

Cabaret and Arcahaie

Opportunities for the creation of a “Vocational Training Center” in the region



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1. INTRODUCTION

On January 12, 2010 the city of Port-au-Prince was devastated by a powerful earthquake that measured 7 points on the Richter scale. The Haitian government estimate that as many as 250.000 people have died and the population has suffered immeasurable economic and social damages. This event has led several organizations that provide humanitarian assistance and administer development projects (also before the earthquake), such as the UN, funding agencies, NGO's (Non Governmental Organizations), the Haitian government and foreign governments, to reevaluate their role and focus on reconstruction projects.

One of the conclusions from intense public debates that took place after the earthquake is that the country's growth and economic development is concentrated in the metropolitan area of Port-au-Prince, inflicting serious social and economic inequities on a population already castigated by poverty. As a solution, these organizations advocate, on the one hand, for the reconstruction of Port-au-Prince, and on the other hand, for extensive and long-term investments in the economic "decentralization" of the country, implementing development projects and funding on other regions of the country.

This report has two objectives:

1 – To present a series of information, compiled through field research, on the region that includes the *communes* (local administrative division) of Cabaret e Arcahaie, in the north of the *Department*, where Port-au-Prince is located. The information focuses on three specific: a) employment and opportunities in the tourism and hotel sector, b) employment and opportunities in civil construction, c) employment and opportunities in water provision and environmental projects;

2 – To present current and future measures undertaken by NGO Viva Rio and its partners to expand their operations, previously limited to Port-au-Prince and Cite Soleil, to Cabaret and Arcahaie, to promote the decentralization process.

These measures are synthesized in the "Employment Skills Training Center" that Viva Rio will implement in Cabaret-Arcahaie. This 2500 m² space will offer job skills training in the

following areas: the tourism and hotel industry, civil construction and water, sewerage and environmental technologies.

The investments are funded by the NGO's own financial resources, with donations from foreign governments, the Haitian government and private donations, including from Haitians, demonstrating people's receptiveness to the idea. Donations include: a 2500 m² training center (under negotiation), donated by the Government of the State of Rio de Janeiro (Brazil); a concession by the Haitian government of a large area, known as the public beach, on the coast of Arcahaie (under negotiation); a concession of an area of 1290 m² by a hotel owner in the region for educational purposes and environmental projects.

The *communes* of Cabaret and Arcahaie are located in the north of the *Department Ouest*, one of 10 departments that make up Haiti. Cabaret has approximately 70,000 inhabitants, spread out over a city and four "sections" (1 ere section Boucassin; 2 eme section Boucassin; 4 eme section Fond des Blancs; 9 eme section Source Matelas); Arcahaie has around 120,000 inhabitants, residing in a city (Arcahaie) and 6 "sections" (8 eme Montruis, 7 eme Fond Baptiste, 5 eme Delices, des Vases, 6 eme Matheux, 1 eme Bocassim – disputed by Cabaret). Haiti has a total population of 7,929,048 inhabitants, according to the last census conducted by IHEI (Haitian Institute of Statistics) in 2003.



2. Hotel and Tourism Industry

Tourism is the main economic activity in the region that encompasses Cabaret and Arcahaie. The coastline that stretches from Cabaret to Montrouis de Saint Marc – in the south of the Department of Artibonite –, passing through Arcahaie, boasts a large number of seaside hotels, restaurants and summer homes of Haitian families. This region – known as the *Côte des Arcadins* – has attracted these establishments because of its proximity to the cities of Port-au-Prince and Petion Ville, only an hour drive via National Highway 1, and its many natural attractions: beaches, mountains and fresh water. On weekends, the region's public and private beaches draw both Haitians and staff of international aid agencies and organizations – in growing numbers since the earthquake that devastated the Haitian capital on January 12, 2010 – looking for a break, or traveling here for work, to attend conferences, courses or meetings.



Arcahaie beach



Ocean view from Ouanga Bay, Arcahaie

This 50-km stretch of coast features different categories of hotels, each with their own private beach, including: Indigo, Xaragua, Ouanga Bay, Wahoo Bay, Obama, Kaliko and Beach Tennis Club. There is also a less exclusive public beach that is popular among Haitians and MINUSTAH (UN Stabilization Mission) staff.

Although the region already offers a number of establishments geared towards tourism, leisure and business, the sector presents ample growth opportunities, especially in terms of human resources development and new employment niches. A constant complaint of hotel and restaurant owners is the low training level of their staff. Marie Roy of the Ouanga Bay Hotel states: “our staff doesn’t have adequate training. It’s very difficult to run our business well...” It’s important to underline that most of Marie Roy’s employees, and those of the other establishments in the region, reside in the poor neighborhoods in Cabaret and Arcahaie and often live only a few hundred meters from their place of employment. The hotel owner explains that the employment of local workers isn’t only motivated by their proximity to the work place, but also by the owners’ commitment to the development of these small communities in the region. “We are very concerned about the situation in Haiti and Arcahaie. It’s also our obligation to contribute to development”, states the owner.

