2018 Haiti Study Abroad Travel Guide

"Pye bwa ki wo di li wè lwen, gren pwomennen di li wè pase l'"
The tall tree says it sees far, The wandering seed says it sees more.

"Wandering Seeds"

Lauren	Grace	Megan	Emily	Tyler
Alanis	Aubrie	Kelly	Kayleigh	Skyler
Lukila	Peter	Kelly	Ellen	

May 20th to June 19th, 2018


HAITI
International boundary
Departmental boundary
National capital
Departmental seat
Town, village
Main road
Secondary road
Airport
© Nations Online Project
CUBA
DOMINICAN REPUBLIC
ATLANTIC OCEAN
CARIBBEAN SEA
Golfe de la Gonâve
Canal de Saint Marc
Canal de la Gonâve
Canal de la Tortue
ÎLE DE LA TORTUE
ÎLE DE LA GONÂVE
ÎLES CAYEMITES
PRESQU'ÎLE DES BARADÈRES
NORD - OUEST
NORD
NORD - EST
ARTIBONITE
CENTRE
OUEST
SUD - EST
SUD
NIPPES
GRANDE - ANSE
PORT-AU-PRINCE
Cap-Haïtien
Port-de-Paix
Gonaïves
Hinche
Jérémie
Miragoâne
Jacmel
Les Cayes
Fort-Liberté
Palmiste
St. Louis de Nord
Anse-à-Foleur
Le Borgne
Jean-Rabel
Môle St.-Nicolas
Bassin-Bleu
Port-Margot
Bombardopolis
Baie de Henne
Anse-Rouge
Gros-Morne
Terre-Neuve
Pilate
Limbé
Plaisance
Acul du Nord
Plaine du Nord
Quartier Morin
Limonade
Milot
Caracol
Phaëton
Trou-du-Nord
Ferrier
Sainte Suzanne
Ouanaminthe
Perches
Vallières
Mont-Organisé
Grande-Rivière du Nord
Dondon
Marmelade
Ennery
Bahon
Saint-Raphaël
Ranquitte
Saint Michel de l'Attalaye
Pignon
La Victoire
Cerca Carvajal
Dessalines
Grande-Saline
Petite-Rivière de l'Artibonite
Saint-Marc
Verrettes
Maïssade
Cerca-la-Source
Thomassique
Thomonde
La Chapelle
Mirebalais
Saut-d'Eau
Belladère
Lascahobas
Baptiste
Savenette
Cornillon
Arcahaie
Duvalierville
Thomazeau
Croix des Bouquets
Ganthier
Fond Parisien
Jimani
Dajabón
Monte Criste
Magasin
Pointe-à-Raquette
Gressier
Carrefour
Pétion-Ville
Léogâne
Kenscoff
Fonds-Verrettes
Petit-Goâve
Grand-Goâve
Trouin
La Vallée de Jacmel
Cayes-Jacmel
Marigot
Belle-Anse
Thiotte
Grand-Gosier
Banane
Anse-à-Pitres
Bainet
Côtes-de-fer
Vieux Bourg d'Aquin
Aquin
L'Asile
St. Louis du Sud
Petite Rivières de Nippes
Anse-à-Veau
Petit Trou de Nippes
Baradères
Maniche
Cavaillon
Camp-Perrin
Chantal
Torbeck
St.-Jean du Sud
Côteaux
Roch-à-Bateau
Port-Salut
Port-à-Piment
Chardonnières
Les Anglais
La Cahouane
Tiburon
Les Irois
Anse d'Hainault
Dame-Marie
Abricots
Trou-Bonbon
Moron
Chambellan
Source Chaude
Roseaux
Corail
Pestel
Cap Saint-Nicolas
Cap-à-Foux
Pointe Jean-Rabel
Pointe de la Grande-Pierre
Pointe Ouest
Pointe de Montrouis
Pointe Fantasque
Cap Raymond
20°
19°
18°
74°
73°
72°
0 10 20 30 40 km
0 5 10 15 20 25 mi
N

Haiti Study Abroad 2018
Water, Environmental Issues, and Service Learning
May 20 (19 in GR) to June 19

May 19th 4-6 pm - Pizza, Packing, and Parents party in Niemeyer MPR.

Delta Air Lines 1369 20MAY Grand Rapids / Atlanta 8:10A 10:04A
Delta Air Lines 685 20MAY Atlanta / PAP 11:20A-2:32P
Delta Air Lines 684 19JUN PAP / Atlanta 3:30P-6:45P
Delta Air Lines 1433 19JUN Atlanta / Grand Rapids 9:44P-11:43P

OVERVIEW:

- Saturday May 19, 4:00-6:00 pm Pizza, Packing, and Parent party Niemeyer Multipurpose Room, parents and friends invited.
- Sunday, May 20th 6:00 am meet at Gerald R. Ford (GRR) Airport in Grand Rapids
- Sunday, May 20th 8:10 am depart on Delta Flight DL 1369
- May 20th to May 23rd Staying at the Le Plaza Hotel, Port-au-Prince.
- May 24th to May 26th Trip to Jacmel staying at Amitie Hotel.
- May 27th travel to Deschapelles via PAP and airport stop at Moulin sur Mer museum en-route.
- May 27 to June 10 Staying at HAS in Deschapelles, Haiti
- June 11 to June 13 at UCI in Central Plateau (Pignon)
- June 14 to June 18 in Cap Haitian at Auberge du Picolet Hotel
- June 18 travel to PAP and stay at Servotel in Port au Prince
- June 19 return flight to GRR

FOR EMERGENCY CONTACT:

Dr. Peter Wampler, Director (wamplerp@gvsu.edu):
(US) (616) 638-2043 (cell) or (616) 331-2834 (office message) or +509 _____ (Haiti Cell phone)
Kelly McDonell, Assistant Director (mcdoneke@gvsu.edu):
(US) 248-459-4063 or (616) 331-8155 (office message) or +509 _____ (Haiti Cell phone)
Elena Selezneva (Padnos International Center) 616-331-3898
Rachel Fort (Hôpital Albert Schweitzer) + 509 3424-0465 (Haiti) rfort@hashaiti.org
Leah Steele (Hôpital Albert Schweitzer) + 509 3735-8012 (Haiti) lsteele@hashaiti.org
Mahamat Koutami Adoum (HAS) + 509 3418-0700 (Haiti) madoum@hashaiti.org

US Embassy Duty Officer in Haiti: +509 2229-8000
Boulevard du 15 October
Tabarre 41, Route de Tabarre
Port au Prince, Haiti

Daily Itinerary (subject to change as conditions warrant):

Date	Activity	Contact
Saturday, May 19	Pizza, packing, and parents party at Niemeyer MPR 4:00-6:00 pm	Dr. Peter Wampler (616) 638-2043 (cell) (616) 331-2834 (message) Kelly McDonell, Assistant Director (US) 248-459-4063
Sunday, May 20	6:00 am Meet at Gerald R. Ford (GRR) Airport in Grand Rapids for 8:00 am departure on Delta Flight DL1369; 10:00 am arrive in Atlanta, GA; 2:30 pm arrive in Port au Prince, Haiti flight DL 685 Travel to Le Plaza Hotel - Port-au-Prince – Haiti via van	Dr. Peter Wampler (616) 638-2043 (cell) (616) 331-2834 (message) Kelly McDonell, Assistant Director (US) 248-459-4063 LOJISTIK S.A. / TOUR HAITI 38Bis Rue Darguin • HT6140 • Petion Ville • Haïti Telephone Customer Department: 509-2813-2223 | 509-3713-2223 (8:00AM to 4:00M) Telephone Administration & Accounting: 509-2812-2223 | 509-3702-2223 (8:00AM to 4:00M Mika Theronier - e-mail:mika@tourhaiti.net
Monday, May 21	Touring sites in Port au Prince including: Marche De Fer (Iron Market), National Museum, Atiz Resistanz Gallerie, El-Saieh Gallery, Rue de Chilli, Galerie d'art Nader Haiti 50 Rue Gregoire, Petion-Ville, Expressions Art Gallery 55, rue Metellus, Petion-Ville	LE PLAZA HOTEL 10 rue Capois Champ de Mars Port-au-Prince, Haiti From the U.S. and abroad: Toll-free: 866-356-5407 Direct: 305-394-6984 Within Haiti and abroad: +509-2814-6000 By email: reservations@plazahaiti.com College Catts Pressoir Mr. Guy Etienne, principal getienne@cpressoir.org Tél: (509)2811-6339 / (509)2811-6340 +509 3482-4764 Rossi Jacques Casimir +509 3418-3805 Claudel Casseus +509 4895-2223 Romel Jean Pierre +509 3667-3043 Pierre Adler Adias Marcelin (Gheskio) 509-3840-7767 or 509-3252-0816
Tuesday, May 22	Touring in PAP; Croixes Boucquet metal working tour Lunch at Domino's Pizza Turgeau	
Wednesday, May 23	Field Day above PAP; Kenskof Baptist Mission Museum and Giftshop; Hike	

	around Kenscoff Mountain with tour of Wynn Farm; l'Observatoire Overlook	
Thursday, May 24	Travel to Jacmel staying at L'Amitié Hotel	L'Amitié Hotel 120 Ti Mouilage, Route Cayes Haiti Phone # 3888 9386 or 3812 3297 **Fosaj** Art Center. 5-7, RUE SAINTE- ANNE
Friday, May 25	Jacmel and Bassin Bleu touring	
Saturday, May 26	Jacmel and Bassin Bleu touring. Possible Galleries and sites to see include: Les Créations Moro; Fosaj Art Center; Fanm Atizans Jakmel?; Rue De Commerce; Marche de fer; Ciné Institute	
Sunday, May 27	Travel to Deschapelles via PAP airport (drop off Ellen Adams); Stop at Moulin Sur Mer for lunch and museum tour; Stop in St. Marc for frozen chicken purchase; Stop at Giant Store for final purchases for HAS.	http://www.moulinsurmer.com/ (509) 3701-1918 / (509) 3702-1918 (509) 2813- 1042 / (509) 2813-1043 info@marinabluehaiti.com From the United States: 1-786-206-6383 1-855-4MSNFUN (855-4676386)
Monday, May 28	Hôpital Albert Schweitzer (HAS) Tour and Tour of Deschapelles and Library	https://hashaiti.org/ Rachel Fort (Hôpital Albert Schweitzer) + 509 3424-0465 (Haiti) rfort@hashaiti.org Leah Steele (Hôpital Albert Schweitzer) + 509 3735-8012 (Haiti) lsteele@hashaiti.org Mahamat Koutami Adoum (HAS) + 509 3418-0700 (Haiti) madoum@hashaiti.org
Tuesday, May 29	Visit site to follow up on filters from 2017 trip meet with residents to answer questions?	http://www.sistercitiesessexhaiti.org/library-project/ Besly Belizaire beslybelizaire@yahoo.fr
Wednesday, May 30	Small group workshops at	

	Library; Water Project Mapping for HAS; Service learning projects	
Thursday, May 31	Health worker water filter distribution and Q & A at HAS training in Deschapelles	
Friday, June 1	Small group workshops at Library; Water Project Mapping for HAS; Service learning projects	
Saturday, June 2	Market tour in Verrettes and free time around Deschapelles; optional hike to Verrettes waterfall;	
Sunday, June 3	Sunrise Hike; Free Time: Optional activities; attend local church service; hike to Verrettes waterfall (if we don't go on Saturday); hang out by the pool and relax	
Monday, June 4	Library or School activities or small group activities at the library	
Tuesday, June 5	Library or School activities or small group activities at the library	
Wednesday, June 6	Library or School activities or small group activities at the library	
Thursday, June 7	Water Filter Distribution in remote village?	

Friday, June 8	Library or School activities or small group activities at the library	
Saturday, June 9	Day trip to Petite Riviere by ferry and tap-tap	
Sunday, June 10	Packing and Art Sale at HAS celebration at Kay Onze or Mellon house	
Monday, June 11	Travel to Cap Haitian via Mirebelais; stop at Saut D'eau and Peligre Dam; Staying at UCI guest house in Pignon	
Tuesday, June 12	UCI Workshops, service learning, etc. staying UCI	UCI (http://ucihaiti.org/) JeanJean & Kristie Mompremier +509 4250-3362 (Haiti) +509 4304-7873 (Haiti) jeankris@ucihaiti.org
Wednesday, June 13	UCI Workshops, service learning, etc. staying UCI	
Thursday, June 14	Travel to Cap Haitian via Hwy3 in Van and stay at Picolet Hotel	Auberge du Picolet Hotel http://www.manmanpemba.com/auberge-du-picolet/ Blvrd du Cap-Haitien, Cap-Haitien, Haiti +509 34 38 6357
Saturday, June 15	Cap Haitian Touring and Hiking	
Sunday, June 16	Cap Haitian Touring and Hiking	
Monday, June 17	Cap Haitian Touring and Hiking	
Tuesday, June 18	Drive from Cap Haitian to PAP by Van - Staying at Servotel	Servotel Haiti, Route de l'Aéroport, Zone Cargo, Tabarre +509 28 12 75 00 / 1(800) 503-9801 info@servotelhaiti.com http://www.servotelhaiti.com/home/
Wednesday June 19	Departure PAP Delta flight DL 684 at 3:30 pm Arrive at GRR Delta Flight 1433 19JUN at 11:06 pm	**GVSU Haiti study abroad program ends when we arrive in Grand Rapids.**

◄ April

May 2018

Juni ►

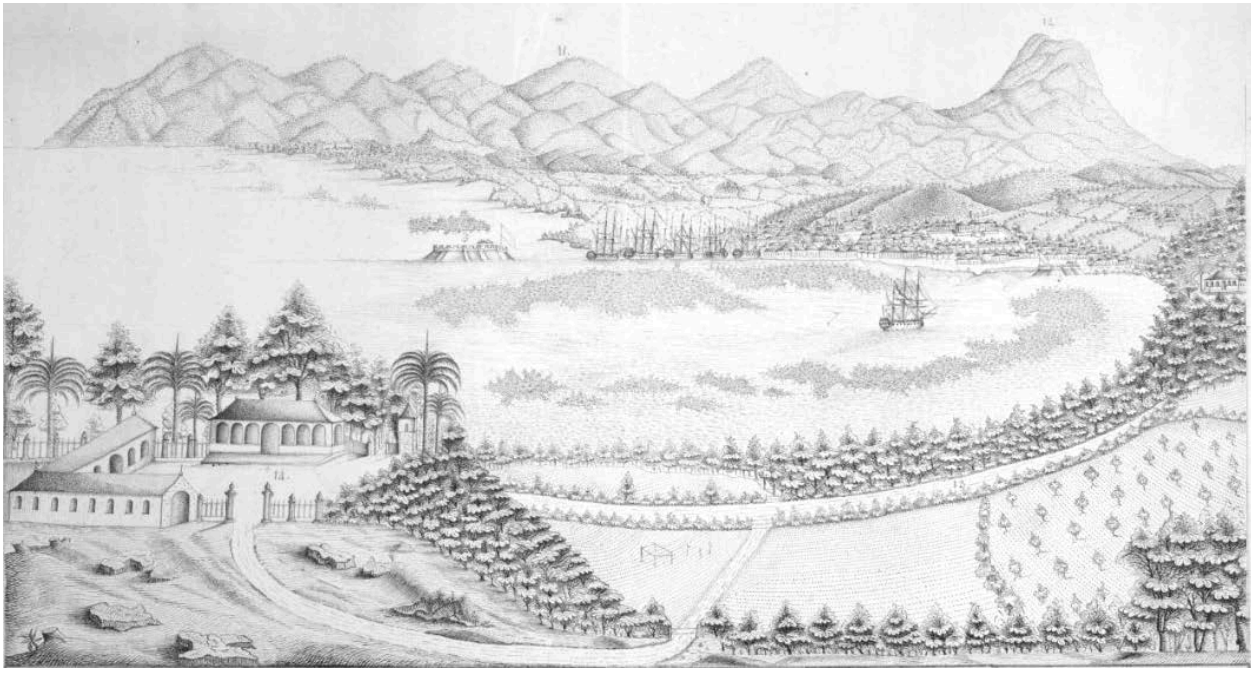
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19 Packing Party at Niemeyer MPR
20 Meet at GRR at 6:00 am for Departure Arrive in PAP 2:30 pm Delta Flight 685 Travel to Le Plaza Hotel	21 Port au Prince (PAP) and surrounding	22 Port au Prince (PAP) and surrounding	23 Port au Prince (PAP) and surrounding	24 Travel to Jacmel Hotel L'Amitie	25 Jacmel touring and sites	26 Jacmel touring and sites
27 Travel to PAP and drop off Ellen at airport Travel to Deschapelles	28 Staying at HAS	29 Staying at HAS	30 Staying at HAS	31 Staying at HAS		

◄ Mai

June 2018

Juli ►

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Staying at HAS	**2** Staying at HAS
3 Staying at HAS	**4** Staying at HAS	**5** Staying at HAS	**6** Staying at HAS	**7** Staying at HAS	**8** Staying at HAS	**9** Staying at HAS
10 Staying at HAS	**11** Staying at UCI	**12** Staying at UCI	**13** Staying at UCI	**14** Staying in Cap Haitian Auberge du Picolet Hotel	**15** Touring Cap Haitian	**16** Touring Cap Haitian
17 Touring Cap Haitian	**18** Travel to PAP for departure Staying at Servotel	**19** Depart PAP on Delta flight 684 Arrive at GRR 11:43 pm Delta Flight 1433 GVSU study abroad Trip Ends at GRR	**20**	**21**	**22**	**23**
24	**25**	**26**	**27**	**28**	**29**	**30**



Port au Prince ca ~1800

Boundary representations are not necessarily authoritative.

BACKGROUND

Land and Climate

Haiti shares the island of Hispaniola with the Dominican Republic. Haiti is about three times the size of Cyprus but is slightly smaller than the U.S. state of Maryland. It is composed of two peninsulas split by the Gulf of Gonâve. The mountainous, nearly barren island of Gonâve, which belongs to Haiti, rests in the center of the gulf.

Haiti's portion of Hispaniola is significantly more mountainous than the rest of the island, with successive mountain chains running east to west on both peninsulas. The northern Massif du Nord is part of the island's backbone, which Dominicans call the Cordillera Central. The southern peninsula boasts the Massif de la Hotte and Massif de la Selle. The highest peak, Pic la Selle, is located in the Massif de la Selle and rises to 8,793 feet (2,680 meters). The mountains are punctuated by hills and valleys, where most people live and work. The four main plains include the Central, Northern, Artibonite, and Plaine du Cul-de-Sac (where the capital, Port-au-Prince, is located). Haiti is crossed by several large rivers, the longest of which is the Artibonite. Trees once covered most of Haiti prior to European colonization, but deforestation resulting from farming and charcoal fuel production has led to severe soil erosion and poor soil quality.

Haiti's climate is warm and only mildly humid. The average temperature in the mountains is 66°F (19°C), while at Port-au-Prince it is 81°F (27°C). Spring and autumn are rainy, whereas December through February and June through August are dry. July is the driest summer month. The hurricane season lasts from June through November.

History

Original Inhabitants and Colonization

The island of Hispaniola was originally inhabited by the Taíno (Arawak) peoples. After Christopher Columbus arrived in 1492 and opened Spanish colonization on Hispaniola, the indigenous peoples were enslaved. Within a few decades, a million natives died from starvation, European diseases such as smallpox and measles, and hard labor in Spanish gold mines. In a belated effort to save the remaining native peoples and to help their sugar plantations prosper, the Spanish settlers began importing African slaves in the early 1500s. By 1560, few natives remained. The 2,000 Spanish settlers controlled the island and some 30,000 African slaves. In 1697, Spain ceded the western third of Hispaniola to France, which soon enjoyed the coffee, sugar, and cotton riches of its new colony, Saint Domingue. France was given the entire island by 1795, although it did not fully control the eastern half.

Independence

The Haitian Slave Revolt began in 1791. Though slaves were granted their freedom by 1793, leaders such as Toussaint Louverture (a freed slave) continued to fight European powers for control of the island. Louverture was eventually captured and subsequently died in a French prison, but his successor Jean-Jacques Dessalines gained victory over the French in 1803. Haiti declared its independence on 1 January 1804. French settlers who were not killed left the island. Dessalines became the emperor.

When Dessalines was killed in 1806, political chaos and rivalries led to a split: Henri Christophe eventually became King Henry I of northern Haiti, and Alexandre Pétion ruled southern Haiti in a more republican style of government. Ill and fearing a coup, Christophe committed suicide in 1820. In 1822, north and south were reunited under President Jean-Pierre Boyer, who finally established governance over the Dominican Republic; this era still perpetuates tensions between the two neighbors.

France recognized Haitian independence in 1825 after Boyer agreed to pay 150 million francs in reparation to former slaveholders over the next century, a sum that crippled Haiti's already weak economy. In 1844, the Dominican Republic declared its independence from Haiti, and Boyer was overthrown. Power changed hands repeatedly until the 20th century, which found Haiti near anarchy. Under the United States' Monroe Doctrine, which essentially sought to maintain U.S. dominance in the Western Hemisphere, U.S. troops invaded and occupied Haiti from 1915 to 1934.

Instability

The following years did not bring stability to Haiti, as people revolted against the government and elites who controlled it. In 1957, Doctor François Duvalier, known as Papa Doc, won presidential elections despite charges of fraud. He killed his opponents and ruled with impunity, terrorizing the populace with his *Tontons Macoutes*, the secret police. Before he died in 1971, Duvalier designated his son, Jean-Claude Duvalier (Baby Doc), as his successor. Riots in 1985 forced Jean-Claude Duvalier to flee Haiti in 1986.

A succession of military-led governments ruled Haiti until 1990, when Jean-Bertrand Aristide became the nation's first democratically elected president. Glee over his election was followed by impatience for reform and violence between Aristide's supporters and opponents. After just eight months, the military—led by General Raoul Cédras—led a coup d'état against Aristide, who subsequently made his way to the United States and set up a government in exile. His supporters in Haiti either went into hiding or were killed. The military dictatorship became increasingly brutal, and the international community decided to intervene with an embargo, though its effect was diminished by smuggling through the neighboring Dominican Republic.

In September 1994, about 20,000 U.S. soldiers landed in Haiti to facilitate the removal from power of the Haitian military junta. A few weeks later, Aristide returned from exile and ruled until 1996. Aristide was reelected in 2000; however, he was overthrown again in 2004. Following Aristide's ouster, United Nations (UN) peacekeepers entered Haiti to help with security and stability. A democratically elected government came to power in 2006.

Current Challenges

In recent years, Haiti's biggest challenges have resulted from two major natural disasters. In 2010, a powerful earthquake struck the Port-au-Prince area, killing as many as 300,000 people and destroying much of Haiti's infrastructure. The aftermath of the earthquake was made worse by a massive outbreak of cholera, which was inadvertently spread to the Haitian population by UN peacekeepers. After the earthquake, Haiti received billions of dollars from international donors to rebuild infrastructure, house those displaced by the earthquake, and fight disease.

In addition to earthquakes, Haiti also is vulnerable to destructive and deadly hurricanes and tropical storms. In October 2016, Hurricane Matthew caused extensive damage, killed hundreds of people, and worsened the ongoing cholera epidemic. Reconstruction efforts following the earthquake and Hurricane Matthew have been hampered by government instability and insufficient aid. The damage incurred from the recent natural disasters remains an obstacle to Haitians as they try to return to their normal lives.

Recent Events and Trends

• **New president**: In February 2017, Jovenel Moïse was sworn in as the new president of Haiti, ending over a year of Haiti being led by an interim government. In his inaugural speech, Moïse vowed to restore law and order, end corruption, and promote economic recovery and development. Moïse won the long-delayed presidential election in November 2016 after the results of the October 2015 election, which Moïse also won, were thrown out due to findings of fraud.

• **UN peacekeepers**: In October 2017, the United Nations ended its 13-year peacekeeping mission in Haiti, as Haiti has achieved some level of political stability. The United Nations' presence in Haiti has been marked by scandal, including its role in introducing a deadly strain of cholera and allegations that UN peacekeepers sexually abused and exploited women and children. UN peacekeepers entered Haiti in 2004 to help stabilize the nation following the ouster of President Aristide.

