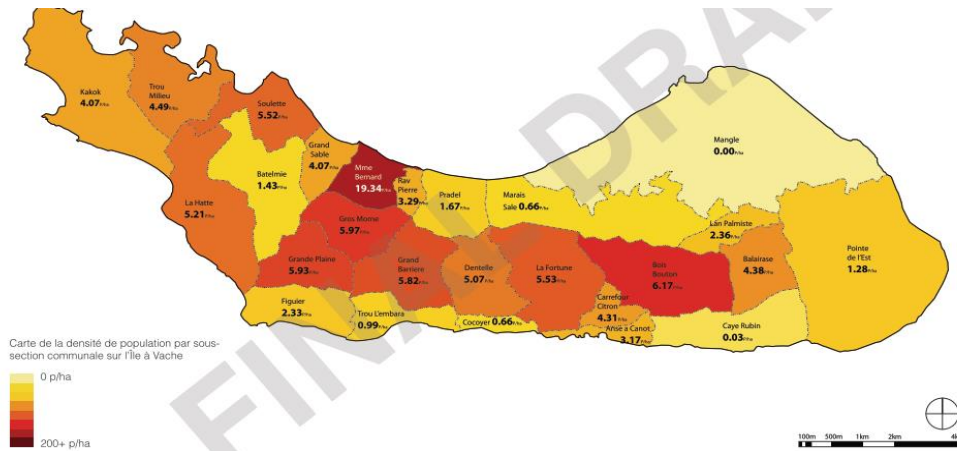
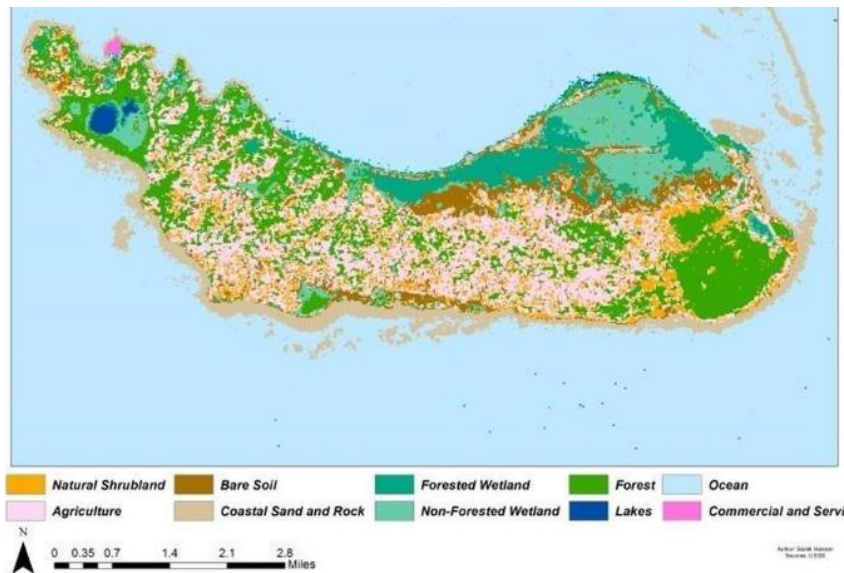


Figure 1: Image of population distribution on the island.⁶

The primary language is Creole (some also speak French) and though English is not widely spoken, the language is growing in use amongst the youth.⁷ The terrain (shown below in Figure 2) is hilly, reaching peak elevation of 492 feet (150 m) above sea level along the western end of the island. The northeastern landscape is primarily uninhabitable mangrove swamps, but the central portion has flat sand, rock, and soil suitable for agriculture.⁸



⁶ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁷ “Daily Life and Infrastructure in Ile-a-Vache,” *Massachusetts Maritime Academy*, https://12ad5109-6f89-54cf-0f9f-c37ad96372dd.filesusr.com/ugd/608284_7e66c736d0a37c5b3c53c7a72cec9bd7.pdf.

⁸ Good Samaritan, “Ile a Vache.”

Figure 2: Land terrain map of Île-à-Vache.⁹

The island faces extreme poverty and lacks a formal economy. Though there is no data available on income distributions of the local population, the pattern mirrors much of rural Haiti. The average income of a rural Haitian is \$350 per year, with a daily income amounting to typically less than \$2 per day per person.¹⁰ The main economic activities on the island include informal commerce, fishing, livestock farming, and agriculture. As the fishing and agriculture sectors have declined—which a large portion of the population relies upon for sustenance—the tourism industry started to emerge as the intended primary economic driver prior to the Covid-19 pandemic.

Furthermore, the island is home to a young population with an average age of 20 years old—56% of the total population is below 18. The island has a total of 25 schools, consisting of 24 primary and one secondary school, but no tertiary options (colleges, vocational schools, etc.). In recent years, youth have increasingly migrated to the mainland (primarily to Les Cayes, the closest port of entry to the mainland from Île-à-Vache) in search of education and economic opportunities. The main modes of transportation around the island are on foot, motorbikes, donkeys and horses, and boats. There is one central road spanning from the west to east coast, serving mainly as a footpath for people and livestock.

Île-à-Vache is governed by a municipal government, consisting of one mayor and two deputy mayors, six (Communal Section Assembly (CASECs) and nine Administrative Council of Communal Sections (ASECs). Together, they are tasked with the socio-economic development of the island. The local government, however, has limited capacity to address the challenges of development. The island does not have a strong tax collection system, and only collects property taxes and an annual tax to reserve a space at the market, even though legally allowed to collect other forms. Property tax collection is minimal given the high level of poverty on the island. The legal framework of tax collection was established in the National Constitution of 1987 and the Presidential decrees of 2006. These documents also establish greater decentralization of fiscal power as well as the institutionalization of municipal revenue. Yet municipal governments still heavily rely on the central government for public finance as well as leadership.

In Haiti, municipal governments such as Île-à-Vache have four main sources of funding: transfers from the central government, taxes collected by the General Tax Office (DGI) on behalf of the communes, duties and royalties collected by the communes, and external sources (such as development partners).¹¹ Of these four sources, Île-à-Vache's budget is primarily composed of transfers from the central government (63% of total budget),¹² though legally Île-à-Vache should have greater financial autonomy. Taxes account for only 1.6% of the budget, while duties and royalties contribute a meager 0.11%.¹³ The remainder of the local government's budget relies on external support and financing.

The financial situation on Île-à-Vache follows a broader pattern of the overall weak public finance in Haiti. Municipal governments have a limited ability to plan, provide services, and stimulate local

⁹ Serra et al., "Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft)."

¹⁰ Good Samaritan, "Ile a Vache."

¹¹ Serra et al., "Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft)."

¹² Ibid.

¹³ Ibid.

economic growth. Incomplete decentralization and a weak legal framework for municipal finance also contribute to the problem. While Les Cayes is a first-tier commune with the ability to raise sufficient government revenue to provide for its own services, Île-à-Vache is a third-tier commune, the lowest level of independence from the central government. Île-à-Vache is heavily reliant, and thus all local taxes collected are sent to the central government. The taxes enter a pool of funds, which are then redistributed amongst all the communes to fund proposals requested by each commune. The central government spends only 0.6% of GDP at the communal level financed through the Local Government Development Fund (FGDCT).¹⁴ The total municipal revenue makes up only 1.7% of the total revenue of the central government.

Due to limited funding, many non-governmental organizations (NGOs) have stepped up to fill the gap in governance and provision of public services. The country has been described as a “Republic of NGOs” with nearly 80% of basic services provided by the private sector through NGOs.¹⁵ Engagement, collaboration, and coordination of civil society is critical to successful and sustainable implementation. One NGO active on Île-à-Vache is the EDEM Foundation, a nonprofit dedicated to development on the island. EDEM, which translates to “Help Me,” was founded by Patrick Lucien and his wife Bernadette Lucien in 2003. The EDEM Foundation has become a model for leadership, partnerships, and implementation that we look to for inspiration in making change for the benefit of the people.

The following sections will explore the problems and opportunities the island faces for development. Section III explains the methodology used to combine approaches from Growth Diagnostics and Problem Driven Iterative Adaptation. Section IV describes our findings on development avenues through a literature review, case studies, and interviews with various stakeholders. Our analysis indicates a process to achieve the future envisioned by the community of Île-à-Vache. We share recommendations in Section V for an overarching development strategy, as well as potential projects to achieve this. We hope this report can provide a consolidated overview of the island’s history and the opportunities that lie ahead.

Section III: Methodology

The methodological approach fused together two development models, *Growth Diagnostics* and *Problem Driven Iterative Adaptation* (PDIA), to explore potential for improvement. *Growth Diagnostics* identifies areas of economic opportunity by determining the limiting constraint(s) on growth. Though this model traditionally analyzes substantial market data, we adopted a narrative-based approach given the lack of data common in development contexts. Through a series of interviews with key community representatives, we hoped to have captured the binding constraints Île-à-Vache faces. We then built on our understanding of the greatest sources of *knowhow*, which are the skillsets and capabilities the island already has. We fused this approach with *PDIA* to break down these problems into smaller components and iterate on different ideas to resolve them. This approach requires

¹⁴ Nancy Lozano-Gracia and Marisa Garcia Lozano, *Haitian Cities: Actions for Today with an Eye on Tomorrow*, (Washington DC: 2017 International Bank for Reconstruction and Development / The World Bank, 2017), <http://documents1.worldbank.org/curated/en/709121516634280180/pdf/122880-V1-WP-P156561-OUO-9-FINAL-ENGLISH.pdf>.

¹⁵ Edmonds, “NGOs and the Business of Poverty in Haiti.”

collective learning, where we brought together these key community representatives to share their perspectives. These breakout groups enabled *facilitated emergence* for stakeholders around developing a shared understanding of both problems and solutions they wish to pursue. Our methodology highlights people as the focal point.

The research design involved a literature review, case studies, and interviews. The literature review consisted of academic journals, published reports, and government publications. The primary source of island-wide data collection was funded by the W.P. Kellogg Foundation and completed by Architecture for Humanity in 2013. The 200-page report provides a comprehensive overview of the island's history, features, and development challenges. We additionally reviewed literature available online from international organizations and foundations analyzing the state of development in Haiti. Furthermore, we studied the 2010 Action Plan for National Recovery and Development of Haiti and the 2018 Integrated Country Strategy. We developed the case studies from the literature and interviews, building upon community members' perspectives to understand how initiatives impacted them. We hope to capture a variety of perspectives amongst stakeholders by representing local community members, youth, non-profit owners, funders, and government officials alike. Our objective was to listen and learn, then communicate these diverse experiences through our collective understanding.

Section IV: Findings

Section IV.I: Overview and Problem Deconstruction

The findings section begins by providing a synthesis of the major development constraints Île-à-Vache faces. The constraints are divided into *process challenges* (governance, unsustainable funding, and community engagement) and *outcome challenges* (education, formal economy, and public services). Section IV.II builds upon these constraints by providing a historical review of initiatives to address the *outcome challenges*. These case studies highlight that, because of the *process challenges*, many initiatives were not successful. A new process that acknowledges historical lessons learned will be critical for impact and sustainability. To frame the focus of this new process, Section IV.III pinpoints the binding constraint of *outcome challenges* as basic services—specifically water, electricity, and transportation routes. The underlying *process challenge* preventing long-term success has been a lack of collaboration. Section IV.IV sheds light on the local *knowhow* that could be leveraged to address the binding constraints. The findings conclude with Section IV.V, tying together the narrative and history of Île-à-Vache to deepen a “Sense of Us.” The self-made island has shaped its very landscape, turning a once barren island into a scenic destination renowned for its beauty. Its future can be just as prosperous.

The challenge of developing Île-à-Vache is not due to a lack of awareness around problems. Though the local government has conducted minimal data collection or documentation, internal and external stakeholders have engaged community members to better understand what they face. In 2013, Architecture for Humanity (funded by the W.P. Kellogg Foundation) completed the most extensive report yet, culminating in 200 pages of surveys, reporting, and recommendations. In 2015, Patrick Lucien hosted 24 community members through EDEM's platform to document problems from different perspectives (the full report can be found below in Appendix 3). The Pan American

Development Foundation (funded by USAID) launched a strategy report promised for completion in 2018. Furthermore, many prominent organizations have pledged assistance and funding.

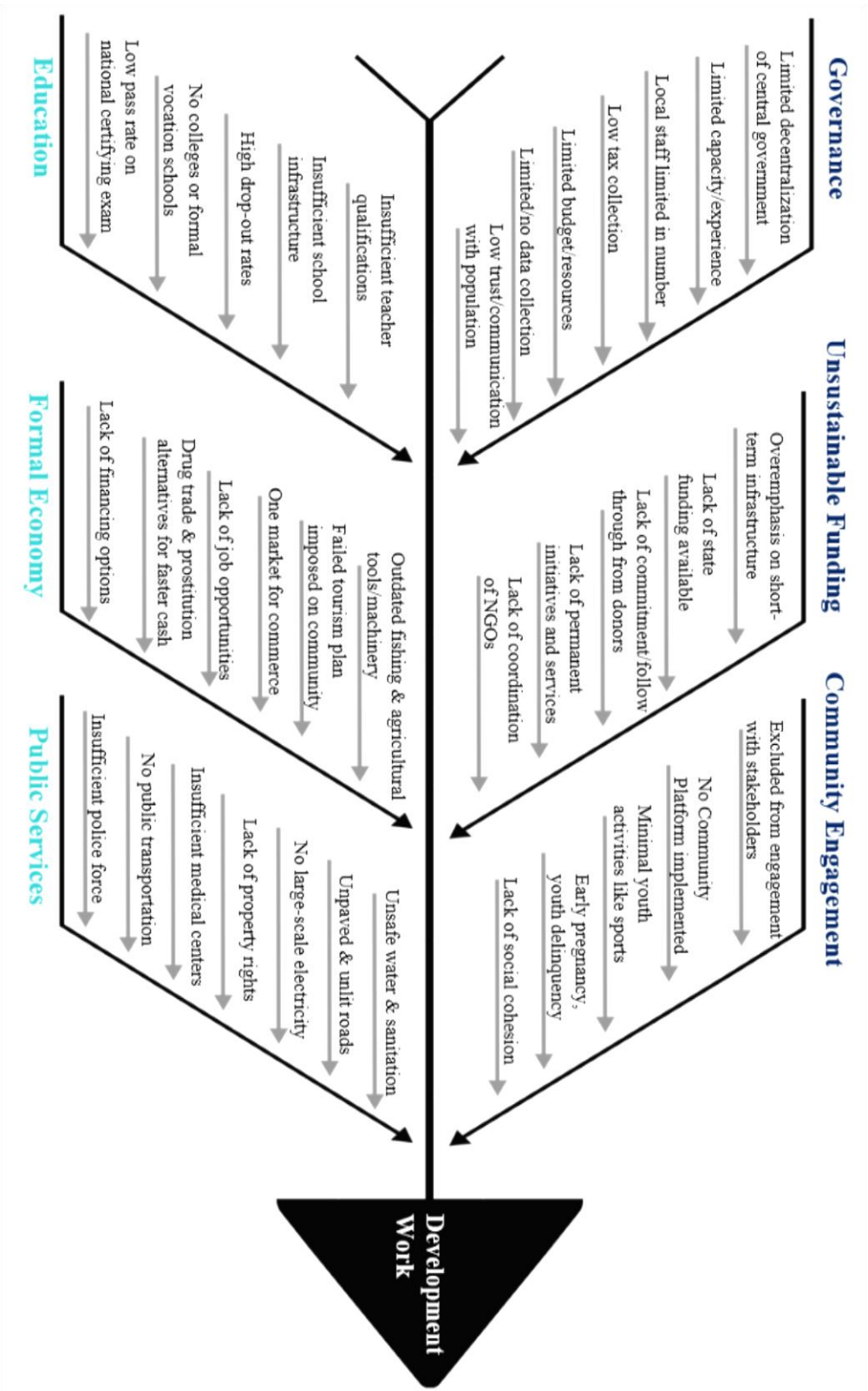
Despite these commitments, assistance has often fallen short of *fixing* many of the problems documented. For example, the promising recommendations presented by Architecture for Humanity were not funded for implementation as initially agreed upon. The charity closed its San Francisco headquarters in 2015 due to bankruptcy, having only released a final draft of the Île-à-Vache report in French (which was intended to be translated to English and Creole as well). The development report promised by the Pan American Development Foundation is already three years late without an expected date for release. Fortunately, the groundwork laid particularly by Architecture for Humanity and the EDEM Foundation provide excellent overviews of critical problems and proposals to address them.