Marie Roy also explains that the implementation of a school for the hotel and tourism sector in the region would be very valuable, because it would contribute to “local development”, by offering education to the region's inhabitants, and would be “good for business”, by making the industry more “efficient” and “skilled”. In fact, the owner is so excited about this project that, with her husband Daniel, she is willing to donate 1 *carreau* of land (1.29 hectares), near their hotel, to the organization or individual who is willing to build a school. However, the offer is contingent on two prerequisites: firstly, the donated land has to be used to build a school; secondly, the organization in question also has to make an effort to solve the “problem of access to drinking water”, which affects the small community that surrounds the hotel and its grounds, separated only by National Highway 1.

If a hotel school contributes to the economic growth of the region, she will also provide opportunities for establishing new activities in the tourism sector. A viable and suitable opportunity would be the implementation, including by Viva Rio, of “model hotels”.

These “model” establishments would meet the following prerequisites:

- 1) Construction, implementation and operation according to environmentally sustainable criteria and principles. Part of the construction materials should come from renewable and available resources in the region. One viable option is the use of straw, commonly used for paneling, roofs and walls, and timber harvested from existing (or future) reforestation and forest management projects, such as the one funded by USAID (United States Aid) in Cabaret and Arcahaie.
- 2) Construction, implementation and operation according to socially sustainable criteria. Jobs created in the three stages of the project will employ the local population, including a number of vulnerable individuals (such as people with disabilities, women and at-risk youth, seniors, etc.), to generate income in the area and contribute to local development, preventing the displacement of the local population to the capital, Port-au-Prince, in search of work.
- 3) The use of renewable energy sources in the implementation and operation of the establishment. Haiti still uses charcoal as its main energy source, which causes serious

environmental damages (deforestation, erosion of rivers and ravines, loss of nutrients in the soil, etc.). Therefore, the use of renewable energy sources will not only address this problem, but once it has proven its economic viability and environmental and social benefits, it will also serve as a model for similar initiatives to be implemented by national and foreign government or private organizations. For the "model hotels" we recommend the use of solar panels and biodigesters; Viva Rio has already successfully implemented this system in its projects in Port-au-Prince. The use of renewable energy sources will also allow the establishment to register for a carbon credit program, contributing the income generation.

A "model hotel" would not only provide lodging for tourists, foreign aid staff and foreigners, but may also be used to accommodate other forms of tourism. One of these new opportunities is "social tourism"; foreigners traveling to Haiti to perform volunteer services would book a travel package that included a stay in one of these "model hotels". Viva Rio, as well as a number of other organizations, already have extensive experience in working with volunteers in their projects, both in Haiti and Brazil.

However, these packages aren't limited to volunteer work in social projects of interested organizations. It opens up a range of opportunities to provide foreigners with new and unique experiences, by interacting directly with Haitian culture. Cabaret and Arcahaie offer great tourism potential; the region has a large number of small communities on the coast and in the mountains that still preserve many traditional elements of Haiti's national culture. In this region we still find: a) a local rustic economy based on farming and livestock, b) traditional architecture— on the coast houses are made from wood and straw, in the mountains the houses are made from stone —, c) the history of the country, d) the national religion, voodoo.

In terms of these last two elements I would like to highlight some more of the region's characteristics. Arcahaie is a *commune* with significant historic value; its residents are very proud of the history of their community. It was here in Arcahaie, in 1803, where general J. J. Dessalines, leader of the slave uprising (1789-1804) that freed the country from slavery and French colonial rule, created the national flag, the red and blue "*bicolor*", after a victorious

battle against the French army (Dubois, 2005, James, 2000). This was such an important symbolic event in Haitian culture that every year, on May 18, the entire country celebrates Flag Day. This is one of the most important national holidays, after Independence Day, celebrated on January 1. Arcahaie commemorates Flag Day with a huge celebration, uniting locals and tourists from across the country. The event is also attended by Haitian artists and politicians, including the President of the Republic, who pays tribute to the fallen heroes and the flag.

Arcahaie was not only the place where the country's flag was created, but also the stage of important battles in the fight against slavery (in 1794) and colonial rule (Haiti became independent in 1804). Historic testimonies to these events can still be found in the mountains above Arcahaie. Fearing a new invasion by the French army, Dessalines ordered construction of several fortresses to protect the region. Standing at an elevation of 1500 meters, Fort Dwet and Habitation Lamothe are in good condition and still preserve the ramparts, walls, trenches and even cannons. The area is surrounded by the large mountain range that forms the eastern border of Arcahaie; a few rustic houses and plantations are scattered throughout this scarcely populated area. The road from Cabaret to the fortresses offers a unique experience; this hour long drive winds through high mountains and deep valleys. This landscape is a wonderful example of Haiti's unique geography, a mountain range rising up from the Caribbean Sea.



Fort Dwet in the background, in the 5th section of Arcahaie



The road to the fortresses, with the Caribbean Sea in the background

An important characteristic of Haitian culture is the voodoo worship, a collection of religious and magical beliefs and practices that grew from the encounter between European Catholicism and the various African religions in an innovative process that has been described by anthropologists as “*creolization*” (Mintz e Price, 1992). One of the characteristics of voodoo is its worship of supernatural entities and ancestors; it also has a strong family and territorial aspect. Around Cabaret and Arcahaie we find many “*ufós*” and “*peristilos*”, areas dedicated to the practice of voodoo rituals and magic, usually led by an “*ogan*” or “*manbo*” – the priests/esses – , that are also used for events, family gatherings or oracle readings.