THE PEOPLE

Population

Most Haitians (95 percent) are descendants of African slaves who came to the island beginning in the 16th century. A small proportion of Haiti's people (5 percent) are of mixed heritage or white. Haiti has a high birthrate, but emigration and poor health lower the overall population growth rate. As many as 300,000 people were killed in January 2010, when an earthquake struck the Port-au-Prince region.

A large number of Haitians live in the United States, the Dominican Republic, Cuba, Canada, and elsewhere. Haitians have been living and working in the Dominican Republic since its founding as a nation in 1844. Throughout the 1900s, the majority of the Haitians who traveled to the Dominican side of the island worked in the agricultural industry, specifically with sugarcane. As sugarcane profits began to decline, increasing numbers of Haitians began to migrate to urban areas in the Dominican Republic; the government there has attempted to restrict immigration and has carried out mass deportations of Haitian immigrants.

Language

According to the 1987 constitution, the official languages of Haiti are *Kreyòl* (Haitian Creole) and French. Kreyòl is the language of daily conversation. French is used in government and business. Although French has traditionally also been the language of instruction in schools, some schools are starting

to use Kreyòl because in most cases it is the only language that students speak and understand. Only educated adults or secondary school students speak French, though with varying levels of fluency and accuracy. Knowledge of French has become a sign of social class in Haiti; those who speak French may shun those who do not.

Kreyòl is a unique mixture of French, Taíno, English, Spanish, and various African languages. It is similar to creole spoken on some other Caribbean islands, such as Guadeloupe and Martinique. Kreyòl is traditionally an oral language, though it had a written form as early as the 19th century. Use of written Kreyòl began to spread after the 1940s with the introduction of adult literacy programs.

Because of the popularity of U.S. American television and films and because many Haitians have relatives in the United States, English is used more often than in the past.

Religion

The majority (55 percent) of Haitians are Catholic. While some people regularly participate in religious services, others only draw upon their Catholic identity in the case of marriages, funerals, or other rites of passage. Protestants claim 29 percent of the population. The largest denominations are Baptist, Pentecostal, and Seventh-day Adventist.

Perhaps as important as organized religion is *Vodou* (voodoo), which is practiced by many Haitians in addition to Christianity. It was given legal status equal to other religions in 2003. While official Catholicism opposes its practice, Vodou includes the worship of Catholic saints and other Catholic rituals. Vodou ceremonies and rituals, held in temples, usually are performed at night. Adherents believe that during the temple ceremonies, a Vodou god inhabits the body of a believer. Because some in Haitian society oppose Vodou, not all Vodou adherents practice the religion openly. Still, certain Vodou temples are the focus of annual pilgrimages.

General Attitudes

Haitians tend to be warm, friendly, and generous. Their tradition for hospitality is clear in how most people treat guests or go out of their way to help strangers find an address or something else they need. Haitians are generally proud of their culture and history. Everyday life is hard for most people, so parents strive to send their children to school, though it is very expensive, trusting that an education will give the next generation a better life. Despite hardships, most Haitians try to make the best of their circumstances.

Haitians from rural and urban areas have different perspectives on life, as their cultural practices and attitudes vary significantly. Haitians living in rural areas often value their traditions and slower pace of life. Because much of the rural economy is based on agriculture, community and cooperation are very important to people in rural areas. Life tends to be more fast paced and competitive in urban areas. People living in urban areas often see themselves as more cosmopolitan than people from the countryside.

Feelings toward Haiti's closest neighbor, the Dominican Republic, have long been complex and may vary according to occupation, class, and geography. Haitians from the upper classes may have business ties in the Dominican Republic, and those from the lower classes may take short-term trips to the Dominican Republic to buy and sell wares. Haitians living on the border often have friendly social and economic interactions with Dominicans. Some Haitian students study at Dominican universities. After the earthquake in 2010, the Dominican government, as well as Dominican businesses and private citizens, contributed goods and money to reconstruction efforts in Haiti. However, tensions have increased between the countries as a result of recent changes to Dominican citizenship laws that have resulted in mass deportations of Haitians and the return from the Dominican Republic of thousands of others, fearing prejudice and violence.

Personal Appearance

Whenever possible, people generally pay great attention to their public appearance. Urban Haitians tend to prefer Western-style clothing. Urban women may wear pants or colorful skirts; some wear a headscarf to match their outfits. Young people usually follow the latest fashion styles, particularly those of U.S. American musicians and actors. Sandals are the most popular footwear. Government officials and businessmen wear suits and ties. Rural men usually wear T-shirts and shorts or pants when working. Rural women typically wear dresses and headscarves, but they rarely wear pants. Almost all Haitian women enjoy jewelry (though it is often unaffordable) and brightly colored clothing. Men may wear gold jewelry as a status symbol.

CUSTOMS AND COURTESIES

Greetings

Personal greetings are considered very important in Haiti. When entering a room or joining a group, a person is expected to physically greet each individual. Haitians usually shake hands when meeting a new acquaintance. Everyone else, from relatives to friends and casual acquaintances, receives a kiss on each cheek. The most common verbal greeting is *Bonjou, kouman ou ye?* (Good day, how are you?). The response usually is *M pa pi mal, e ou menm?* (I am not worse, and yourself?).

Haitians address superiors or persons of status by title (e.g., *Monsieur*, *Madame*, *Doctor*, etc.) and last name. Friends use first names or nicknames, which are usually related to a person's name, to address each other. An older person might be called “aunt” or “uncle” even if not related to the speaker.

Gestures

Haitians tend to be an animated people, and hand gestures usually accompany conversation. For instance, one may hold a person's shoulder or drill a finger into a person's shoulder or chest when making a point. If one is too busy to talk, the person will greet a passerby by nodding the head up. To get someone's attention, Haitians often say “pssst.” To hail a taxi, Haitians may say “pssst” and point in the direction they want to go. Clicking the tongue, called a *chipe*, is a sign of protest or disgust and considered impolite.

Visiting

Visiting is a national pastime. Friends, neighbors, and relatives are generally welcome in the home at any time of day until about 8 p.m. It is not necessary to call ahead. Visitors arriving during a meal may be asked to wait in another room until the family finishes eating. Close friends might be invited to share the meal, and they may accept or decline. It is also acceptable for guests to decline refreshments. Hosts typically offer fruit juice or soda.

In addition to impromptu visits, many Haitians enjoy inviting friends over for an evening of socializing or for dinner. When a visit ends, hosts accompany guests to the door. Rather than leaving, however, Haitians frequently extend their visit for a while by standing and talking with their hosts. Special occasions also call for visits. Guests usually bring food to hosts celebrating a communion, baptism, graduation, or wedding—occasions for which many organize elaborate parties.

Eating

Haitians eat three meals a day if they can afford it. People in rural areas may eat breakfast and not eat again until evening. The family gathers at the table for the main meal, which is usually at midday in cities. However, economic pressures and varied school and work schedules mean that families are increasingly eating at staggered times or separately. Diners take their portions from serving dishes on the table. If guests are present, they are given first opportunity to serve themselves. When no guests are present, family members often wait for the mother to begin eating before they eat. Sunday dinner traditionally is reserved as a family meal.

Usually, only the upper classes go to formal, enclosed restaurants on a regular basis. There are, however, a large number of small eateries where workers can go for a noontime meal, in case they do not have the opportunity to eat at home.

LIFESTYLE

Family

Structure

Urban families might have two or three children, while rural families may have five or more. The basic unit of society is the extended family. Children from cities may be sent to live with relatives in the countryside during summer vacations to strengthen family ties, and children from the countryside may be sent to live with relatives in cities to attend school. Grandparents may act as parents in place of an absent or working mother or father. Relatives may also fill the role of godparent, which entails responsibility for a child if a parent dies. Elders are highly respected, and every member of the family is expected to care for them.

Parents and Children

In most families, a child's main concerns are succeeding in school and completing household chores. In wealthier families, children may be responsible only for keeping their rooms clean; in poorer families, chores include cooking, laundry, and cleaning. Some families can afford to send only one child, usually the oldest, to school. Educated children are expected to better the social and financial status of the family, providing for parents or less fortunate siblings later in life. Other children are expected to help more around the house or with the family business, which could simply mean being a street vendor. In wealthy families, parents establish goals for their children to become doctors, lawyers, or entrepreneurs who will expand the family business.

Adult children are expected to remain with their parents until marriage, and occasionally, married children live with one spouse's parents until they can afford a home of their own. Married couples usually live close to their families. This is especially true in the countryside, where the traditional *lakou* form of housing (a common courtyard surrounded by a family compound of small sleeping rooms) is prevalent. After retirement, parents often move in with one of their married children.

Gender Roles

In urban areas, the father, if present in the home, is head of the household and responsible for earning an income. Mothers in urban areas are responsible for cooking, cleaning, and teaching their children religion and morality. Middle-class urban families may hire someone to cook and do other chores. Rural men work their fields, while rural women sell produce in the market and care for the household and children. Though men may earn the money and make decisions, it is often the women who manage the household's money. Single-mother households are very common, as men typically have children by more than one woman. In such households, mothers often rely on older children to help earn income and to care for younger children.

Domestic violence against women is fairly common, and some of Haiti's laws tend to discriminate against women. For example, wives who murder their unfaithful husbands face harsher punishment than husbands who murder their unfaithful wives. A growing number of women from all social classes hold jobs, own their own businesses, and participate in government, though few women hold positions of power.

Housing

Urban

Houses are typically built with whatever materials are available. In Port-au-Prince, cement buildings are common. In older, established neighborhoods of the capital, brightly painted two-storey wood and brick houses are prevalent. Primitive cinderblock houses are found in newer parts of the city. These houses often consist of just one nine-square-foot room with packed-earth flooring and a corrugated tin roof. Houses are built on top of each other, and winding narrow footpaths snake down to the local market. A small minority of Haitians has access to electricity; access to running water is even less common.

Rural

Outside of the capital, the traditional *lakou* form of housing survives. The *lakou* is a compound built around a courtyard where the family eats, cooks, braids girls' hair, and takes bucket baths. Surrounding this courtyard is a ring of small sleeping rooms made of mud and rock, wood logs, banana

leaves, or cement.

Earthquake Damage

During the earthquakes of 2010, some 250,000 homes were destroyed, leaving over one million Haitians homeless. Most of these were cinderblock structures with insufficient flexibility and internal support. However, many old buildings in the so-called gingerbread style of housing (Victorian-era architecture with high ceilings, porches, narrow windows, and triangular roofs) suffered almost no damage, given the flexibility of wooden structures. The earthquake's destruction, coupled with a pre-earthquake housing shortage, means that hundreds of thousands of people still lack permanent housing.

Dating and Marriage

Dating and Courtship

Although young Haitians generally socialize in groups, they do not usually begin dating until their late teens. Young people often develop friendships that later turn romantic with the children of their parents' friends. Others form such relationships with classmates or acquaintances. Group activities usually include participating in study groups, watching soccer games, celebrating birthdays, and attending school fairs. Teenagers are increasingly entering into sexual relationships.

Men usually initiate dates. When dating, the man will visit the woman at her home to become familiar with her parents and family members. Couples also go out to dance clubs, to movies, or to other social events.

Engagement

Once a couple has been dating for a few years, a proposal is expected. A man traditionally asked a woman's father for permission to marry her, but where there is little relationship between the woman and her biological father, a man may ask the mother or the mother's husband. Today, asking permission is less common, especially in urban areas.

Marriage in Society

Most parents do not greatly influence dating or marriage, but they expect their children to choose spouses from respectable families with a social status similar to their own. The minimum legal age for marriage is 15 for women and 18 for men. Haitians usually wait until they are adults and have finished their schooling before getting married; however, early marriage is more common in rural areas than in urban areas. Couples often live together and have children as if married until they save enough money for the wedding and wedding reception.

Homosexuality is taboo in Haitian society, and LGBT individuals commonly face discrimination, threats, and even violence. Same-sex marriage is illegal.

Although formal polygamy is illegal, married men sometimes have many girlfriends and children out of wedlock. This is often attributed to the desire for a son to continue the family line. Women are expected to remain faithful to their husbands and are chastised if they are not. In rural areas, a man's partners acknowledge each other and may even cohabitate.

Divorce is rare but separation is common, especially after a couple's children are raised and have families of their own. Usually, children live with their mother after separation, but they may also move in with grandparents or other relatives.

Weddings

A couple will not officially marry until they can afford a big wedding, so some poorer couples never get married. Weddings are usually paid for by the groom or his family, but the bride's family may also contribute money. Typically, couples have a church wedding followed by an evening reception where rice, beans, meat, salads, cake, champagne, and soft drinks are served. Receptions are usually held in private homes, where guests eat, dance, and socialize until late in the evening.

Life Cycle

Birth

Motherhood is extremely valued, and celebrations of births are joyful, but Haitians tend to be careful not to be seen as boastful, as many children die before the age of five. Women do not usually announce pregnancies until they begin to look pregnant out of a belief that doing so could bring bad luck on the baby. The gender of the child is not commonly announced before birth. Due to a preference for traditional practices, most births take place without formal medical assistance. Once the baby is born, the maternal grandmother traditionally comes to care for the baby and mother.

Names are given just after the baby is born, though consideration may be given to a name prior to birth. Deciding on a name is an important event. It is common for children to be named after respected family elders or ancestors. Firstborn sons are usually named after their fathers. Children carry their father's surname unless the father is unknown or denies paternity. In rural areas, a child's name may reflect the circumstances of his or her birth. For example, a couple who has had difficulty becoming pregnant may name a girl Jesula (Jesus is here) or Dieula (God is here) or a boy Dieufel (God created him) to show their gratitude. Children who survive their first years are often given a nickname.

Milestones

Baptism and First Communion are significant rituals for Catholic children. Children dress in nice clothes, and family, friends, and neighbors gather to celebrate with a large meal, including some meat if the family can afford it. Because people often live with their parents into their adult years, young people are not generally seen as adults until they have children of their own.

Death

When a person dies, family and friends gather to reminisce and provide emotional support to the deceased's immediate family members. Given the respect for ancestors in Haitian culture, even poor families make an effort to have a proper funeral. A viewing of the body is followed by a religious ceremony.

Funeral processions in rural areas include a single car and mourners dressed in black led by a marching band. Urban funeral processions consist of cars and fewer pedestrians. Burial is traditional, although cremation is becoming more common. Traditional cemeteries contain brightly colored aboveground tombs. Food and other offerings—such as *kleren* (an alcoholic drink made from cane juice)—are often placed on the tombs. People sometimes pour *kleren* and rum

onto the ground as offerings to ancestors. Catholic families have masses in honor of the deceased on the anniversary of their passing.

Diet

Most Haitians eat rice and beans every day, although a main meal, when affordable, usually also includes meat, salad, and a vegetable. Rice and corn are staple grains. Spicy foods are most popular. *Piman zwazo* (small, hot pimentos) and garlic are often added to dishes. Meat is marinated in sauces with ingredients such as sour orange juice, lemon juice, and hot peppers. Pork is the most commonly eaten meat, but Haitians also eat goat, chicken, guinea pig, and seafood (fish, shrimp, conch, and crab). Eggplant, yams, sweet potatoes, and a variety of fruits round out the diet.

For breakfast, one might drink coffee and eat the traditional urban fare of herring with plantains and avocados, corn with codfish, or liver with plantains. A lighter breakfast consists of coffee and jam on buttered bread or *cassave* (bread made from manioc). A favorite daytime snack might be bread and butter or pastries. Meat-filled pastries are also popular snacks. Haiti is especially known for its fresh-pressed juices made from passion fruit, oranges, *chadèk* (grapefruit), cherries, papaya, *zikak* (a small, pulpy fruit), and other fruits. *Dous makos* (Haitian fudge) is a very popular dessert prepared for special occasions.

Recreation

Sports

The most popular sport is soccer. Streets are often empty if an important regional or world match is being televised. Both boys and girls begin to play soccer at an early age. Leagues are organized throughout the country. Adult soccer stars are extremely popular among people of all ages. Many Haitians of all classes cheer for soccer teams, with a special affinity for Brazil's and Argentina's teams due to their repeated successes in the World Cup.

Leisure

Most Haitians have access to radios, and people generally listen to music and news throughout the day. A growing number of middle-class families are able to afford televisions in their homes. Some Haitians enjoy watching movies and internet videos on their smartphones. Haitian music videos are favored.

Children often like to play games like patty-cake, *mab* (marbles), *oscelet* (jacks generally made of cow or goat bones), jump rope, and various versions of *lago* (tag). Children often invent their own games as well. In rural areas, the tradition of *tirer conte* (storytelling) continues. Children gather around an adult who begins the storytelling with the greeting *Krik*, to which the audience responds *Krak*. Popular stories include tales of Booki and Timalice (famous Haitian fable characters), stories about the past, and *lougawou* (ghost) stories. Young adults in urban areas spend their time with friends at fairs, *bals* (concerts), parties, or nightclubs.

Important events such as baptism, communion, graduation, and weddings provide families and friends the opportunity to get together and enjoy each other's company. These events include *banbòch* (partying and having a good time), catching up with old friends, joke telling, drinking, eating, political discussion, and dancing. Many Haitians enjoy dancing and may dance if they hear a catchy tune.

Many men enjoy cockfights, usually held on Sunday afternoons. They also spend hours playing dominoes and card games such as *kazino*, a complex game involving counting. Recreation for lower-class women often occurs in the form of jokes and storytelling while washing clothes, gathering water, or selling at the market.

Vacation

Vacations are a luxury enjoyed by wealthy families. Though vacationers usually visit foreign countries, there is a growing interest in visiting other areas of Haiti.

The Arts

Music and dancing are integral to everyday life. For over one hundred years, Haitians have composed and performed classical music. Older still is the traditional music of the Haitian rural and lower classes. These include music (called *rara*) played before Lent, music performed in *Vodou* (voodoo) ceremonies, and music associated with a particular rhythm (*merengue*, etc). Contemporary music in Haiti includes *rap Kreyòl* (Haitian hip-hop), *rasin* (traditional music fused with rock, jazz, or reggae), *chansonnette française* (traditional French songs), or *konpa* (dance music). Urban residents enjoy a variety of U.S. American music.

Haitian artists and sculptors are known for their unique images and striking colors. One popular art form is sculpture made from cut, pounded, and painted scrap metal. *Tap taps*, brightly painted pickup trucks fitted with benches and covered tops, are both a means of transportation and traveling art. Many artists choose Haitian history or daily life for their subjects; nature is also an important theme. Painted screens, papier-mâché art, wood carvings, basketwork, pottery, and painted wooden boxes are prominent crafts.

Oral literature is abundant and includes songs, proverbs, and riddles. Storytellers carefully craft their performance, acting out the story with their voices. There is also a vibrant tradition of Haitian literature, mostly written in French, although *Kreyòl* (Haitian Creole) is now commonly used as well.

Holidays

Haiti's national holidays include New Year's Day, which is also Independence Day (1 January); National Heroes Day (2 January); *Kanaval* (Carnival, held before Catholic Lent); Labor and Agriculture Day (1 May); *Jour du Drapeau* (Flag Day, 18 May); Dessalines Day (17 October); All Saints' Day (1 November); *Fèt Gede* (All Souls' Day, 2 November); Battle of Vertières Day (18 November); and Christmas (25 December). Haiti also celebrates Catholic holidays, such as Good Friday (the Friday before Easter); Easter; Ascension Thursday (39 days after Easter); *Fête Dieu* (Corpus Christi); and the Feast of the Assumption (15 August).

New Year's and Independence Day

On 1 January, Haitians celebrate both New Year's and Independence Day, though New Year's has been getting more attention in recent decades. On this day, people traditionally visit their parents and friends to wish them well in the new

year. Almost every household eats *soup joumou*, a soup made from a squash broth with carrots, potatoes, cabbage, pasta, and meat, which is traditionally understood to be the hearty food of the French colonists, who severely rationed the diets of slaves. After the French were driven out of Haiti, eating *soup joumou* came to symbolize Haiti's independence from France. Independence Day is also marked by parades and street decorations.

Kanaval

Kanaval (the Sunday, Monday, and Tuesday before Ash Wednesday) is a festive time of dancing and parades. People prepare for the holiday for weeks in advance, beginning just after New Year's. On the holiday itself, people awaiting the main parade dance to music they play on their own portable stereos. The parade includes dancers dressed in traditional clothing, *raras* (musical bands on foot), *chaloska* (people dressed as monsters), and *chars* (floats from which popular music groups entertain the crowd). The partying continues all night and into the early-morning hours for two or three days. Stores are open only in the morning on these days.

Rara

Rara, another celebration closely linked to Lent, contains a mixture of African and Haitian *Vodou* (voodoo) traditions. It is usually celebrated in rural areas but occurs also in Port-au-Prince. Every Sunday during Lent, and occasionally on weeknights, a number of *rara* bands take to the streets, playing music on Haitian-made instruments and collecting people into a crowd, which follows them as they go. The instruments include the *banbou* (a bamboo pipe), *tambou* (a hand drum with a wooden base, topped with leather), *lanbi* (a conch shell horn), and *graj* (a grater that is rubbed with a metal stick).

Patriotic Holidays

Haitians celebrate several patriotic holidays. *Jour du Drapeau* (Flag Day) is commemorated on 18 May with a parade held in front of the palace; students from various schools participate. Dessalines Day (17 October) commemorates the assassination of Jean-Jacques Dessalines, the man who led Haitians out of slavery and became the nation's first president. Battle of Vertières Day, celebrated on 18 November, is the anniversary of one of the most important battles in Haiti's fight for freedom.

Fèt Gede

Fèt Gede is held on 2 November to honor the dead, who are highly venerated in Haitian culture. On this day, offerings such as coffee and *kleren* (an alcoholic beverage made from sugarcane) may be brought to the *Bawon Samdi* (the first man buried in a cemetery) or *Gran Brijit* (the first woman buried in a cemetery).

SOCIETY

Government

Structure

The Republic of Haiti is divided into 10 departments, but the central government has control over most political affairs. The president is head of state and is elected by popular vote for a five-year term. The president cannot serve consecutive terms. The prime minister is head of government and is appointed by the president and confirmed by the bicameral National Assembly. The National Assembly's upper house is the 30-seat Senate, and the lower house is the 118-seat Chamber of Deputies. Members of both houses are elected through a majoritarian system. Senators serve six-year terms and deputies serve four-year terms. A constitutional amendment passed in 2012 set a minimum 30 percent quota for women in government, but this goal has not yet been reached, as very few women hold seats in the National Assembly.

Political Landscape

Several parties field candidates in national elections and gain representation in the National Assembly. Haitians enjoy a relatively strong democratic tradition on the local level; however, chronic political instability and weak institutions on a national level are common. Perhaps the biggest challenge facing Haiti's government is rebuilding the country in the aftermath of the devastating 2010 earthquake and Hurricane Matthew (2016). Lack of transparency in using foreign aid is also an important related issue.

Government and the People

Citizens of Haiti do not generally enjoy free speech, press, or assembly. An ineffective police force and judiciary, in addition to the government's heavy-handedness, contribute to this situation. Corruption is a major problem in Haiti. Haiti's political instability has made it difficult for the government to provide basic services to citizens, including repairing damaged infrastructure and addressing public health concerns. Many have protested against the government for failing to control the high cost of living. The voting age is 18. Voter turnout has been low since the end of the military junta rule in 1994, in part because election fraud is common.

Economy

Haiti's economy is based on small-scale agriculture, which employs nearly 40 percent of the workforce. Large farms are rare, so production quantities are small. The most important cash crops include coffee, mangoes, and cacao. Industrial activity is minimal; however, the clothing industry has become increasingly important and accounts for over 90 percent of exports and 10 percent of Haiti's gross domestic product (GDP).

Haiti is the poorest country in the Western Hemisphere. The government is dependent on foreign aid. Nearly 60 percent of all Haitians live in poverty. Unemployment and underemployment are widespread, and two-thirds of workers do not have formal jobs. Remittances from Haitians living abroad are an important source of income and account for more than 25 percent of GDP.

The already weak economy experienced a severe setback when the 2010 earthquake struck the Port-au-Prince area. Though lenders cancelled Haiti's debt after the earthquake, the country soon accrued more. In 2016, Hurricane Matthew also hurt the economy by damaging crops, houses, and infrastructure. Corruption, political instability, and inefficient state enterprises are additional barriers to development. Haiti's currency is the *gourde* (HTG).