Though there seems to be consensus that problems persist, uncertainty remains regarding solution development, monitoring, capabilities, and implementation. The history of previous attempts revealed thematic challenges concerning governance, coordination, resources, community engagement, and accountability. Community members are tired of organizations rotating on and off the island, requesting locals' unpaid time for surveys, interviews, and focus groups, promising aid but often delivering little impact. The objective of this research was to develop a better process to ensure stakeholders are accountable to one another and most importantly, the people of Île-à-Vache.

The challenge of development is composed of a complex compilation of many micro problems. To

1. **GOVERNANCE:** Limited capacity of government as an actor and regulator.
2. **UNSUSTAINABLE FUNDING:** Major financing constraints in funding, structure, and incentives. Funding largely favors short-term initiatives that are uncoordinated.
3. **COMMUNITY ENGAGEMENT:** Challenges of mobilization, engagement, and consultation.
4. **EDUCATION:** Poor quality of education due to lack of training, materials, and resources.
5. **FORMAL ECONOMY:** Lack of job options and opportunities.
6. **PUBLIC SERVICES:** Problems of basic needs going unmet.

begin to understand what Île-à-Vache faces, these challenges were deconstructed and organized into pillars. Six significant themes were identified from the literature, case studies, and interviews: A *fishbone diagram* was used to flesh out these pillars and further deconstruct the overarching problem of development on the island. The fishbone diagram is a tool often used in *Problem Driven Iterative Adaptation* (PDIA). The PDIA methodology embraces complex problems by breaking down its factors into increasingly specific components, referred to as the fish bones. An abstract problem is modeled as a combination of more tangible components, which become more feasible to address. The six pillars identified above and their contributing components are depicted below:



Each of the six major fishbones highlight contributing factors to the development challenges.

GOVERNANCE

***“My vision for the island is greater self-sufficiency and independence.”*¹⁶ – Sauny Pierre**

The limited decentralization of the state has caused both structural and financial challenges for the island to exert greater independence. The local government is comprised of three elected staff members, a mayor and two deputy mayors. Its size and capabilities are constrained by the fixed revenue provided by the central government. Given the limited budget and resources, it is immensely challenging for the elected staff to initiate substantial projects within the 5-year term. The staff does not have the capabilities for substantial data collection, nor is it politically or economically feasible to increase taxes to increase budget capacity. This has resulted in low trust in the ability of the local government.

UNSUSTAINABLE FUNDING

***“There are a lot of problems, but many can be solved by good investment. It’s not just a money thing, we need commitment.”*¹⁷ – Senator Jean David Geneste**

***“People don’t need charity; they need to earn their living in meaningful and sustainable ways.”*¹⁸
– Sister Flora Blanchette**

The limited budgetary capacity is further exacerbated by incentives to produce short-term results, which often come at the expense of long-term sustainability. The lack of availability of local financial resources often makes the island vulnerable to externally imposed projects which or may not be in the locals’ best interests. A pattern has emerged where state departments, NGOs, and aid organizations have come to the island to implement a project without the ability or commitment to deliver a permanent service. Projects tend to lack the funding to cover management, essential training of long-term staff, ongoing maintenance, and operation costs. Even well-intentioned projects often become unfunctional within the span of a few years. Additionally, these projects are often implemented with little to no coordination amongst other stakeholders.

Furthermore, an ongoing cycle of aid-based development has failed to place empowerment as the focal point. One of the island’s most well-respected leaders is a French-Canadian Catholic nun, Sister Flora

¹⁶ Sauny Pierre, Interview, Feb. 11, 2021.

¹⁷ Jean David Geneste, Interview, Feb. 9, 2021.

¹⁸ “Ile a Vache, Haiti,” *Massachusetts Maritime Academy*, Jul. 27, 2012, <https://blogs.umass.edu/rvlllyr/2012/07/27/ile-a-vache-haiti/>.

Blanchette. She came to the island nearly 40 years ago, establishing a school and orphanage in addition to assisting those with disabilities. Massachusetts Maritime Academy students interviewed the “small powerhouse, clear and political” on an annual visit in 2012. The students noted her “forceful emphasis on a need for jobs and that nonprofits are not helpful with this. It comes down to economics, she stressed.”¹⁹

COMMUNITY ENGAGEMENT

***“People first.”*²⁰ – Jean Matulnes Lamy and Louis Jean Gadi**

Another dimension to the problem is that the community is not necessarily included in the planning of projects. Architecture for Humanity had recommended the development of a Community Platform as a means for the individual communities to establish formal leadership and help coordinate with various stakeholders. The funding to implement the platform, however, was not available, limiting the social cohesion of the island. Youth especially often see little opportunities ahead through education or employment, and have limited social avenues such as sports. Because of these limited opportunities, social problems have also developed including violence, prostitution, and drug trade. Community members ultimately must be engaged for plans to be successful for the island.

EDUCATION

***“‘Brain drain’ is a major problem since youth do not see potential for a future on the island.”*²¹
– Nestor Wener**

Much of the lack of opportunities stems from a poor education system. There are not enough schools to meet the demands of the population, nor does the quality meet national standards. The final grade of high school was not available on the island until 2019, forcing students who sought to complete their education to finish on the mainland, often in Les Cayes. Furthermore, there are not colleges or formal vocational schools available. The underfunded schools struggle to afford textbooks or pay teachers secure incomes. There is also insufficient training provided on agriculture or the environment, which is the foundation of the island. A baseline study conducted by Columbia University’s Earth Institute in 2012 found that the probability of students reaching grade five (completing primary school) was only 34%.²² The majority of education programs have targeted Saint Jean du Sud and Port Salut in the South, while Île-à-Vache has received comparatively few projects. Port-à-Pimen for example, offers a

¹⁹ “Île a Vache, Haiti,” *Massachusetts Maritime Academy*, Jul. 27, 2012, <https://blogs.umass.edu/rv1lyr/2012/07/27/ ile-a-vache-haiti/>.

²⁰ Ibid.

²¹ Nestor Wener, Interview, Feb. 7, 2021.

²² “Integrated Baseline Study - Ten Communes of the Southwest Coast, South Department, Haiti,” *The Earth Institute Columbia University*, Nairobi: United Nations Environment Programme, 2013.

professional school, the Development Center on the South Coast of Haiti, for carpentry, electrical, plumbing, and construction skills, all of which could be useful for Île-à-Vache.

FORMAL ECONOMY

***“The artisan fishing is as old as when Christopher Columbus first discovered Haiti in 1492,” and the agricultural techniques are just as “archaic.”*²³ – Senator Jean David Geneste**

The economy of the island is largely informal and sustenance based. Few jobs are offered as part of a formal economy, which consist primarily of teachers. The primary commerce center on Île-à-Vache is located in Madame Bernard, the most populated locality. Market stalls, such as the one shown in Figure 3, line the beach filled with vendors offering a variety of goods. The market is located next to the mayor’s office, which collects a small annual fee from the vendors to reserve a stall. Products sold include food (fruits, vegetables, meat, fish, poultry, grains),²⁴ clothing, shoes, electronics, cosmetics, alcohol, cooking ware, miscellaneous household goods, and small farm animals.



Figure 3: A vendor sells crops at the market.²⁵

The market only operates twice a week and no other organized commerce exists on the island; business is primarily conducted in Les Cayes. Beyond commerce, fishing and agriculture are the primary means of sustenance, but are limited by a lack of machinery and modernization. Sustenance farming requires intensive manual labor without advanced equipment. Fishing presents similar challenges. Without deep-sea tools, vessels are limited to shallow, depleted waters as a result of overfishing and sedimentation.²⁶ Île-à-Vache has also become a potential site for tourism, though a successful plan has not been implemented.

PUBLIC SERVICES

***“My three priorities are water, electricity, and roads.”*²⁷ – Mayor Jean-Yvres Amazan**

***“Maintenance is the key.”*²⁸ – Patrick Lucien**

²³ Jean David Geneste, Interview, Feb. 7, 2021.

²⁴ “Daily Life and Infrastructure in Ile-a-Vache,” *Massachusetts Maritime Academy*.

²⁵ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

²⁶ “Integrated Baseline Study,” *The Earth Institute Columbia University*, 2013.

²⁷ Amazan, Interview, May 2018.

²⁸ Patrick Lucien, Interview, Apr. 6, 2021.

Development has also been constrained by the lack of public services. The island does not have access to safe water and sanitation, which poses a risk of cholera and/or E. coli. Residents must either use potentially contaminated water or treat sources themselves with chlorine tablets. There is no municipal system for waste management. Roads are mostly unlit and unpaved, except for one paved central road crossing the span of the island. The unlit conditions have worsened safety conditions at night, which has led to instances of violence, theft, and rape. Property rights are not secured formally and rely mostly upon word of mouth. No public transportation is available either on the island or in connection to the mainland. The boats used to travel around the island are unregulated, and face further safety concerns navigating around coral reefs and rocks. The police force is insufficient to improve safety and address crime. Furthermore, health care is constrained to three health centers on the island in Kakok, Madame Bernard, and Bois Bouton. Of the ten southwest communes surveyed in 2012 by Columbia University’s Earth Institute, Île-à-Vache had the lowest proportion (9%) using improved sanitation facilities (primarily pit latrines in southern Haiti).²⁹

Section IV.II: Historical Approaches

There have been many attempts to improve the *outcome challenges* identified above, which have varied levels of success. The following case studies provide insights as to how to improve the *process* of development on the island. The emphasis is less on *what* was attempted, but more so on *how*. As the island has struggled to develop without substantial funds, a chicken and egg problem has emerged—which comes first, development or financing? Perhaps the most comprehensive undertaking to answer this question was the 2014 national plan to turn the island into a tourist attraction. Though the intent was to attract financing to Île-à-Vache to support development, the process turned out to be much more nuanced than the Department of Ministry had anticipated.

National data on economic trends in Haiti suggest promise for tourism as a means of generating economic growth. The Harvard Kennedy School’s Growth Lab has published an *Atlas of Economic Complexity* consolidating country-wide data on export products. Exports are analyzed because they represent products of recognized value through international trade. Haiti’s export data indicates noteworthy strengths in the textile and service industries, which points to high *knowhow* in these sectors. As shown in Figure 4, 36.6% of Haiti’s exports come from the travel and tourism industry. This is the largest sector and thus a critical component of Haiti’s economy. Textiles are an additional source of substantial income, notably from knit t-shirts, sweaters/pullovers/sweatshirts, and suits. Greater diversification (and thus greater economic complexity) increases by expanding out from products where *knowhow* already exists. Figure 5 indicates that textiles and services have grown over the years for Haiti, and so suggest that for a rural community developing their economy, these two areas could provide promising focuses.

²⁹ “Integrated Baseline Study,” *The Earth Institute Columbia University*, 2013.

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- **Lessons: Ensure local voices are heard and *listen* to their needs. The community has substantial mobilization potential when engaged.**

KOPI President Jean Matulnes Lamy had spoken out against many of these concerns, highlighting problems with the land acquisition proposal. Land across the entire island was allocated for the tourism industry to expand to 1,000 hotel rooms and 2,500 villas. The population would have been removed from their rural homes throughout the island and relocated to confined living spaces. He explained:

If there's a plan to displace the population, the first thing to do is to meet with the people, show them what kind of housing you're going to give them and where. Today we must say that this wasn't done. In Île-à-Vache Farmers, we say a big thank you to the government, because in the 21st century, instead of initiating us into a series of high-level things to allow us to develop, it is initiating us into slums.³⁶

Another KOPI representative, Louis Jean Gadi, added:

Where will the population go? It's all this worry that hangs over the population. Here's why the people don't agree to this project. The population has been living here more than a century. And now, for a project to come and throw away all the people like this, not take their needs into account. Well, then, this is what has pushed the residents to protest against this project.³⁷

He also shared that the association was not against tourism but the way the state planned to impose it:

Let me say something more about this development business. It isn't that we don't really want development. The population must be integrated in the development being done. If you are doing a development, you should take into account all the impact on the population. If you come to an area and you say you're doing development, and you expel the people from the area. You're doing this development for whose profit? This is it! This is a big problem today. You see? You cannot do a development and say: 'We're developing Île-à-Vache.' You say you will develop an area. You specify the area that you will develop! And then the people allow it so their lives can improve.³⁸

In response to these peaceful protests, Jean Matulnes Lamy was imprisoned without charge by the Ministry of Tourism for six months in the national jail. 115 militarized police were stationed on the island and on February 25th, 2014, a protest against his imprisonment resulted in injury of several peaceful protesters by the police. The International Journal of Security & Development reported "excessive use of force by UDMO and BIM in February 2014 against citizens protesting the expropriation of peasants' lands for tourism development on Île à Vache in the South."³⁹

³⁶ Dady Chery, "Jean Matulnes Lamy: Haiti's 'Peasants Built Ile a Vache!' – Part II," *Haiti Chery*, Apr. 5, 2014. <http://www.dadychery.org/2014/04/05/jean-maltunes-lamy-haitis-peasants-built-ile-a-vache-part-ii/>.

³⁷ Chery, "Jean Matulnes Lamy: Haiti's 'Peasants Built Ile a Vache!' – Part I," 2014.

³⁸ Ibid.

³⁹ Stephen Baranyi, "Second-Generation SSR or Unending Violence in Haiti?," *Stability: International Journal of Security & Development*, 8(1), p. 2, <https://www.stabilityjournal.org/articles/10.5334/sta.668/>.

After much controversy, the project was terminated in 2016 after only \$8.8 of the \$250 million were spent due to the embezzlement. The funding came from the national PetroCaribe scandal, which had been fraudulently mismanaged by Haitian administrations since 2008.⁴⁰

- **Lessons: Tourism is a promising economic driver in the long-term, but problems of implementation must be addressed first. Locals *must* be the primary beneficiaries.**

More community focused initiatives provide a different model for implementation. The EDEM Foundation is preparing to open its Village for Innovation, Technology, Education, and Sport (VITES) on May 8, 2021. Located in Madame Bernard, VITES will be a center that includes a restaurant, culinary school, gift shop, art school, beauty shop and beauty school, cybercafé, computer center, and sports facility (depicted below in Figure 7). EDEM aims to provide vocational opportunities for locals and develop hospitality skills to ensure Île-à-Vache can benefit from future tourism. The center also places special emphasis on youth, providing outlets for healthy engagement in sports, social interaction, entrepreneurship, science and technology, and business, while also tapping into developing technical skills of young phone owners.