In addition to being an important element of Haitian culture, voodoo also plays an important role in individual and collective movements that promote the value and identity of black and African culture. We see this especially reflected in social thinking and literature, for example in the work of writers like Jean Price-Mars, Jacques Roumain, Aimé Césaire and Alejo Carpentier.

When promoting activities that foster local sustainable development, it is also important to promote local cultures, not only to preserve certain aspects of a community, but also to generate employment and income.

Including voodoo in sustainable tourism endeavors could accomplish the following objectives:

- 1 – Promote the appreciation of Haitian traditional culture;
- 2 – Provide opportunities to generate income;
- 3– Reduce the prejudice against Haitian cults;
- 4 – Serve as a powerful tool to promote the value of Afro-American black culture.



"peristilo" voodoo in Fond Blanc, Cabaret



Inside of an "ufó" voodoo in Bayel, Cabaret

The implementation of a school for the hotel and tourism industry and a “model hotel”, based on local employment, should be seen as an integrated model for development (although these two concepts may also be implemented separately). However, by integrating these concepts we can create a structure for tourists and travelers in the region of Cabaret-Arcahaie that accomplishes the following goals: respect for the local economy and traditions; generate income and development for the existing economic entities and surrounding communities; implement an environmentally and socially sustainable model of local development; train residents and generate employment and income. This model will also support the principle of decentralization that has guided most of the reconstruction efforts of the Haitian government and international aid agencies after the earthquake, by implementing economic, social and environmental development projects outside of Port-au-Prince that contribute to more equitable economic growth throughout the country.

The Haitian government has taken such an interest in this idea conceived by Viva Rio that it has offered the organization a large area, located on the so-called public beach of Arcahaie. This area would be used to implement its “Employment Skills Training Center” to train the local population and develop its “model hotel” that will employ local workers, including those who have graduated from the hotel school, and will accommodate primarily "social tourists" who are concerned about the reconstruction of Haiti.

3. School for Civil Construction

Another important opportunity in the region around Cabaret and Arcahaie can be found in the civil construction industry. There are three main factors that play a role here:

1 – The region features several major construction companies

Cabaret is home to “Cimenterie National d’Haiti”, the main manufacturer and importer of cement for the entire country, an important economic player in Haiti’s reconstruction process. Other companies located in Arcahaie include “Estrella”, a Dominican construction company that is currently upgrading and expanding National Highway 1, the road that connects Port-au-Prince to the north of the country, and “City Bloc”, a vendor of construction material

that sells large quantities of foundations, lining and flooring materials to government and private construction companies in Cabaret and Arcahaie, as well as in Port-au-Prince.

2 – Road construction and paving projects are currently underway

National Highway 1, the busiest Haitian highway that connects the country's two largest cities, Port-au-Prince and Cap-Haïtien, is currently being upgraded and expanded. Along most of the highway, from Port-au-Prince to Saint Marc, in the center of Haiti, crews and equipment are working on this project. Two other highways are also under construction and being expanded. The first road goes from Cabaret to the Central and Artibonite Departments, in the east, crossing the mountainous areas of Cabaret and Arcahaie (the road that leads to Fort Dwet). The second road also departs from Cabaret and heads to the southern part of the Central Department, to its capital Mirabolais.

3 – After the January 12 earthquake, and based on proposals for economic decentralization of the country, this entire region, including the area around Croix de Bouquets, between Cabaret and Port-au-Prince, has become a priority for reconstruction and local development projects by Haitian government and foreign organizations.

The January 12 earthquake confirmed something that Haitian authorities already knew, but had mostly ignored: the extreme concentration of economic development and population density in the capital of Port-au-Prince. Approximately one third of Haiti's population lives or works in the metropolitan region (around 3 million out of a total population of 9 million, according to the most recent official census in 2003). All major companies, industry, the largest port and the international airport are located in the capital's metropolitan region. This is the result of two key factors. Firstly, Port-au-Prince is the capital of the country, which naturally leads to a significant amount of concentration as a result of the government's presence in the city. Secondly, many of the development projects managed and/or funded by international development organizations, before or soon after the earthquake, were and are based in Port-au-Prince and environs (mainly in the cities of Delmas, Petion Ville and Carrefour).

The destruction and economic, social and human havoc caused by the earthquake only exacerbated this situation and prompted international aid agencies, national and foreign

governments, the UN, funding agencies and NGO's to realize that it is imperative to invest in the decentralization of the population and the economy of the country.

Obviously, this process requires the efforts of all agencies involved, on several different levels.

The following developments have already been initiated:

- a) In name of the Presidency of the Republic, the central Haitian government declared a large part of the territory of the municipality of Croix de Bouquets, which borders on Cabaret in the north and on Port-au-Prince and Cite Soleil in the south, a public good to be used for reconstruction projects;
- b) Administrators of municipalities further from Port-au-Prince, including Cabaret and Arcahaie, have requested funding and reconstruction and development projects for their regions that have also, directly or indirectly, been affected by the January 12 earthquake;
- c) There is a movement of international funding agencies, including the IBD (Inter-American Development Bank) to contribute to the process of decentralization, by offering lines of credits for projects outside of Port-au-Prince;
- d) There is intense internal debate in the clusters organized by the UN after the earthquake on decentralizing projects and funding in Haiti in the next few months and years (clusters on agriculture, WASH, child protection, early recovery, shelter, health, food).