Transportation and Communications

For short distances, most Haitians travel by foot. In cities, they may also ride buses, taxis, or colorful *tap taps*, which travel fixed routes but not on a fixed schedule. Intercity transportation is made by bus, boat, or plane. Few people own private cars.

Most people use cellular phones, and smartphones use is growing; landlines are increasingly hard to find. The postal system is generally reliable but not protected against theft. In the past, people often posted messages on certain radio stations or sent a written message via truck drivers, who would drop the messages at a store on their way where recipients could retrieve them. Haiti has two daily newspapers, more than a hundred radio stations, and several television stations. A small minority of the population uses the internet, accessed mainly through smartphones and at internet cafés.

Education

Structure

Only a small fraction of schools are public, with private institutions making up the majority of schools. Private schools include Catholic schools, *écoles nationales* (national schools, which are funded by foreign countries), and international schools. Most urban dwellers send their children to private schools, even though tuition can be a burden.

Haiti's school system is patterned after the French model, with kindergarten, six years of primary school, and seven years of secondary school. Children usually enter primary school at age six. It is common for students from poorer families to end their education after primary school and begin working. Students must pass exams at the end of the third, sixth, and seventh years of secondary school. The education system often does not adequately prepare students to pass these difficult exams.

Access

In general, schools lack qualified teachers and necessary materials. Some of the worst-performing schools are known as *lekòl bòlèt*, or lottery schools, because students are said to have as much chance of learning as they do of winning the lottery. The school year is often interrupted by political unrest, especially in Port-au-Prince, where daily schooling is sometimes interrupted by street demonstrations focused on elections. Because these events can be violent, parents tend to keep children home whenever a protest is announced or anticipated. Education is highly valued but unaffordable to most. Even in public schools, parents are responsible for enrollment fees, books, uniforms, and school supplies.

School Life

From primary school onward, curriculum consists of math, grammar, history, and geography classes. Other courses such as literature and foreign languages, and occasionally extracurricular activities such as sewing, are introduced at later levels. Learning by memorization is common. Students in higher levels of primary school and secondary school spend their afternoons studying and completing homework assignments. Most only study until sunset because of numerous power outages and the prohibitive expense of generators. Parents are generally involved in their children's study habits, though involvement typically decreases as students age. Cheating may result in expulsion, possible rejection from other schools, and severe reprimands at home.

Higher Education

Students who complete secondary school may pursue higher education at a university or other institution. Wealthier students are more likely to attend universities in foreign countries, while middle-class ones usually attend universities in Haiti. The country's main university is the State University of Haiti. Less-wealthy students are more likely to search for employment immediately after secondary school. A growing number of vocational schools, which have no entrance exams and are less expensive than universities, provide career-specific skills to students who can afford tuition.

Health

Living Conditions and Diseases

Many Haitians live in one-room houses with outhouses and no running water. The earthquake of 2010 destroyed many buildings and forced many Haitians to live in tents. Such living conditions foster the spread of diseases such as malaria, typhoid, tuberculosis, and HIV/AIDS. Since 2010, a mass outbreak of cholera has killed nearly 10,000 Haitians and infected hundreds of thousands more. Although the disease is less prevalent today, cholera rates remain unusually high.

These diseases, combined with malnutrition and the lack of health care, lead to numerous deaths—life expectancy rates are low and infant mortality rates are high. Hospitals provide minimal assistance to new mothers and infants, and a large number of women give birth at home without medical assistance. Many infants do not receive vaccinations, though most children receive vaccinations in school.

National Health System

Haiti's national health system is unable to meet the needs of most people due to the lack of funds, staff, modern equipment, and sometimes even basic supplies. The majority of hospitals are concentrated in the capital. A small number of clinics and hospitals service rural areas but are not accessible to everyone they are intended to serve. There is no reliable ambulance system in Haiti. Sick people must be able to afford both the trip to receive the treatment and the care itself, which is often lacking in quality.

There is no public health care in Haiti; most have to pay their medical expenses out of pocket, if they can afford to do so. After the 2010 earthquake, the presence of foreign medical aid increased; however, aid organizations can often only treat the most urgent cases.

Traditional Beliefs

Traditional beliefs strongly influence the way that many Haitians view their health, especially in poor and rural areas. When confronted with a condition, some might try plant- or food-based remedies or traditional remedies prepared by a family member or friend. If money is available, one might try to purchase products at a pharmacy to relieve symptoms. Illnesses are often characterized as “sent” sicknesses, magically placed on a person by a traditional religious practitioner. If an illness is understood to be mysterious in origin, one may visit a *doktè fèy* (a healer who mainly relies on herbal remedies), an *oungan* (a male *Vodou*, or voodoo,

priest), or a *manbo* (a female Vodou priest). Payments are usually made in cash, but some patients exchange cattle or land for services. Usually there is at least one such traditional healer in each area.

AT A GLANCE

Contact Information

Embassy of the Republic of Haiti, 2311 Massachusetts Avenue NW, Washington, DC 20008; phone (202) 332-4090; web site www.haiti.org.

Country and Development Data

Capital	Port-au-Prince
Population	10,646,714 (rank=87)
Area (sq. mi.)	10,714 (rank=143)
Area (sq. km.)	27,750
Human Development Index	163 of 188 countries
Gender Inequality Index	142 of 188 countries
GDP (PPP) per capita	$1,800
Adult Literacy	64% (male); 57% (female)
Infant Mortality	48 per 1,000 births
Life Expectancy	62 (male); 67 (female)
Currency	Gourde

CultureGrams™
ProQuest
789 East Eisenhower Parkway
Ann Arbor, Michigan 48106 USA
Toll Free: 1.800.521.3042
Fax: 1.800.864.0019
www.culturegrams.com

Student Travel Guide Entries

Guidebook Entry	Travel Guide Topic Chosen	Author_Last
1	NGO Culture in Haiti	Bixby
2	Vodou culture and practices in Haiti	Clardy
3	Healthcare in Haiti	DeKeyser
4	Haitian film and video culture	Loewer
5	Sanitation Issues and Practices in Haiti	Martin
6	Cuba/Haiti Healthcare connections	Perez-Alvarez
7	Geology and Water Resources of Haiti	Postma
8	Gender Issues in Haiti	Schultz
9	Sports and Physical Activity culture in Haiti	Thomas
10	Haitian Laws	Wickert
11	Haitian Education System and Schools	Witthoeft
12	Water Resources and Treatment in Haiti	Wampler
13	Haitian Literature and Proverbs	McDonell

Lauren Bixby

NGO Culture in Haiti

What is a NGO?

An NGO (non-governmental organization) is defined as any non-profit, voluntary citizens' group that is organized on a local, national or international level.[1] NGOs can do a lot of things like voice public concern for legal affairs, help the environment, or provide advocacy for human rights to name a few.

According to the NGO Aid Map[2], there are roughly 27 organizations working in Haiti, with 59 or so projects being run throughout the country. The majority of these projects are related to education, while the runner up is related to health. Out of the 59 projects, only 4 of them are dedicated to providing disaster prevention and preparedness. I think this is something that is concerning because of the magnitude of the earthquake that happened recently in Haiti.

The aid map also mentions that about 11 of those projects are related to water sanitation. Another source that I have clashes with this evidence, leaving me to believe that the information is outdated or incomplete for the aid map. A project done by a student named Thuy-Thuong Nguyen is working on a joint project with professors at Grand Valley State University to develop a sheet of an array of the various organizations working in Haiti towards water sanitation and agriculture development. From one of her documents I can see that there are far more than 11 projects going on in Haiti towards water quality improvement.[3] Some examples of the organizations doing projects are Hands Helping Haiti, Partners in Health, and Inter Aide.

---

[1] "DEFINITION OF NGOS." n.d. Accessed May 2, 2018. http://www.ngo.org/ngoinfo/define.html.
[2] "Haiti Aid Map · NGO Aid Map." n.d. Accessed May 2, 2018. https://haiti.ngoaidmap.org/.
[3] "CAWST Map.Xlsx." n.d. Google Docs. Accessed May 2, 2018. https://docs.google.com/spreadsheets/u/1/d/1ZE7INJUs8D-vy_gIEcJxY5jDgvGErBxcGGSHNHs40EI/edit?usp=drive_web&ouid=105630358373064991525&usp=embed_facebook.

Lauren Bixby

A look into some of the organizations helping Haiti

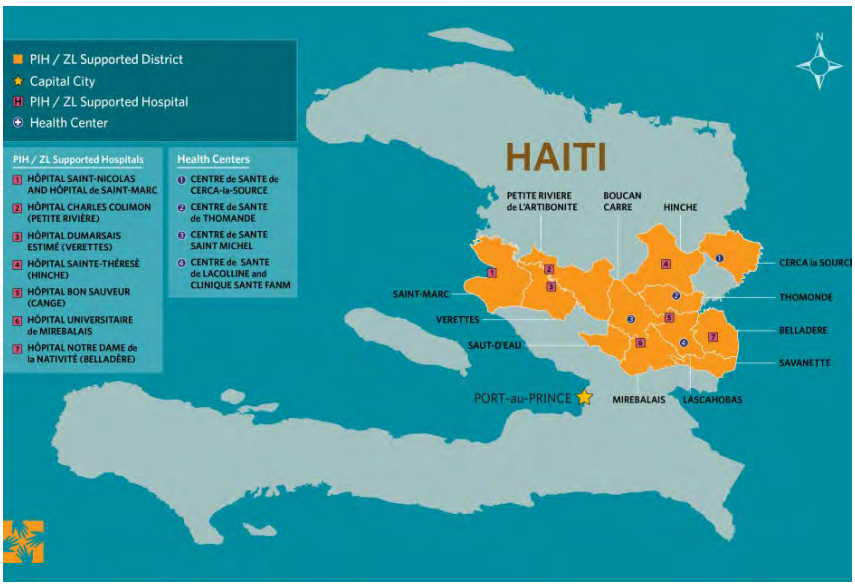
Hands Helping Haiti[4]

- This organization's mission is to provide safe drinking water in Haiti because unsafe water can cause illness, disease, malnutrition and death.
- They are working with communities in Southeast Haiti to develop safe drinking water.
- They are installing bio sand filters in homes. They are sustainable and something that the Haitians can accomplish themselves.
- The program consists of building and installing filters, teaching the families proper water sanitation, and following up along with continuing the water education.
- Each filter is capable of providing over 100,000 gallons of safe disease free water over it's life.

[4] Haiti, Hands Helping. n.d. "Water Project." Hands Helping Haiti. Accessed May 2, 2018. https://haitiwaterproject.org/our-story.

Haiti: Partners in Health[5]

- Their program in Haiti is known locally as *Zanmi Lasante.* They have 12 hospital sites across the Central Plateau and the lower Artibonite, that are two of the countries poorest regions.
- Partners in Health is the largest NGO health care provider in Haiti.
- They serve an area of around 4.5 million people, and have more than 5,700 staff members. They have received more than 1.6 million patient visits, had education assistance given to 9,400+ children, as well as many other accomplishments.
- Since the earthquake Haiti had in 2010, just over 700,000 people in Haiti became sick with cholera, with roughly 9,000 dead. Partners in Health responded by giving 20,000 patients treatment for cholera. As well as provided the countries first cholera vaccination campaign, reaching nearly 100,000 vulnerable people.



[5] "Haiti." n.d. Partners In Health. Accessed May 2, 2018. https://www.pih.org/country/haiti.

Inter Aide[6]

- In 2017, this organization carried out seven programs that supported over ten thousand families.
- They were able to help through education by supporting schooling for the children.
- Inter Aide was also able to help the WASH program, that raises awareness for sanitation and hygiene. As well as encouraging the chlorination of water at home.
- Additionally, they helped launch a program in Haiti for agriculture.
- Currently, there are located in the central region and the southern region
- The three local organizations that they partner with are the ACDED, the Concert Action and the OKPK.

inter aide

Lancement et suivi de programmes concrets de développement

[6] "Haiti." n.d. *Inter Aide* (blog). Accessed May 2, 2018. http://interaide.org/en/our-intervention-areas/haiti/.

The body of a sacrificed animal is surrounded by Haitians. This sacrifice leads to a feast that is intended to nourish both the spirits and the faithful.

In vodou belief a human is made up of five components:

1. Corps Cadavre, or the mortal flesh, the body that decays after death
2. N'âme, or the spirit of the flesh, allows the body to function while alive and passes as energy into the soil after death
3. Z'étoile, or the star of destiny, resides in the heavens
4.Gros- bon- ange, reflects the part of the cosmic energy that turns into life force
5. Ti-bon-ange, reflects the person's knowledge and experience, which are the two parts of the soul.

VODOU AND ITS HISTORY

Vodou originated from Africans that were brought as slaves to Haiti were from the Guinea Coast of West Africs. Their descendants are the primary practitioners of Vodou (those Africans brought to the southern US were primarily from the Kongo kingdom). Although vodou has remained in the area, the practices and beliefs have changed a bit. One of the largest differences between African and Haitian Vodou is that the enslaved Africans of Haiti were obliged to disguise their lwa or spirits as Roman Catholic saints, a process called syncretism. It was believed that this was done because the religion was viewed as pagan by their masters.

The most historically important Vodou ceremony in Haitian history was the Bwa Kayiman or Bois Caïman ceremony of August 1791 that began the Haitian Revolution. This revolution resulted in the spirit Ezili Dantor, the main loa or senior spirit of the Petro family in Haitian Vodou, possessed a priestess and received a black pig as an offering. All those present during this pledged themselves to the fight for freedom. This ceremony ultimately resulted in the liberation of the Haitian people from their French masters in 1804, and the establishment of the first black people's republic in the history of the world.

Haitian Vodou grew in the United States to a significant degree beginning in the late 1960s and early 1970s with the waves of Haitian immigrants fleeing the Duvalier regime, taking root in Miami, New York City, Chicago, and other major cities. It is still largely practiced in Louisiana.

https://en.wikipedia.org/wiki/Haitian_Vodou
https://www.britannica.com/topic/Vodou
http://www.d.umn.edu/~sava0089/voodoo.html
https://universes.art/specials/2010/vodou/history/
http://www.haitianconsulate.org/vodou.html

Ezilí Dantor or Erzulie Dantó is the main loa or senior spirit of the Petro family in Haitian Vodou. Worship. Tuesdays are the days reserved to worship Ezili Dantor.

Vodou: a traditional Afro-Haitian religion, is a worldview encompassing philosophy, medicine, justice, and religion

VODOU AS A RELIGION

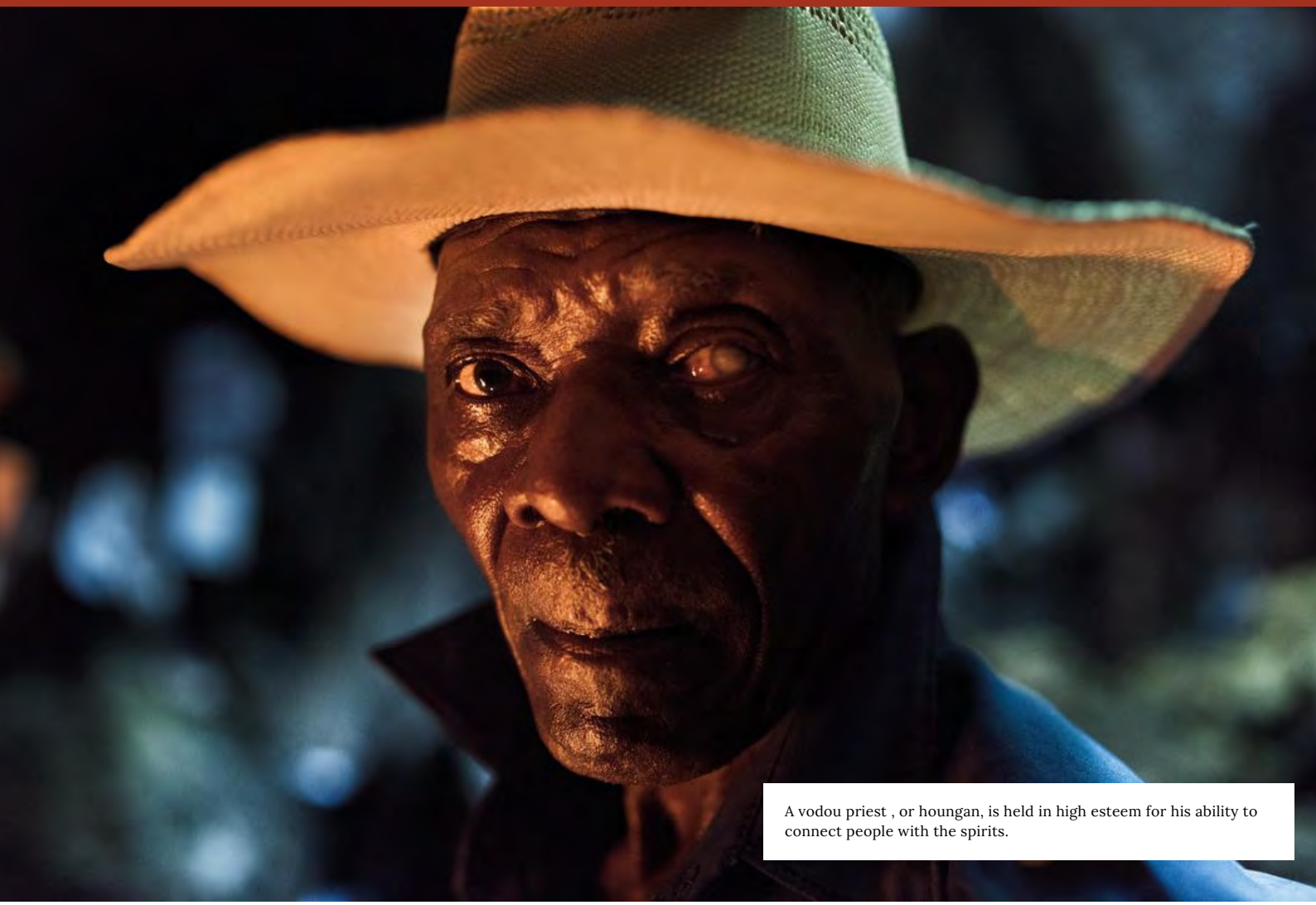
In Haiti, vodou began as an underground activity. During the 1700s thousands of West African slaves were shipped to Haiti to work on French plantations. The slaves were baptized as Roman Catholics upon their arrival in the West Indies. Their traditional African religious practices were viewed as a threat to the colonial system and were forbidden. Practitioners were imprisoned, whipped, or hung. But the slaves continued to practice in secret while attending masses. What emerged was a religion that the colonialists thought was Catholicism, but wasn't.

Haitian vodou today is the result of the pressures of many different African cultures and ethnicities of people imported to Hispanola during the African slave trade. Due to the suppression of African practices and beliefs, Haitian vodou combines the spirits of many different African and Indian nations, pieces of Roman Catholic liturgy have been incorporated to replace lost prayers or elements; in addition images of Catholic saints are used to represent various spirits or "mistè" ("mysteries", actually the preferred term in Haiti), and many saints themselves are honored in Vodou in their own right. This syncretism allows Vodou to encompass the African, the Indian, and the European ancestors in a whole and complete way. It is truly a "Kreyòl" religion.

Roman Catholicism is the official religion of Haiti, but vodou may be considered the country's national religion. The majority of Haitians believe in and practice at least some aspects of vodou. Most vodouists believe that their religion can coexist with Catholicism.

Vodou's main principle is that everything is spirit. Humans are spirits who inhabit the visible world. The unseen world is populated by lwa (spirits), mystè (mysteries), anvizib (the invisibles), zanj (angels), and the spirits of ancestors and the recently deceased. All these spirits are believed to live in a mythic land called Ginen, a cosmic "Africa." The God of the Christian Bible is understood to be the creator of both the universe and the spirits; the spirits were made by God to help him govern humanity and the natural world.

The belief system of vodou revolves around family spirits (often called loua or mistË) who are inherited through maternal and paternal lines. Loua protect their "children" from misfortune. In return, families must "feed" the loua through periodic rituals in which food, drink, and other gifts are offered to the spirits. There are two kinds of services for the loua. The first is held once a year; the second is conducted much less frequently, usually only once a generation. Many poor families, however, wait until they feel a need to restore their relationship with their spirits before they conduct a service. Services are usually held at a sanctuary on family land.



A vodou priest , or houngan, is held in high esteem for his ability to connect people with the spirits.

Misconceptions about vodou have given Haiti a reputation for sorcery and zombies. Popular images of vodou have ignored the religion's basis as a domestic cult of family spirits. Adherents of vodou do not perceive themselves as members of a separate religion; they consider themselves Roman Catholics. In fact, the word for vodou does not even exist in rural Haiti. The Creole word vodoun refers to a kind of dance and in some areas to a category of spirits. Roman Catholics who are active vodouists say that they "serve the spirits," but they do not consider that practice as something outside of Roman Catholicism. Haitians also distinguish between the service of family spirits and the practice of magic and sorcery

In the West vodou has been portrayed in zombie movies and popular books as dark and evil, a cult of devil worship dominated by black magic, human sacrifice, and pin-stuck vodou dolls. A very popular supernatural-thriller movie that has touched on vodou is the movie The Skleton Key. In the movie, African slaves were owned in Louisiana, and used vodou to to take over people's bodies in order to live forever. The popular show American Horror Story had a character that was a fictionalized version of Marie Laveau. Ms. Laveau was a Louisiana Creole practitioner of Vodou, who was renowned in New Orleans, and is still well known to this day. In the show she is seen using many different potions to create vodou magic. In all of these depictions, none of it exists in the vodou practices that originated in Benin.

https://news.nationalgeographic.com/news/2004/07/0707_040707_tvtaboovoodoo_2.html
https://www.theguardian.com/world/2015/nov/07/vodou-haiti-endangered-faith-soul-of-haitian-people
https://www.britannica.com/topic/Vodou
http://www.travelinghaiti.com/haitian-voodoo/

After just completing their pilgrimage Vodouisants ascend from the caves into sunlight.

Pilgrimage: a journey undertaken for a religious motive; commonly to seek a specific place that has been sanctified

VODOU PILGRIMAGES

Saut-d'Eau (Haitian Creole: Sodo) is a commune in the Mirebalais Arrondissement, in the Centre department of Haiti. It has 34,885 inhabitants.

Its name is French for 'waterfall', named after a large waterfall called 'Le Saut'. It is said that this waterfall was created in the massive earthquake on 7 May 1842.The waterfall is approximately 100 feet high and is the tallest in Haiti.

The area holds cultural significance in Haiti, to both Catholic and Vodou practitioners. In the 19th century, it is believed that the Virgin Mary of Mount Carmel (or the closely associated Vodou Lwa, Erzulie Dantor) appeared on a palm tree there. In some accounts, this appearance is said to have occurred during the 1860s. Another account states that there were two appearances of the Virgin in the 1840s and later in the 1880s.
In Laguerre's detailed account, an apparition of the Virgin Mary first reported in Saut d'Eau on July 16, 1849, by a man reportedly named Fortune Morose. In numerous oral accounts collected by Laguerre from local people, the young man went away in fear but returned shortly accompanied by a police officer. Together, they found a portrait of the apparition on the leaf of a nearby palm tree.

In 2003, the Haitian government formally recognized vodou as an official religion alongside other faiths. Precise statistics are hard to come by, but it is commonly estimated that more than half the Haitian population practices it. This helped bring significance to the pilgrimage as well.

Ancestor worship is a main element of the faith. So is trance possession by the spirits, which is aided by the complex, sacred rhythms of master drummers. The sacrifice of chickens, goats or cows is also widely practiced, with the animal intended to replenish the life-giving energy of the universe. The meat is usually distributed among family and friends.

The vodou calendar is filled with pilgrimages, often coinciding with Catholic saints' feast days, to sites around the country. Around Easter, the faithful, robed in white, pay homage to the spirits near the sacred siteof Souvenance. In summer, thousands flock to a towering waterfall where the Virgin Mary (also venerated as Ezili Danto, a goddess of love) is believed to have appeared.

Dressed in white, symbolic of their purity, Vodouisants begin a ceremony by reading prayers of thanks out loud with a priest.

A photographer for the Smithsonian Magazine walked through the caves during a pilgrimage. This was his account,"Inside the caves, the floors were slick with the blood of past sacrifices. Occasional beams of light streamed in through holes in the limestone roof. In the darkest recesses, candles cast orange light onto walls that fluttered with small papers bearing written prayers. A woman dressed in red held up a chicken—an offering to Ogou Feray, a god of iron and war, a divinity drawn directly from West African traditions and often represented by the icon of St. James the Greater.