Figure 7: Plan for the Village for Innovation, Technology, Education, and Sport (VITES).

- **Lessons: Partner *with* the community to develop greater internal *knowhow*. Focus on broadening skills and providing opportunity.**

The EDEM Foundation has already successfully launched several programs to provide economic opportunities for the community. Following the 2010 earthquake, Patrick Lucien developed the business and construction plan of an eco-resort called Vacation Village with the support of the Haitian Diaspora and friends in the United States. The small resort includes a hotel and bakery, while partnering with schools and several small businesses to support young, local entrepreneurs. EDEM has learned from many initiatives previously attempted, such as a microlending program.

- **Lessons: The Haitian Diaspora continues to support efforts back home. Give voice to Haitians far and near, while supporting local partners.**

⁴⁰ Ciara Nugent, “Why a Venezuelan Oil Program Is Fueling Massive Street Protests in Haiti,” *Time*, Jun. 24, 2019, <https://time.com/5609054/haiti-protests-petrocaribe/>.

EDEM partnered with the Massachusetts’s Phillips Academy in 2010 to fund loans for entrepreneurs on Île-à-Vache. The nonprofit, Microcredit Initiative, Inc., raised \$10,000 through school fundraising and was then managed by a local women’s organization, Île-à-Vache Gathering of the Women of the South, Île-à-Vache (KOFASI). Though the program enjoyed success for several years, Hurricane Matthew devastated the island in 2016 and destroyed the assets of those borrowing. The loans were unable to be paid, which ended in the terminating the program. The program demonstrated the importance of successful partnerships which leverage the strengths and personal connections of the island. The KOFASI group running the program leveraged their relationships and expertise to select borrowers, establish the method of repayment, and set the rate of interest. Microlending programs proved to be difficult to manage through natural disasters and political instability, highlighting the need for substantial risk management. Neither HAVEN nor Fonkoze, two well-known national organizations, were able to succeed in launching their own microlending programs on the island.

- **Lessons: Mitigate risk through strong partnerships, long-term savings, and contingency plans for unpredictable circumstances.**

EDEM has also launched entrepreneurial programs. In 2013, EDEM partnered again with KOFASI and agronomist Rosner Denis Gedeon to lead a one-week training for women on how to market, produce, and sell their own products. This led to interest in the production of hot sauce, mayonnaise, and other goods. That year, KOFASI successfully partnered with the Île-à-Vache Development Group and EDEM to launch a hot sauce named Flamm (Creole for flame). In 2014, EDEM partnered with Denis O’Brien and his Digicel Foundation to support an entrepreneurial training program, Train the Trainers, conducted by the organization Être Ayisyen. The program involved 200 local youth, though it lasted only four weeks and the foundation required all funds to go towards the training. No funding could be allocated to launch startups proposed by the youth in the program.

- **Lessons: Financing must have long-term plans to fully cover implementation. Making a difference requires commitment that spans years and decades, not weeks.**

The central government has also attempted to support the island through a widespread development initiative. President Moïse launched a nation-wide initiative called the Caravan of Change in 2017, which reached Île-à-Vache in February of 2018. The initiative was a coordinated effort led by the Ministries of Agriculture, Environment, Health, and Finance to meet fundamental needs of Haitians.⁴¹ The distribution included heavy machinery, materials, and equipment including graders, compactors, excavators, and tipping trucks. According to the Head of State, the intent was to address problems inhabitants face by implementing several drinking water systems, road construction, and major electrical and agricultural infrastructure. Additionally, the Head of State hoped the initiative would help “not only to make Île-à-Vache a real tourist area, an ecological island that will do the honor to the Haitian people, but also to attract Haitian and foreign investors.”⁴²

⁴¹ “Volumes Achieved as Haiti's 'Change Caravan' Marks Its First Year,” *PR News Wire*, May 29, 2018, <https://www.prnewswire.com/news-releases/volumes-achieved-as-haitis-change-caravan-marks-its-first-year-683927781.html>.

⁴² “Haiti - Politic: The Caravan of Change lands on Île-à-Vache,” *Haiti Libre*, Sep. 4, 2018, <https://www.haitilibre.com/en/news-24048-haiti-politic-the-caravan-of-change-lands-on-ile-a-vache.html>.

The current mayor of the island, Mayor Jean-Yvres Amazan, emphasized urgent areas of intervention and expressed “hope that all sectors of the population of Île-à-Vache will mobilize as one man as part of this vast operation that will be conducted on the island.”⁴³ The project was promising; the people were being heard and were receiving assistance from the state. The central government did do substantial work, paving the central road, fixing some of the water systems, and bringing equipment such as trucks for agriculture and infrastructure needs. However, the project did not fulfill all of its promises. As the state attempted to take back the equipment, residents rioted in protest over the unfinished work. Some of the equipment was permitted to remain as a compromise, but without necessary maintenance, will soon become unmaintained and non-operational. The very promising project fell short in delivery, once again reinforcing disappointment.

- **Lessons: Fulfill promises to rebuild trust. Do not guarantee what is beyond feasible. Start small, build momentum, and maintain assets along the way.**

Mayor Amazan has also made progress on improving access to electricity. In 2019, the mayor’s office partnered with an international non-profit, Sail Relief Team, to provide and install donated solar panels. Sail Relief Team successfully provided 500 solar kits (solar panels, batteries, and inverters), supplying electricity to approximately one third of the island’s homes (installed panels shown in Figure 8).⁴⁴ The resilient solar energy infrastructure is eco-friendly, robust, and sustainable, a promising path forward for expansion. Residents have also been developing *knowhow* on how to maintain and repair the panels.



Figure 8: Solar panels installed on roof.⁴⁵

Challenges arose, however, in distribution. The intended distribution plans between the non-profit and the mayor’s office highlighted differences in interests. The mayor was encouraged by advisors to stand by his plan as the elected representative of the island. The mayor did implement his plan and had each household sign off on receiving the kit. The EDEM Foundation then helped to store the signed documentation. This data collection helped to address any concerns over distribution and provide transparency in the process.

- **Lessons: Everything should and must be coordinated through the mayor’s office. External organizations should support and help strengthen the coordinating capacity of local institutions in place. The mayor’s office should defend its authority as the lead coordinator.**

⁴³ “Haiti - Politic: The Caravan of Change lands on Île-à-Vache,” *Haiti Libre*, 2018.

⁴⁴ “Update on 2019 Activities,” *Sail Relief Team*, Mar. 3, 2027, <https://sailrelief.team/2020/03/27/update-on-2019-activities/>.

⁴⁵ *Ibid.*

These lessons are critical for stakeholders to learn from when engaging on the island moving forward. They should help inform the process for future development, starting with the binding constraints.

Section IV.III: Binding Constraints

Growth Diagnostics point to binding constraints as the first area to address because they most hold back all other growth. We highlighted many challenges above in the *fishbone diagram*, which cannot all be fixed at once. By determining the binding constraints, we can begin to address the bones that present the most pressing problems. Of the four main economic levers on the island—fishing, agriculture, commerce, and tourism—tourism provides the most potential for growth, but also the most risk. Economic formalization is an attractive first step because of the potential to attract funders and foreign investment. However, the local population cannot benefit from these initiatives before their own basic needs are met and there is sufficient training to enable participation. Based on analysis of the deconstructed problems of development, we identify basic public services—specifically water, electricity, and transportation routes—as the binding constraint. As basic services are improved, other fishbones such as education and formalization of the economy can be addressed more effectively in the future.

WATER

“It has to begin with water—getting clean potable water and clean water principles, policies, and practices.”⁴⁶ – Professor Tom Lennon

The island’s natural water supply is limited and variable. The only permanent source of water is a lake located on the western portion of the island, covering just over 1% of the territory (see Figure 9).

⁴⁶ Tom Lennon, Interview, Feb 19., 2021.

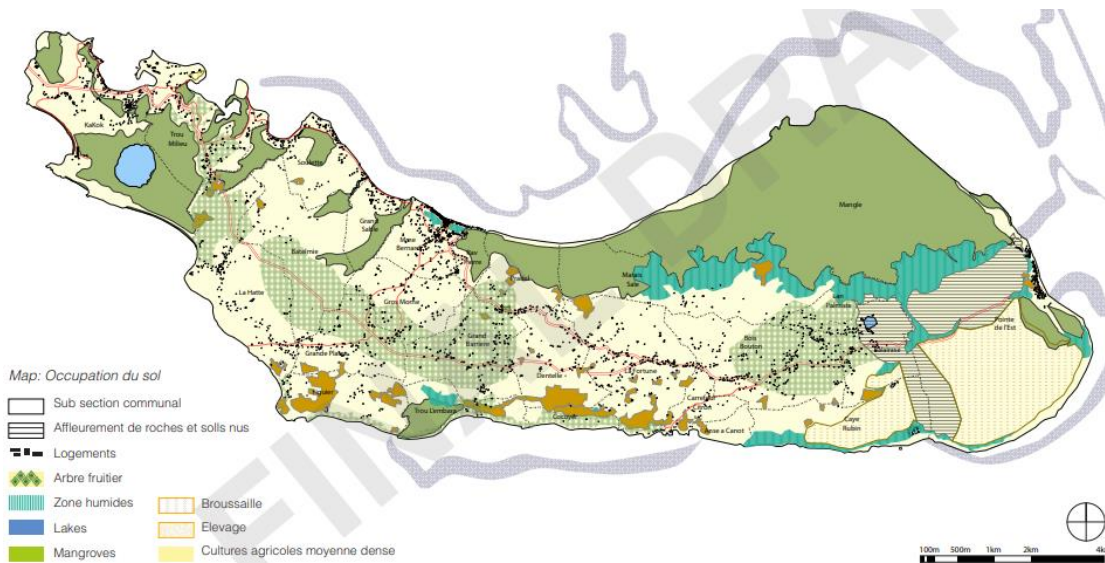


Figure 9: Land features on the island.⁴⁷

The island has small, changing streams which vary in depth based on tides and rainfall. They make the coast vulnerable to flooding especially near Madame Bernard due to low elevation. Pictured in Figure 10 is the water demand based on population density for the island.

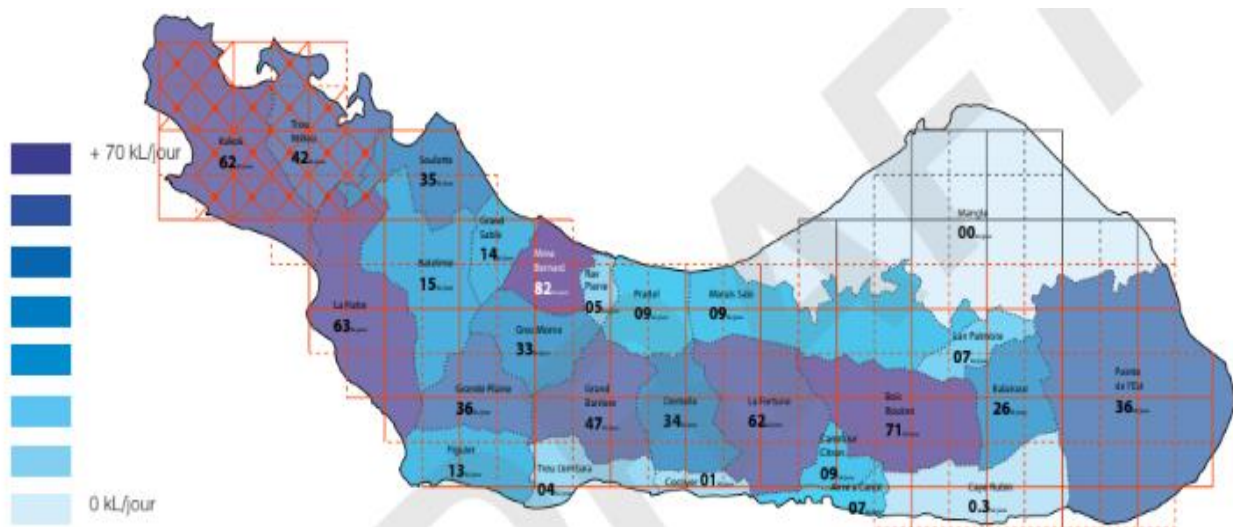


Figure 10: Image of water demand across the island.⁴⁸

The primary sources used for water consumption are wells built from rock and mortar, with pumps installed above to prevent contamination. Residents have limited access to wells, but many are contaminated and/or require maintenance, leaving an estimated only 15% of the population with a

⁴⁷ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁴⁸ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

reliable, safe drinking water source.⁴⁹ Wells are mainly managed by the community but lack strong regulation, raising concerns over quality assurance for safe water. An inventory assessment from 2012 showed that, of the seven wells tested, five were positive for either Coliform, E-coli, or both (the inventory assessment is provided in Appendix 4).⁵⁰ There have been some updates conducted by DINEPA since 2012, but there is no formal documentation available on these changes.

In addition to the threat of bacterial contaminants, water sources may be exposed to runoff, erosion from hills, waste from proximity to farmlands, flooding threats, and trash compiling. Without a waste management system, contamination from humans and households remain a significant concern. There are no restrictions in place on the proximity allowed between potential contamination sites and the water sources. Surveys from 2012 indicate latrine sites across the island with blue labels in Figure 11, which should be considered in the safe management of water sources.

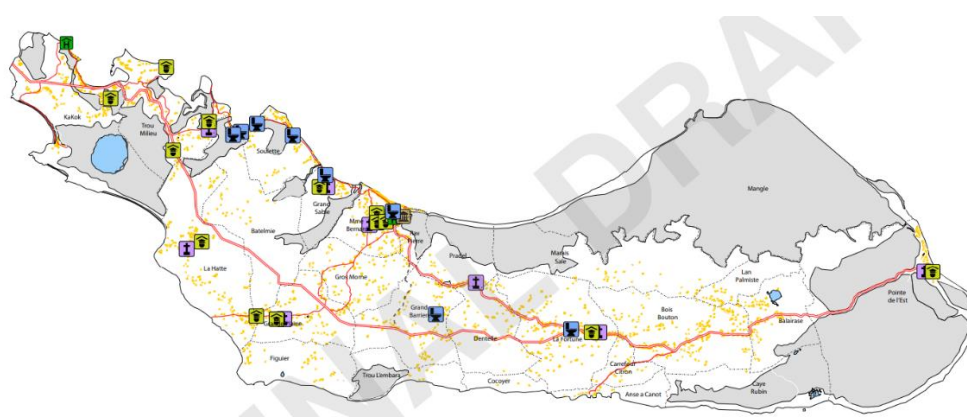


Figure 11: Latrines are depicted by the blue labels on the map.⁵¹

Another significant problem is the lack of maintenance. Many of the pumps have been broken off, leaving wells uncovered and unprotected from contamination. Furthermore, the functionality of the wells is often so poor that organizations find it more economical to replace wells rather than fix the ones already in place. An estimated 30% are currently functioning and none would be considered of quality for drinking, according to accepted global health standards.⁵² To ensure safety for drinking, most households purify the water with chlorine tablets. There is also the option to buy five-gallon water jugs from Les Cayes for approximately \$0.30/gallon.