The entire construction and reconstruction process described above requires labor that is specialized and skilled in civil construction. There will be a large demand for foremen, carpenters, metalworkers, etc., to work on current and upcoming projects. Viva Rio has experienced first-hand the lack of skilled labor, both before and after the earthquake, in the implementation of its projects that require construction and demolition services, such as the installation of water capture and distribution structures, the construction of biodigesters, the construction of its community center in Port-au-Prince ("Kay Nou", in Bel Air neighborhood). Now more than ever, Haiti has an urgent need for skilled labor. In other words, the lack of skilled workers is part of the problem that currently affects Haiti.

That's why Viva Rio and funding agencies, such as the IBD, advocate that organizations involved in the reconstruction process and the development of new projects in Haiti must invest in the training of workers for civil construction. The implementation of a school for civil

construction in the "Employment Skills Training Center", which will be set up in the Cabaret-Arcahaie region, will meet a number of the local and national requirements and needs.

The implementation of this kind of school will, a) address the local employment needs in Cabaret and Arcahaie; b) address the demand for skilled labor in current and future local and regional reconstruction and development projects; c) promote the decentralization advocated by Haitian authorities and international development staff, as its implementation outside of Port-au-Prince would contribute to local development; d) contribute trained and skilled labor to government, private sector and international aid projects in the regions most affected by the earthquake, as Cabaret and Arcahaie is only a 40-60 minute drive from Croix de Bouquets and Port-au-Prince; e) contribute to the professional development of the population, income generation and local development, as most training courses of the construction module and hotel and tourism industry model will be attended by residents from Cabaret and Arcahaie; f) provide continuity for the activities that Viva Rio has initiated since its arrival in Haiti, in 2004, and after the January 12 earthquake, by training workers who can then be employed in projects to construct biodigesters, water services infrastructure, facilities, etc.

4. School for Water, Sewerage and Environmental Technologies

The third module of the Employment Skills Training Center will promote technologies for capturing, treating and distributing water, as well as techniques for restoring and protecting the environment, with a special focus on the use of alternative energy sources and reforestation.

It's worth noting that Viva Rio has extensive *expertise* in these areas. Since 2006, the organization has developed a series of projects in Port-au-Prince, including: the distribution of drinking water in Grand Bel Air, Port-au-Prince, through a network of cisterns that capture rainwater, and kiosks that serve a population of approximately 128,000 inhabitants; a reforestation program in Bel Air neighborhood, as part of the "Bele Vet" project that calls for the UN to reclassify the neighborhood as a "green zone" (the region is currently classified as a "red zone", which not only stigmatizes the population, but also has economic consequences by discouraging potential investors or funders of new projects); a biodigester construction program, also in Grand Bel Air, to assist in the collection of human waste from residences and,

after January 12, also from refugee camps, and diversify the energy supply of the region by producing gas.

The implementation of a school for water and environmental technologies in Cabaret-Archaise will also promote the abovementioned environmentally sustainable practices in other areas of Haiti, contributing to local development and decentralization. It will also create new initiatives and employment opportunities in the region's existing water distribution and environmental projects.

a) Structures and technologies for water services in Cabaret

According to recent municipal data, Cabaret has a population of approximately 70,000 inhabitants. The current water distribution structures in the region give the population sparse and unequal access to water. There are 4 separate systems that distribute water to the entire municipality: one is managed directly by the municipal government; the second one is managed by 2 local committees; a third one is managed by AIPA (Association of Irrigators of the Archaise valley); a fourth one is composed of private individuals who capture water from wells ("*puis*") or springs ("*sous*").

The Municipal Water Supply

The municipal system is supplied by a "*forage*". Water is obtained from 10 wells ("*puis*") in the area around the Torcelle River. This water is then transferred to a reservoir on the outskirts of the city, where it is treated with chlorine (currently suspended). From the reservoir, the water goes directly to homes or one of the 28 public *kiosks* in the municipality (most are located in the downtown area and the 2eme section and 1 eme section).

The pipe ("*tyo*") provides direct water service to 900 homes, or 900 families as the municipal governments prefers, out of a total population of 70,000 residents. The price of water varies according to the level of control that is exercised by the "*mairie*" in its distribution. "Controlled" residences pay a fee of 50 gourdes per m³ consumed; "uncontrolled" residences pay a flat fee of 225 gourdes per month, regardless of the amount of water consumed.

According to the municipal engineer responsible for water supply, the system suffers from five major problems: 1- very limited reach; 2 – intermittent distribution, caused by the limited amount of water obtained from wells and the lack of funds to purchase fuel to operate the system’s pump; 3 – overdue fees, especially after the January 12 earthquake; 4 – a lack of specialized labor in areas of water treatment and sewerage (according to the engineer this problem affects all systems, including the committees and AIPA); 5 – deficiency in water treatment, starting with the addition of chlorine. The engineer also states that water from wells, municipal or private, requires treatment as it is contaminated by coliform bacteria from poorly managed latrines (according to a municipal study, confirmed by an Oxfam study of the quality of groundwater, conducted in 2008).

The kiosk system suffers from the same problems; although the water is distributed differently, it comes from the same source. It’s important to emphasize that because of the water scarcity, the public kiosks and residences only receive water periodically; each area of the city is serviced on a different day of the week. The cost of water at the “kiosks” is 1,50 gourdes for 5 gallons (1 boukite).