Some sang to spirits such as Damballah and Ayida Wedo—the snake and rainbow—and Baron Samedi, spirit of the dead. A woman's voice rose to praise the spirit of the forest as a chorus chanted behind her. Other pilgrims sang of ritually cleansing themselves with river water. Some went into trances, their bodies providing a medium for lwa to dwell in the caves.

I came without a flashlight, to avoid disturbing the ceremonies, and kept silent as I worked and the worshipers prayed. I tried to follow a request by one of the pilgrims. He told me not to photograph the people here, but instead to photograph the spirits."

http://www.wilderutopia.com/traditions/haitian-healing-pilgrimage-saut-deau-waterfall/
https://globalnews.ca/news/2829541/thousands-of-haitians-make-annual-pilgrimage-to-sacred-waterfalls/
http://www.bbc.com/news/av/world-latin-america-10673099/haitians-make-voodoo-waterfall-pilgrimage
https://www.smithsonianmag.com/arts-culture/explore-timeless-world-vodou-haiti-180963673/

A large beaded Vodou "drapo" or flag by artist Oldof. The use of the large hand-dyed sequin in the border signifies that it was made during the U.N. embargo of Haiti in the early 90's when sequin were scarce.

Sevi Lwa: "serve the spirits" by offering prayers and performing various devotional rites directed at God and particular spirits in return for health, protection, and favour.

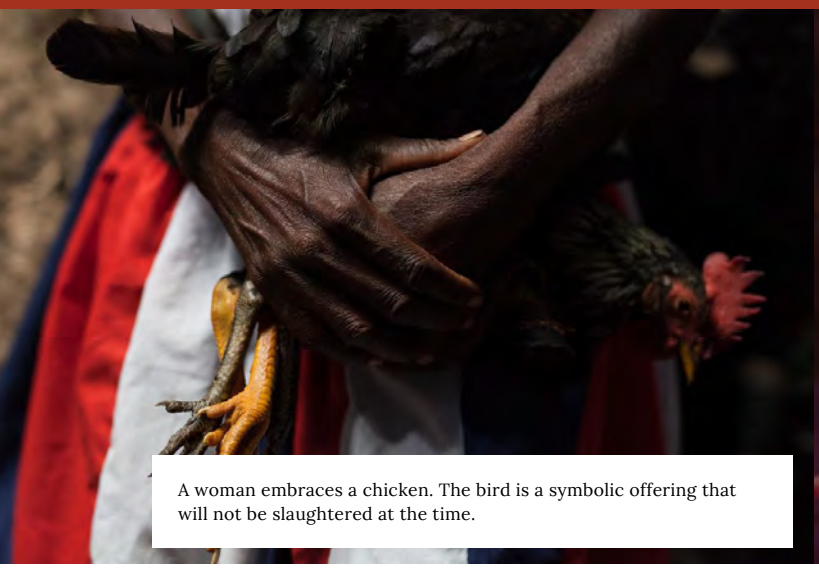
VODOU SUPPLIES AND USES

Many stereotypical supplies and vodou practices are actually related to hoodoo. Hoodoo is neither a religion, or a denomination of a religion, it is a form of folk magic that originated in West Africa and is mainly practiced today in the Southern United States. However, things like superstitions developed within the Voodoo tradition in Louisiana. While these superstitions are not central to the Voodoo faith, their emergence has been partly a result of Voodoo tradition in New Orleans and have since influenced it significantly.

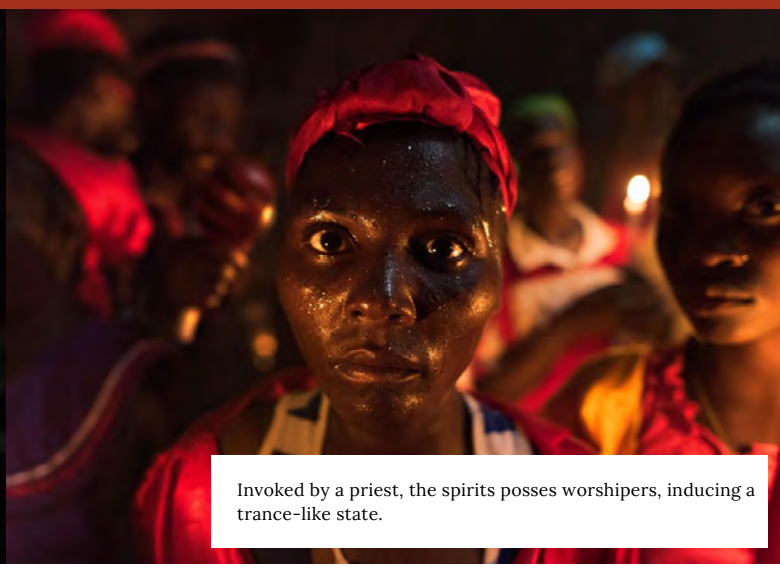
In Hoodoo herbalism, the "cure-all" is very popular among followers. The cure-all is a Hoodoo mixture that could solve all problems. Hoodoo's herbal healing system included a variety of ingredients for cure-alls; one recipe was to mix jimson weed with sulfur and honey. The mixture was placed in a glass, which was rubbed against a black cat, and then the mixture was slowly sipped. The Hoodoo doll is a form of gris-gris and an example of sympathetic magic. Contrary to popular belief, Hoodoo dolls are usually used to bless and have no power to curse. The purpose of sticking pins in the doll is not to cause pain in the associated person, but rather to pin a picture of a person or a name to the doll, which traditionally represents a spirit. The gris-gris is performed from one of four categories: love; power and domination; luck and finance; and uncrossing.

Since vodou is primarily an oral tradition, the names of gods, as well as the specifics of different rituals, can change in different regions or from generation to generation. However, African Vodou has several consistent qualities no matter where people practice it. Along with the belief in multiple gods and spiritual possession, these include veneration of ancestors, rituals or objects used to convey magical protection, Animal sacrifices used to show respect for a god (to gain its favor or to give thanks), The use of fetishes (or objects meant to contain the essence or power of particular spirits), ceremonial dances (which often involve elaborate costumes and masks), and ceremonial music and instruments, especially including drums.

Divination is using the interpretation of physical activities, like tossing seed hulls or pulling a stone of a certain color from a tree. The association of colors, foods, plants and other items with specific loa and the use of these items to pay tribute to the loa. Many of these traits, particularly ancestor worship, polytheism, and the importance of music and dance, are also important in other African religions. So, in practice, vodou looks a lot like other traditional African religions. Many observances appear to be part celebration, part religious service incorporating rhythmic music, dancing and songs. Many rituals take advantage of the natural landscape, such as rivers, mountains or trees. Through decoration and consecration, ordinary objects, like pots, bottles or parts of slaughtered animals, become sacred objects for use in rituals.



A woman embraces a chicken. The bird is a symbolic offering that will not be slaughtered at the time.



Invoked by a priest, the spirits posses worshipers, inducing a trance-like state.

Spiritual oils can be used in many ways. They can be worn as a scent for spiritual purpose, they can be wiped onto the person whom one wishes to influence, they can be used to “dress” a candle, they can be used for Spiritual Cleansing Products, they can be used in cleansing, love drawing or protection vodou spells, they can be used in a work lamp, and they can be used in conjunction with other magical items to create a focal point for the work

Dressing a candle is also very common. If using a jar candletheycarve the name of the person whom one wishes to influence into the wax, pour the oil(s) on top while making the petition for one’s desire. Simply dressing a candle, however, does not ensure the success of one’s endeavor. The candle (now a focal point) must be “worked,” that is to say that each day one must talk with one’s spirit about the issue.

Your role in affecting changes in your life with the use of magical items centers around your focus, prayers and including the fetish in your daily routine. Your intent, will, focus and consistency of working with any magical item makes the difference.

It is always important to anoint the magical fetish as soon as you bring it home; you can use the spiritual oils and powders that are included in some of our ritual kits or with your favorite oils or scents. Also, you want to personalize your fetish with your favorite charms, sample of your hair, favorite colors, photo, etc. to connect the spirit to you.

Hoodoo practitioners have used different tools throughout the history of the practice to solve their customer’s ailments, like a gris-gris. Examples include: Five Finger Grass, Dragon Blood Sticks, Dixie Love Perfume and Brimstone. Explanations in a 1946 book said that Five Finger Grass was a leaf split into five sections. The belief was that if hung in one’s house, it would ward off any evil. Dragon Blood Sticks were said to bring good luck in money, business, and love. Keeping a stick close on a person was said to bring luck. Dixie Love Perfume was noted for a fragrance to encourage romance. Brimstone is used to keep away evil spirits and counteract spells cast on households, and was burned in rooms needing to be deodorized. These were traditionally available in local shops. The user often had to take additional steps in a process before using such items, such as washing their hands in “Two Jacks Extract.” Only hoodoo shops have been known to sell these supplies. Many voodoo practitioners were believed to be afraid of these hoodoo items.

http://www.erzulies.com/how-to-use-spiritual-oils-magical-ritual-items-in-vodou-voodoo-and-voudou/
https://www.brown.edu/Departments/Joukowsky_Institute/courses/13things/7393.html
https://people.howstuffworks.com/voodoo1.htm

Megan DeKeyser

Healthcare in Haiti

History

In order to understand the complex health issues in Haiti, it is important to understand the country's history and the poverty that resulted from it. France gained control of Haiti (formerly Saint Domingue) in 1697. The French imported tens of thousands on Africans each year to work as slaves in Haiti (mainly on sugar cane plantations). The enslaved Africans were exploited for their labor while the French landowners profited. In the late 1700s, Haitian slaves began a revolution for independence from the French. Inspired by the revolution happening in France, the slave army defeated the heavily outnumbered French slave owners. In 1804, the slaves were officially liberated and the independent nation of Haiti was formed. However, this independence did not come without a price. In 1825, the Haitian president signed the Royal Ordinance of Charles X which promised Haiti French diplomatic recognition. In exchange, the ordinance stated that Haiti had to pay 150,000,000 francs in indemnity to the French (COHA). This amount was almost three times the actual amount that the French lost in revenue from Haitian land and slave labor. This debt, along with the resulting unstable economic and political structures, caused issues with healthcare in Haiti that are still present today (Poverty & Health in Haiti).

The Battle of Vertières during the Haitian Revolution

Healthcare System

There has never been a structured healthcare system in Haiti. While there are hospitals and clinics, the cycle of poverty that many Haitians are born into inhibits many people from paying medical fees or paying travelling to medical facilities. Basically, Haitians that live in poverty depend on non-governmental organizations (NGOs), charities, and international medical volunteers to provide them with healthcare. For example, Paul Farmer started the organization Partners in Health in 1987. His non-profit organization has helped bring modern health care and services to many people in rural Haiti. Farmer's organization started in Haiti by providing healthcare to Haitians in rural areas, building medical facilities, and working to fix sanitation issues (Social Justice Hero of the Week, Paul Farmer). Farmer really set a new precedent for health care organizations working in poor, rural areas. Instead of simply handing out medications, installing water filters, and leaving, Farmer focused on trying to find permanent solutions instead of temporary ones.

Paul Farmer with a patient

Healthcare Issues

Another issue with Haiti's healthcare system is the medical professional shortage. Haiti has three medical schools; comparatively, the Dominican Republic has 16. Haiti ranks 155th in

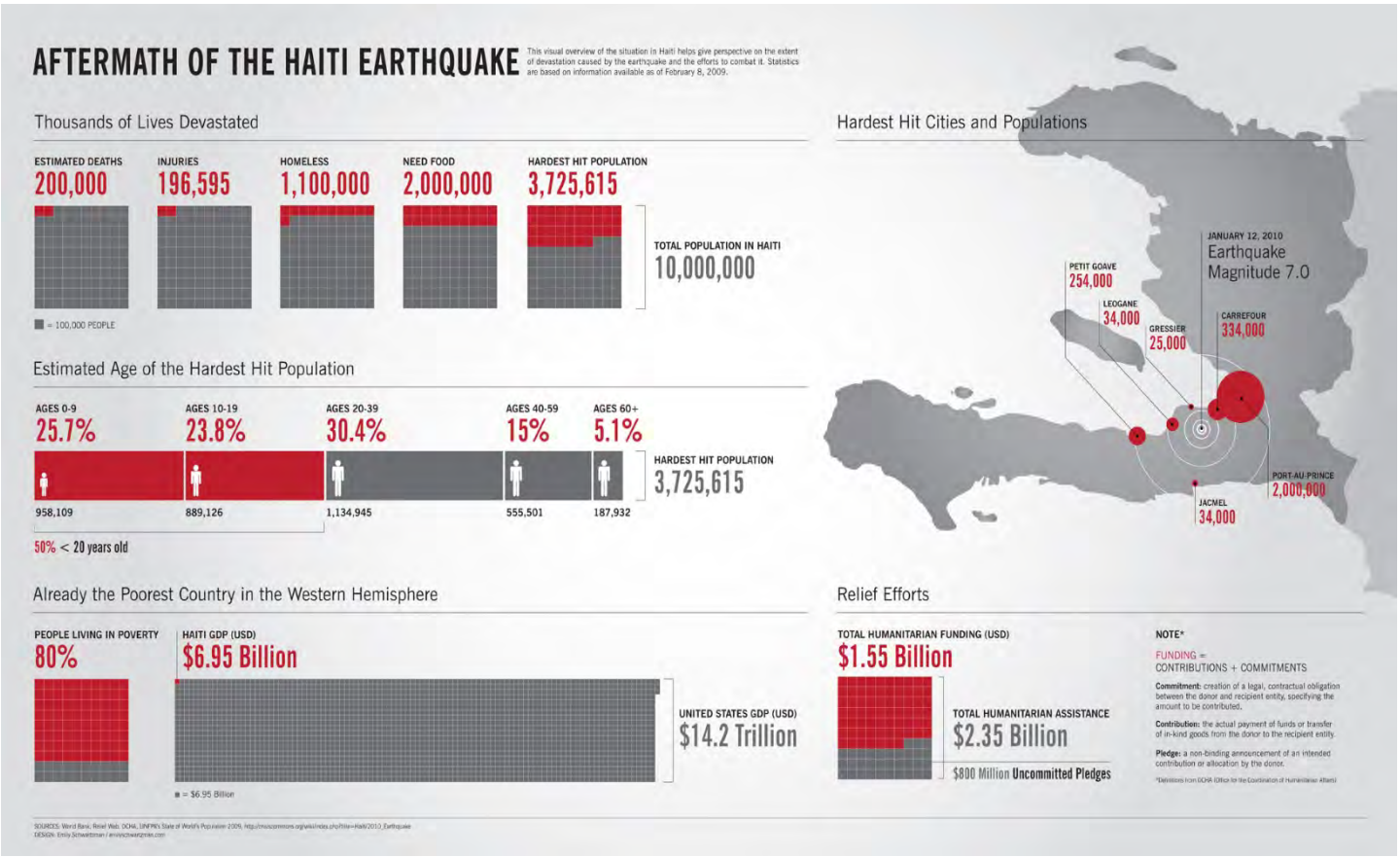
the world for doctor to people ratio with approximately 25 doctors per 100,000 people. To put this in perspective, the United States has a ratio of about 25 doctors per 230 people (Haiti and Healthcare). Even the small number of hospitals and clinics that *are* functioning in Haiti are in poor condition—they lack resources, staff, doctors, room, and funding.

Crowded hospital room in Port au Prince (Cholera: Haiti's Latest Scourge).

Healthcare Post-Earthquake

Healthcare in Haiti before the earthquake of 2010 was already a struggling system. The earthquake caused many disasters that only made health conditions worse. Over 500,000 people died or were injured and about 2 million people were displaced from their homes. The 7.0 magnitude earthquake destroyed many buildings in the southwestern parts of Haiti, including important infrastructure like hospitals, schools, and government buildings. With so many hospitals and clinics destroyed, it was hard to provide immediate medical care to injured victims. Communicable diseases were spread more rapidly in the small, uncleanly camps that victims had to seek shelter in. Most notably, the earthquake resulted in a cholera epidemic in Haiti. Cases of cholera had not been present in Haiti for nearly 100 years before the earthquake (Haiti's

Struggling Healthcare System). In short, volunteers from Nepal brought the disease over to Haiti and the sewage from their camp entered the water as a result of the earthquake (Harmon, 2011). The exact number of deaths from cholera in Haiti since the earthquake is hard to say, but it is currently near 10,000. The effects of the earthquake are still evident over eight years later; the health crisis in Haiti is even worse than it was before the earthquake.



Conclusion

Because of Haiti's aforementioned history, the nation never really had the chance to develop good economic or political structures. From military dictatorships to international intervention to being fiscally controlled by other countries, there are many reasons why Haiti has never had the chance to develop a government that would create or fund a functioning healthcare

system. Therefore, the main source of healthcare and medical aid in Haiti comes from international NGOs and health organizations.

References

"Cholera: Haiti's Latest Scourge." The Why Files. January 22, 2016. Accessed May 7, 2018. https://whyfiles.org/2010/cholera-haitis-latest-scourge/index.html

COHA. "The Haitian Timeline: A History of Military Dictatorship and Civil Rule (Revised and Expanded)." COHA. Accessed May 9, 2018. http://www.coha.org/military-dictatorship-in-haiti/.

"Haiti and Healthcare." Plenty International. February 12, 2010. Accessed May 8, 2018. http://plenty.org/haiti-and-health-care/.

"Haiti's Struggling Healthcare System." New Internationalist. July 05, 2017. Accessed May 9, 2018. https://newint.org/blog/2013/02/25/haiti-healthcare.

Harmon, Katherine. "Health Lags in Haiti 1 Year After the Earthquake." Scientific American. January 12, 2011. Accessed May 9, 2018. https://www.scientificamerican.com/article/health-lags-in-haiti-anniversary/.

"Poverty & Health in Haiti." The Future of Wind Power. Accessed May 8, 2018. https://www.mtholyoke.edu/~follo20e/classweb/css/3poverty.html.

"Social Justice Hero of the Week, Paul Farmer." Cortina Community Blog. Accessed May 10, 2018. http://blogs.creighton.edu/cortinacommunity/2016/06/29/social-justice-hero-of-the-week-paul-farmer/.

Emily Loewer

11 May 2018

A Brief History of Haitian Cinema

The documentation of Haitian film culture is extremely limited. It consists of only one issue of the *Conjonction* (1983) journal of the French Institute of Haiti, the book *Matériel Pour Une Préhistoire du Cinéma Haïten* (Material for a prehistory of Haitian Cinema) (1983) by Arnold Antonin, and an article, also by Arnold Antonin, in the book *Cinéma de l'Amérique Latine* (Cinema of Latin America) (1981). Cinema appeared in Haiti at the same time as many other countries, and the first ever screening took place on December 14, 1899. In the beginning, Haitian cinema never really got a chance to flourish, but it has begun to grow in recent years.

Many of the first Haitian films are from the US occupation of the country from 1915 through 1934, depicting United States marines and official ceremonies. Other early movies depict health care, agriculture, and scenes of social life, particularly carnival.

Carnival, or *Kanaval*, a tradition beginning in Port-au-Prince in 1804 following the country's declaration of independence, is a celebration predating the season of Lent and encourages indulgence in food, drinks, and debauchery. An example of *Kanaval* in film can be found at https://www.loc.gov/item/ihas.200003813/ . The two young boys perform a "scissor dance" during the festival. Visible in the background are parade floats, elaborate masks, and a stilt dancer. Another example of this "everyday life" style of Hatian film can be found at https://www.loc.gov/item/ihas.200003822/ . In the video clips, filmed in 1936, Hatian workers perform traditional dances with glimpses into La Citadelle, cockfighting, and Vodun.

Although cinema began with a bang, there was and continues to be very little local film production, and Hollywood cinema dominates the big screen. Throughout the Duvalier regime, the Father-Son Dictatorship of Haiti spanning from 1957-1986, strict surveillance over films was exercised. This, along with the extreme poverty of the country and the technological and financial constraints of filmmaking, led to only four films being produced in the entire 28 years of the dictatorship. Many films have been made since the fall of the regime, though, many by Haitian filmmaker and documentarian Arnold Antonin. Antonin is responsible for many of the legendary films of Haiti, including *Les Duvalier sur le Banc des Accusés* (The Duvaliers on the Accused's Bench) (1973) and Haïti le Chemin de la Liberté (Haiti, the Way of Liberty) (1974), the latter of which was sponsored by the famous French New Wave *Le Cahiers Du Cinéma* magazine and elevated Haitian film culture to an international audience. More dramatic films emerged in this post-regime era as well, such as those by Raoul Peck, including *L'Homme sur les Quais* (The Man on the Shore) (1992), and the semi-biographical *Lumumba* (2000), which went on to be successfully released in Africa and the United States.

Although the Haitian film industry is growing, it is still deeply flawed- namely, by poverty, piracy, and a lack of imagination. Artistic and technical preparation are weak, with cast and crew alike learning on the job. Due to this inexperience, they are forced to deal with technical problems before every considering creative ones. There is only film school in Haiti, the Ciné Institute, founded in 2008 by David Belle. There is no Haitian legislation regarding cinema, and the government has shown no interest in encouraging film production.

In 2000, the most prominent filmmakers living in Haiti, led by Claude L.C. Mancuso and Arnold Antonin, created the Haitian Filmmakers Association. In 2007, the Motion Picture

Association of Haiti was founded by Hans Patrick Domercant. Both these organizations have created progress in enriching the film culture of Haiti.

Although Haitian cinema struggled with a slow start, recent efforts have begun to revitalize the growing film industry in the country. The culture and spirit of Haiti shine through the existing film artifacts from the beginning of the motion picture, and its ethnicity and philosophy are undeniable in recent works as well.

References:

"Arnold Antonin: Interview with the Filmmaker". *Kreyolicious*. Online.

Bruno, Shirley, ed. (17 March, 2014). "Interview: Haiti's Ciné Institute Founder David Belle On Cultivating A Local Film Industry & More". *Indie Wire*. Online.

Dunham, Katherine (1932-1937). "Haiti". Video. Retrieved from https://www.loc.gov/item/ihas.200003813/

Dunham, Katherine (1936). "Haiti Fieldwork". Video. Retrieved from https://www.loc.gov/item/ihas.200003822/

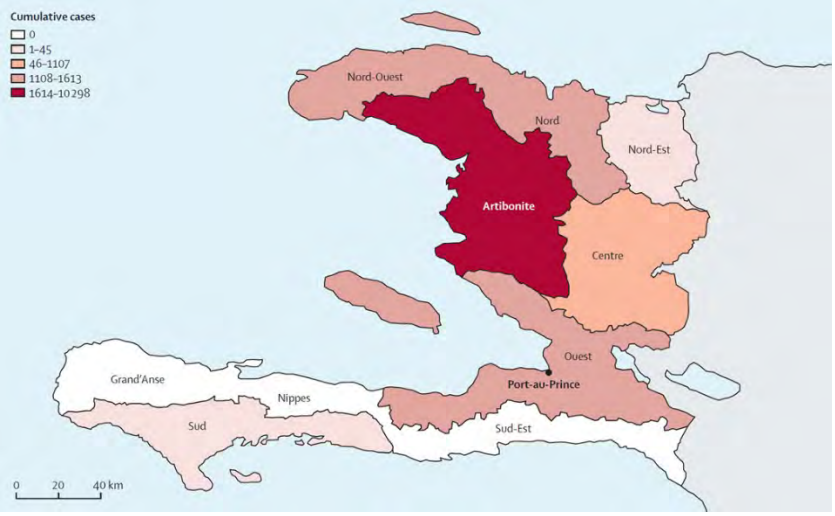
Gaestel, Allyn (March 9, 2011). "Carnival returns to Haiti, with some darker themes". *Los Angeles Times*. Online.

Jacobsen, Stevenson (6 July, 2007). "Film Industry Blooms in Volatile Haiti". *Washington Post*. Online.