An image of wells and pumps on the island are shown in Figure 12. The World Health Organization (WHO) recommends walking distances to water points not exceed 1000 meters (varying with topography). However, the topography in Île-à-Vache is particularly difficult with steep hills, especially in the western, more populated area of the island.⁵³ Currently, people are expected to walk

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁵² Ibid.

⁵³ Ibid.

between 20 to 40 minutes to reach a water point, which can be improved upon with a well-planned network of sites.⁵⁴

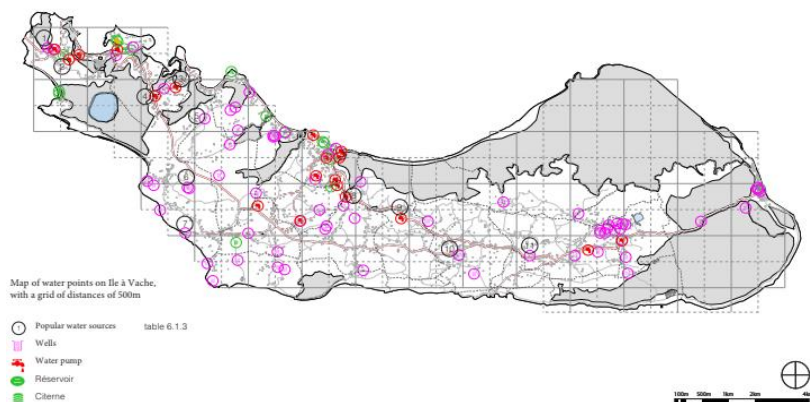
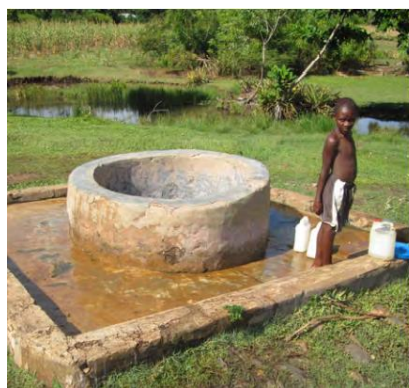


Figure 12: Wells and pumps established on the island last surveyed in 2012.⁵⁵

Naturally occurring water holes on the island are too brackish for safe consumption. Removing the salt from water would require a complex, expensive, and energy intensive purification process. There are some reinforced water holes on the island, which can be used for laundry and household work. Hard ground dug wells have poor water quality and are typically only used in low-density areas for livestock drinking water. Residents also collect and store rainwater in reservoirs and cisterns, but contamination is still a risk if the water is not stored properly. Images depicting the wells, pumps, and waterholes found on the island are shown below in Figure 13.



⁵⁴ Ibid.

⁵⁵ Ibid.



Figure 13: From left to right, the images show a well, a second well, pump, naturally occurring water hole, reinforced water hole, and hard ground dug well on the island.⁵⁶

For the time being, chlorine tablets, safely managed rainwater, and bottled water from Les Cayes are the safest options for residents. To achieve full-scale and universal access to safe drinking water, the trajectory widely accepted in the sector follows a service ladder approach. The ladder (shown in Figure 14) progresses across five rungs from 1) no service, to 2) sub-standard, followed by 3) basic, then 4) intermediate, and finally, 5) high service.

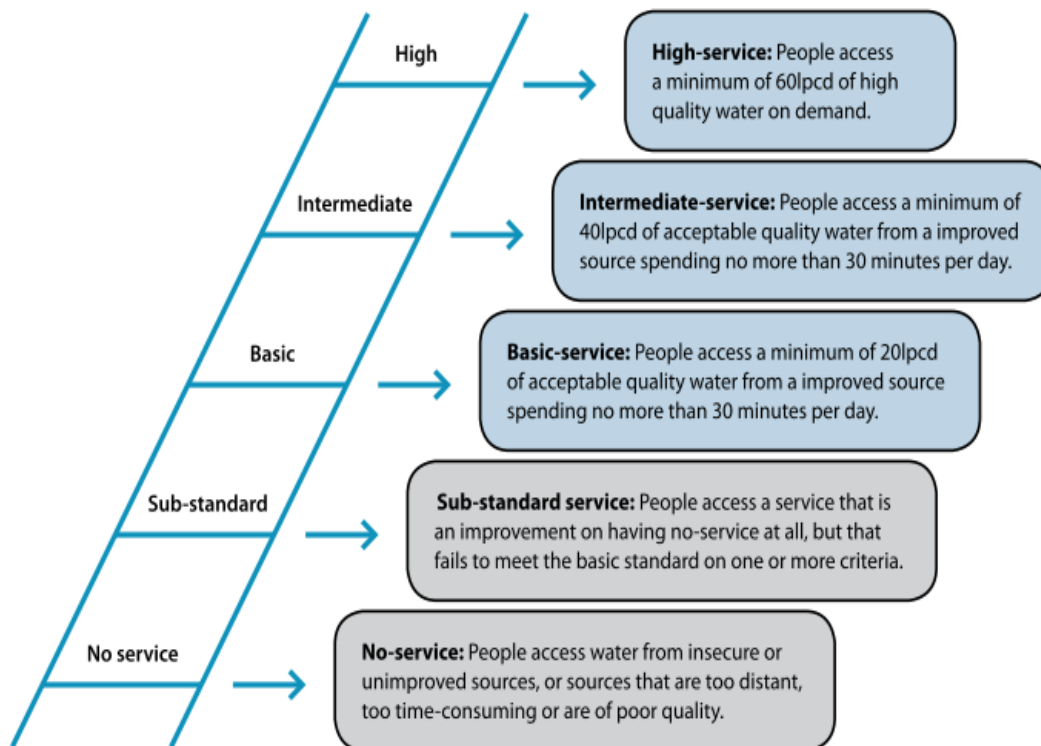


Figure 14: Descriptions of the five service levels.⁵⁷

⁵⁶ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁵⁷ Patrick Moriarty, et. al., “Ladders for Assessing and Costing Water Service Delivery,” *IRC WASH*, 2011, <https://www.ircwash.org/sites/default/files/Moriarty-2011-Ladders.pdf>.

The Joint Monitoring Programme led by the WHO and UNICEF provides a helpful framework for how to progress across the service levels, accounting for water quantity, quality, accessibility, and reliability.

Table 2: JMP requirements for improved status of service level.⁵⁸

Service level	Quantity (litres per person per day)	Quality	Accessibility (minutes/capita/day)	Reliability	Status (JMP)
High	>= 60	Good	Less than 10	Very reliable	Improved
Intermediate	Greater than 40	Acceptable	Less than 30	Reliable/Secure	
Basic (normative)	Greater than 20				
Sub-standard	Greater than 5	Problematic	Less than 60	Problematic	Unimproved
No service	Less than 5	Unacceptable	Greater than 60	Unreliable/insecure	

The service ladder model provides a realistic, achievable path without the expectation of jumping from a lower service to the end goal, a high-service. The ladder instead promotes “progress up different rungs of this ladder, rather than drawing a binary distinction between those who have reached the top and those who have not.”⁵⁹ The transition between each level requires different implementation strategies and different financial demands. The current level of services available on the island are sub-standard, either due to quality and reliability concerns (wells, rainwater) or poor accessibility (bottled water from Les Cayes). The next step would be to provide a basic service, whether that be through the government as a public utility, NGO, or the private sector. The strategic focus for the island would be to improve these indicators while moving up the rungs.

ELECTRICITY

“By virtue of being a universally distributed source of energy, the sun helps level the global playing field...”⁶⁰ – Bob Freling, Solar Electric Light Fund Executive Director

Electricity of Haiti (EDH) is the public institution responsible for providing electricity to the Haitian population. EDH is owned by the Haitian government and benefits from a natural monopoly in the country. However, EDH is highly inefficient and underfunded, and due to limited capacity, primarily provides electricity to urban areas. According to an assessment conducted by the Boston University

⁵⁸ Ibid.

⁵⁹ Patrick Thomson and Johanna Koehler, “Performance-Oriented Monitoring for the Water SDG – Challenges, Tensions and Opportunities,” *Aquatic Procedia* 6, no. 0 (2016): pp. 87–95, <https://doi.org/10.1016/j.aqpro.2016.06.010>.

⁶⁰ “Solar Electric Light Fund Now Accepts Cryptocurrency Donations!,” *Solar Electric Light Fund*, <https://www.self.org/articles/self-now-accepts-cryptocurrency-donations/>.

Institute of Sustainable Energy in 2018, only an estimated 20-40% of Haitians overall have access to electricity.⁶¹ Even for those that do have access, the service is unreliable. Rural accessibility has reached a meager 15%. In 2012, the central government published a National Development Plan for the Energy Sector and a National Energy Policy for Haiti. Both documents express aspiration to address energy issues in the country, however neither plan has been enacted. Energy remains a slogan for all elected officials (regardless of level) during their electoral campaigns, but most cannot deliver on those promises. Figure 15 provides a map of the locations covered (though not reliably) by EDH.



Figure 15: EDH electricity service connections throughout Haiti.⁶²

EDH does not currently provide any electrical service to Île-à-Vache. The island instead is powered primarily through solar energy. There are solar streetlights lining the main road, nearby Madame Bernard, and along the southern coast, with a few also offering connections for phone charging stations. However, the streetlights are vulnerable to heavy winds which occur during cyclone seasons, making even these services unreliable. Some households use kerosene lamps to provide lighting for their homes and/or have access to small solar panels with the capacity to charge a cell phone. Digicel, a Caribbean mobile phone network company, provides connectivity to the island, enabling cell phone service despite the electricity challenges.

⁶¹ Richard Stuebi and Jennifer Hatch, "Assessment of Haiti's Electricity Sector," *Boston University Institute of Sustainable Energy*, March 2018.

⁶² "Assessment of Haiti's Electricity Sector," *Boston University Institute for Sustainable Energy*, Mar. 2018, <https://www.bu.edu/ise/files/2018/03/FINAL-Haiti-Electricity-Report-March-2018.pdf>.

There are several important factors inhibiting a large-scale electricity network for the island. The price and availability of fuel presents a significant barrier, further exacerbated by the logistics of transporting the fuel from the mainland. EarthSpark International recorded fuel costs in 2015 at 210 HTG/US\$ 2.59 per gallon for gasoline and 40 HTG/\$0.49 per bidon of kerosene.⁶³ The energy demand and expenditures recorded at the time for the island are provided in Table 3.

Table 3: Expenditures on energy in Île-à-Vache, 2015 (1 US\$/81 HTG).⁶⁴

Expenditure Type	Amount (HTG)
Weekly Business Expenditures	16,000
Weekly Household Expenditures	45,000
Total Weekly Expenditures	61,000
Gasoline and Diesel Consumed Weekly	100 gal

Given these constraints, the most feasible method for increasing accessibility to electricity is through solar power. Solar energy is becoming increasingly popular worldwide as an affordable, green energy source. As solar panels have also become more prevalent on the island within the past decade, local *knowhow* has grown, too. The Solar Electric Light Fund (SELF) partnered with the state (financed through the Interamerican Development Bank) in 2012 to install solar panels for health centers throughout southern Haiti, including 18 panels for a health center in Île-à-Vache.⁶⁵ In 2015, EarthSpark International surveyed local businesses in Île-à-Vache and found all interviewed generated their own source of electricity through generators or solar panels. The survey determined there was high demand for energy in the business sector, predicting 227 buildings could be connected to a micro-grid. The primary energy users at the time were a water pumping station, hotels, a Digicel tower, a church, and ice manufacturer.

While most engineers on the island are trained in civil engineering, there are a few electrical engineers who have picked up the trade as well. Households are becoming more accustomed to maintenance, now that approximately a third of the homes have been provided solar kits for their roofs in 2019. Solar electricity also aligns well with the environmental preservation of the island. The kits are robust helping to mitigate damage as a result of natural disasters, such as cyclones and earthquakes. The primary concerns with solar power for the island are variability in sunlight (especially during rainy seasons) and the threat of theft (both the panels and batteries). Maintenance has been an ongoing challenge for the island for all infrastructure, and solar panels are no different. As greater appreciation grows around maintenance needs, solar panels become an increasingly feasible avenue for universal electricity.

⁶³ “Haitian Solar-Powered Micro-grid Potential: Town Ranking Report,” *Energy and Security Group*, 2015, http://www.earthsparkinternational.org/uploads/1/3/4/4/13442473/final_report_-_public_version_-_microgrid_development_assessment_and_ranking_in_100_haitian_towns_20171206.pdf.

⁶⁴ “Haitian Solar-Powered Micro-grid Potential: Town Ranking Report,” *Energy and Security Group*, 2015.

⁶⁵ “Haiti – Energy: 12 Health Centers of Southwest, solar powered,” *Haiti Libre*, Sep. 5, 2012, <https://www.haitilibre.com/en/news-5603-haiti-energy-12-health-centers-of-southwest-solar-powered.html>.

The EDEM Foundation’s new village, VITES, has also turned to solar power for an electricity source. VITES will be powered by 24 solar panels, each providing 250 watts of electricity. The village will be powered by two separate systems to ensure neither exceeds capacity and a backup is available. The first system will power the restaurant, conference center, and art center while the second will supply outdoor power in addition to electricity for nearby facilities. Regulators are essential for ensuring the batteries do not become overcharged, further improving the resilience of the systems. As solar power accessibility increases when more panels can be added, there becomes greater opportunity for formal employment of electrical engineers to maintain the systems. Solar power is more than a basic service—it improves overall development standards while opening new economic opportunities.

The same service ladder approach used for improving water services can also be used for expanding electrical services. For the short term, the focus should be on targeting those most in need of electricity. Given approximately one third of the households were serviced by 500 solar kits, approximately 1000 additional solar kits will be necessary to provide universal access to electricity. With the support of either the state or external NGOs, the island could seek additional donated or affordable service kits. This could provide two significant benefits—the island would improve its access to electricity and the mayor’s office would build its authority as the primary decision maker and regulator. The office would improve its ability to document, manage, and enforce initiatives, while also rebuilding trust by delivering on a top campaign promise. Meanwhile, residents would develop an expectation for electricity, increasing demand for electrical engineering as a valued skillset. A culture could be built around prioritizing maintenance to ensure families retain their access to electricity. Solar panels can last 25+ years, which is a very long-term solution that could be implemented today.

Looking more long-term beyond the life of these household panels, service quality can improve through a more efficient solar farm. The 2015 expenditure survey indicates high demand particularly from the business sector to connect to a grid. If tourism also expands over time, demand for electric would further increase, creating more reason for a grid. The island could ultimately leverage flat, sunny sites for a solar farm, led by the local government and implemented by partner organizations. As Île-à-Vache becomes increasingly trained and proficient with solar panels, managing a farm could become the long-term objective for high quality electrical service.