Municipal Water “Kiosk”

The Committees’ Water Supply

There are two local committees, divided into subcommittees, independent from each other and autonomous from the municipal government, who are responsible for water distribution. One is located in the regions of Cazale and Fond Blanc, in the northern part of the *commune*, intersected by the Torcelle River; the other committee operates in Bretelle, in the northeast of the *commune*, intersected by the Bretelle River. The committees are composed of members elected by residents of the region, and are under the authority of a local administrative council (CASEC de Fond Blanc), the lowest level of political administration in Haitian government. It is composed of 3 elected members who serve a four year term and manage the “9^{eme} section communale”.



Cazale and Fond Blanc Valley, Cabaret

Unlike the municipal system, the water is directly captured from springs (“*sous*”) in the mountains. After the water is captured at the springs (“*sous*”), it is stored in reservoirs and distributed through a network of public water fountains (“*fontaine piblik*”) or pipes (“*tyo*”) that supply the homes directly, in case of Cazale; in Bretelle, there are 10 “*fontaine piblik*” (a wall with taps). Both systems distribute the water free of charge. Maintenance of these systems is provided through partnerships with the public and private sector (DINEPA is restoring the Cazale system after damage by floods that plagued the region in September of 2008; a similar project was carried out in Bretelle by OXFAM, also in 2008). In Cazale, the water is chlorinated

and undergoes a quality check. However, this only occurs when chlorine is available, which isn't always the case, according to data obtained from Cabaret's municipal government. The Bretelle system undergoes no treatment whatsoever, according to the municipal government.



“Captage” system at a local spring, Cazale, Cabaret

It's important to underline that, in the case of the Fond Blanc and Cazale system, only 3 “sous”, out of more than a dozen, possess the right infrastructure for capturing water. According to preliminary calculations by hydrology experts of Viva Rio, just one pipe that could divert the water that spills from the capture system in one “sous” would be enough to supply 10.000 inhabitants, based on a flow rate of more than 30 m³ per hour (due to technical reasons, it was not possible to make calculations for the entire system at the time of the study). The 4^{eme} section communale de Fond Blanc, which also encompasses Cazale, as well as other communities, has approximately 25,000 inhabitants, according to CASEC data. This means that if it was possible to install a capture system in more wells in the “4^{eme} section”, there would be enough water for all of Cabaret, with its 80.000 inhabitants.



“Fontaine piblik” (public water fountain) in Fond Blanc, Cabaret

AIPA Water Supply

AIPA is an association of 12,000 farmers who live in the large valley that stretches from Cabaret to Archaie. According to its president Karl Moreau, the Association of Irrigators of the Archaie valley, as the name says, is the organization responsible for managing and administrating a large network of canals and reservoirs used for irrigating most of the farmland (“jardin”) in the valley. The association was founded in 1997. The canals are a bit older and were constructed in 1989-1991 by the Ministry of Agriculture, with funding from the French Development Agency (AFD), the Inter-American Development Bank (IBD) and the FAO (UN Food and Agriculture Organization). AIPA also states that the canals belong to the Ministry of Agriculture, but are managed by the association.

The canals and reservoirs obtain their water from 4 rivers in the lowlands around Cabaret and Archaie: the Bretelle and Torcelle rivers, in Cabaret; the Courjolles and Matheux rivers, in Archaie. The Bretelle River has a reservoir with water capturing capacity and a system of canals (also called “rive”) that fans out from here. The other rivers also each have a reservoir, with two “rives” that spread out from here, one along the right bank, the other along the left bank, forming a total of 7 systems or “rives” (Bretelle = 1 system, Torcelle, Courjolles and

Matheux = 2 systems each). Throughout the valley, each system flows into larger main canals and then into smaller secondary and tertiary canals, located at the end of each “rive”.

Although the water that flows through these canals is intended to be used exclusively for irrigation, Moreau states that the population also uses the water for other purposes, such as drinking or bathing. The president of AIPA also states that this number is decreasing. "Today only 10% of water recipients use the water for these purposes."

Despite this statistic, we still see a large number of people, especially children, bathing in the narrow canals. In terms of drinking water, both Moreau and Dijot, the municipal engineer responsible for water distribution, state that the water from local rivers is unsuitable for drinking.

The AIPA manages its irrigation systems through a complicated organizational structure. At the base are farmers, organized in “*comités de quartier*” (or “*groupements d’usagers*”). Each committee has three members elected by the residents of a specific “*quartier*”; with 150 *quartiers* there are 450 members in total. Above these committees are the “federations” of the “*rives*”. Each “*rive*”, which includes a certain number of “*quartiers*”, has a “federation”, with a total of 7 “federations”, each with 7 elected members. For example, the *Federation Rive Gauche Torcelle* has 7 members and 11 committees (with 33 members in total). Above these two structures is the *Comité Central de L’Association des Irrigants*, with 7 members, and the General Assembly, in which the 450 committee members participate. All members are volunteers.

Parallel to this structure, there are also paid AIPA staff, including secretaries, maintenance staff, “*policier d’lo*” (water police)¹ and fee collectors. To support this staff team and maintain the canals, the association charges its members an annual fee: 400 gourdes per “carreau” of land per year.²

Despite these maintenance funds, the AIPA administrators complain that most canals are in poor condition, either damaged or clogged by sediments produced by human activities or

¹ Staff responsible for inspecting water use. Moreau explains that it is common for users to consume more water than they are entitled to, impacting other users. To prevent this, these “police officers” monitor water use and follow up on complaints about water misuse.