Sanitation Issues and Practices in Haiti
Tyler Martin

Pt 1. Statistics

Haiti has the lowest rates of clean water and sanitation practices in the Western Hemisphere. The regional average for Latin America and The Caribbean for 80% sanitation coverage, while Haiti boasts only 17%. 85% of Haitians in cities have access to improved water, while only 51% of the rural population has access. Statistics for improved sanitation also show how much worse the issue is in the country, with access for urban and rural areas at 24% and 10%, respectively. Within less than a year of the brutal 2010 7.0 magnitude earthquake, nearly 20,000 haitians were hospitalized and over 1,000 killed by the cholera epidemic.



Pt 2. Port au Prince study

In December of 2010, a survey was conducted in Port au Prince to determine the success of efforts made to fight the ongoing cholera outbreak. The study also recorded access and community attitude toward soap and water tablets.

Drinking water sources and treatment before and after cholera outbreak, as reported by survey respondents, Port au Prince, Haiti, 2010*

Source or treatment	Before outbreak		After outbreak	
	No. yes/total no. respondents	Weighted % (95% CI)	No. yes/total no. respondents	Weighted % (95% CI)
Water source				
Piped public kiosk	122/396	32.5 (21.3–43.7)	84/391	21.5 (10.5–32.5)
Piped in house	101/396	26.9 (15.1–38.7)	57/391	15.1 (7.9–22.2)
Private kiosk	129/396	26.8 (18.7–34.9)	203/391	47.6 (36.2–58.9)
Tank filled by truck	11/396	4.4 (0–8.6)	12/391	5.1 (0.8–9.4)
Bladder	3/396	0.6 (0–1.2)	8/391	3.2 (0–8.0)
Other source	7/396	1.3 (0–3.3)	7/391	1.9 (0–3.9)
Treated water (any method)	130/405 (30.3)	30.3 (22.1–38.4)	307/405	73.9 (67.2–80.6)
Method of treatment†				
Water purification tablets	79.119 (66.6)	66.6 (52.8–80.4)	259/301	86.1 (80.2–92.0)
Bleach	76.132 (57.7)	57.7 (47.6–67.8)	174/347	50.1 (36.2–64.1)
Boiling	11/162 (6.8)	6.8 (2.9–10.7)	25/385	6.5 (3.4–9.6)
PuR, Gadyen Dlo, or Dlo Lavi	0	NA	1/333	0.3 (0–0.8)
Other answer	4/160 (2.5)	2.5 (0–5.5)	2/100	2.0 (1.3–3.3)

*CI, confidence interval; NA, not applicable. Sampling weights are according to population size. Before and after data were collected at 1 time point.
†Respondents selected >1 method of water purification.

Access to soap and attitudes toward water purification tablets, Port au Prince, Haiti, December 6–7 and 14–16, 2010*

Access and attitude	No. respondents	Weighted† % (95% CI)
Soap		
Received soap	65	16.5 (3.6–29.4)
Purchased soap	381	95.7 (93.9–97.5)
Had soap at the house at time of survey	355	84.1 (81.3–86.9)
Water purification tablets		
Received in the past month	178	41.5 (29.9–53.1)
Bought in the past month, n = 403	279	70.2 (64.3–76.2)
Know how to use, n = 402	389	97.5 (96.0–99.1)
Perceptions of water purification tablets, n = 387		
Strong taste, unacceptable	25	4.7 (2.4–7.0)
Some taste, acceptable	345	87.7 (83.7–91.6)
No taste	3	0.6 (0–1.2)

The results of the study suggest that at least in Port au Prince, initial efforts to prevent and inform about cholera were successful. With nearly 100% of people surveyed in Port au Prince reporting successful use of water purification tablets, it can be assumed most everyone has access to water in the city. However it leads to wonder if the face that across the board cities only have 85% of citizens with purified water, if some urban areas receive more aid and resources than others.

Pt 3. Artibonite Study

Another study was conducted in all rural households of the Artibonite Department in Haiti in 2012. Part of the data they collected was on what sources of water were being used, and on effectiveness of a sample of water sources. The results are on the following page.

Variable (n = 433)	Number (%)
Improved source	185 (42.3)
Public tap/fountain/kiosk	85 (17.5)
Borehole with handpump	58 (14.8)
Protected spring	20 (4.9)
Private kiosk (vended water) *	16 (3.4)
Piped water onto plot	6 (1.7)
Unimproved source	247 (57.3)
Unprotected springs	115 (26.5)
River/canal	17 (2.8)
Unclassified surface water	63 (16.0)
Dug well †	52 (12.0)
Undefined	1 (0.4)

Water source type	Number (%)	*E. coli* positive number (%)
Improved	55 (50.9)	28 (50.9)
Public tap/fountain /kiosk	28 (25.9)	22 (78.6)
Borehole with handpump	18 (16.7)	3 (16.7)
Protected spring	2 (1.8)	2 (100)
Private kiosk (vended water)	6 (5.5)	0 (0)
Piped water into plot	1 (0.9)	1 (100)
Unimproved	53 (49.1)	44 (83.0)
Unprotected spring	33 (30.5)	24 (72.7)
River/canal	6 (5.6)	6 (100)
Dug well *	14 (13.0)	14 (100)
Total	108 (100)	72 (66.7)

As suggested by the data, many improved water sources still carry dangerous *E. coli,* and nearly all unimproved sources carry it. This calls into question the validity of approaching Haiti's water and sanitation issues through the view of "improved sources", as they can often still carry harmful materials. The study also asked respondents about their perception of the safety of their water. 64.1% believed that their water was "safe as is", which is nearly the same percentage of sources containing *E. Coli.*

Pt 4. Conclusion

Overall, while some studies show successful distribution of both water and sanitation, it is clear that overall in Haiti sanitation practices are still poor and access to genuinely clean and healthy water is scarce, despite public perception.

Relationship Between Cuba and Haiti in Healthcare

Even before the earthquake that devastated Haiti in 2010, the country was already the most impoverished in the Western Hemisphere. For example, childhood mortality was 171 per 1000 and diseases such as malaria were still common. The Haitian Ministry of Public Health and Population consisted of a small group of Haitian public health leaders that were working to build a new and improved healthcare system (Dowell, 2011). This has been made possible with the support of organizations around the world such as the Pan American Health Organization. Foundations such as this one, have been able to establish:

> "A national surveillance system and a camp-based system serving the internally displaced population reporting disease-specific data that have been used to asses reports of diphtheria and typhoid outbreaks and to monitor for increases in disease incidence warranting field investigations" (Dowell, 2011).

After the 2010 earthquake, a cholera outbreak emerged in the weakened country. It spread quickly throughout the country, within two months, and killed over 3,990 people. Because of programs such as the one developed by the Haitian Ministry of Public Health and Population, the cholera disease has been tracked. This allows not only for data collection but also for the efficient response of areas most affected. For example, the numbers of deaths and cases of cholera have decreased since 2010. In 2017, 13,468 cases of cholera were reported resulting in 157, a big decrease from 3,990. Although not perfect the Ministry has started a change in Haitian healthcare by effectively using resources.

Figure 1: Haitian Ministry of Public Health and Population

http://mspp.gouv.ht/newsite/

Figure 2: Cholera cases in Dominican Republic and Haiti, 2010-2017

Year	Dominican Republic			Haiti		
	Cases	Deaths	CFR (%)	Cases	Deaths	CFR (%)
2010†	191	0	0	179,379	3,990	2.2
2011†	20,851	336	1.6	340,311	2,869	0.8
2012†	7,919	68	0.8	112,076	894	0.8
2013†	1,954	42	2.1	58,809	593	1.0
2014†	603	11	1.8	27,753	296	1.1
2015	546	15	2.7	36,045	322	0.9
2016	1,159*	27*	2.3	41,421*	447*	1.1
2017	119**	4**	3.4	13,468***	157***	1.2

†**Source**: WHO, Weekly Epidemiological Bulletins. Available at: http://www.who.int/cholera/statistics/en/
* Data up to EW 52 of 2016.
** Data as of EW 50 of 2017. Published by the Dominican Republic Ministry of Public Health, General Directorate of Epidemiology.
*** Data as of EW 50 of 2017 - Published by the Haiti Ministry of Ministry of Public Health and Population / Directorate of Epidemiology, Laboratory and Research.

Although it is not well known, relationships with Cuba is another resource Haiti has for healthcare. After Hurricane Georges in 1998, Cubans helped with the aftermath of natural disasters the earthquake of 2010. Cuban were one of the first responders in the country even though the countries hadn't had diplomatic relations in at least 36 years (Kirk, 2010). After 1998, Cuba developed a two-pronged system, Cuban doctors would remain in Haiti as long as they were needed, and Cuba would provide a six-year scholarship for Haitians to study medicine in Cuba's Latin American Medical School (Gorry, 2010). Because thought to understand their country's needs better than anyone, most students to receive the scholarship were from the poorest parts of the country. Since 1998, Cuba has trained around 550 Haitian doctors. Not only are Cuban doctors helping out in Haiti, a third of Cuban doctors are heling 77 other impoverished countries.

Figure 3: Public Health Statistics

TABLE 8. Improvements in Public Health in Haiti, 1999–2007

Health Indicator	*1999*	*2007*
Infant Mortality, per 1,000 live births	80	33
Child Mortality under 5 per 1,000	135	59.4
Maternal mortality per 100,000 live births	523	285
Life expectancy (years)	54	61

Source: Pan American Health Organization, *Haiti*.

TABLE 9. Selected Statistics on Cuban Medical Cooperation, December 1998–May 2007

Visits to the doctor	10,682,124
Doctor visits to patients	4,150,631
Attended births	86,633
Major and minor surgeries	160,283
Vaccinations	899,829
Lives saved (emergency)	210,852

Source: Kovac, "Cuba Trains Hundreds of Haitian Doctors."

Figure 4: Medical Contributions

Table 10. Comparative Medical Contributions in Haiti by March 23

	MSF	*Canada*	*United States*	*Cuba*
Number of staff	3,408	45	550	1,504
Number of patients treated	54,000	21,000	871	227,143
Number of surgeries	3,700	0	843	6,499

Source: Data compiled from Gorry, "Two of the 170,000+ Cases"; "Cooperación con Haití"; "Haiti: Two Months after the Quake"; "New Services and New Concerns"; "Haiti-USNS Comfort Medical and Surgical Support"; Popplewell, "Singing Canada's Praise"; "USNS Comfort Leaves Haiti."

Although it is a small country and is also impoverished, Cuba has made more contributions to the health of Haitian than large developed countries such as the United States and Canada. Not only have they provided services in times of distress, but they have helped improve the overall everyday health of the people, as seen in Figure 2. This can be seen by the rise in life expectancy, from 54 to 61

years of age, and by the number of visits to the doctor and made by the doctor, 10,682,124 and 4,150,631.

References

Epidemiological Update Cholera. Pan American Health Organization, World Health Organization. https://reliefweb.int/sites/reliefweb.int/files/resources/2017-dec-28-phe-epi-update-cholera.pdf

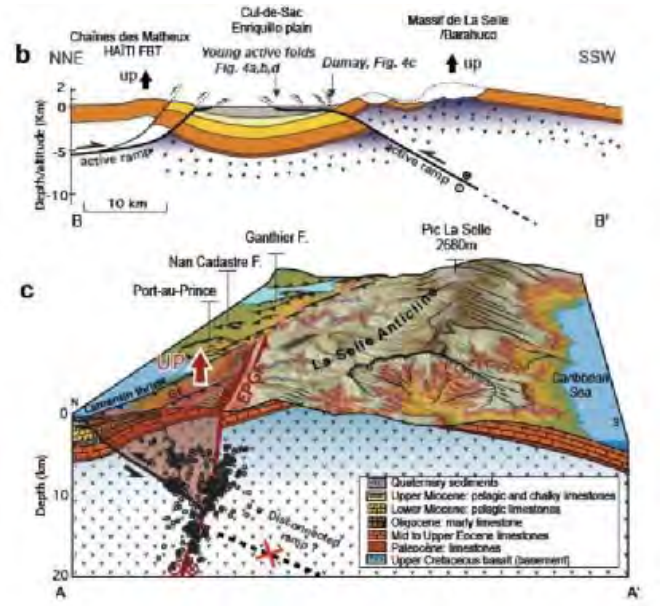
Dowell, Scott F., Tappero, Jordan W., Frieden, Thomas R. "Public Health in Haiti- Challenges and Progress". The New England Journal of Medicine. 27 January, 2011. http://www.nejm.org/doi/full/10.1056/NEJMp1100118

Gorry, Conner. "Haiti One Year Later: Cuban Medical Team Draws on Experience and Partnerships". International Cooperation Report. January, 2011. MEDICC Review. http://www.medigraphic.com/pdfs/medicreview/mrw-2011/mrw111l.pdf

Kirk, E., & Kirk, J. M. "Cuban medical cooperation in Haiti: One of the world's Best-Kept Secrets". *Cuban Studies, 41*, 166-172,209-210. 2010. http://search.proquest.com.ezproxy.gvsu.edu/docview/863206191?accountid=39473

Lakhani, Nina. "Cuban Medics in Haiti Put the World to Shame." *The Independent*, Independent Digital News and Media, 23 Oct. 2011. www.independent.co.uk/life-style/health-and-families/health-news/cuban-medics-in-haiti-put-the-world-to-shame-2169415.html.

The Geology of Haiti



Current Geology

The island, in which the country of Haiti resides, is located on the border of a transform plate boundary consisting of the North American Plate and the Caribbean Plate. The two large plates have been slowly sliding past each other causing faulting throughout the region. This faulting has resulted in deformation and up lift on the island. This tectonic activity has given Haiti its mountainous landscape as well as its valleys and plateaus.

Faulting has also been the catalyst for the islands seismic activity. In 2010 Haiti experienced a magnitude 7.0 earthquake which devastated the capital of Port-Au-Prince and surrounding areas. Much of its infrastructure had been damaged or destroyed and an estimate upwards of 200,000 people died as a result of the earthquake. Many people were left homeless and exposed to unsanitary conditions for an extended periods of time. The effects of the earthquake still impact Haiti today.

Haiti's stratigraphy is predominantly limestone sedimentary rock and its basement is mafic basalt. Limestone is mostly composed of calcium carbonate and is partially soluble in water and acid. Basalt is extrusive igneous rock and is formed by the rapid cooling of lava. Small deposits of gold and copper are also found there.

Water Resources In Haiti

Currently, Haiti is struggling to provide much of it's rural population with a sanitary water supply. The drinking water they have access to is teaming with E. coli. E. coli is typically found in the intestines of animals and humans and if contracted, it can lead to serious illness and even death.

Due to deforestation and soil erosion in Haiti, there has been a decrease in infiltration of rain water. Porous soil and rock act as a filtration system for groundwater and when there is little to no soil there is nothing to prevent the passage of contaminants.

Haiti's Limestone stratigraphy has also been problematic in regards to the filtration of ground water. Limestones solubility in water causes the limestone develop large pores. When the groundwater passes through these large pores there is nothing to filter out the contaminants.

The wells and springs in Haiti are mostly exposed, which also contributes to contamination. Although isolating the water sources may be beneficial, poor sanitation and lack of plumbing, leads to the leaching of feces into the groundwater supply.

Proper sanitation, filtration and reversing deforestation are all methods that can be used to improve the quality of water in Haiti. With aid and the proper resources Haitians will access to water that is safe to drink.

Gender Issues in Haiti

Gender issues are not frequently thought of as one of Haiti's most pressing issues from an outsider's perspective, especially considering the most publicized NGO involvement tends to focus on rebuilding after natural disasters or access to clean water. While both of these are obviously prevalent issues, it is important that gender issues present in Haiti are recognized and policies are put in place to reduce the gap. Issues such as gender-based violence and antiquated laws must be addressed in order to improve the standing of women and girls in Haiti.

With such an emphasis on rebuilding and improving Haiti, it is important that the issue of gender inequality continues to be addressed. In the case of the Earthquake in 2010, and in other natural disasters that have occurred, human-rights issues often get pushed to the wayside in order to focus on relief efforts. However, in the aftermath, vulnerable Haitians are too frequently faced with exploitation and abuse. One such example is the small town of Anse-a-Pitre, located at Haiti's most southern border crossing with the Dominican Republic. As the population increased with people seeking refuge after the Earthquake, so did the number of cases of violence against women (Bakody).

During the post-Earthquake period, the government did little to inform the public about access to post-rape care, and few health providers were trained to address gender-based violence. Additionally, medical and judicial communities do not agree on how to record forensic medical evidence of rape and the penal code failed to encompass most forms of violence against women and provides little measures for victim protection (Klasing). These factors, combined with the stigma and shame the victims feel, as well as fear of reprisal from the perpetrators or the community, lead to underreporting or overlooking incidents of sexual and gender-based violence (Doctors without Borders).

A student of a girls' school in Port-au-Prince walks by a mural depicting the suppression of women in Haiti. Photo by Patrick Farrell

However, Haiti's women's movement has worked to change archaic Haitian laws that put women and girls at a grave disadvantage from the day they are born. One important change was how the law addressed cases of rape. Up until 2005, it was considered a moral crime. However, the law was changed to address rape and the consequences for perpetrators (Klasing). Additionally, the aftermath of the 2010 Earthquake, UNICEF staff created a referral system for survivors of violence and encouraged the Haitian government's push to include gender-based violence serves as a part of its approach to women's and girl's health. Furthermore, support groups are teaching both men and women how to prevent violence, as well as how to create safe spaces (Bakody). Gender issues are just as important to consider in the aftermath of a natural disaster as at any other point in time, and they will continually need to be addressed in order to improve the treatment of women in Haiti.

At this point in time, the current availability of services is still inadequate to address the problem of sexual and gender-based violence. However, efforts are being taken to address this issue. Doctors Without Borders joined other agencies serving survivors to open a clinic that specializes in providing

care in Port-au-Prince in May 2015. As of March 2017, the Pran Men'm clinic (Haitian creole for "take my hand") has provided care to nearly 1,300 survivors (Doctors Without Borders: MSF).

In order to address issues that Haitian women face, it is important that there is sufficient representation in government positions. Haiti's constitution protects women from workplace discrimination as well as physical abuse, and guarantees the right to political participation. However, in practice, women routinely face harassment in public and private life. Additionally, women seeking political office often face considerable obstacles, such as a patriarchal attitude towards leadership, lack of financial support, and threats of violence and intimidation. In order to reduce these obstacles, the Parliament passed an amendment instituting a 30 percent quota for women in all elected and appointed positions at the national level in 2012, and then added the same quota for local councils and political candidates in 2015 (US AID). However, these quotas are not always met, so the issue of female representation still remains. Female representation in the government is necessary to ensure that the voice of females is considered when drafting new legislation and changing existing laws to ensure they are modernized. Additionally, female representation ensures that women's issues are brought up and considered, ensuring positive change for the women of Haiti.

According to USAID, Haiti's long-term economic and democratic development rely on prioritizing the protection and empowerment of women. Key challenges that need to be addressed include gender-based violence, the need for safe spaces in schools, and the weak judicial system. One in three Haitian women, ages 15 to 49, has experienced physical and/or sexual violence. However, the weak judicial system means that women and girls often face unequal legal protection. Sexual harassment occurs without punishment, and victims often are blamed for rape and abuse. Therefore, it is imperative that social norms are challenged in order to ensure fair treatment of women facing gender-based

violence and discrimination. It is important that gender issues continue to be addressed in Haiti in order to improve the standing of women and girls throughout the country.

Works Cited

"Against Their Will by MSF." *Exposure*, msf.exposure.co/against-their-will.

Bakody, Jennifer. "After the Earthquake, Protecting Haitian Women and Girls from Violence."*UNICEF*, 29 Mar. 2010, www.unicef.org/emergencies/haiti_53204.html.

Klasing, Amanda. "Hope for Haiti's Women." *Human Rights Watch*, 17 Apr. 2015, www.hrw.org/news/2012/01/17/hope-haitis-women.

"Women and Gender Fact Sheet." *USAID | Haiti*, Mar. 2017.

Kayleigh Thomas

The Impact of Sports Physical Education

As a people Haitians spend on average a vastly larger amount of time outside compared to the typical American. Simply due to the lifestyle most of the population lives it is needed for them to work fields, and walk miles to town or to markets in order to sell their products to consumers. Besides this day-to-day exercise, sports are a common way for the people and children to interact within the community and have fun under the heat of the Haitian sun. Sporting events create a community within the country, either bonding people over the love of a team or tearing apart friendships after a bet on a game. When looking at the grand scheme of physical activity in Haiti, there can be many similarities drawn between America and Haiti, but when taking a closer look there are many details and differences that make this topic unique to the culture and tradition of the people living there.

For the Americans physical activity has multiple purposes in our lives, and the majority of the time it is an individual choice to be physically active once leaving school. Over the decades there has been a large movement to incorporate exercise into the education of students, a concept that is vastly different to that of the schools in Haiti. For a large percent of the Haitian population going to school is an expense that cannot be afforded by the family, and if it can be the type of education the children receive is the bare minimum. In 2013 the recorded literacy rate of Haitians was 64% for males and 57% for females (UNICEF, 2013). Due to the lack of a proper

education system, children may receive some classroom education on subjects such as reading, writing, and math. In many rural communities if there is an opportunity for education it may be at night or for only parts of the day due to the duties the children have at home. When teachers are given very small windows of time with students they have to prioritize teaching what would be most beneficial to the children, because of this physical education is something learned outside the classroom, in the form of games, sports, and manual labor. For generations of rural Haitians the demand to be physically fit in order to survive has been the difference between life and death for countless families. Children are brought up learning how work for their meals instead of simply being a mouth to feed.

As a society we know that being physically active provides positive health benefits that prolong and improve the lives of people. Recent demographic indicators have shown that with the advancements in health care the life expectancy of people in Central America has increased, making the general population older. It is estimated that, "Children under 15 years of age, who represented 42% of the population in 1995, are expected to represent only 30% by the year 2025. Conversely, the proportion of persons over 64 years of age is expected to increase from 4% to 6% in that same time span" (Pena, 2004). When comparing the body mass index (BMI) and the obesity percentages of Latin American countries, shown in Table 1, Haiti stands out as having the lowest documented obesity percentage. While this is generally viewed as a good thing for the country, researchers must also take into consideration that it can be just as unhealthy to be underweight, and that is in fact an issue faced in Haiti. Without proper education on the importance of remaining physically active throughout one's life the older population will not be

able to be active members of the community, instead they will be sedentary and suffer health complications that come with the lack of physical activity.

TABLE 1. Prevalence of overweight and obesity in women aged 15 to 49 in Latin American countries.

Country (Year)	*n*	Body mass index/*s*	Overweight (%) (25–29.9 kg/m²)	Obesity (%) (≥30 kg/m²)
Bolivia (1994)	2,347	24.3/3.7	26.2	7.6
Brazil (1996)	3,158	24.0/4.3	25.0	9.7
Colombia (1995)	3,319	24.5/4.0	31.4	9.2
Dominican Republic (1996)	7,356	24.3/4.9	26.0	12.1
Guatemala (1995)	4,978	24.2/3.9	26.2	8.0
Haiti (1994–1995)	1,896	21.2/3.4	8.9	2.6
Honduras (1996)	885	23.5/4.7	23.8	7.8
Mexico (1987)	3,681	23.7/4.3	23.1	10.4
Peru (1996)	10,747	25.1/3.6	35.5	9.4

Source: Martorell R, Kettel Khan L, Hughes ML, Grummer-Strawn LM. Obesity in women from developing countries. (Submitted for publication).

Besides physical education, sport provides people with a distraction from day-to-day stress and a way to connect with the community.. Soccer is the highest watched and played sport in Haiti, as a country Haiti has integrated the sport into

the lives of the people from a very young age. Despite having their own national team, the Brazilian team gained Haitian support and pride in Brazilian victories run in While they don't have official leagues and clubs the games played on dusty fields are organized in their own way. Travellers to Haiti commonly remark on the level of physical competitiveness seen between kids in soccer games, and also on the difference in attitudes of the players there versus places such as Spain or America. Finding that, although more physical, the Haitians have better attitudes on the field because they use their skills to do the talking instead of their egos.

Being that soccer plays such a large role in Haitian life programs such as GOALS and Haitian Health Foundation developed ways to incorporate education and create health communities through the sport. For example, an experiment was conducted by Haitian Health Foundation, named the GenNext program, that used soccer (futbol) as an integrative approach to reduce the amounts of children girls ages 15-19 were having. UNICEF estimated that females ages 15-19 make up 11.7 percent of the Haitian population, and with the average age at which girls begin having children sitting at 21 years old many of the young mothers are unable to properly care for themselves or their children. This cascade of events often lead to orphaned children or infant death. This experiment hoped the combination of health screening, classes, and a summer long soccer league HHF was able to provide 4,251 young girls with the tools and education to make positive decisions in their lives. The organization compiled data revealing that when comparing girls in the program that chose to participate in the summer leagues versus those who did not, the athletes had significantly different lower birth rates.