TRANSPORTATION ROUTES

Mobility and transportation around the island are constrained by the limited road network. The majority of roads are widened footpaths, which people, motorcycles, donkeys, and horses use to transit the island. The most common type of routes are dirt paths carved out by storm water, which then become used as footpaths. Flat paths lining the beaches are often preferred for circumventing more mountainous terrain. Routes on the eastern side of the island are often used to access the market at Madame Bernard. The paths are on higher ground, which helps to avoid flooding near coastal areas. The paths connect to the primary road on the island, which was built by the Hotel Port Morgan to connect the east and western coasts. The state recently paved this road in 2018 as part of the Caravan for Change initiative. Another secondary road spans from the Hotel Port Morgan in Kakok, passing through the center of the island to reach the east coast. The path known as the St. François Route provides access directly to the Orphanage of St. François, an orphanage built by Haven. Figure 16 shows a map and Figure 17 provides pictures of these various routes.

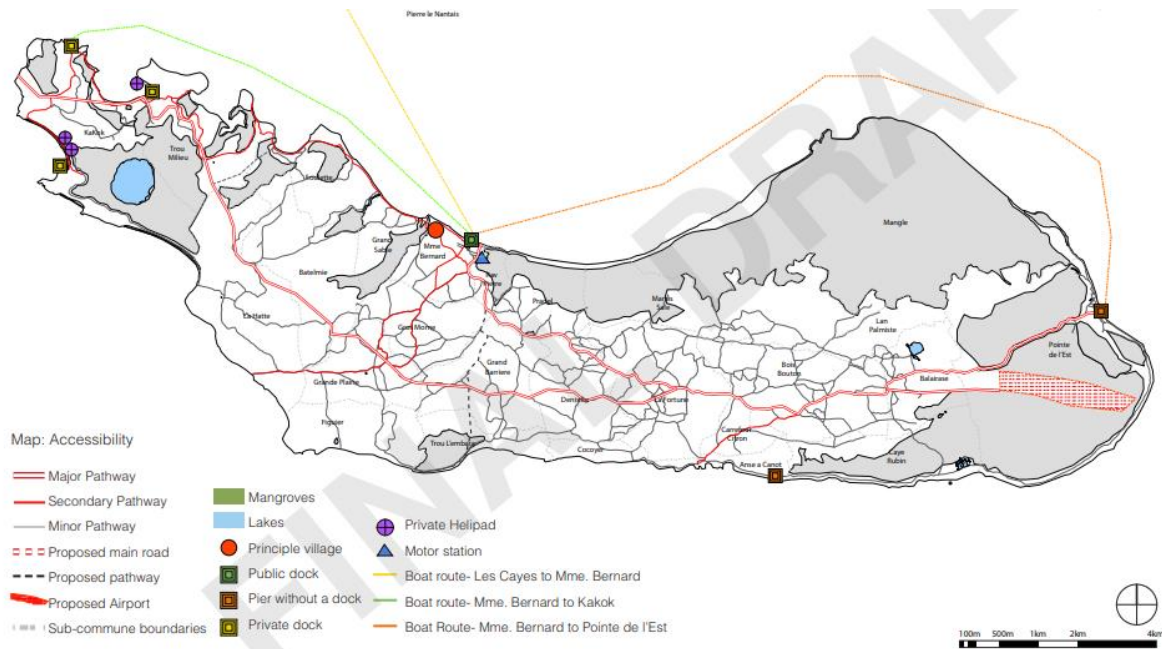


Figure 16: Land features on the island.⁶⁶



Figure 17: Pictures of different routes along the island.⁶⁷

⁶⁶ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁶⁷ Ibid.

To travel to the market located centrally in Madame Bernard, residents may have to transit up to four miles from the furthest community, approximately a two-hour walk in each direction. To assist with transportation, residents may use cattle to help carry goods and have recently tried pulling chariots behind motorcycles. Another option is to travel by boat, which presents its own unique challenges. The small motor-powered boats lack navigational equipment or safety measures such as whistles for SOS, compasses, or communication radios. Boats struggle to access the east coast due to surrounding coral reefs and have occasionally wrecked against the rocks.

Safety must be a key focus for road development. The roads do not have speed limits for the motorcycles, creating a safety hazard to residents walking. The limited street lighting also creates safety hazards at night, which has led to violence against women, the spread of infectious diseases, theft, and other crimes. Illegal drug trade, primarily cocaine and marijuana smuggled from Jamaica, have also been able to flourish in recent years. After the airstrip was left unfinished as part of the broader development plan, it became an ideal location for trade to occur at night. The island serves as a refueling depot on the way to Columbia, which has increased both the internal and external drug trade on Île-à-Vache. With one national police officer on the island, drug trade is incredibly challenging to mitigate. Roads provide much more than just a means of transportation—they also serve as indicators of safety, accessibility, and ease in mobilization.

Another key focus is maintenance to preserve the routes already established. These routes will be critical to the logistics of transporting infrastructure supplies and equipment. Flooding is a major concern due to variable rain patterns. After the state's Caravan of Change concluded in Île-à-Vache, which paved the primary road, Mayor Amazan continued this work by protecting the secondary roads from flooding. The various routes by boat or road demonstrate the ongoing need for greater regulation and safety mechanisms. Supplies and equipment will have to be transported by boat to the island, and then internally to construction sites to support infrastructure projects. Improving access to all communities, increasing connectivity, and maintaining safe roads will enable a smoother path forward towards development.

Section IV.IV: Tapping into Local *Knowhow*

The island possesses great resilience, skills, and tenacity for growth. To address obstacles to development, the island can leverage the *knowhow* that has already been well-developed:

- **Community Engagement:** The demonstrations led by KOPI in 2014 show the strength local community representatives have in influencing policy, keeping residents informed, and organizing for change. Women especially are very active on the island, with 42% participating in local organizations—the largest participation rate among southwest communes surveyed in 2012.⁶⁸ Women's groups such as KOFASI, multiple associations, and groups such as the Organization of Women in Action of Île-à-Vache show great potential for further engagement through established local organizations.

⁶⁸ "Integrated Baseline Study - Ten Communes of the Southwest Coast, South Department, Haiti," *The Earth Institute Columbia University*, Nairobi: United Nations Environment Programme, 2013.

- **Partnerships:** Over the years, many NGOs have come and gone, leaving many lessons for more effective partnership. The local government has emphasized the importance of collaboration, recognizing this as a critical skillset necessary for coordinated implementation.
- **Vegetation:** Locals transformed the beautiful, forested landscape of Île-à-Vache. The vegetation provides sustenance agriculture in addition to the natural scenery. The vegetation helped to develop the identity of the island and is a source of pride for residents.
- **Entrepreneurship:** Though financing challenges have inhibited economic growth, entrepreneurial spirit is not lacking. As the case studies demonstrate, even when financing flows into the island, often factors outside of locals' control terminates the initiative.
- **Haitian Diaspora:** Though many have left the island and even mainland Haiti in search of economic opportunities, much of the Haitian Diaspora still invests greatly in the future of the country. In 2019, the diaspora accounted for 36% of Haiti's GDP through remittances.⁶⁹ Remittances have steadily grown over the years, reaching \$3.3 billion in 2019, following a 4.5% growth from the previous year.
- **Connections to Central Government:** Relationships often serve as political currency. Senator Jean David Geneste served under the central government, bringing a wealth of insights on how state processes are managed. As connections grow between the local and central government, the island may be able to attract greater investment in community projects. The island could also partner with nearby mayors to build a coalition, finding ways to better support each other.
- **Mainland Knowhow:** Currently the island struggles with losing residents to the mainland as they become increasingly educated. But if tourism could attract more tourists, the opportunity to bring expertise *to* the island instead of *away* increases.

Section IV.V: Deepening a 'Sense of Us'

While water, electricity, and transportation routes may be binding constraints to the development of the island, an underlying syndrome makes this work extremely difficult: poor coordination. Coordination has been a persistent obstacle for the island in bringing together all stakeholders around one shared strategy. Frequently, external organizations come with their own projects in mind as opposed to working with community members to understand their interests. Organizations struggle to balance incentives to deliver short-term results without long-term sustainability. Many have not gone through proper authorities by working through the mayor's office and engaging all stakeholders. The island has seen over time that external interventions do not always place the locals' best interests at the center. Instead, we look to already established *knowhow* on the island for the best way to move forward.

Perhaps the greatest strength of Île-à-Vache is that the island was self-made. By the end of the decade, Île-à-Vache will have celebrated 100 years since its founding in 1930. As Jean Matulnes Lamy proudly exclaimed, "It's the peasants who built Île-à-Vache!"⁷⁰ The history of Île-à-Vache is rich with stories of Haitians coming from the mainland to the island and transforming the once barren island into the

⁶⁹ Sam Bojarski, "Decline In Remittances From Pandemic Could Be Hard-Felt In Haiti," *Haitian Times*, Apr. 28, 2020, <https://haitiantimes.com/2020/04/28/decline-in-remittances-from-pandemic-could-be-hard-felt-in-haiti/#:~:text=In%202019%2C%20remittances%20represented%20more%20than%2036%25%20of%20Haiti's%20GDP.&text=According%20to%20figures%20provided%20by,4.5%25%20from%20the%20previous%20year.>

⁷⁰ Chery, "Jean Matulnes Lamy: Haiti's 'Peasants Built Ile a Vache!' – Part I," 2014.

beautiful, peaceful home it is today. Hardworking farmers, fishermen, and religious leaders developed the identity of the island, and still remain great assets of Île-à-Vache to this day. Just within the last several years, KOPI demonstrated the immense coordination potential of the island to fight against injustice. This same coordination potential is what will drive islanders towards fighting *for* their future. We can build from this strength to create a path forward. Improving coordination will require external organizations to better align with the objectives locals have for the island, while the mayor's office builds its internal capacity to lead and manage stakeholders.

To address the binding constraints, Île-à-Vache must first improve *internal* coordination capabilities. The challenge is that beginning with water services is a very complex, logistically challenging, and daunting task. ***We believe the best initial step forward is to strengthen the local population's ability to coordinate, and the confidence in their ability to do so.*** Trust between the islanders and local government can be improved by accomplishing *something* together. The objective is to strengthen the connections on the island first, which will later build the foundation for strengthening external relationships with outside stakeholders.

The upcoming election of a new mayor in 2021 provides an opportunity for this strategic emphasis. The incoming mayor will have many challenges to overcome, and a strong 'Sense of Us' will better enable effective governance. The new mayor should first focus on reinforcing the collective identity of locals. By designing and implementing a project for the benefit of the community with quick results, the island may reaffirm its collective ability to shape the environment, as locals have done for many years. This can serve as not only a quick victory for the new mayor, but a spark for further development.

How do we reinforce a 'Sense of Us'? The purpose is to build a sense of ownership and empowerment. The local and state governments are underfunded and under-resourced. No international aid has been able to make a drastic impact, nor has any donation. A new narrative could be constructed that turns away from the reliance on external aid, which has proven ineffective and poorly aligned with local best interests. New norms could emerge around the expectations of local leaders, from the mayor's office, to associations such as KOPI and KOFASI, to religious leaders, teachers, and beyond. The key is '*us*'. The work is not about *what* to do, but *how* to do it; we hope to develop *processes*. Who are the local mobilizers? What problems do people care about? What ideas are there to improve?

Section V: Recommendations

Regardless of the what or who, the *how* is essential to ensuring quality, sustainable, equitable solutions for the people of Île-à-Vache. The island's strategic aspirations will require immense collaboration amongst stakeholders. A holistic approach will leverage local *knowhow*, systems, and the most important asset, the people of Île-à-Vache. All partners actively working on the island must understand how they fit into the larger picture of the development of Île-à-Vache.

RECOMMENDATION 1: PROVIDE IN-DEPTH STAKEHOLDER ANALYSIS TO ALL PARTNERS ACTIVE ON THE ISLAND. THE LOCAL POPULATION MUST BE THE TOP STAKEHOLDER.

All initiatives must prioritize residents as the primary beneficiaries. Community members are often excluded from the planning of development projects, though their buy-in is critical. Projects can serve to be mutually beneficial between funders, the private sector, and tourists, for example, but must first serve the local population.

Recommendation 1.1: The common denominator across stakeholders must be a shared commitment to serving the people of Île-à-Vache.

Stakeholders can be categorized as authorizers, designers/planners, post-design implementers, and end users/beneficiaries. The predominant authorizers of Île-à-Vache consist of the national and local government, funders, and key community leaders. Each should be consulted and involved in the design process, as case studies show that projects which neglect these authorizers tend to fail. Planning of the design often lies with the central government and funders, given the current limitations of the local government to spearhead initiatives. But to build up the authority of the local government, stakeholders must actively work through the mayor's office.

Recommendation 1.2: All initiatives *must* go through the mayor's office.

“Everything has to be done through the mayor's office. That is the right way to do it. It's a Sisyphean task but I don't think there is any other way.”⁷¹ – Professor Tom Lennon

There is a combination of 'insider' and 'outsider' stakeholders working with the island, which each offer different perspectives. For the island, we define insiders as those with a permanent relationship to the island whose future is impacted by its development. This includes residents and NGOs which have established a long-term service for Île-à-Vache. Outsiders, on the other hand, provide a new perspective but also less understanding of island dynamics. Outsiders may also have external agendas, which has the potential to lead to personal projects not in accordance with a more aligned development strategy. Historically, outsiders have not always worked together and the local government has struggled to coordinate initiatives under pressure to accept any and all aid. The key is recognizing their different priorities, expectations, and interests, and aligning them towards a common purpose.

⁷¹ Tom Lennon, Interview, Feb. 9, 2021.

NGOs work under an awful lot of external pressure. They have incentives, they have pressure to deliver certain targets, they have branding and profile issues, and the need for fundraising-- which are very, very powerful. A lot of these NGOs really survive on being able to showcase what they have done, them specifically. So to give up your identity and to work in a common framework and cause runs counter to a lot of things that make NGOs keep going.⁷²

Recommendation 1.3: The mayor’s office can and should say no. If stakeholders are not willing to work within the established authority structure of the island or to prioritize the community, a partnership is not worth pursuing.

A brief overview of stakeholders is provided below. Appendix 5 provides more detailed descriptions of the individual stakeholders.

- **Local population:** The 26 communes of Île-à-Vache represent a variety of different cultures and lifestyle preferences. Their varying interests must be represented, voiced, and the focal point of all development initiatives.
- **Central government:** Some of the most relevant ministries for collaboration include the Ministry of Tourism, Ministry of Planning and External Cooperation, Ministry of Public Works (including the water department, DINEPA), Ministry of Education, and Ministry of Agriculture. The highly centralized government is based in Port-au-Prince.
- **Regional government:** Les Cayes serves as the governing body over the southern department. As a commune of the department, Île-à-Vache is heavily influenced by the leadership and assets of Les Cayes. This partnership provides access to a wealth of economic and educational opportunities, services, and healthcare.
- **Local government:** The local government consists of a mayor and two deputy mayors.
- **NGOs:** Many NGOs have sought to improve different sectors on the island, such as the EDEM Foundation, Flying High for Haiti, Tailored for Education, Project Teach, Vision Care International, Project Picture Day, Friends of Île-à-Vache, Soul of Haiti, and Œuvre St. François D’Assise Orphanage & School.
- **Funders:** Large funders have included USAID, W.P. Kellogg Foundation, International Rotary, Ansara Family Fund, and Friends of Île-à-Vache.
- **Community representatives:** Notable community representatives include religious leaders—both from Christian and local voodoo traditions—as well as associations, such as KOPI and KOFASI. Sister Flora represents one of the most successful outsider leaders on the island.
- **Research partners:** The Merchant Marine Academy, Naval Academy, and Harvard Kennedy School have partnered with EDEM to provide academic support for research and implementation. The Merchant Marine Academy in particular conducts a yearly visit to the island to work directly with the community on various projects and document conditions.
- **Private sector:** Two tourist hotels were established on the island. The northwestern portion of the island houses these resorts, the Hotel Port Morgan and Abaca Bay Resort.
- **Tourists:** Targeted tourists include both international visitors and Haitians from the mainland.