² 1 carreau = 1.29 hectare

rains. Other ongoing complaints aren't directly related to the water supply or the canals, but reflect the ongoing concerns of farmers. These include: pests that affect the farms (especially banana plants); the lack of machines and equipment to work the land; flooding in the rainy season; a lack of infrastructure to retain water for the dry season.³

AIPA states that, even with these problems, the irrigation system is an important tool for increasing the productivity of the land. According to the Association's data, non-irrigated land produces between 7 and 9 tons of bananas per hectare; whereas irrigated land produces 12 to 14 tons of bananas per hectare (1 hectare = 10,000 m²), an increase that may be as high as 100%.⁴



AIPA irrigation canal, Cabaret

a) Infrastructure and technology for water services in Arcahaie

³ The rainy season begins in April-May and lasts until November; the dry season begins in December and lasts until March-April. On average, in the rainy season the canals contain more than twice the water than in the dry season.

⁴ Banana is the main crop in the region. Farmers also grow corn, tomatoes, mandioc, beans and rice. There is also a little bit of sugarcane, but members state that its production is declining.

According to local government, Arcahaie has a population of approximately 120,000 inhabitants. Its water distribution infrastructure can be divided into 3 groups: one is managed directly by the municipal government, a second is administered by AIPA (as explained above), and the rest consists of privately operated systems.

The Municipal Water Supply

The Arcahaie municipal government has two water treatment and distribution systems, although only one is currently operational. Each of these two systems consists of a “forage”, which includes one or more wells (two wells in the case of the Saint Tarde system, inactive), a reservoir, public water kiosks, and a network of pipes that transfers the water to the reservoirs, the kiosks and private homes (this includes only a small number of homes, but there are no official statistics on the numbers of residences served). According to the municipal government, the systems, including the kiosks and residences with water service, supply water to approximately 10% of the population of Arcahaie, covering part of two “sections communales”, Boucassin 1 (in Arcahaie) and Des Vases, and part of the city of Arcahaie, out of a total of 6 “sections communales”.

The system currently has between 20 and 25 kiosks. According to M. Lamour, responsible for the municipality’s finances, these kiosks operate, on average, only two days a week, because of the lack of funds to purchase gasoline to operate the pump to extract the water from the wells. The water at the public water kiosks is sold for 1 gourde per “*boukite*” (approximately 18 liters). Those who receive water at home pay according to another price mechanism: 1 – those with a meter at home pay 58 gourdes per m³ consumed; 2 – those without a meter pay 137,50 to 330 gourdes per month, depending on the pressure used to distribute the water.

Other water structures

The remaining 90% of the population of Arcahaie (90%) has to access its drinking water or water for other uses in a number of different ways. Some obtain their water from the two

rivers, the Courjolles and the Matheux, that flow through the municipality, primarily for bathing, washing and cooking.



Courjolles river, Arcahaie

However, the municipal government states that the untreated water is also frequently used as drinking water, especially by children and the poor. The same rule applies to the wells “*puis*” and springs “*sous*” throughout the region. Although this water is mostly used for bathing and cleaning, it is also commonly used as drinking water, especially water from springs “*sous*”, and in particular by those who live in remote mountain villages on the eastern border of Arcahaie that are almost completely devoid of any water facilities. There are a few exceptions, such as in a small village in Baptiste, where NGO’s built a small network of water kiosks.

These springs (*sous*) are also the main water source of communities and establishments in the lowlands by the ocean, further from the city of Arcahaie; these consumers range from elegant summer homes and hotels along the *Cote des Arcadins*, to small villages whose residents live off fishing or farming, or are employed by the local economy.



Montruis de Arcahaie

In areas such as Montruis de Arcahaie, water is captured from the *sous* and transferred to the villages or constructions through pipes (“*tyo*”) that run from the mountains to the sea. Sometimes the water is free, if a system belongs to one person or one establishment. In other cases, there is a fee as high as 1500 gourdes a month for water supplied by a privately built structure (capture system, pipes and, in some cases, also the kiosks). There are also examples of privately built water distribution systems that provide free water services to nearby communities, like in the case of a construction company located on National Highway 1, close to Montruis, that provides water trucks to nearby villages.

However, these urgent water supply issues can’t be addressed separately from environmental issues, particularly when forests and forest coverage are involved. Most Haitian authorities and international development agencies are fully aware of the fact that most of the vegetation and forest that once composed Haiti’s biomes has been almost completely destroyed. This has been (and still is) the result of the country's high use of charcoal for energy production. When visiting rural communities, it’s not uncommon to see peasants make charcoal by letting tree stumps and branches smolder for days under a layer of dirt.

The destruction of the native vegetation has major social and economic consequences for rural and urban populations that go far beyond the environmental damages.

To name just a few:

- 1 – The elimination of fruit trees that provide an important food source, exacerbating the social conditions in a country already plagued by hunger;
- 2 – The removal of the layer that holds the nutrients in the soil, which becomes depleted and less productive;
- 3 – The erosion of rivers, ravines and hillsides in a country that already has a history of flooding caused by heavy rainfall and hurricanes;
- 4 – Less water retention in the soil, which reduces water levels in rivers and groundwater.