TABLE 1. Characteristics of a selected group of adolescent female residents (n = 4 251) of 21 villages that offered a combination sex health education–soccer program ("GenNext"), by participation level, Haiti, 2006

Characteristic	Girls who did not participate in education or soccer component	Girls who participated in education component only	Girls who participated in both education and soccer components
Total no. (%)	3 495 (82.22)	441 (10.37)	315 (7.41)
Gave birth between 15 and 19 years old (%)[a]	4.78	3.17	4.44
Mean age during program sessions (in years)	15.27	15.26	15.39
Mean age at time of giving birth (in years)	19.01	19.10	19.02
Pretest / post-test change in knowledge score	—[b]	34.35	33.10
Mean time (in days) to giving birth from last day of program[c]	909.424	840.11	910.21

[a] $\chi^2 = 2.3167$; $P = 0.3140$.
[b] Not applicable.
[c] $P < 0.001$.

To Haitians, physical education is a subject very rarely taught inside the classroom. It's instead through sports and everyday physical activity that children develop an understanding of how to take care of their bodies. Programs are beginning to emerge that use the way in which Haitians exercise to educate them on the importance of keeping themselves healthy. Beyond teaching life lessons, sports create community among people of different social and economical class in a way that has brought people together for generations and has become a strong part of Haitian culture.

References

Déralciné, Vilmond Joegodson, and Paul Jackson. *Rocks in the Water, Rocks in the Sun: A Memoir from the Heart of Haiti*. Edmonton, Alberta: AU Press, 2015.

Kaplan, Kathryn C, Lewis, Judy, Bette, and Katherine. "Soccer and Sexual Health Education: A Promising Approach for Reducing Adolescent Births in Haiti." Ciência & Saúde Coletiva. May 01, 2015. Accessed May 8, 2018. https://www.scielosp.org/scielo.php?pid=S1020-49892015000400019&script=sci_arttext.

Pena, Manuel., Bacallao, Jorge. *Obesity among the Poor: An Emerging problem in Latin America and the Caribbean.* Scientific Publication No. 576. ResearchGate, 2004

"Statistics." UNICEF. December 27, 2013. Accessed May 9, 2018. https://www.unicef.org/infobycountry/haiti_statistics.html.

"What We Do." GOALS Haiti. Accessed May 9, 2018. https://www.goalshaiti.org/what-we-do.

Skyler Wickert

Haitian Laws

Haiti, to ones who do not make an effort to learn more, is known as just another developing country experiencing civil unrest. However, once the history of the nation is studied, every event that has occured plays a crucial role in the character of the country. Laws in Haiti have developed into what they currently are due to its rich history with different leaders and other factors.

To start studying Haitian laws, one must understand the constitution. There have been a total of 23 constitutions in place in Haiti's history. The first being from Toussaint Louverture (Abidor), the commander of the rebel army, in 1801. (Federal Research Division, 2006). Following the original constitution, succeeding presidents drafted and changed the country's constitution freely causing it to change vastly over the years. (Federal Research Division). Currently in force is the constitution of 1987 (Florèn-Romero, 2008). Included in this modern constitution is 15 titles, sub-articles with each article varying depending on the section it is apart of. One main change on this constitution was the ban of dual citizenship. In the preamble of the 1987 constitution is as follows,

> The Haitian people proclaim this constitution in order to:
>
> Ensure their inalienable and imprescriptible rights to life, liberty and the pursuit of happiness; in conformity with the Act of Independence of 1804 and the Universal Declaration of the Rights of Man of 1948.
>
> Constitute a socially just, economically free, and politically independent Haitian nation.
>
> Establish a strong and stable State, capable of protecting the country's values, traditions, sovereignty, independence and national vision.

Implant democracy, which entails ideological pluralism and political rotation and affirm the inviolable rights of the Haitian people.

Strengthen national unity by eliminating all discrimination between the urban and rural populations, by accepting the community of languages and culture and by recognizing the right to progress, information, education, health, employment and leisure for all citizens.

Ensure the separation and the harmonious distribution of the powers of the State at the service of the fundamental interests and priorities of the Nation.

Set up a system of government based on fundamental liberties, and the respect for human rights, social peace, economic equity, concerted action and participation of all the people in major decisions affecting the life of a nation, through effective decentralization (Embassy of Haiti in Washington, DC).

Although there are many similarities in the Haitian constitution to the United State's, the judicial system in Haiti experiences setbacks unlike developed nations. For example, threats are often made to judges or jury members leading to an impartial decision. On top of threats, bribes from more wealthy people cause some judicial decisions to be unfair. There is also a shortage of both qualified officials and funds for the judicial system (Federal Research Division). On the contrary, the preamble states many different points ensuring a singular nation with not a certain group of citizens above another.

The written constitutional laws meets a majority of international human rights standards. Though, some rights are held to a higher standard than others. For example, the right to freedom of expression is highly respected but some journals self-censor their work simply to protect themselves from any repercussions. This protection of the freedom of expression is why political protests are so common in Haiti. According to Article 30 of the constitution, "All religions and

faiths shall be freely exercised," (Embassy of Haiti in Washington, DC) meaning the freedom of religion is respected. Unfortunately, though, there are certain parts of the constitution that are not able to be carried out as well. The section stating everyone is guaranteed the right to education is not capable of being upheld due to lack of resources and funds. Thus, not every child is able to receive a quality education - or any education whatsoever.

In conclusion, the laws that are set in Haiti meet the standard of international human right laws. Due to a lack of resources and organization, however, some of the laws are not able to be respected as well as others or as well as they are in more developed countries. Haiti is a country filled with traditions, culture, and life regardless of the trials and stipulations.

Works Cited

"1987 Constitution of Haiti" *Republic of Haiti,* 2011. Abidor, Mitch. "Constitution of 1801" *Marxists*

"Country Profile: Haiti" *Federal Research Division,* 2006. Florèn-Romero, Marisol. "Researching Haitian Law" *Hauser Global Law School Program,* 2008.

Art Education within a Haitian Education

A child's education is one of the most important factors of their life. How and what they are taught at a young age will ultimately shape their ability to what they can accomplish in the future. The education system in Haiti lacks in several areas for a variety of reasons. One of the core reasons a child's education fails them in Haiti is the way that they are taught by teachers. Students learn reading, writing, arithmetic and science.

Teachers in Haiti show up to work and teach the majority of their class time. As shown in Figure 1 below, Haiti's teachers spend a large amount time on academic activities. 76% of their time is towards academic activities, which is higher than all other Latin American Caribbean countries (Baron). However, the methods of teaching are not beneficial to the kids. "Most instructional time is spent on lecturing or eliciting responses in unison from the class" (Baron). Children receive little to none instructional feedback on their answers.

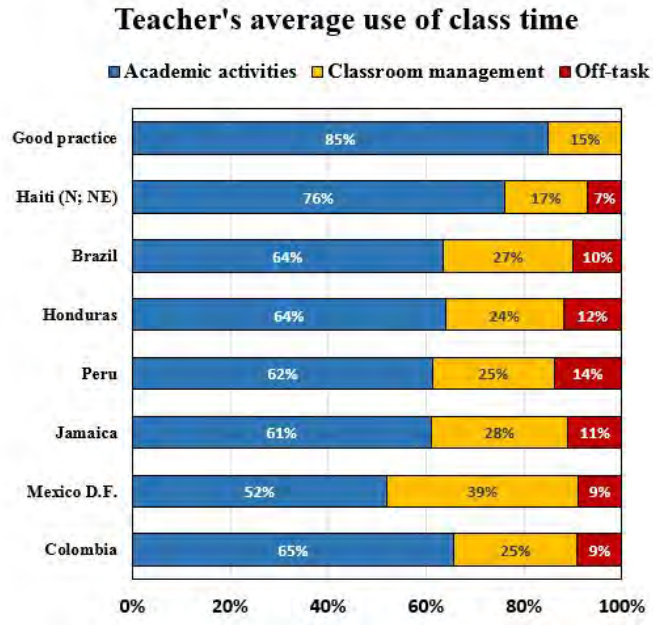


Figure 1

Currently memorization and recitation are one of the main methods of teaching. That is not an effective way for children to learn at such a young age. Some of the most effective ways to teach children in primary school are through demonstration, hands-on activities, having the children collaborating and working as a team and letting the children problem solve (Common Teaching Styles in Elementary School). As shown in Figure 2 Below, 65% of class time is spent which students not engaged. Additionally, Figure 3 illustrates how lecture should only take up 5% of the child's time in school by their average learning retention rates.

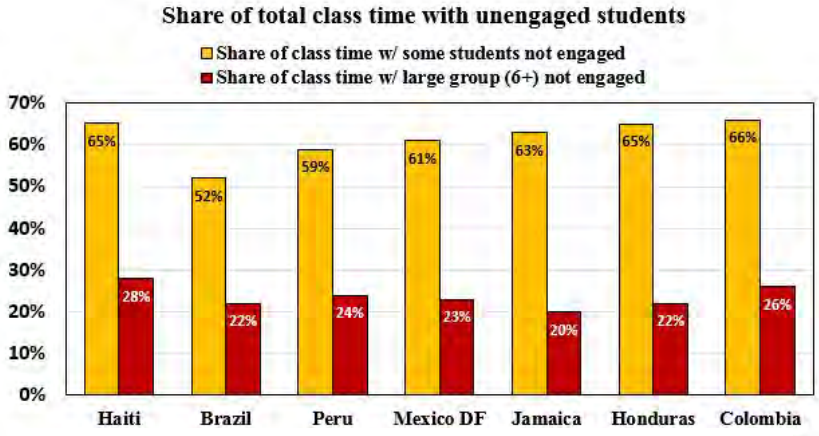


Figure 2

Figure 3

The previous data makes it clear that the methods of teaching in Haiti are not as effective as they should be. However, there are organizations trying to implement art education to enhance the student's ability to learn in many different subjects. Through an organization called Havserve, teachers are able to interact with both students and teachers. The teachers volunteer at summer camps in Haiti, during these camps students do a variety of activities. There are art stations at these camps and one teacher discussed the impact this camp had on the attendees. For most of the children, this is their first exposure to creating art. "Many of the students were hesitant to complete projects on their own because they were afraid of being wrong" (Volunteer Service Network). From the way that the students are taught in school, they believe the only way

to complete a task is by the exact way a teacher said to do. The teachers volunteering spend time with the students and the teachers. With the Haitian teachers, the volunteers work on different skill sets to allow the teachers to be able to use different methods of teaching in the classroom. The same teacher explains how she would hear another teacher say a student's art piece was inadequate because it didn't look exactly like the example piece. The Haitian teachers learned how positive reinforcement would be much more beneficial to the students rather than negative feedback. Through positivity, hopefully the teachers can make small changes that benefit the children in large ways.

The quote, "The greatest discovery a person can make is knowing why he or she was created," is one that particularly resonates with me while I've participated with HavServe. All of us have been created to serve others, in some way. The key is finding God's purpose for you and fulfilling it. I feel that my time at HavServe is helping me fulfill this purpose.

Multiple studies have shown how beneficial art education can be. Implementing art in school will allow students to develop their motor skills. Holding a crayon, paint brush or scissors benefits the students ability to hold a pencil which allows them to write better. Art is visual learning which is the first way that children start learning. Art also provides inventiveness, cultural awareness, improved academic performance, and language development (Arts). Focus is required while working on art and if a student practices their focus while working on art they will have a longer attention span in the classroom.

Supplies are limited in Haitian schools by economic barriers. However, a popular form of art in Haiti is making art through old materials that otherwise might have gotten thrown out. Multiple artists use "automotive fragments, carved wood pieces, broken TVS, and discarded toys" (Associated Press). Art for Haitians is extremely expressive. Implementing art in schools

can be done by using old materials which allows the students to get in touch with their creative side and learn about Haitian Art culture as a whole.

Jacques Eugine - Sculpture Artist, Haiti

Works Cited

"Arts." *PBS*, Public Broadcasting Service, 25 May 2012, www.pbs.org/parents/education/music-arts/arts/.

Associated Press. "Haiti Artists Use Junk to Make World-Class Art." *The Oneida Daily Dispatch*, The Oneida Daily Dispatch, 11 Apr. 2016, www.oneidadispatch.com/article/OD/20160411/NEWS/160419979.

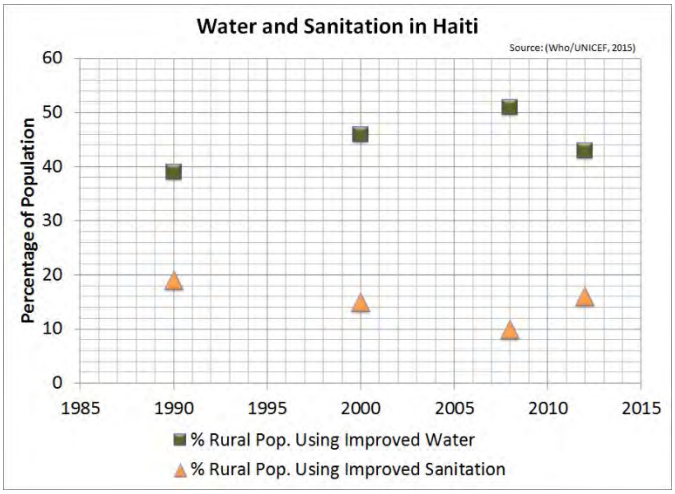
Baron, Juan. "Why School Enrollment Is Not Enough: A Look inside Haiti's Classrooms." *Governance for Development*, 9 June 2016, blogs.worldbank.org/education/why-school-enrollment-not-enough-look-inside-haiti-s-classrooms.

"Common Teaching Styles in Elementary School." *Concordia University-Portland*, 6 Apr. 2018, education.cu-portland.edu/blog/classroom-resources/most-common-teaching-styles-used-with-elementary-school-students/.

Volunteer Service Network. "Summer Art and Crafts in Rural Haiti: Cultural Connection with Students and Their Teachers." *HavServe*, havserve.org/blog-post/cultural-connection-through-art/.

Water Resources and Treatment in Haiti

The Haiti earthquake of January, 2010, and rapid post-earthquake emergence of Cholera, have focused attention on water in resources in Haiti. There has been an ongoing discussion between the medical community and those who have researched water in Haiti about how best to combat cholera and other water-borne pathogens (Cyranoski, 2011; Farmer et al., 2012)). This discussion is really about whether to invest scarce resources in vaccination and medical interventions, or sanitation and water resource interventions. These efforts are not mutually exclusive and resources should be allocated toward both endeavors. However, it is crucial that water resource interventions be implemented with a good understanding of the complex ecology, geology, and hydrology which impact water quality in Haiti. Poor sanitation practices, combined with shallow karst aquifers and fractured rocks, result in widespread contamination of groundwater and surface water ((Wampler and Sisson, 2011)). Dysfunctional macro- and micro-biotic ecosystems due to deforestation have resulted in a cycle of ineffective contaminant removal and recontamination after rain events. Unicef and the World Health Organization have been collecting data on water and sanitation in Haiti for several decades (Figure 1 (WHO, 2012)).



Safe and Sustainable Treatment Methods for Haiti.

Providing safe and sustainable water in Haiti is complicated by geologic, ecologic, sociologic, and economic factors. Those seeking to help provide clean water to Haiti must consider and address these factors to provide safe and sustainable water for Haiti. These four factors are interrelated in complex ways that make

solutions complex, and by their nature interdisciplinary and transdisciplinary (Wampler et al., 2016).

Geologic Factors

The geology of Haiti consists of a core of igneous rocks which forms the backbone of the island of Hispaniola and the border between Haiti and the Dominican Republic. This core is surrounded in much of the mountains by sedimentary rocks consisting of limestones and shales. Limestones have fissures and fractures which have been enlarged by dissolution in a process referred to as karstification or simply karst. The karst aquifers are particularly prone to contamination with water-borne pathogens. Near major rivers and in the large basin occupied by Port au Prince sufficient alluvium has accumulated to form alluvial fans and alluvial aquifers. These aquifers, although more effective at filtering pathogens than karst limestone are prone to contamination from long term sanitation and industrial practices.

Ecologic Factors

One of the most common things people think of when someone mentions Haiti is poverty, but running a close second is deforestation, soil erosion, and a generally devastated ecosystem. There have been major modifications to the forest cover in Haiti since the time of Columbus, however, several recent studies suggest the magnitude of deforestation has been overestimated (Churches et al., 2014; Kennedy et al., 2016). What people may not think of is the microbiotic ecosystem which is an integral part of the macrobiotic ecosystem which has also been devastated. Both the microbiotic and macrobiotic (trees and plants) provide a first line of defense for protecting groundwater in Haiti from contamination(Wampler, 2011).

Sociologic Factors

Attitudes and perceptions of water in Haiti are affected by religious attitudes, historic practices, and the general educational level of most rural Haitians. Many Haitians who practice Voodoo view water as sacred. Waterfalls and springs are

generally viewed as sacred places in Voodoo for their natural beauty and provision. Catholicism also views water as sacred but in a way more connected to God and the cleansing power of water. Both of these viewpoints are predisposed to view water as clean and sacred even when it is contaminated with pathogens that can kill, especially when those pathogens are not visible and the water appears clean.

Economic Factors

Haiti is a very impoverished country with many people living close to the edge of survival. Water in large cities is often provided by central systems of fountains. Many also buy water that has been treated in bottles and bags. In the mountains of Haiti central water systems and bottled water are not available so many drink untreated water from springs. A simple solution for ensuring the safety of this water would be to boil all water but many do not have the money to buy fuel for sterilizing water and cooking their meals. Many are also unaware that the water is unsafe because it looks clean and may be collected from a spring emerging from a rock.

Table 1 below is a summary of treatment methods applied in Haiti and other countries.

Method	Pros	Cons	Cost	Sustainability
SODIS (Solar Water Dissinfection)	Cheap; reuse bottles; simple	Water is warm; have to wait for water; turbidity sensitive	$	High
Plastic Biosand Filters	Effective; once primed provide quick water treatment	Time needed to develop biofilm; skill required to maintain; support needed; turbidity sensitive	$$$$$	Moderate
Concrete Biosand Filters	Effective; once primed provide quick water; can usually be built in country with local materials	Heavy and difficult to transport and move; skill required; turbidity sensitive	$$$$	Moderate
Chlorine	Very effective when used properly; cheap	Bad taste to water; skill required; potential negative health impacts; doses vary depending on product being used	$	High
Boiling	Very effective at killing most pathogens	Expensive; contributes to deforestation; have to cool water before drinking	$$$	Moderate
Reverse Osmosis	Very effective at removing all pathogens	Very expensive; requires consistent fuel or power; skill required; maintenance required	$$$$$$	Low
Sawyer Filters	Very effective, easy to use when proper education materials are provided	Expensive; may have to sterilize filters regularly; not well suited for areas with turbid water; backwashing can cause contamination	$$$	Moderate
Clay Filters	Cheap and can be made from local materials	Clay quality can affect treatment; skill required; may not be effective for some viruses and bacteria	$	High
Ultraviolet Disinfection	Very effective; power requirements low (~ 200 watts for 40 gpm)	Flow rates low; can be complicated to install; maintenance required for bulbs	$$$$	High/Moderate
Slow sand filtration	Can be scaled to larger water sources for schools and communities	Initial costs are high and require materials which may not be available on-site	$$$$	High/Moderate
Ozone Disinfection	Does not create harmful byproducts; does not alter taste; no residual chemicals	On-site equipment required is expensive and requires maintenance; ozone is reactive and corrosive	$$$$$$	Low
In-Situ Filtration (ISF) wells	Can be constructed from local materials with local labor; can provide long term source of clean water with minimal maintenance	Some support and maintenance is required by local community members	$$	High

References

Churches, C. E., Wampler, P. J., Sun, W., and Smith, A. J., 2014, Evaluation of forest cover estimates for Haiti using supervised classification of Landsat data: International Journal of Applied Earth Observation and Geoinformation, v. 30, p. 203-216.

Cyranoski, D., 2011, Cholera vaccine plan splits experts: Nature (London), v. 469, no. 7330, p. 273.

Farmer, P., Gardner, A. M., Hoof Holstein, C. v. d., and Mukherjee, J., 2012, Haiti after the earthquake, New York, PublicAffairs, xii, 445 pages p.:

Kennedy, N., Amacher, G. S., and Alexandre, R., 2016, Adoption of soil and water conservation practices in central Haiti: Journal of Soil and Water Conservation, v. 71, no. 2, p. 83-90.

Wampler, P., 2011, Pick sanitation over vaccination in Haiti: Nature, v. 470, no. 7333, p. 175-175.

Wampler, P. J., Molla, A. R., and Rediske, R. R., 2016, Transdisciplinary Approaches to Sustainable Water Resources and Treatment in Developing Countries: Water Resources IMPACT.

Wampler, P. J., and Sisson, A. J., 2011, Spring flow, bacterial contamination, and water resources in rural Haiti: Environmental Earth Sciences, v. 62, no. 8, p. 1619-1628.

WHO, U., 2012, Progress on Drinking Water and Sanitation: 2012 Update: WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP).

Haitian Literature and Storytelling, Proverbs, and Use of Language in Writing and Storytelling

Kelly McDonell

Literature and Storytelling

Storytelling has a long history in Haiti and is commonly used as a form of recreation, where families gather together for *krik krak* evenings. *Krik krak* is a call and response pattern, where the story teller calls out "krik," signifying they are ready to tell a tale, and the audience answers "krak" if they want to listen. The purpose of the evening is for entertainment but also a way to teach morals and proper behavior. During a *krik krak* evening, families may also sing, recite poetry, and tell riddles.

Many of the stories told during a *krik krak* evening have been passed down through generations and feature themes of family, animals, and moral lessons. Family encompasses deceased family members as well as the living, and the need to preserve the family bond and celebrate family ties is a frequent topic. This is primarily due to the history of slavery within Haiti. The stories are commonly told through the experiences of Bouki and Ti Malice. Ti Malice is believed to be more intelligent thank Bouki and is often shown as smart but mischievous. However, he is usually outwitted by Bouki, who is considered to be more slow-witted. Animals are also frequently used as characters and often the animal held in low esteem outwits the one believed to be more intelligent; this is said to mirror the relationship between the enslaved and their oppressors.

Imagination is taken to great lengths during this storytelling, but ultimately the moral matters more than the content. Generally, at the end of a story, the storyteller ends with *se yon kote m t ap pase mwen wè bonbon lan boutèy, diven lan panyen banbou*, meaning my story comes to you from a place where I saw cookies in a bottle and wine in a woven basket. This is meant to put the reader at ease, to signify that the story was made up and comes from a place where things exist differently (like wine in a basket) than they do in reality. The evening is often concluded with *Se yon kote mwen tap pase, mwen pran yon kout pye mwen vin tonbe la a*, meaning the last place I told this story, they kicked me out of sight and this is how I landed at your doorstep to again refer to the fact that the stories are fictitious.

From its independence in 1804, Haiti has been producing poetry and plays. A common subject in the 19th century was the struggle for liberation from colonial power. *Stella*, by Emeric Bergeaud, is considered to be the first novel written by a Haitian, which was actually written while Bergeaud was in exile due to his opposition of the dictator at the time, Faustin I. The book was published in 1859 and is an imaginative retelling of Haiti's fight for independence as told through the experience of brothers Romulus and Remus. It uniquely gives a pro-Haitian version of the Haitian Revolution and was originally written in French but has since been translated into English.

Moving into the early 20th century, much of the poetry was aimed at France. However, you can start to see a revival of the interest in indigenous forms through popularity of the *lodyans*, a genre of Haitian literature that takes the traditional oral form of storytelling and gives it literary expression. The American occupation of Haiti from 1915-1934 also served to deepen this movement, as can be seen in *Ainsi parla l'oncle* by Jean-Price Mars, which can be seen as the manifesto of the *indigeniste* movement, the return to Haiti's African cultural heritage.