⁷² Narracott, podcast, “Adopting a Systems Approach to Deliver the SDGs.”

The capacity to coordinate stakeholders is the linchpin to transforming Île-à-Vache. No single non-profit, foundation, or even mayor can provide a holistic solution. Coordination will depend on strengthening the authority systems already in place, developing the capabilities of the local government and supporting leadership structures. The local government should maintain a comprehensive list of all active stakeholders to better enable collaboration. Good governance is a critical component of successful development. Regardless of public or private provision, the government must play an active role in spearheading coordination and driving performance.

*Whether services are provided through public, private, community or self-managed models, or a combination of any of the above, the State has a strong role to play in regulating service provision, and ultimately has the legal obligation to and is accountable for ensuring that services meet human rights principles and standards.*⁷³

RECOMMENDATION 2: FOR THE SHORT TERM, FOCUS ON DEVELOPING INTERNAL COORDINATION CAPABILITIES THROUGH SMALL-SCALE, COMMUNITY-LED PROJECTS.

These projects should broadly work towards strategic objectives for Île-à-Vache, but their importance lies in developing the internal skillsets to design, implement, and manage an initiative. Data collection has been lacking on the island and should be greatly improved. It provides a mechanism for management, accountability, and trust building. Data also serves as the guide to continually iterate and improve, learning along the way through attempted initiatives.

Recommendation 2.1: Document *everything*.

*“Without robust data on functionality, quality, sustainability and service delivery, programs are hindered in their ability to take preventative and corrective action.”*⁷⁴

Given water is such an important constraint, the Water, Sanitation, and Hygiene (WASH) sector could provide a promising entry point. The WASH sector requires immense coordination to provide a holistic, sustainable service. The United Nations’ Sustainable Development Goals advocate for universal, equitable, safe, and affordable water services. Water service delivery is a complex process—water resources must be managed, stakeholders must be coordinated, pricing must balance ability to pay with long-term costs, and safety must be ensured.

⁷³ Virginia Roaf, et. al, “The Human Rights to Water and Sanitation,” in *Equality in Water and Sanitation Services*, edited by Oliver Cumming and Tom Slaymaker, pp. 26–45 (New York City: Routledge, 2018).

⁷⁴ “Six Year Review,” *The Water Institute at UNC*, 2016.

WASH on the island must cover drinking water for both people and livestock, agriculture, cooking, washing, and bathing. The primary agricultural crops produced are corn, yuca, potatoes, millet, wheat, squash, nuts, lettuce, tomatoes, radish, plantains, eggplants, peppers, and beans. The primary livestock on the island includes cattle—cows, horses, mules, donkeys, pigs, and sheep, and poultry—chicken, turkey, guinea fowl, duck, and pigeon. Livestock are often raised on the same land used to grow crops, closely linking agricultural and livestock water needs. Each requires different water quality (drinking water being the highest and bathing being the lowest).

As more long-term approaches will be required to fully develop a comprehensive WASH system, two potential entry points for the short-term include: 1) increasing the quantity of drinking water for livestock and 2) decreasing contamination from unmanaged waste. Livestock breeding and beef trade previously flourished on the island, attracting residents across the southern department for preferential pricing. However, water insecurity and epidemics have made livestock trade increasingly difficult. One small-scale project the island could work together on would be to engineer an artificial lake. This man-made water reservoir would ideally be located on low lying ground made from clay (which is not sandy, rocky, or dispersive) protected from waste flow.

Optimizing for ideal terrain, areas where livestock breeding is prevalent (highlighted yellow), and general household water demand is high, one promising site for the artificial lake could be along the southeastern coast, indicated below by the black X (see Figure 18). The blue X on the first image marks the location where an artificial lake was constructed by the state, which has aided in providing water to livestock in the area.

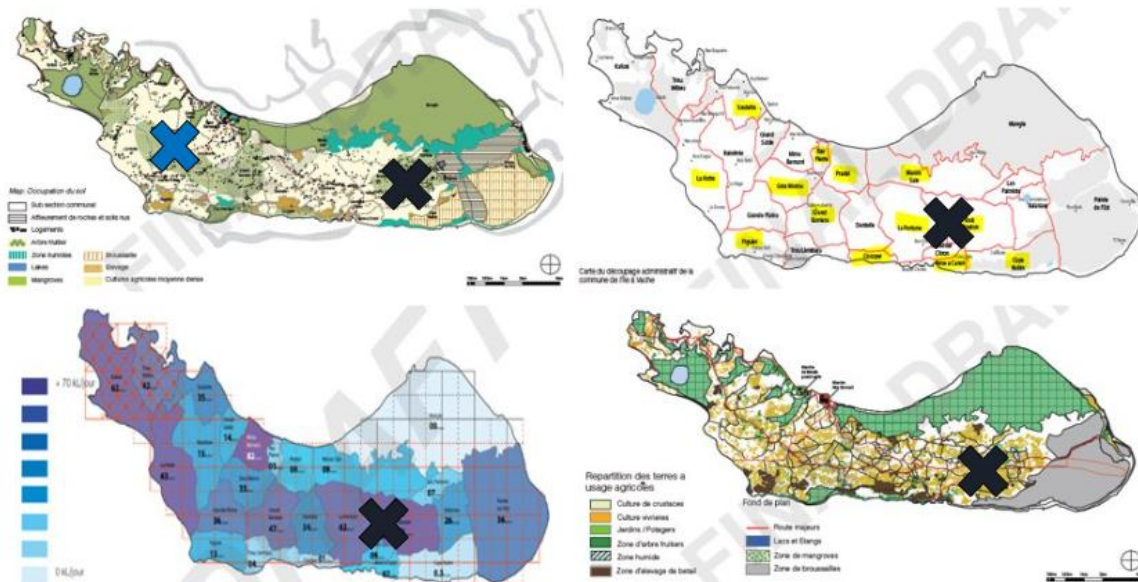


Figure 18: Optimizing for the site selection of an artificial lake.⁷⁵

⁷⁵ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

Another idea could be to improve waste management by collecting trash. By tapping into the island's natural beauty and the desire for environmental preservation, communities might be supportive of a more structured trash collection initiative. Architecture for Humanity predicts daily trash production is 0.5 kg/person/day, where 75% of waste is inorganic. The report estimates the total population produces 1984 kg/day of waste which must be managed sustainably.⁷⁶ Though there is no organized waste management and collection system on the island, there are several public landfill sites, as shown in Figure 19. The primary means for waste management is to burn trash, given the lack of alternative options and limited knowledge around the toxins released from burning plastic.⁷⁷

Rwanda provides a framework for a potential route forward. After the devastating 1994 genocide, Rwanda needed somewhere to begin to mend the country and rebuild a new identity. The proposal selected was a cleaning initiative. The country instituted mandatory workdays where residents were required to help remove trash from the streets. These monthly cleaning days were meant to do much more than collect waste. The task brought and continues to bring neighbors together around a common and relatively simple goal. People worked together in the streets, determining more efficient ways to organize, and communicating around shared problems. The workdays enabled greater coordination to solve increasingly bigger problems. The mandate, however, is not without controversy over forcing labor from citizens. For Île-à-Vache, there may be relevance if implemented *with cultural relevance*. Voluntary trash collection is already a growing trend on the island. Islanders are proud of the natural beauty they have created through years of reforestation.

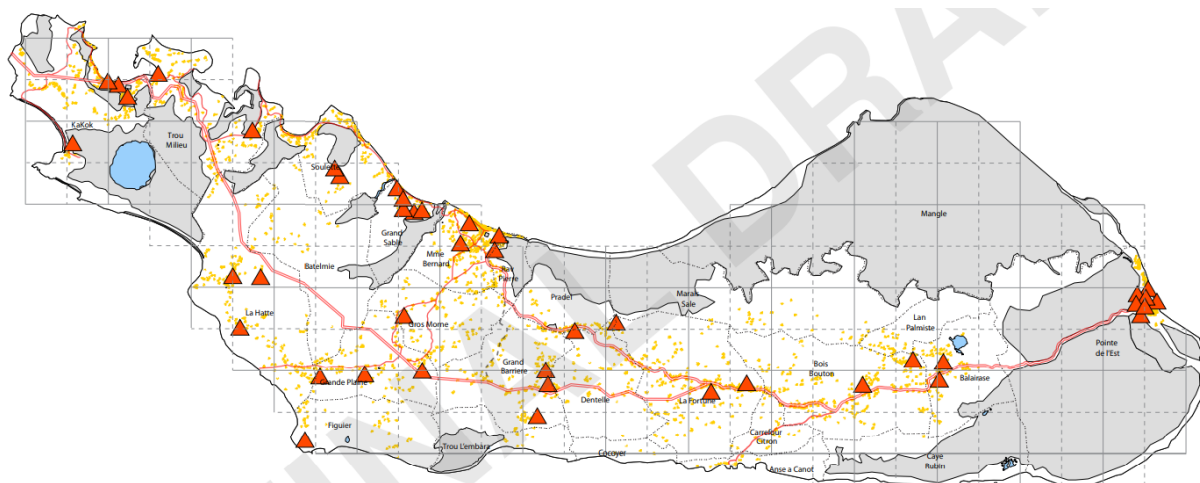


Figure 19: Landfill sites distributed around the island, marked by red triangles.⁷⁸

Community groups and schools have already begun to organize trash collection, particularly in areas planned for tourism. Other potential allies include religious organizations, established associations, and local neighborhood leaders. A Canadian family residing on the island has been known to pay residents to collect and burn trash. The possibility of paid incentives opens up further potential for results-driven financing. Investors interested in the island may be willing to pay residents for cleaning the island, better enabling their own prospects on the island.

⁷⁶ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

⁷⁷ Ibid.

⁷⁸ Ibid.

Recommendation 2.2: Communicate *everything*.

To engage with the community, the mayor's office will need to communicate effectively and often. The purpose is to rebuild trust and improve collaboration. These projects are meant to create a spark and build momentum for future development. Through these efforts spearheaded by the mayor's office, managed by local leaders, and implemented by community members, the island would not only be cleaner but better coordinated. As challenges arise, the community would help to answer the various questions that emerge. How would the program start? Who would lead it? Who would collect trash? What would happen to the trash once collected? Is the current landfill system sufficient? Where else could trash be stored? How should it be disposed? Are there any other ideas beyond burning trash? The result is a 'a minimum viable product' that constantly improves, all while developing processes for coordination. Whether managing trash collection, building an artificial lake, selling agricultural products, or any other project, *the objective is to galvanize people in a feasible, sustainable way.*

Looking long term, the opportunities of the island are endless. Île-à-Vache is small and isolated from mainland politics as a separate island. As coordination capabilities improve, the island can turn its attention to managing larger-scale, highly efficient, long-term initiatives. Locals should determine the future efforts to focus on, and the mayor's office can then *choose* partners based on aligned interests.



RECOMMENDATION 3: FOR THE LONG TERM, FOCUS ON DEVELOPING KEY PARTNERSHIPS FOR LARGER-SCALE OPERATIONS.

The first step is a plan; a plan with details, clear objectives, and a strategy.

Recommendation 3.1: Business plans help to make development goals a reality.

“Funders want to see experience, finance, and capacities. What is your goal and what project are you working on?”⁷⁹ – Ines Lozano, Flying High for Haiti Founder

Large-scale projects such as a full WASH system and eventually even a comprehensive tourism plan offer very promising long-term initiatives. As the binding constraints are addressed through resolving the process of development on Île-à-Vache, new opportunities will become feasible to implement successfully and sustainably. The partnership that the EDEM Foundation has already established with the Rotary Club suggests one potential avenue for ongoing development work. Rotary International has recently undertaken a huge initiative to provide water to all of Haiti, adopting an ambitious and country-wide approach.

⁷⁹ Ines Lozano, Interview, Dec. 8, 2020.

The program builds upon two established programs: Haiti Outreach, spearheaded by Rotary International, and Haiti National Clean Water, Sanitation and Health Strategy (HANWASH) initiated by Rotary District 7020 in the Cayman Islands. Rotary advocates strongly for working through DINEPA as well as with all other partners active in the sector. The strategies are also long-term and intentionally aligned with the Sustainable Development Goals timeline for 2030. The program facilitates a community-led initiative focused on collaboration. The connections and interest already built between Rotary International could be strengthened through a relationship with the club in Les Cayes.

Recommendation 3.2: Reports maintain momentum towards an increasingly prosperous future.

The local government is currently only responsible for providing an annual report to the state each year. The process is not ideal and frustrating for the mayor's office. The reports submitted are often not read, receive little to no feedback, and attract sparse aid. But one thing the mayor's office could do is to also submit these reports to the community. Social reports could serve as a means of further deepening the trust with the community, while also ensuring data on the island is documented particularly from the perspective of its elected leaders. As accountability is increased, *knowhow* is documented and preserved, and new possibilities are opened, the future of Île-à-Vache is limitless.

Section VI: Appendices

Appendix 1: Growth Diagnostics Methodology

Growth Diagnostics provide an economic framework to determine how to focus growth initiatives. While there may be multiple barriers inhibiting economic growth, there tends to be a particular binding constraint(s) holding back all other developments. The underlying assumption is that inputs to economic growth are complements and not substitutes; as one input improves, so do the others. The Harvard Growth Lab models this concept with a barrel (shown in Figure 20), where the limiting factor constrains the water level. By prioritizing the most binding constraint, the effect on economic growth should be the most impactful.