Therefore, the construction of infrastructure for water supply and treatment or the training of people who will build these facilities has to focus on the associated environmental risks and issues that are related to water use. Environmental, economic and social sustainability requires an integrated approach of the issues and problems that affect Haitian society as a whole, from the capital of Port-au-Prince to the small villages on the ocean or in the mountains of Cabaret and Arcahaie.

However, when the agenda addresses water and, especially, the expansion of existing infrastructure, we also need to include issues and solutions related to reforestation and the preservation of the existing vegetation in the lowlands and mountains of Haiti. Cabaret and Arcahaie are no exception to the rule. They have been, and continue to be, devastated by human activity. But they could be a place where solutions to mitigate and resolve the problem flourish.

This is already happening. Although efforts have been modest and insufficient, a number of reforestation projects are currently underway in the region. USAID finances a project in the region that encompasses the Courjolles and Mathieu river basins, in Arcahaie. The *commune* also features a private initiative, developed by an agronomist who lives in the city and a local community, near the previously mentioned Hotel Ouanga Bay, that promotes the cultivation of fruit trees on small family lots.

Although there are only a few projects currently underway, both the local authorities and the region's inhabitants are very much aware of the magnitude of the issue that needs to be resolved. It's common to hear rich owners of summer houses and hotels on the *Cote des Arcadins*, as well as poor peasants say things like, “we need to protect our rivers”, or “we have to reforest the hillsides and mountains”. This issue, with its problems and solutions, becomes even more relevant in Cabaret and Arcahaie because this region is, still, rich in water and could become a great laboratory for projects, initiatives and experiences that lead the way to a solution for Haiti's environmental problems.

In addition to addressing water and forestry issues, any comprehensive environmental discussion also needs to focus on energy and its impact on water and forests, and how it relates to human activity. Haiti's enormous loss of vegetation, which resulted in the deterioration of its water supplies, has mainly been caused by the demand for energy to generate heat for cooking. Therefore, when promoting the careful use of water resources, and the implementation of projects to preserve and replant native flora, we also need to address the rational and sustainable use of energy. There is no point in planting a tree today if it will be chopped down tomorrow to produce charcoal. But if we are able to offer renewable alternatives for the production of energy, the solutions, to both problems, will emerge.

Therefore, the goal of Viva Rio is to expand its projects to Cabaret and Arcahaie and address the following issues, using an integrated and environmentally sustainable approach:

1- capturing, treating and distributing water; 2- reforestation of small family owned lots, hillsides and river basins; 3- the construction of biodigesters for the production of energy and gas.

As a first step, this expansion will implement a module within the Employment Skills Training Center that focuses on water and environmental protection technologies, with a specific emphasis on issues related to reforestation and the use of renewable energy sources.

With the creation of the Employment Skills Training Center and the implementation of the module for water and environmental technologies, Viva Rio will be able to: 1- contribute

directly to local development and the resolution of local environmental problems, by training specialists and working in partnership with local government and private entities; 2 – assist in promoting water and environmental technologies, both at a local and national level; 3 – transform the training center in the region of Arcahaie and Cabaret into a laboratory of best practices for water distribution and environmental development, and become a model and reference for governments and international aid organizations.