The tumultuous politics of Haiti have also shaped the type of literature produced over time. During the Duvalier years (1957-1986), any form of dissent from the current regime was punished, which included literary dissent. This put a damper on literary expression of the late 1940s and 1950s,

and led many Haitians to leave the country, which resulted in a wide range of literature written outside of Haiti. There is a divide in content between those who have left Haiti and those who remain, with those who remain placing an emphasis on the aesthetic rather than anything overtly political or social. In addition, there is debate as to whether a writer who has lived outside of Haiti for most of his or her life should be regarded as a Haitian writer.

Proverbs

Proverbs are widely used throughout Haiti, and it has been suggested that these proverbs link to Aesop's fables in their method for teaching a lesson. In one source (M. Jules Faine), there are estimated to be over 2,000 proverbs in use in Haiti. There are many sources online that offer lists of proverbs, along with their explanations. Proverbs are used in everyday speech to express knowledge and share wisdom from generation to generation. According to James Ivy, who wrote *The Wisdom of the Haitian Peasant: Or Some Haitian Proverbs Considered*, proverbs are poetically termed the tears of humanity, and they begin to appear when man suffers and seeks consolation in his suffering by laughing at his oppressors.

When viewing the proverbs, it is clear that they come from different origins: Haiti, Europe, and Africa. The origin of proverbs can often be determined by examining the animals used to tell the proverb. For example, proverbs of African origin refer to elephants, tigers, and monkeys, all species that do not exist in Haiti. Proverbs that originated in Haiti often feature Haitian peasant life as their chief theme and use goats, horses, cows, pigs, dogs, cats, monkeys, alligators, lizards, fish, gumbo-stews, trees, and more, and they are "flavored with the soil of the land" (John Bigelow). Poverty, boasting, suffering silence, and servitude are the focus of many proverbs, while some also include politics.

Selected Proverbs:
Tout moun se moun.
Everyone deserves to be treated as a human being.

Dèyè mòn gen mòn.
Beyond the mountains, more mountains. (patience, recognition how difficult life in Haiti is)

Wòch nan dlo pa konn doulè wòch nan solèy.
The rock in the water does not know the pain of the rock in the sun.

Use of Language in Writing and Storytelling

Currently, French and Haitian Creole are considered official languages of Haiti. Haitian Creole developed in the 17th and 18th centuries and mixes various Niger-Congo languages with French. In the early 1940s, attempts were made to standardize the language, which were finalized in 1979. Since that time, slight modifications have been made to the standardization of the language. Although spoken by almost all Haitians, it wasn't until the Constitution of 1987 that Haitian Creole was upgraded to a national language alongside French. The Constitution names both Haitian Creole and French as the official languages, but names Haitian Creole as the only language that all Haitians hold in common. French has historically been spoken only be the elite and educated, and is the language of instruction in

schools. Haitian Creole is typically an oral language and not all who speak and understand Haitian Creole can read it.

As mentioned previously, Haiti has a rich tradition of oral storytelling, making much of their literature a living literature. In many libraries, people congregate to write and recite poetry. Haitian Creole is frequently used in poetry and drama, as it is the most widely accessible language. In terms of published literature, there is a long tradition of use of the French language. However, in the last 30-40 years, the use of Haitian Creole has been increasing for published literature. Writers will also switch between the languages based on their needs, passion, the rhythm, or the idea that inspired their original thought. Translation of Haitian literature is becoming more common, and it can be found in a variety of languages. Edwidge Danticat is seen as the most widely-read Haitian author; she writes in English and lives in the United States.

Resources

Literature:
http://www.bookmanlit.com/krikkrak.html
http://faculty.webster.edu/corbetre/index/index.html
http://uhuk.org/haitian-culture/
https://haitisupportgroup.org/haitian-literature-an-introduction/

Proverbs:
https://hdl.handle.net/2027/wu.89094564259
http://www.jstor.org/stable/2715008?seq=1#page_scan_tab_contents

Use of Language in Writing and Storytelling:
https://en.wikiquote.org/wiki/Haitian_proverbs
https://en.wikipedia.org/wiki/Haitian_literature
https://www.pbs.org/newshour/arts/conversation-after-earthquake-haitian-literature-holds-strong
https://en.wikipedia.org/wiki/Haitian_Creole

Readings and Background Information

Reading	Paper	Authors
1	Peasants, agroforesters, and anthropologists: A 20-year venture in income-generating trees and hedgerows in Haiti	Murray and Bannister, 2004
2	Landscape-level Land Management Efforts in Haiti Lessons Learned from Case Studies Spanning Nine Decades (p. 1-27)	Andrew Tarter, Katie Kennedy Freeman Pierre-Olivier Collier Klas Sanders 2015
3	An In-Depth Look At Sawyer Water Filters	Sawyer.com
4	Haiti: Where Has All the Money Gone?	Vijaya Ramachandran and Julie Walz
5	Partners in Haiti	Maggie Del Ponte, Christa Cheatham, , Montana Campbell, Rachel Stowers, and Kelli Teskey

Agroforestry Systems **61:** 383–397, 2004.

Peasants, agroforesters, and anthropologists: A 20-year venture in income-generating trees and hedgerows in Haiti

G.F. Murray[1,*] and M.E. Bannister[2]
[1]*Department of Anthropology, University of Florida, Gainesville, Florida 32611;* [2]*School of Forest Resources and Conservation, University of Florida, Gainesville, Florida 32611;* [*]*Author for correspondence: e-mail: murray@anthro.ufl.edu*

Key words: Anthropology, Domestication, Land tenure, Tree tenure, Project design

Abstract

This chapter examines the evolving trajectory and emerging lessons from twenty years of agroforestry project activities in Haiti that made it possible for more than 300 000 Haitian peasant households – over a third of the entire rural population of Haiti – to plant wood trees as a domesticated, income-generating crop on their holdings. Unusual popular enthusiasm for the project derived from several anthropological and technical design factors: the adaptation of the project to pre-existing Haitian land tenure, tree tenure, and market systems; the elevation of micro-economic over macro-ecological themes; the decision to bypass the Haitian government and operate the project through local NGOs (non-government organizations); the use of a joint-venture mode in which smallholders supplied land and labor and the project supplied capital in the form of seedlings; the use of professionally managed small-container seedling technology rather than backyard nurseries; and a project management policy that *encouraged farmer-induced deviations* from project assumptions in matters of tree deployment and harvesting schedules. Issues of secure tree tenure were central to farmer planting decisions. The article discusses how secure tree tenure was possible under the heterogeneous informal arrangements that characterize Haitian peasant land tenure. The approach generated the birth of several creative Haitian peasant agroforestry configurations described in the chapter. In discussing lessons learned, the authors argue that long-term environmental payoffs should be viewed, not as the principal project goal, but as secondary side effects of smallholder tree planting decisions made for short-term micro-economic reasons.

Introduction

This chapter examines the evolving trajectory and emerging insights of 20 years of program efforts to promote tree planting and sustainable hillside farming practices in rural Haiti. The Agroforestry Outreach Project, which was launched in 1981 and continued in modified form and under different names until 2000, made it possible for over 300 000 Haitian smallholders voluntarily to plant several hundred fast-growing wood trees and/or to install hedgerows on their land.

One of the authors (Murray, an anthropologist who had lived and worked in rural Haiti) was heavily involved in the initial theoretical conceptualization and programmatic design of the project and was the project 'chief of party' for the first 18 months of implementation. The other author (Bannister, an agroforester) first came to Haiti as a regional coordinator for the initial project and stayed with the implementing agency, the Pan American Development Foundation (PADF), for most of the two decades in which the project continued. An unusually heavy level of interdisciplinary collaboration between agroforesters and anthropologists was a key feature of the project in its initial years.

The protagonists in the tree saga, however, are neither anthropologists nor agroforesters but the smallholders of Haiti, inhabitants of a nation with troubling economic, political, epidemiological, educational, and ecological indicators. The doom-and-gloom tone that dominates international discussions of Haiti began long ago. Indeed the entire Caribbean

island of Hispaniola has had a tragic demographic history, beginning with the death of as many as one million Amerindians, in the early sixteenth century, largely from European diseases, and followed by their replacement with half a million African slaves coerced into what was the most prosperous but the harshest of New-World slave regimes. In 1804, after 13 years of revolutionary bloodshed, the French colony of Saint-Domingue was renamed Haiti, as the first independent nation of rebel ex-slaves was born, (Rogozinsky 2000).

Two centuries later more than 8 million Creole-speaking descendants of these rebel slaves are crowded into the mountainous western third of Hispaniola, tensely sharing the island with 8 million more prosperous Spanish-speaking Dominican neighbors to the east. Ecologically Haitians inherited the 'wrong side' of the island. Haiti's surface area of 27 750 sq. km. has few fertile lowland plains. Most of the country is mountainous and 75% of the country would be classified as sloping highlands (Weil et al. 1973). Limestone substrate underlies 80% of the land area; the rest is basaltic or alluvial (Ehrlich et al. 1985). The country's thin subtropical topsoils, vulnerable to start with, long ago succumbed to erosion under land-use systems based not on the practices of unknown African ancestors but on the extractive technologies of a market-oriented colonial plantation system.

Tree cover has virtually disappeared. An application of Holdridge's (1947) classification showed a country whose 'life zones' consisted of subtropical moist forest and subtropical dry forest, subtropical wet and rain forest zones being common in the middle and upper elevations. Half a century later, however, the few forests that remained in the 1940s have now virtually disappeared. The few autochthonous tree-planting traditions that emerged in post-revolutionary Haiti tended to focus on fruit trees. Wood trees, in contrast, were viewed as natural goods supplied by nature – or rather by *Bon-Dye*, the Creole version of the French word for God – for human extraction. Though some individual wood trees were considered sacred and left standing, protective folk religious traditions were ecologically impotent in the face of a growing rural population that needed to clear land for farming and a growing urban population that needed charcoal as cooking fuel. In short, its troubling economic and social statistics, its political chaos, and its denuded hillsides make Haiti an unlikely setting for a happy tree story.

The earliest reforestation attempts were emphatically not happy stories. They began under foreign prodding with the arrival of development agencies after World War II. These early projects were largely based on the theme of *reboisement*, protectionist and conservationist reforestation premises inappropriate to a virtually treeless but densely inhabited country. Furthermore international donor funds were routinely entrusted to the fiscal management of predatory and mistrusted state bureaucracies whose authoritarian commands to plant and protect trees were routinely ignored by villagers and whose foreign-funded seedlings therefore died in nurseries for want of interested planters.

Some three decades of tree planting failures led frustrated expatriate donors, by the late 1970s, to be open to new paradigms. It was at this period that the United States Agency for International Development (USAID) contracted anthropologists to propose new models. The result was the Agroforestry Outreach Project, and its successor descendants, to be described here. The approach was based on several factors, including (1) the adaptation of the project to pre-existing Haitian land tenure, tree tenure, and market systems, (2) the elevation of micro-economic over macro-ecological themes, (3) the decision to bypass the Haitian government and operate the project through local NGOs (non-government organizations), (4) the use of a joint-venture mode in which smallholders supplied land and labor and the project supplied capital in the form of seedlings, (5) the use of professionally managed small-container seedling technology rather than backyard nurseries, and (6) a project management policy that *encouraged farmer-induced deviations* from project assumptions in matters of tree deployment and harvesting schedules.

Information sources

To go beyond personal anecdotes, we will base our description of the approach and our analysis of its results on a now voluminous literature from Haiti, which includes over a dozen empirical studies of Haitian smallholders who planted wood-trees on their holdings in the course of the project. The research scrutiny given to one project has been quite unusual. Pre-project feasibility investigations include Murray (1979[1]; 1981[2]) and Smucker (1981[3]). Two years after the project started Murray published the first description of the project (Murray 1984), followed by an analysis fo-

cusing on anthropological issues (Murray 1987). A project agroforester returned to villages where he had delivered trees three years earlier to examine their fate (Buffum 1985[4]; Buffum and King 1985[5]). One anthropologist wrote his doctoral dissertation on the project (Balzano 1989). Another anthropologist examined decision-making processes in a community of early tree planters (Conway 1986a[6]) and synthesized the results of five additional studies of tree-planting communities done under the auspices of either PADF or the University of Maine, a project research partner (Conway 1986b[7]; Lauwerysen 1985[8]). An economist calculated monetary returns to tree planters and documented higher-than-predicted internal rates of return (Grosenick 1986[9]). Another economist examined the charcoal and pole markets (McGowan 1986[10]), and Smucker (1988[11]) analyzed six years of tree planting in several communities. In the early 1990s, Bannister and Nair (1990) discussed the soon-to-be expanded hedgerow component of the project, and Bannister and Josiah (1993) examined extension and training issues. An anthropologist/forester team (Smucker and Timyan 1995[12]) did case studies that included harvest information. The following year Timyan (1996) published a volume on the trees of Haiti. Land-tenure issues were analyzed by Smucker et al. (2002). Most recently Bannister and Nair (2003) analyzed data from 1540 households and 2295 plots that had received project interventions. There is, in short, a substantial body of empirical information provided by anthropologists, agroforesters, and economists from which we will draw.

In terms of secondary literature, the project has received more attention in the professional circles of anthropology than those of forestry or agroforestry. Two years after its onset, it won the international Anthropological Praxis Award, a competitive annual prize for applied anthropology. The project is now one of the most frequently cited cases of applied anthropology in recent college cultural anthropology textbooks (e.g., Robbins 1993, Nanda and Warms 1998, Peoples and Bailey 1997, Ferraro 1998, Harris and Johnson 2000). A description of the project has been reprinted in four successive editions of a widely circulated reader in applied anthropology (Podolefsky and Brown 1989). We have come across only one anthropological critique of the project (Escobar 1991), whose author had not been to Haiti but who excoriated this and several other anthropological projects for the sin of 'commodification', i.e. opening the 'natural systems' of peasants to the 'penetration of capital' and exposing peasants to the perilous world of markets and money. (This romantic but poorly conceived desire to protect smallholders from access to money would meet with little sympathy among intended peasant protégés anywhere in the world).

The project has received much less attention, however, in what may be its most proper professional habitat, the world of agroforestry. In this article we will therefore focus on issues germane to agroforesters.

Projects as evolving systems

We will proceed systemically rather than anecdotally. Agroforestry configurations are best viewed, not as a collage of discrete practices, but as dynamic, evolving, integrated systems. By the same token, *externally funded projects themselves are best viewed as evolving, problem-solving systems*. We propose that, whatever culture-specific idiosyncratic arrangements may be instituted in different countries, the typical agroforestry project nonetheless has four universal or quasi-universal underlying problem sets to solve: technical planning, benefit-flow planning, fund management, and village outreach strategies. We will examine the Haiti project through the lens of these four broad systemic components.

Technical base

For market-related reasons discussed in Murray (1987) the planting of wood was a better income-generating venture in Haiti than the planting of fruit. The project therefore focused on the distribution of wood tree seedlings. Because of the limited inventory of existing small-container tree nurseries in Port-au-Prince, the project began with six exotic fast-growing hardwood species: *Acacia auriculiformis*, *Azadirachta indica*, *Casuarina equisetifolia*, *Eucalyptus camaldulensis*, *Leucaena leucocephala*, and *Senna siamea*. By the end of the project twenty years later farmers were planting 74 species, many of them local trees. As we shall see below, the farmers supplied land and labor. The project supplied several hundred seedlings free of charge to each participant.

Both for quality control and economies of scale, the project opted for professionally run nurseries rather than backyard nurseries or direct-seeding techniques. At the apogee of the tree planting component in the late 1980s the project was being supplied by 36 nurseries producing nearly 10 million seedlings a

year all over Haiti. The nurseries were not owned by the project. NGOs (non-governmental organizations) operated the nurseries as profit-generating microenterprises. Villagers who had been contracted as tree extensionists would elicit orders for quantities and species of wood seedlings among their kin and neighbors. The nursery would produce and sell the seedlings to PADF at an agreed on price. PADF would then organize the distribution of seedlings. To facilitate transportation the nurseries used small containers rather than polyurethane bags. Backyard nurseries with polyurethane bags were experimentally introduced in the late 1980s, and increased in the 1990s.

To enhance the soil conservation element, the second author began experimenting with *Leucaena leucocephala* hedgerows in 1984. Extension of tree-based soil conservation structures was officially adopted by the project in 1987, but after 1991 it became the dominant project element. Because of marketing weaknesses, fruit trees had been a minor component of the project in its earliest years. This component, however, increased dramatically in the project's second decade, including top-grafting of adult fruit trees. A new component, improved food crop germplasm, was introduced in the 1990s. The logic of this new agricultural component was that plots protected by some form of soil conservation would eventually become more fertile, and therefore would merit a larger investment in crop production.

Benefit flow arrangement

Agroforestry projects cannot limit attention to technical matters. The resolution of a second problem set, the guaranteeing of satisfactory *benefit flows* is equally essential to project acceptance. We assured benefit flows by sharing costs and risks with farmers and by guaranteeing their total control of harvesting and marketing. We established a joint venture arrangement in which participants supplied two of the factors of production – land and labor – and the project supplied capital in the form of seedlings. Participants would risk covering part of their land with a new crop – the wood tree – and plant enough to make a measurable economic difference down the road. As for labor, we broke militantly with the 'Food-for-Work' subsidy that had been used in most previous tree-planting projects. Participants had to supply all of the ground preparation and planting labor, either by doing it themselves or by using one of the many labor-mobilizing arrangements (e.g., exchange labor with neighbors) found in traditional Haiti.

As for capital, the project supplied it in the form of several hundred free-of-cost wood seedlings to each participant. The original minimum of 500 seedlings was quickly dropped to 200 seedlings and eventually even less. The project was having difficulty supplying the unexpected demand which it provoked, and labor constraints (more so than land constraints) made it difficult for many farmers to plant 500 seedlings at one fell swoop, since the planting of seedlings had to be timed with rains, which was the trigger for planting other crops as well. Each seedling cost about 10 U.S. cents to produce. The project thus made a modest average contribution of about $20 in seedlings to each participant, who in turn allocated land and labor. We recommended different planting strategies, but planters made the final seedling-deployment decisions. Of major importance, we guaranteed tree tenure and full harvest rights. We repeated regularly that planters would be sole owners of seedlings and trees. Villagers needed no permission to harvest trees. In the second decade, other benefit flow arrangements were instituted for hedgerow and improved food-seed components.

Fund management arrangements

Besides a solid technical base and well-designed benefit flows, projects have a third challenge: fund management. Had funds been entrusted to the Haitian government, we would be doing a post-mortem on why the project failed. The money was managed, instead, by PADF, the implementing NGO, utilizing an ad-hoc 'umbrella strategy' of grant management that was devised specifically for the project. USAID made a macro-grant of $4 million – i.e. $1 million per year – to PADF. PADF then entered into agreements with local NGOs all over Haiti to hire and train village tree agents who in turn would invite their kin and neighbors to plant trees on their own land. PADF's support to these groups was in the form of contracts that included in-kind seedlings and small amounts of cash for overhead, salaries of promoters, and other minor expenses. This umbrella strategy permitted one central macro-grant to feed hundreds of localized minicontracts. It was a welcome buffering mechanism appreciated by all parties. USAID staff had to manage only one grant. Local NGOs were shielded from stringent USAID accounting requirements.

Outreach structures

A fourth universal agroforestry problem-set is outreach. Local NGOs selected and hired villagers to serve as tree extensionists. These villagers, trained by the project and compensated on a part-time basis by tasks performed, would explain the project to their kin and neighbors and invite them to allocate part of their land and labor to wood tree seedlings over which, once planted on their land, they were guaranteed total ownership and harvest rights. As nursery seedlings matured and rains arrived, the seedlings, which were grown in commercial organic potting mixes that guaranteed good root development, would be removed from the containers, placed in boxes, and loaded on pickup trucks. Villagers were pre-alerted and plots were prepared. Participants gathered at designated drop-off sites and received their seedlings. Seedlings were generally in the ground 48 hours after pickup. Similar outreach structures were employed in the second decade for hedgerow and improved crop promotion. During the second ten years of the project (beginning in 1992) there was a shift from larger NGOs to smaller community-based organizations (CBOs) and the strengthening of farmer groups became an important goal.

The project measures just described are presented, not as a cookbook recipe to be applied elsewhere, but as an abstract project paradigm that may be generalizable beyond Haiti. The four problem sets addressed in the Haiti project will have to be addressed in many and perhaps most projects around the world: (1) technical decisions, (2) benefit flow arrangement, (3) fund management, and (4) outreach. Different specific solutions will apply in other world regions. But the problem-sets themselves are widespread if not universal.[13]

Qualitative results: evolving agroforestry micro-systems

We have more research information on the results of the tree component than on the later hedgerow component. The PADF component alone[14] tripled its projected seedling output in the first four years. And the 65 million seedling figure for two decades, all voluntarily planted in small lots of several hundred or fewer by over 300 000 peasants on their own holdings, leaves absolutely no doubt as to the enthusiasm generated by the project for the planting of wood trees in a country where they were formerly extracted from nature.

These figures by themselves, however, reveal little about the character of the agroforestry systems that emerged. Enthusiasm seemed homogeneous, but not specific tree-deployment decisions. The creativity of diverse local responses produced a rich heterogeneity of agroforestry configurations. They have been descriptively documented in several of the studies cited in the Introduction section. We will describe the systems as a series of questions.

Who planted project wood trees, who did not plant, and why?

Several studies (among them Conway1986a[6]; Balzano 1989; Bannister and Nair 2003) explore statistical links between tree planting as the dependent variable and personal or household variables as independent variables governing tree-planting decisions. Socioeconomic differentials and gender are two particularly interesting clusters of independent variables.

Haitian villages are not homogeneous; modest socioeconomic differentials exist. A 5-hectare holding would be ‘large’. The national holding mean is closer to 1.5 ha (Zuvekas 1979). Balzano (1986[15]) documented a slight statistical tendency for tree-planters to be older, to have slightly more land under secure tenure, and to be in a better position to hire labor. Similar findings were found to hold as well more than a decade later in Bannister and Nair (2003). Though statistically significant, however, the cross tabs and correlations using household and plot characteristics as predictors explain only a small fraction of the differences between planters and non-planters, or between heavier and lighter participation. The project hope of reaching even land-poorer sectors was attained. (Total landlessness is rare in rural Haiti.)

As for gender, trees were offered to females as well as males. In the project’s final year, 135 436 males and 41 121 females (23%) were listed as participants. These figures warrant explanation. The gender skewing reflects local customs of formal household headship. In households with a conjugal couple the male traditionally presents himself as household head and was listed as the project participant. Female participants are generally from households headed by a female. Even in households with a conjugal couple, however, case studies (e.g. Smucker and Timyan 1995[12]) have shown that wives of participants were heavily involved in household decisions whether to plant or not to plant and in the subsequent management of the plantings.

For what purposes did peasants plant trees?

The stated goals of tree planters in all studies were overwhelmingly economic. The dominant goal was harvest of the wood, precisely as had been predicted in the anthropological 'social soundness analysis' (Murray 1981[2]) that formed the conceptual backbone of the original USAID project document. The definition of 'economic', however, had to be broadened. Murray (1984) alluded to the themes of 'cash cropping' and the 'domestication of energy' (e.g., of charcoal) as central to the project in the first article published on the project a year and a half into its implementation. The prediction was that the project would permit a shift from the then prevalent extractive mode of charcoal procurement. Balzano (1989) and Smucker and Timyan (1995[12]) give case study evidence of farmers in some regions behaving exactly as predicted, planting *jaden chabon*, 'charcoal gardens'. They would prepare a field, plant it with annuals, intercrop wood tree seedlings, continue cropping until shade competition from the trees no longer permitted, clear cut the growing trees, convert the wood into charcoal, and begin again.

But these were the exceptions. More farmers planted with a view to more valuable saw-timber further down the road. And few harvested all of their trees at once. They used the tree rather to store value, less vulnerable to drought than annual crops (cf. Conway 1986a[6]; Smucker and Timyan 1995[12]). In some regions farmers calculate a 50% probability of losing one's annual food crop to drought. Under such conditions of agrarian peril the domestic tree stand becomes an economic safety net that is protected until absolutely needed, and even then cut only selectively. Balzano[16] revisited his dissertation community 10 years later and found large number of project trees still standing, some of them over 15 m high, being protected as vehicles of savings for times of emergency.