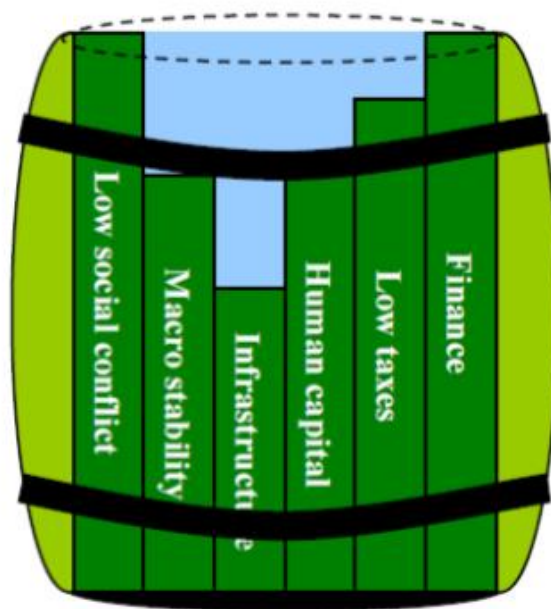


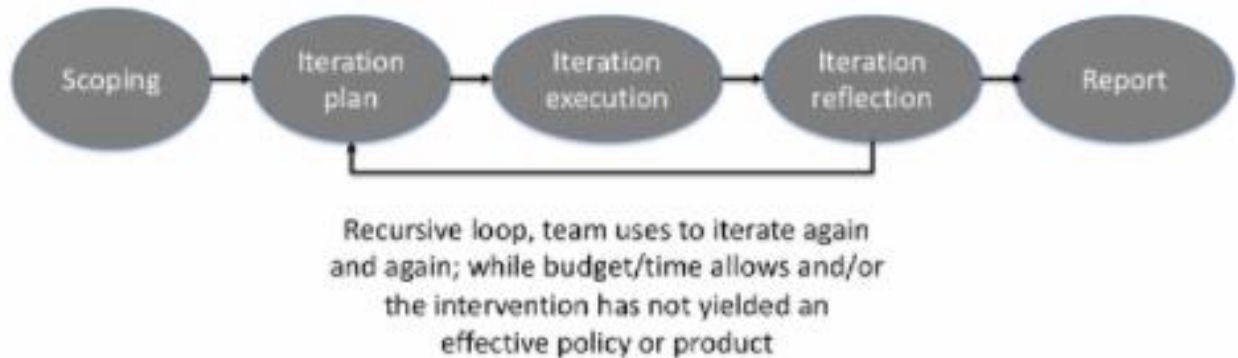
Figure 20: Barrel modeling the binding constraint.⁸⁰

Growth Diagnostics traditionally rely on extensive, country-wide economic data regarding exports. The exports represent high *knowhow* for a specific product which has value on the global scale. Since data collection is often limited in developing countries, our research adopted an approach around narratives. We sought to determine anecdotally what have been the binding factors for development on Île-à-Vache.

⁸⁰ Ricardo Hausmann, Bailey Klinger and Rodrigo Wagner, “Doing Growth Diagnostics in Practice: A ‘Mindbook,’” CID Working Paper Series 2008.177, Harvard University, Cambridge, MA, September 2008.

Appendix 2: Problem Driven Iterative Adaptation Methodology

Problem Driven Iterative Adaptation (PDIA) is a five-step process:



1. **Scoping:** The problem is defined and conditions to indicate success are determined.
2. **Iteration Plan:** Promising initiatives are investigated through short bursts of prototyping and documenting results and feedback.
3. **Iteration Execution:** Research and findings are recorded.
4. **Iteration Reflection:** Lessons learned and progress towards meeting the satisfaction conditions are recorded.
5. **Report:** A plan is developed for implementing ideas to improve satisfaction conditions.

To apply PDIA to this research, we embraced *facilitated emergence* to acknowledge uncertainty. We began by scoping the problem of development work on Île-à-Vache. We investigated barriers to economic growth through a literature review, case studies, and interviews. The different stakeholders each hold partial knowledge, like pieces of a puzzle, that we aimed to bring together to develop a comprehensive picture of the island. The objective was to provide a holistic strategy for iterations moving forward. PDIA is a continuous process which requires learning throughout all stages of iteration. The feedback loop will provide Île-à-Vache with insights on how to progress.

Appendix 3: EDEM Foundation 2015 Community Report

In 2015, the EDEM Foundation held a community gathering consisting of 24 community leaders, future political candidates, and civil society. The objective was to unify key stakeholders around the mantra, “One Island, One Vision.” Community members came together to share their perspectives on the greatest problems on the island. The topics cover education, water and sanitation, health, infrastructure/security, economy, and governance. The full report is included below:

EDUCATION Issues

Primary Level Issues:

- In addition to the materials supplied by the minister of education, there are two different systems used at the primary level using their own books and tests (Kodes and Dawil). Those systems are chosen because they come with test materials which the minister of education does not supply. Schools are free to choose the system they want and no one has taken the time to analyze if one system is better than the other
- Cost of books is skyrocketing due to middlemen making a business out of school books.
- Many schools lack sanitary infrastructure
- Many schools need to improve their infrastructure
- Lack of teacher’s training

Suggestion/Proposition:

- Standardize books and tests used at all primary schools
- Reduce the cost of books by partnering directly with printing companies and avoiding middlemen.
- Seek funding to build proper sanitary infrastructure for all primary schools.
- Setup an academic group to help develop additional classes that provide children an opportunity to relate their education to their own reality and their environment.

Secondary Level Issues

- The high school has been operating at the local national primary school since 1992 and does not have its own facility. The high school facility has been under construction for over 5 years and is still not completed.
- Apparently there is a prostitution ring happening in the unfinished building
- The high school does not provide access to the last academic year (12th grade), all students have to move to Les Cayes to complete high school.
- Education does not take into consideration local environment and resources of the kids.

Suggestion/Proposition

-
- Request that the government complete the construction of the high school and also build a new high school on the east side of the island.
 - Recruit better teachers from Les Cayes
 - Add 12th grade to the high school
 - Introduce agriculture and environmental studies at the high school level

Vocation Level Issues

- No formal vocational school on the island

Suggestion/Proposition:

- Build a vocational school in a location that is accessible to most kids.
- Setup a scholarship fund to send the best kids finishing high school to attend college in LesCayes.

HEALTH Issues

- There are only one major clinic on the island but it is in Kakok, which is on the far east side of the island
- There are no maternities on the island and sometime women and babies lose their life on their way to LesCayes
- There are no adequate transportation systems for sick patients
- Water is the major cause of sickness and most wells are drying up

Suggestion/Proposition:

- Need for 2 more clinics with adequate doctors, nurses in the center and far west of the island
- Need for at least one maternity on the island to avoid women having to take a boat trip to LesCayes to give birth
- Need a transportation system dedicated to carrying patients to the clinics
- Need to dig new water wells with a proper management team to maintain the wells and provide clean drinking water to the population

INFRASTRUCTURE/SECURITY Issues

- While a main road going from east to west is still under construction, access to secondary roads is impracticable during raining season
- There are no public transportations to LesCayes, all are small private boats usually overcrowded and not proper safety equipment
- Most homes on the island needs improvement and adequate sanitation
- No access to any energy source for basic electricity

-
- No control over who is coming in and out of the island
 - Bad location for the main public market
 - No sport facility for youths
 - No cultural center for youths

Suggestion/Proposition:

- Need to improve secondary road for access to villages not on the main road
- To protect the local environment, only government entities and police force should have access to cars on the island.
- Need for a standard ferry system for transportation between LesCayes and Ile-a-Vache
- Identify partners to help improve the infrastructure of local homes, to build sanitation facility and adequate rooms that local could rent to visitors
- Setup a brick making factory to help improve constructions on the island and create local jobs.
- Develop a plan to power homes through small power grids or individual systems using some form of renewable energy.
- Request that all visitors staying on the island for over a week be registered with the mayor's office
- Request that citizen reports all visitors they deem suspect of doing anything illegal
- Setup a phone line at the mayor's office to report any illegal activities
- Public market should not be at the center of town, center of town needs to be an attractive area for art and craft, restaurant, bars.
- Build a formal sport complex with soccer, basketball and volleyball fields accessible to all
- Setup mobile cine theater at existing facilities and help build a cultural center for the youths.

ECONOMY Issues

- Agriculture needs to be part of the local economy
- Greater support for fishermen to go deep fishing
- Lack of access to the tourism market and opportunities by all
- Better transportation infrastructure to improve local economy
- Lack of access to credit

Suggestion/Proposition:

- Access to training and seeds for local farmers
- Access to motor boat to allow fishermen to go deep fishing and take advantage of DCP (Fish Concentration dispositive tool)
- Introduce other tourism activities such as horseback riding, guided tours, inland visit, bike tours to allow youths and other access to visitors
- Boat ferry to allow visitors from the main land better access to the island for day tour

-
- Setup additional micro-credit programs around the island for small businesses.

LOCAL GOVERNANCE Issues

- Lack of resources
- Lack of trust
- Lack of communication between leaders and local community

Suggestion/Proposition:

- Identify other partners that can help in supporting the island
- Organize municipal meeting every 3 months as required
- Make use of public radio, social media to communicate the work of the mayor's office and worked been done on the island
- Respect the role of Boards of Directors of Communal Sections (CASECs) and of members of the Communal Sections Assemblies (ASECS)
- Identify sub committees to help mayor's office with collecting data on the needs of the island

RESOLUTION (SHORT TERM)

- Continue to work together and support the future mayor that will be in place in January.
- Vacation Village will make its facility available for communal administrative meetings
- EDEM Foundation will ensure the preparation of meetings, agenda and will also cover the cost of food during meetings.
- The EDEM Farm located in Pradel will also be available to members for meetings.
- The new mayor, other cartels will continue to support this process and meet even after the election.
- EDEM will research and gather data on the issues discussed and write proposals to partner organizations willing to work with the community and help solve those issues.

CURRENT ACTION BY EDEM FOUNDATION

- Survey all schools for the need of new sanitary and hand washing facilities.
- Survey the cost of books per students in all schools on the island.
- Work with Mass Maritime to bring in equipment for Agriculture and sanitary infrastructure
- Draw sample plan for sanitary and hand washing facility for the schools:

Appendix 4: Survey of Water Points, 2012⁸¹

Place	Active	Status	Description	Ph	Salinity	Coliform	E. Coli	Observed use*
Kakok Well	Active	Broken pump	Base of hill; exposed to water runoff	7	0	+	-	D, C B, W
Kakok Pump	Active	Recently repaired pump	On downhill slope; exposed to runoff	7	0	+	+	D
Trou Millieu Pump	Active	Plans for erosion control	Exposed to runoff and erosion	7	0	-	-	D, C, B, W
Trou Millieu “Broken” Pump	Active	Broken or dry; recently fixed	Farmland	7	0	-	-	W
Camila Well	Active	Large open well near broken pump	Remote location near pathways	7	0	+	-	D, C, B, W
La Seoce Well	Active	Open well	Around farm and sloping hills from south	n/a	n/a	n/a	n/a	n/a
Pradel Pump 1	Active	Hand pump	Near main road from Mme. Bernard and Pradel; low lying; flood hazard	7	0	+	+	D, B, W
La Fortune Well	Active	Large open well near broken pump	Cleaned with chlorine	n/a	n/a	+	+	D, C, B, W

*D = drinking, C = cooking, B = bathing, W = washing

⁸¹ Serra et al., “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).”

Appendix 5: Organization Descriptions

Ansara Family Fund: Jim and Karen Ansara believe deeply in the role of US international philanthropy and have dedicated their efforts over the years to bringing people together to share their experiences and inspire others to use their resources to create a more equitable and sustainable global future. They are also the founders of Build Health International.

Digicel: Phone company and philanthropic foundation. Digicel is the primary phone service company in Haiti.

EDEM Foundation: Non-profit based in Île-à-Vache to implement development programs on the island. EDEM, which translates to “Help Me,” was founded by Patrick Lucien and his wife Bernadette Lucien in 2003.

Flying High for Haiti: A non-profit organization developed to empower communities through sustainable development and to provide access to a quality education to children on Ile-a-Vache.

Haven: An Irish non-governmental organization launched in 2008 to empower the people of Haiti to build strong, sustainable livelihoods and communities. The foundation works solely in Haiti, focusing on three core development areas: water and sanitation, training and education, and shelter. These long-term, sustainable development programs and training courses promote improved health, create employment and enterprise, strengthen education, and eradicate poverty. In January 2016, Haven assumed the management and administration of Soul of Haiti in January 2016.

International Rotary Club: Rotary is an international foundation focused on impacting six core mission areas: 1) Promoting Peace, 2) Fighting Disease, 3) Providing Clean Water, 4) Saving Mothers & Children, 5) Supporting Education, and 6) Growing Local Economies.

Massachusetts Maritime Academy: Since 2011 has performed on-going site assessments coordinated with representatives from EDEM Foundation and other non-governmental and governmental organizations using Disaster Risk Management principles, processes and methodologies developed through various emergency management organizations in the US.

Ministry of Agriculture, Natural Resources, and Rural Development: Responsible for irrigation infrastructure, flood and drought-alert systems, weather forecasts, and management of hydro-meteorological data.

Ministry of Commerce: Regulates trade in and out of the country, and is responsible for formulating and implementing the Government's Commercial and Industrial Policy.

Ministry of Interior and Territorial Communities: The Ministry of the Interior is the central body whose mission is to design, define and implement the policy of the executive power with regard to the supervision of local authorities, immigration and emigration and civil protection.

Ministry of National Education: Government ministry that is responsible for determining the policies and direction of the education system in Haiti.

Ministry of Planning and External Cooperation: Responsible for development and implementation of a national planning policy. The Ministry led the initiative for Haiti's Strategic Development Plan (PSDH) released in 2012, which intends to establish Haiti as an emerging country and economy by 2030.

Ministry of Public Health and Population: The executive body responsible for formulating and implementing the National Public Health policy.

Ministry of Public Works, Transportation and Communications: Ensures the study, planning, execution, maintenance, control, supervision and evaluation of physical infrastructure.

Ministry of the Environment: Provides coordination, support, supervision, and legislation for environmental concerns; also administers educational training programs.

National Service for Potable Water and Sanitation: Serves as the main entity responsible for potable water and sanitation as a directorate of the Ministry of Public Works, Transportation and Communications. Also oversees implementation and regulation of public service providers.

Nature Conservatory: The Nature Conservatory is a U.S. charity promoting sustainable economic activity with respect for the environment and local governance. The charity first came to Île-à-Vache in 2008 and worked with the local community to support fishing and farming.

Organization of Île-à-Vache Farmers/Konbit Peyizan Ilavach: Referred to as KOPI, the association serves to represent and provide for farmer's needs.

Project Picture Day: Provides school pictures that celebrate the accomplishments and value of students in underserved communities across the globe. Project Picture Day travels to Île-à-Vache every year providing school children an opportunity to take home a professional school picture.

Project Teach/Konbit Pwof: Aims to improve the quality of education in Haiti, in particular the quality of interaction between teachers and students. Every summer, Project Teach travels to Ile-a-Vache to provide teacher's training to over 60 local teachers.

Soul of Haiti: Established in 2007 by a group of Ernst and Young Entrepreneur of the Year finalists, Soul of Haiti was an Irish non-profit organization, focused on empowering communities in Haiti through social entrepreneurship. Haven and Soul of Haiti regularly supported and collaborated on one another's projects. This development saw all of Soul of Haiti's team and projects on the ground transfer to Haven. By coming together, reducing costs and pooling resources, the strength of their impact in Haiti has grown, directly benefiting the people and communities they support.

Orphanage of St. Francis/L'oeuvre Saint Francis D'Assise: In 1980, Haven built the orphanage on the island which has been run for nearly 40 years by a Canadian nun, Sister Flora. The institution serves as more than an orphanage and also provides schooling and a medical clinic.

Tailored for Education: Provides school uniforms to children in developing countries where they are required to attend. Partnering with EDEM Foundation, Tailored for Education is providing uniforms to over 1200 children in the south of Haiti.

U.S. Naval Academy: Provides sustainable services to the island of Île-à-Vache by offering mechanical engineering students the opportunity to design tools adaptable to the island. Over 100 students have designed various tools and equipment adaptable to local needs, including projects for a motorcycle chariot manual and farm irrigation system.

Vision Care International: Travels to Île-à-Vache annually to perform over 500 eye exams and 54 surgeries in 5 days. The organization ultimately hopes to develop quarterly clinics and turn the program into a teaching clinic.