Bayel, Cabaret

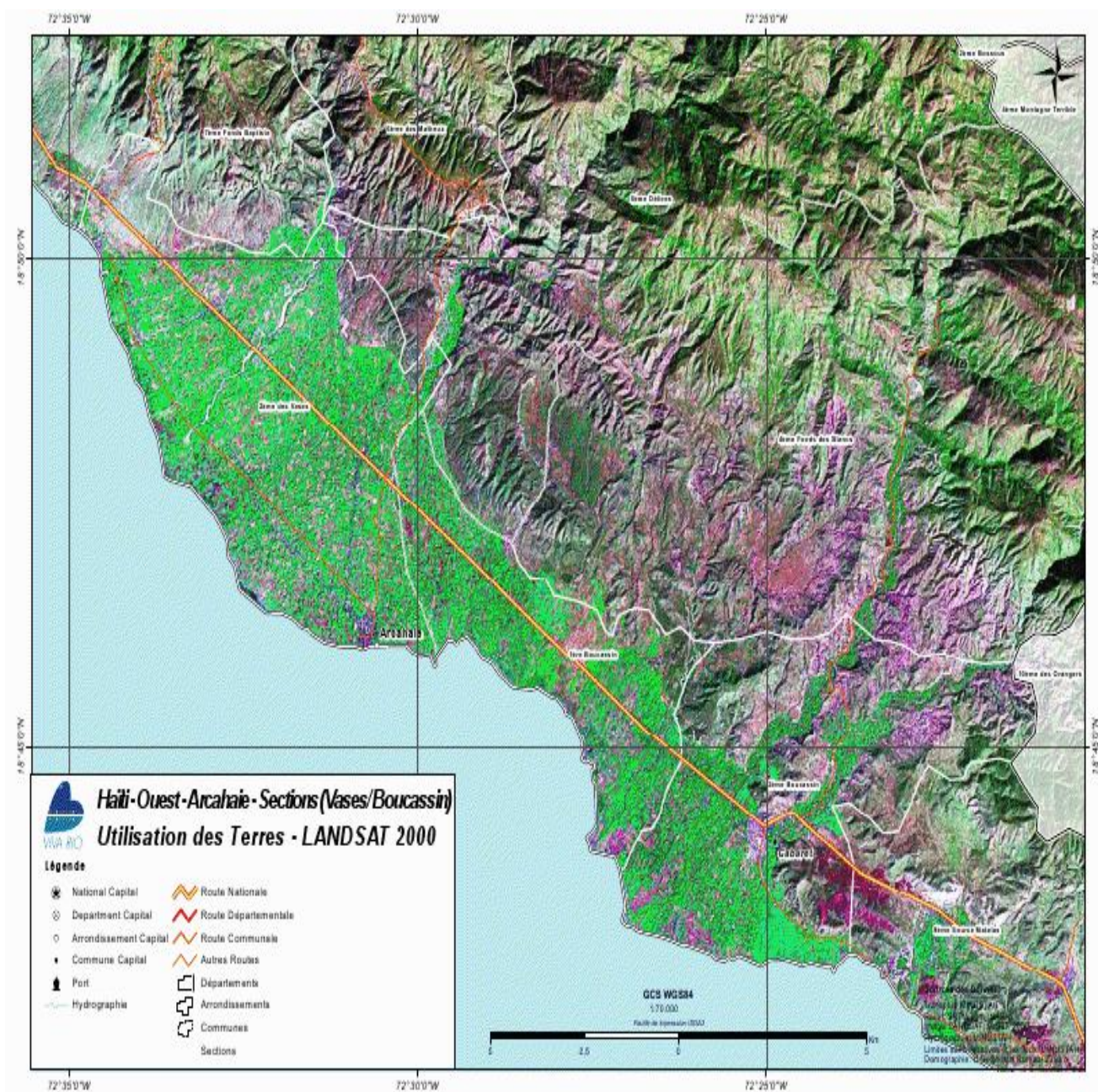


Seme section communale, Arcahaie

APPENDIX 1: Map 1



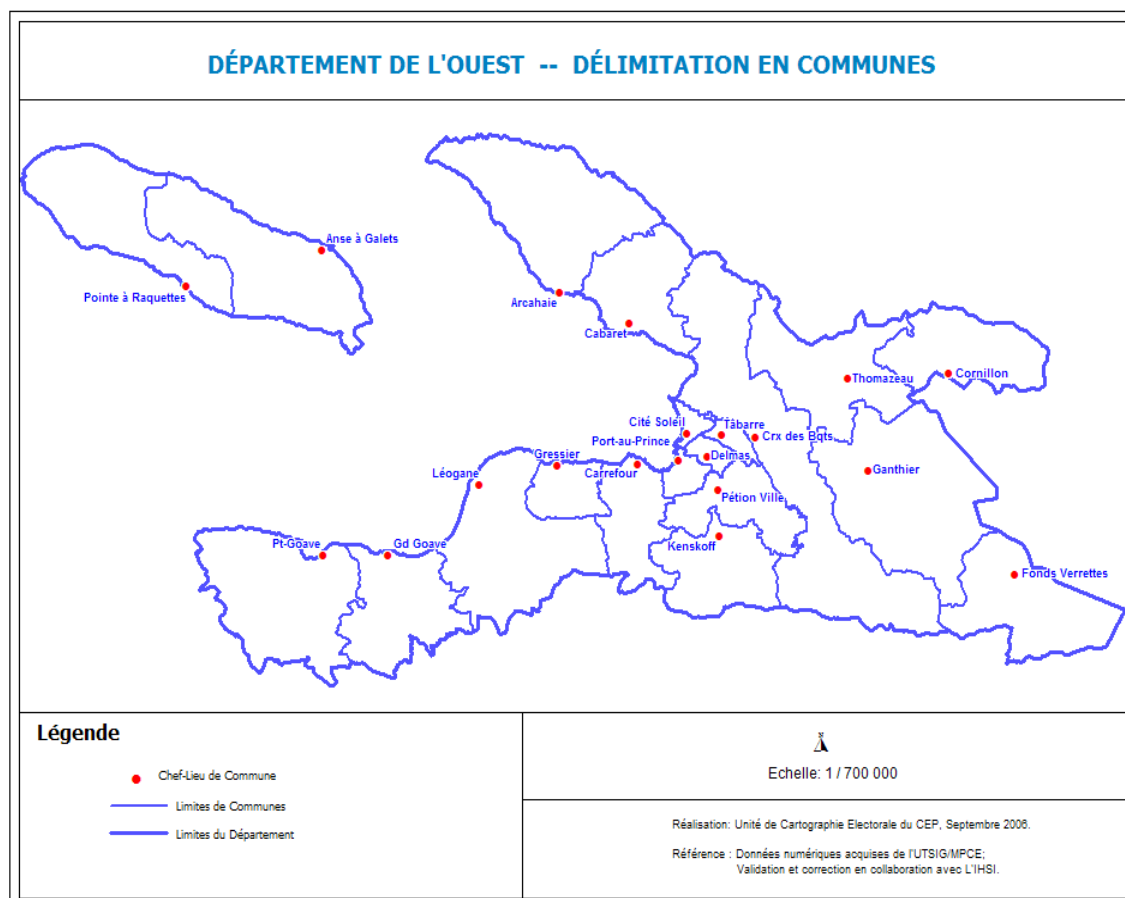
APPENDIX 2: Map 2



APPENDIX 3: Map 3 Haiti's *Departments*



APPENDIX 4 : Map 4 Department L'Ouest - Communes



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