Appendix 6: Interviews

We were fortunate to have the opportunity to speak to a variety of community members to hear and share their perspective. We had the honor of interview with the Mayor Jean-Yvres Amazan; former Senator Jean David Geneste; the President of the EDEM Foundation, Joseph Saun Pierre; the Administrator of the EDEM Foundation, Sauny Pierre; a representative of KOPI, Jerome; a member of the Haitian diaspora, Edlin; and a recent high school graduate, Wener Nestor. We also accessed previous interviews published with community leaders, Sister Flora, Jean Matulnes Lamy, and Louis Jean Gadi. The quotes included in the report have been translated from Haitian Creole. We also had the opportunity to gain insights from two Rotary Club members, Peter Verbeeck and Ines Lozano, as well as Massachusetts Maritime Academy professor, Tom Lennon.

Throughout these narratives representing many different perspectives, we saw repeated calls for increasing the capacity of the local government, provision of long-term public services, inclusion of the local community, and a frustration with the lack of opportunity being offered to youth for their education and employment. We also note great inspiration from the lessons many have learned and clear, shared responses to what is needed. By having these conversations with community members and promoting their aspirations, development work becomes attainable through a collective vision. We are extremely gracious for the time shared with us.

December 8, 2020: Peter Verbeeck and Ines Lozano

Peter Verbeeck and Ines Lozano are two Rotarian members who have worked with the EDEM Foundation. Peter is currently serving as the District Governor covering S.E. Florida and Grand Bahama Island. Ines Lozano is the President of the Key Biscayne, FL Rotary Club and is also founder of a nonprofit called Flying High for Haiti.

February 7, 2020: Jean David Geneste

Jean David Geneste has served as an elected in 2006 as Senator from Île-à-Vache and Deputy Speaker of the House of Representatives in 2006. When he was elected Senator, he established the first third cycle school on the island. In 2016, he was appointed the Secretary of State for Vocational Training (under the Minister of Education). He has a degree in law as well as a master's degree in education management.

February 7, 2021: Nestor Wener

Youth in Île-à-Vache who just finished high school. He is now studying at the American University of the Caribbean in Les Cayes, Haiti. While in University, he started a WhatsApp group with his friends from Ile-a-Vache to discuss problems the island is facing, and how they can be changemakers.

February 9, 2021: Edlin

Edlin moved to Île-à-Vache from Saint Louis Du Sud when he was 10 years old. His father came at the time in response to the demand for construction workers on the island. He served as a teacher while still a student himself, and became an active community servant. His outreach continued throughout

adulthood even after moving to Chile to support his family still on the island. In 2019, Edlin established an informal group called Île-à-Vache en Route of Development to fundraise projects for Île-à-Vache.

February 9, 2021 and June, 2018: Jean-Yvres Amazan

Mayor Amazan is the current mayor of Île-à-Vache (2006-2020). Under his leadership, he has increased electricity access in the island, and has collaborated with various government ministries to build resilience, increase infrastructure development, and provide economic opportunities. Mayor Amazan's term is scheduled to end in 2021 and he does not plan to run for re-election.

February 10, 2021: Joseph Saun Pierre

Saun Pierre is the current President of the EDEM Foundation. He grew up on Île-à-Vache and became a pastor and councilor to the mayor; known as a 'friend to all.'

February 10, 2021: Jerome Genest

Jerome previously served as the Vice President of KOPI, a community organization known for speaking out against the 2013 tourism plans initiated by the central government. He moved around throughout the country growing up, but resettled in Île-à-Vache where he was born for the island's vegetation and for security (safer than Port-au-Prince). Jerome was a proponent of tourism more inclusive of the local people, and launched his own business in 1996 to offer 3 hotel rooms to visiting tourists. He is a key representative of the community and envisions a revised national tourist plan that includes and empowers Île-à-Vache residents.

February 11, 2021: Sauny Pierre

Sauny was born on Île-à-Vache in 1971 and currently serves as the Administrator of the EDEM Foundation. He previously worked at the Hotel Port Morgan before beginning his work with EDEM in 2005. Sauny expressed a love for EDEM's mission and the ability to make change within local communities.

February 19, 2021: Professor Tom Lennon

Former Coast Guard Captain and now professor at the Massachusetts Maritime Academy, Tom Lennon has dedicated much of his time in development work to Île-à-Vache. He has worked with the island for nearly a decade bringing UMass students to learn the challenges of development and make a difference. He has worked closely with the mayor's office and the EDEM Foundation to initiate many projects for the communities.

Appendix 7: Key Terms

Atlas of Economic Complexity: The Harvard Kennedy School's Growth Lab published the online database documenting export products traded internationally. The database consists of country-wide data and analysis of economic complexity as part of growth diagnostics.

Binding constraint: The economic factor which most limits economic growth and is the most pressing issue to resolve.

Collective learning: Insights gained from multiple perspectives coming together.

Diversity: Measures how many different products a country can export.

Economic complexity: Measure of the diversity and uniqueness of export products; a greater range in diversified products and more unique products produces greater complexity.

Fishbone diagram: The fishbone diagram is a tool often used in PDIA to break down a more abstract problem into tangible, smaller components which are more feasible to address. The bones help to deconstruct the problems into more specific factors.

Facilitated emergence: Recognition of underlying patterns and trends.

Growth Diagnostics: Development model which identifies areas of economic opportunity by determining the limiting constraint(s) on growth.

Knowhow: Skillsets and capabilities already developed; tacit knowledge.

Problem Driven Iterative Adaptation: Development model which addresses substantial complexity by breaking down problems into components to then solve through repeated iteration.

Ubiquity: Measures the number of countries which export a product.

Appendix 7: Ethics Statement

Our primary ethical concern revolved around developing a strategy with and for the people of Île-à-Vache, counter to imposing an external solution. Our hope was to better understand the island's history in order to learn from the past, then use those lessons to guide its future.

We aimed to represent a variety of local views to most accurately tell the story of Île-à-Vache. Because of limitations from the pandemic, we were not able to meet in person with those interviewed. We did ensure consent was given before proceeding with our conversations over the phone, and offered anonymity if preferred. However, without being able to visit the island and spend extensive time with locals, we recognize our findings are limited and cannot reflect everyone's experience.

We hope to one day be able to engage more directly with the locals while staying on Île-à-Vache. We recommend further research through focus groups, which engage multiple members of the community to share and learn collectively. We believe local voices should be at the center of all initiatives moving forward. However, we must always be cautious of respecting the time and experience of locals.

In the past, efforts have been made to learn from community members without compensation. Worse, these conversations have not always resulted in change. The island is particularly sensitive to promised interventions that have failed the people's expectations, which is extremely important for outsiders to be respectful of.

Ultimately, the development strategy proposed in this report is meant to celebrate the strength of the island and its people.

Bibliography

- “100 best beaches around the world.” *Cable News Network*. Jul. 10, 2017. <https://www.cnn.com/travel/article/100-best-beaches/index.html>.
- “Assessment of Haiti’s Electricity Sector.” *Boston University Institute for Sustainable Energy*. Mar. 2018. <https://www.bu.edu/ise/files/2018/03/FINAL-Haiti-Electricity-Report-March-2018.pdf>.
- Atis, Maxene. “The Conservation Opportunity in Haiti.” *Caribbean Journal*. Aug. 25, 2014. <https://www.caribjournal.com/2014/08/25/the-conservation-opportunity-in-haiti/>.
- Baranyi, Stephen. “Second-Generation SSR or Unending Violence in Haiti?” *Stability: International Journal of Security & Development*. Vol. 8, Issue 1, p. 2. <https://www.stabilityjournal.org/articles/10.5334/sta.668/>.
- Bojarski, Sam. “Decline In Remittances From Pandemic Could Be Hard-Felt In Haiti,” *Haitian Times*. Apr. 28, 2020. <https://haitiantimes.com/2020/04/28/decline-in-remittances-from-pandemic-could-be-hard-felt-in-haiti/#:~:text=In%202019%2C%20remittances%20represented%20more%20than%2036%25%20of%20Haiti's%20GDP.&text=According%20to%20figures%20provided%20by,4.5%25%20from%20the%20previous%20year>.
- Chery, Dady. “Fight for Haiti’s Ile a Vache: Interview with KOPI’s Jerome Genest.” *The Canadian-Haiti Information Project*. <https://canada-haiti.ca/content/fight-haiti%E2%80%99s-ile-vache-interview-kopi%E2%80%99s-jerome-genest>.
- Chery, Dady. “Jean Matulnes Lamy: Haiti’s ‘Peasants Built Ile a Vache!’ – Part I.” *Haiti Chery*. Apr. 3, 2014. <http://www.dadychery.org/2014/04/03/jean-maltunes-lamy-haitis-peasants-built-ile-a-vache-part-i/>.
- Chery, Dady, “Jean Matulnes Lamy: Haiti’s ‘Peasants Built Ile a Vache!’ – Part II.” *Haiti Chery*. Apr. 5, 2014. <http://www.dadychery.org/2014/04/05/jean-maltunes-lamy-haitis-peasants-built-ile-a-vache-part-ii/>.
- Chery, Dady. “The Fight for Haiti’s Ile a Vache: An Exclusive Interview With Abaka Bay’s Robert Dietrich.” *News Junkie Post*. Mar. 18, 2014. <http://newsjunkiepost.com/2014/03/18/the-fight-for-haitis-ile-a-vache-an-exclusive-interview-with-abaka-bays-robert-dietrich/>.
- “Daily Life and Infrastructure in Ile-a-Vache.” *Massachusetts Maritime Academy*. https://12ad5109-6f89-54cf-0f9f-c37ad96372dd.filesusr.com/ugd/608284_7e66c736d0a37c5b3c53c7a72cec9bd7.pdf.
- “Destination IAV: Corruption Killed a Dream!” *Ayibo Post*. 2019. https://ayibopost.com/destination-ile-a-vache-la-corruption-a-tue-un-reve/?fbclid=IwARITqsaGPSqJJlptQqtQkJHzzbK9_2frEYP1b4Jh7r7h-XA6LBmJdWciEVQ.
- Edmonds, Kevin. “NGOs and the Business of Poverty in Haiti.” *North American Congress on Latin America*. Apr. 5, 2010. <https://nacla.org/news/ngos-and-business-poverty-haiti>.
- “Glossary.” *Atlas of Economic Complexity*. <https://atlas.cid.harvard.edu/glossary>.

-
- “Haiti – Energy: 12 Health Centers of Southwest, solar powered.” *Haiti Libre*. Sep. 5, 2012. <https://www.haitilibre.com/en/news-5603-haiti-energy-12-health-centers-of-southwest-solar-powered.html>.
- “Haiti - Politic : The Caravan of Change lands on Île-à-Vache.” *Haiti Libre*. Sep. 4, 2018. <https://www.haitilibre.com/en/news-24048-haiti-politic-the-caravan-of-change-lands-on-ile-a-vache.html>.
- “Haitian Solar-Powered Micro-grid Potential: Town Ranking Report.” *Energy and Security Group*. 2015. http://www.earthsparkinternational.org/uploads/1/3/4/4/13442473/final_report_-_public_version_-_microgrid_development_assessment_and_ranking_in_100_haitian_towns_20171206.pdf.
- Hausmann, Ricardo, Bailey Klinger and Rodrigo Wagner. “Doing Growth Diagnostics in Practice: A ‘Mindbook.’” CID Working Paper Series 2008.177, Harvard University, Cambridge, MA, September 2008. <https://nrs.harvard.edu/URN-3:HUL.INSTREPOS:37366187>.
- “Île à Vache, Haiti.” *Massachusetts Maritime Academy*. Jul. 27, 2012. <https://blogs.umass.edu/rvillyr/2012/07/27/ile-a-vache-haiti/>.
- “Integrated Baseline Study - Ten Communes of the Southwest Coast, South Department, Haiti.” *The Earth Institute Columbia University*. Nairobi: United Nations Environment Programme, 2013. https://postconflict.unep.ch/publications/UNEP_Haiti_10_communes_Sud_2013_EN.pdf.
- Lozano-Gracia, Nancy and Marisa Garcia Lozano. *Haitian Cities: Actions for Today with an Eye on Tomorrow*. Washington DC: 2017 International Bank for Reconstruction and Development / The World Bank, 2017, <http://documents1.worldbank.org/curated/en/709121516634280180/pdf/122880-V1-WP-P156561-OUO-9-FINAL-ENGLISH.pdf>.
- Moriarty, Patrick, Charles Batchelor, Catarina Fonseca, Amah Klutse, Arjen Naafs, Kwabena Nyarko, Christelle Pezon, Alana Potter, and Ratna Reddy. “Ladders for Assessing and Costing Water Service Delivery.” *IRC WASH*. 2011. <https://www.ircwash.org/sites/default/files/Moriarty-2011-Ladders.pdf>.
- Narracott, Andy. “Adopting a Systems Approach to Deliver the SDGs E10”. IRC WASH Talk. Podcast Audio, Jan. 22, 2018., n.d, <https://www.ircwash.org/news/wash-talk-podcast-adopting-systems-approach>.
- Roaf, Virginia, Catarina de Albuquerque, and Léo Heller. “The Human Rights to Water and Sanitation.” *In Equality in Water and Sanitation Services*, edited by Oliver Cumming and Tom Slaymaker, 26–45. New York City: Routledge, 2018.
- Serra, Annamaria, Nancy Doran, Christian Beaulieu, Nazanin Mehregan, Sony Noel, Serge Dorval, Frederique Siegel, et al. “Île à Vache Technical and Participatory Diagnostic Architecture (Final Draft).” *Architecture for Humanity*. 2013.

-
- Stuebi, Richard and Jennifer Hatch. "Assessment of Haiti's Electricity Sector." *Boston University Institute of Sustainable Energy*. March 2018. <https://www.bu.edu/ise/files/2018/03/FINAL-Haiti-Electricity-Report-March-2018.pdf>.
- "Six Year Review." *The Water Institute at UNC*. 2016. <https://waterinstitute.unc.edu/sixyearreview/>.
- "Solar Electric Light Fund Now Accepts Cryptocurrency Donations!" *Solar Electric Light Fund*. <https://www.self.org/articles/self-now-accepts-cryptocurrency-donations/>.
- Thomson, Patrick and Johanna Koehler. "Performance-Oriented Monitoring for the Water SDG – Challenges, Tensions and Opportunities," *Aquatic Procedia* 6, no. 0 (2016): pp. 87–95. <https://doi.org/10.1016/j.aqpro.2016.06.010>.
- "Volumes Achieved as Haiti's 'Change Caravan' Marks Its First Year." *PR News Wire*. May 29, 2018. <https://www.prnewswire.com/news-releases/volumes-achieved-as-haitis-change-caravan-marks-its-first-year-683927781.html>
- "What did Haiti export between 1995 and 2018?" *Atlas of Economic Complexity*. <https://atlas.cid.harvard.edu/explore/stack?country=101&year=2018&startYear=1995&productClass=HS&product=undefined&target=Product&partner=undefined>.
- "What did Haiti export in 2018?" *Atlas of Economic Complexity*. <https://atlas.cid.harvard.edu/explore?country=101&product=undefined&year=2018&productClass=HS&target=Product&partner=undefined&startYear=undefined>.