But farmers' harvest decisions reminded us further to broaden the term 'economic' beyond money. We have observed tree planters for the first time in Haitian history 'growing' parts of their houses, particularly posts and rafters. No cash is generated in such self-use; but money is saved. Self-use is more frequent with poles and beams than with charcoal and timber, probably because of clearer price-setting dynamics for low-valued charcoal and high-valued planks (McGowan1986[10]; Smucker and Timyan 1995[12]). But whether marketed or used for one's own house, the motivation is economic. The trees did provide ecological benefits to the fields as well (Grosenick 1986[9]). Exactly as was predicted in pre-project documents, however, ecological benefits from trees came as secondary side effects of behaviors in which smallholders engaged for economic reasons.

The primacy of economic motives came out dramatically even in the most heavily ecological component of the project, contour hedgerows. In theory, peasants were to top-prune hedgerows to about 50 cm, use the leafy material as a soil amendment in the alleyways, and the cut woody material as a soil-retention barrier uphill from the hedgerow. In actuality, peasants were more prone to using the leafy material as fodder for livestock rather than as fertilizer in the soil. In other words economic payoffs from well-fed goats were viewed as more attractive than the ecological advantages of well-fertilized land.

But farmers' economic maneuvers went even further. They invented a new type of hedgerow consisting of perennial food crops (especially plantains (*Musa* spp.), sugar cane (*Sacharum officinarum*), cassava (*Manihot esculenta*), pigeon peas (*Cajanus cajan*), and pineapple (*Ananas comosus*)) as the structural component, holding the soil, in combination with annual crops (particularly sweet potato (*Ipomoea batatas*), yam (*Diascorea* spp.), and others) grown underneath them in a wider contour band whose width could reach 2 or 3 m up and down slope (the width of the typical hedgerow is a meter). The name of this new invention was *bann manjé* – a play on words that can mean 'a band of food' or 'a bunch of food'. The bulk of the food on the *bann manje* was destined for sale in markets. What the peasants of market-oriented Haiti were doing was in effect converting what technicians had intended to be a conservation and fertility-enriching strategy – i.e. an ecological strategy into a microeconomic income-enhancing strategy (cf. Ashby et al. (1996) for similar behaviors in Colombia. Bunch (1999) also found Central American farmers independently modifying project-promoted conservation structures. Garcia et al. (2002) discuss evolving hedgerow technologies in the Philippines.)

Site management strategies: Where did they plant trees?

The question can be subdivided into holding-management and plot-management issues. On which plots, within the typical Haitian multi-plot holding, were trees planted? And where were trees deployed

within the selected plots? As for the former, several research documents identify three variables that governed plot selection: land tenure, distance from the home, and the edaphic/ topographic characteristics of the plot itself.

With respect to land tenure, pre-project predictions hypothesized that farmers would plant principally on the two types of plots over which Haitian villagers have reasonably secure control: plots which they have purchased, and plots that they have inherited and subdivided among siblings. Rarely is the subdivision done with a fully legal surveyor's chain. It is almost universally done with ropes in the presence of community witnesses. The separation is informal rather than legal. But once that subdivision occurs with community witnesses, the recipient is the de-facto owner and can safely plant trees. It was conversely predicted that smallholders would be less inclined to plant trees on sharecropped land, on rented land, and on undivided inheritance land over which they had no exclusive control. These predictions were borne out strongly in the studies of several tree-planting villages done in the mid 1980s, several years after project launching, by Buffum (1985[4]), Lauwerysen (1985[8]), Balzano (1986[15]), and Conway (1986a[6]). Smucker and Timyan (1995[12]) also pointed out that the functionally important variable is not legally deeded ownership of the plot (which is extremely rare) but rather secure control over the trees, which can be acquired through informal land ownership. Purchased and subdivided inheritance plots are recognized by the community as 'owned' by farmers even in the absence of surveyed deeds. Such de-facto control is required for secure ownership of the trees planted. The ownership of the tree is, in fact, the key variable predicting willingness to plant. The statistical analysis done by Bannister and Nair (2003) confirms the same tendency for more trees to be planted on plots under more secure tenure.

Exceptional cases were found on which even sharecroppers or managers could work out tree planting arrangements with the owners. But the pre-project predictions about the importance of land tenure as a determinant of tree planting were fully borne out. The project was therefore possible in Haiti, where smallholdings may be the norm but landlessness is rare. In countries with large landless sectors special project measures will be required to avoid favoring only the well-off with privately owned trees.

A second variable, distance from the home, also played a role in plot selection. The result was the planting of project trees closer to home. Soil-quality and slope variables also played a role (Bannister and Nair 2003). Trees were rarely planted in any numbers on precisely the plots that outsiders would deem the ideal site, heavily sloped and eroded agriculturally marginal plots where crops cannot grow but where wood trees could, albeit slowly. Trees tended to be planted on agriculturally better land in conjunction with food crops.

This tendency to avoid distant and degraded plots is fully logical but economically and ecologically unfortunate. The logic is that farmers are aware, much more than planners, that trees in Haiti are vulnerable to three dangerous predators that can wreak havoc on distant plots or agriculturally marginal plots: (1) free ranging livestock, (2) nocturnal thieves, and (3) one's own kin. On plots distant from one's home, young seedlings are more vulnerable to free browsing livestock, and mature trees can be and were cut by thieves. And as for the agriculturally marginal denuded hillsides all over Haiti that would be prime candidates for hardy trees, it is precisely such land that kin groups keep in common for grazing purposes. There is no individually recognized owner of any particular plot.

If seedlings are planted on this collective land, and if the seedlings miraculously survived the free-ranging goats, a distant cousin of the planter could harvest the wood and would not have to do so under cover of darkness. The issue is tree tenure. The tree is not safely yours unless the land on which it stands has been subdivided by common informal agreement. And even when the tree is on your land, you will come under pressure from kin to give them permission to cut some of your trees. Wood was traditionally a free good and, though now planted, retains its earlier 'communal' aura. Relatives might never dream of asking you to let them harvest part of your bean crop. But they can and do ask you to let them cut some of your planted wood.

These three predatory actors – livestock, thieves, and relatives – generate an economically and ecologically formidable barrier to the expansion of tree planting onto precisely the underutilized plots where the competition from trees would be lowest and the economic increments from wood would be greatest. The problems will all be solvable at a more advanced stage of the transition to planting wood. Kin groups and communities can make arrangements to neutralize each of the three predators and to make tree planting possible on these marginal landscapes. The present project, however, merely observed the barriers, without being able to circumvent them.

The result was a strong tendency to plant project trees in conjunction with one's plots, which is precisely the arrangement envisioned in classical agroforestry. The agroforestry configurations that did emerge on agricultural land and on house sites were rich in their diversity. The preferred strategy was to convert the border of the plot into the principal locus of the trees. And no clear-cutting is generally performed on these trees. They are kept rather as a permanent source of wood, to be harvested selectively as needed. Many trees were also planted near the homestead.

In some cases plots were allowed to evolve into permanent woodlots. On agricultural land more distant from homesteads, farmers often place agrarian risks on sharecroppers. As a general rule, however, the sharecropping arrangement impedes tree-planting. Barring exceptional arrangements, the tenant will not plant trees as he will probably not be the one to harvest them. The landowner will not plant, as the sharecropper will take subtle measures to eliminate them. One arrangement observed was for the landowner to designate a block of land on one edge of the plot for a permanent woodlot whose vegetation belongs to him, not to the tenant. Since the tenant cannot plant there, there is no incentive to help the seedlings die. In one reported case (Smucker and Timyan 1995[12]) the household derived more benefits from the woodlot in the form of charcoal and pole wood than it did from the portion of the meager harvest that they received on the sharecropped part of the plot.

In a small number of cases even entire plots with at least some agricultural potential have been allowed to evolve into permanent woodlots. But this is done for exceptional reasons – the owner may be aging and may have less energy for agrarian pursuits, or may migrate temporarily to the Dominican Republic and can get more from the land by turning it over to low-maintenance trees. This is not done with enough frequency to cause a cut in local food supplies.

How many seedlings survived the first year?

The entire undertaking, of course, is an exercise in futility if the seedlings die. Survival- monitoring procedures were instituted by PADF. An increasing 12-month tree survival rate was achieved as the project progressed in its first decade from an early project average hovering near 30% to a later average closer to 50%. Data are not available for seedling survival during the more intensive 1990s phase. Because of closer interactions between project and participants, the survival rates were probably higher. A reasonable generalization, at least for Haiti, would be that in a project of this type, in which seedlings are transplanted onto farmer-controlled rather than project-controlled plots, approximately two seedlings will be required for every mature tree.

When were the trees harvested?

The timing of tree harvest is determined less by agronomic perceptions on the part of the peasant, e.g., the mean annual growth increment, than by special crises or special occasions in which expenditures are required: funerals, illnesses, weddings, school tuition. In this sense peasant treatment of the tree is quite different from what is done in developed industrial plantations. This cutting-in-crisis is not erratic shortsighted behavior on the part of the peasant. It is part of a long-term strategy in which the wood tree becomes a partial surrogate for the savings that used to be achieved principally through livestock raising.

A negative theme that recurs in the case studies is the obligation that farmers felt to accelerate wood harvest. The initial objective was often the harvest of timber, the highest value of wood trees. In some communities studied (Conway1986a[6]) few if any participants reported planting with a view to the charcoal market. But economic pressures often lead to faster cutting of the trees for charcoal.

The harvest schedule of wood trees, because it is so discretionary, is much more vulnerable to political events than is true of other crops. Rice (*Oryza sativa*) and beans (*Phaseolus* spp.) have to be harvested on schedule, whatever happens in national and international politics. Not so trees. But the political chaos following the ousting of a dictator in 1986 increased lawlessness and thievery. A U.S. embargo of the 1990s, instituted after an elected president was ousted in a coup, created hardships that led to premature harvest of the trees. Political events thus accelerated tree harvesting, as tree-owners switched from timber to charcoal goals either to meet urgent cash needs or to protect against the clandestine cutting of trees by thieves.

What happened to the plots after tree harvest?

There are no case studies that document a post-harvest 'good riddance' attitude on the part of farmers. What the case studies, particularly those of Smucker and Timyan (1995[12]), show is the emergence, as a result of project participation, of a transformed land orientation

in which the wood tree is now seen to be a *danre*, an income-generating crop that can be planted like other crops. The post-harvest replacement strategies entail careful managing of coppice and transplanting of wildlings. If seedlings are made available farmers will replant and even expand tree-planting into new areas of their holdings. Internal attitudes and external behaviors toward the wood tree have been profoundly modified, not through educational messages and not through ecological homilies, but through planting and harvesting.

Quantitative indicators

Tree seedlings

If the project had reached only 10 communities and 300 families, the preceding descriptions of emergent agroforestry orientations would still make it humanly and scientifically interesting. But it reached hundreds of thousands of families. During the first 10 years (1982–1991), when large-scale tree distribution was the main focus, about 48 million wood tree seedlings were distributed to farmers by PADF alone. In the project's second decade, from 1992 to 2000, the PADF component of the project delivered 14 million seedlings. An additional three million seedlings were produced during this second decade by farmer-operated, small, 'plastic bag' nurseries.

In spite of the dwindling in average annual seedling output during the second decade (for extraneous reasons to be discussed later), a total of 65 million seedlings, over 95% of them wood tree seedlings of 74 different autochthonous and exotic species, were voluntarily integrated by Haitian peasants onto their own holdings during the project's 20 years through the PADF project. CARE (Cooperative for Assistance and Relief Everywhere, Inc.) was also active in tree-planting activities in Haiti's arid northwestern region during this period under the overall USAID project. Although we lack precise data on such CARE-sponsored tree-planting, a conservative estimate of the total project-facilitated out-planting is over 100 million trees on Haitian peasant land during the 20-year period.

Hedgerows, gully-plugs, and other soil conservation interventions

During the first decade of the project, soil conservation interventions were minimal. Six hundred fifty (650) km of hedgerows were installed, and 2200 gully plugs were built. In the second decade, with its shift into a greater emphasis on conservation practices, farmers installed over 12 000 km of hedgerows, 3000 km of rock walls, and 94 000 gully plugs. In addition, the 'agro' component of agroforestry was increased, and improved food-crop germplasm was distributed to cover over 11 000 ha of land, and 30 000 vegetable gardens were planted.

Numbers of participating smallholders

Such aggregate tree and hedgerow statistics by themselves meant nothing to project implementers. If the 65 million trees planted had all ended up on State land or on the land of 500 wealthy landowners, the project would have been seen as a failure. As Nair (1993) points out, agroforestry is not merely about biomass. It attempts to benefit the rural poor as well. For us, the key statistic in the Haiti project is not number of seedlings distributed but number of households participating.

During the first 10 years, two factors confounded the counting of real participants. About a third of the participants in any season may have been 'repeat-planters', not new ones. But there was even stronger skewing in the opposite direction in the form of 'non-registered participants'. It is known that many farmers receiving 200 or 300 seedlings would distribute a substantial but impossible-to-quantify number to relatives or friends, who thus became de-facto – but uncounted – project beneficiaries. A conservative estimate of numbers of distinct households planting the 48 million seedlings distributed during the first decade would be 190 000 households, or about 250 seedlings per household. During the final eight years, 1992–2000, when the project concentrated in smaller geographic areas, the data are more precise. A total of 176 557 farmers are known to have participated through 83 local organizations that employed about 1000 extensionists. To accommodate the possibility of up to 15% of non-registered planters, a recent article by Bannister and Nair (2003) raise the figure to 200 000 participants for the second decade. That means a total of 390 000 households for the two periods. Conservatively, we can state with confidence that during its 20-year life the project involved a minimum of 350 000 Haitian farm families.

When placed in the context of Haitian demography, these figures startle even the most enthusiastic proponent of the approach used. The population aver-

age for the 20-year period can be set at 6 million, about 70% (or 4.2 million) of whom were living in rural areas. Survey data carried out by the second author yielded an average of 5.7 persons per rural household. If extrapolated to all rural areas, there are about 737 000 rural households in Haiti. With the project reaching a minimum of 350 000 households as stated above, more than 40% and perhaps nearly 50% of the households of rural Haiti may have received seedlings or otherwise participated in the project at one point or another during the two decades. Even if these national participation figures are dropped by 10 or even 20 percentage points for 'safety's sake', the level of nationwide involvement in and enthusiasm for a tree planting project must still be seen as unprecedented in the annals of agroforestry.

We cite these figures, not to tout the 'success' of the project. Success must be evaluated on criteria that go beyond crude number crunching. We consider the qualitative descriptions of emergent agroforestry systems presented in the preceding section to be better indications of the effectiveness of the approach. The national statistics reveal less about the project than about the peasants, or rather about the potential for the emergence, certainly in Haiti and possibly elsewhere, of an evolutionary restructuring of the relationship between the smallholder and the wood-tree. If the poorest farmers, with the smallest holdings, of the Western Hemisphere, can be moved by anthropologically and technically creative project design – and *by an abundant supply of high quality seedlings* – to incorporate wood trees into their agrarian inventory, the potential for smallholder tree planting must be even greater in economically less-stressed settings. Stated differently, there was a latent readiness in Haiti for a shift into massive wood-tree planting, a type of subterranean 'potential energy' waiting to be released. A well designed project that deals with issues of tree tenure, harvest rights, and (above all) *seedling supply* can act as a catalyst to convert this potential energy into kinetic energy – to convert interest in trees into the planting of trees.

Generalizable lessons?

We have learned lessons in Haiti. Their generalizability to other settings, however, is a matter for professional debate. Let us simply conclude by briefly ventilating several controversial issues, each of which by itself warrants an article. Four of them, we believe, have been settled, at least for Haiti. Two are still contested.

Economic vs. ecological goals: The Neolithic analogy

The project entailed a paradigm shift for both planner and peasant in their view of the wood tree. Earlier project planners, with themes of reforestation and conservation, viewed the wood tree as a natural resource to be protected. Haitian villagers also treated it as a natural resource, but one to be exploited, not protected. The project moved militantly away from any such 'natural resource' construal of the tree at all. We presented the wood tree instead as a slow-growing crop that could be planted, harvested, and sold or used as any other crop. Villagers made the shift in their own way, usually treating their trees not as a crop to clear-cut in one fell swoop, but as a store of value to slowly harvest when needed. But the shift into a domesticated mode of wood production was made by a substantial percentage of the population of rural Haiti.

As Murray (1987) pointed out, there were ancient anthropological precedents for this shift into domestication. Archeologists and cultural anthropologists have studied that ancient food crisis in the Fertile Crescent that led some 12 millennia ago into the shift away from dependence on the gathering of wild vegetation and the hunting of wild animals into the domestication of crops and livestock, a process referred to as the Neolithic transition. The shift was provoked by food shortages, by 'Paleolithic overkill' of wild animals. This food crisis was *not* solved, however, by 'natural resource management', by better stewardship of nature's resources, or by a shift to 'sustained yield' hunting and gathering. It was solved instead by *domestication*, by a shift from an extractive mode to a productive mode of resource procurement. Gathering of wild vegetation yielded to crop cultivation, hunting to livestock. (Murray 1987; cf. Simons and Leakey 2004).

Parallel problems evoke parallel solutions. The shift into a domesticated mode of wood production is a replay in the domain of wood of the process that led to the domestication of food. The evolutionary readiness of Haitian villagers to this alternative emerged because two of three conditions were already present in local economic repertoires. (1) The cash-cropping farmers of Haiti had been planting for markets for nearly two centuries. (2) Increasing wood scarcity and burgeoning construction and charcoal markets endowed wood with more commercial value than most annuals. The

missing connection was the *planting* of the wood to be cut and sold. Once a seedling supply had been established, however, and tree tenure had been guaranteed, the shift from extracting wood for sale to planting and harvesting it for sale was a logical, gentle step, and an attractive alternative to explore (Murray 1987).

Rational farmers dealing with real problems easily make the shift into a new paradigm. Whether planners and intellectuals can make the shift – a focus on messages of domestication and production – or whether they will cling to archaic protect-Mother-Nature paradigms, is another question. If the Neolithic analogy holds, the wood crisis on planet earth is more likely to be solved by the production of planted wood, as Haitian villagers have begun doing, than by the protection of nature's wood.

Let us not push the analogy too far; Amazonian and Orinoco rain forests can and should be protected. But let us conversely desist from infecting tree programs in settings like Haiti with inappropriate protect-Mother-Nature conservationist themes. The woodlot planted by a farmer is no longer a 'natural resource'. It is a crop. The natural tree stands of Amazonia should be hugged and protected. The domesticated tree stands of rural Haiti should be hugged and then harvested.

Professional nurseries vs. backyard nurseries

When the anti-subsidy policy in USAID led to the closing of NGO nurseries in 1991, the tree component of the project had to shift to backyard nurseries operated by individual farmers or small groups. The subsidies were just as great; polyurethane sack containers, seeds, and watering devices were supplied by the project. But they were masked under a camouflage of grassroots thatched-shed 'peasant initiative' that the anti-subsidy vigilantes lacked either the talent or inclination to penetrate. These peasant-managed backyard nurseries, however, should not be romanticized as more sustainable or developmentally superior. Their volume of output was lethargic compared to that of professionally run small-container nurseries. And the 80% subsidy that nurtured them is no more sustainable than the 100% dependence by NGO nurseries on project purchases.

Several arguments can be made in favor of the professionally run nursery. Sixty five million seedlings distributed to Haitian farmers were incorporated as crops into their farming systems. A responsibility comes with this level of output – to ensure a sustainable source of the best quality tree seeds possible. The NGO nurseries established with project assistance purchased most of their tree seeds from PADF, who imported some of them from overseas suppliers and collected the others locally using local entrepreneurs who were given some training in what characteristics to look for. The nurseries also collected seeds themselves from their regions.

The difficulty with seed supply in Haiti is that trees with the most desirable characteristics were harvested long ago, leaving the inferior individuals to supply seeds, with the resulting drop in production. Even more troubling is that seed of some of the popular exotic species, such as *Senna siamea*, *Azadirachta indica*, and *Swietenia macrophylla*, were collected from a very small number of parent trees planted near government buildings. This makes for a very narrow genetic base for a large population of trees. Since resistance to pests and diseases is a highly heritable trait in trees, this genetically narrow population could be at risk. In any case, a broader genetic base of tree germplasm is necessary to support future selection for increased production, ability to grow in marginal sites, and improved growth rate (Zobel and Talbert 1984). A tree seed selection program was begun by the project in the late 1980s with large private landowners to establish selection trials that would eventually be converted to seed orchards (J. Timyan, pers. comm. September 2003). In short, professionally managed seed and seedling operations have clear advantages over the backyard user-managed nursery in these matters. And in terms of seedling quality, volume of production, and the ability to excite farmer enthusiasm, the professionally run NGO nursery was a better seedling-supply option than the backyard nursery in Haiti.

Public vs. private fund management

A third matter has been 'settled', at least for Haiti. In the absence of functioning government institutions, the NGO route was selected for project administration. Cordial working relationships were eventually established with local government agronomists. But at no time did the Haitian government control any project funds.

The NGO mode of project implementation does not sit well in all international development circles. One concern is the issue of local State sovereignty in development matters. Another is the fly-by-night, predatory behavior of at least some NGOs. The respect-sovereignty anthem, however, rang flat in

Duvalierist Haiti, whose bureaucrats had for decades exercised their sovereign right to plunder donor funds intended for their people. Even the most ardent government-to-government 'institution builders' had to back down and invite NGOs.

We agree, however, with the legitimacy of the second concern against premature beatification of the NGO-in-shining-armor. One of the authors (Murray), in an unpublished report for USAID/El Salvador, proposed a dichotomy between two types of NGOs: the ONGO, or 'operational NGO', with a bona-fide service track record, and the FONGO, the 'foraging NGO', that worldwide genus of parasitical profit-oriented 'non-profit' group dedicated first and foremost to the foraging and capture of international donor funds. In the early 1980s, there were dozens of bona-fide service-providing NGOs with whom we could work. In view of current (2003) international sanctions against the Haitian government, the NGO route continues to be the preferred project mode.

Tree programs in other political and cultural settings may eschew the NGO option. Few governments could have worked as efficiently as the NGOs of Haiti. But we will avoid doctrinaire generalizations. We simply pose a question for further professional debate. Under what conditions should agroforestry project funds be entrusted to a local government? And under what conditions should planners use every measure that is legally and politically feasible, as was done in Haiti, to protect a project against government interference?

Pedagogues vs. partners: Assigning education its proper role

Some would be puzzled that our project paradigm has no separate education component; education is instead a minor component under 'outreach'. The demotion is intentional. In the early years the project was almost 'anti-education'. In its emphasis on seedling supply, tree tenure, and harvest rights, the approach was a militant philosophical rejoinder to questionable pedagogical theories that viewed peasant knowledge deficits as the cause of Haiti's ecological problem and environmental education as the major solution. The educational component of the project was upgraded in later years with Creole-language manuals and training sessions in administration for CBOs. But we continue to surround education with two caveats. First, educational message-flows must be linked to material flows. They are analogous to user manuals that come with computers or printers. A manual is useless without access to the hardware. Equally useless are environmental education projects whose budgets finance the educational manuals but expect smallholders then to go forth and obtain seedlings on their own. Secondly, educational flows should be bi-directional, moving as frequently from farmer to project staff as vice-versa. While technical information regarding nursery and agronomic practices was valuable and necessary, the knowledge that staff in Haiti carried in their brains was, after 20 years of field immersion, more heavily influenced by farmer inputs than by lessons learned long ago in school. Stated differently, we abandoned the podium and the pulpit. We were neither pedagogues nor ecological preachers, but partners in a long-term joint venture, encapsulated by the Creole slogan used by the field staff '*Plantè se kolèg*' (planters are colleagues). We suspect that in many other agroforestry settings as well, issues of seedling supply, tree tenure, and harvest rights are more critical than the mission of remedying presumed peasant knowledge deficits by itinerant environmental educators.

Santa vs. Scrooge: The issue of seedling subsidy

The preceding issues have been comfortably resolved in Haiti. The 'Santa vs. Scrooge' tensions – subsidy-and-sustainability issues – have not. Seedling supply is the most hotly debated subsidy question: to gift or not to gift. Villagers in the 32 Nigerian settlements studied by Osembo (1987) stated that they would plant trees under three conditions: tree seedlings would be free of cost, farmers could interplant trees and food crops without losing crop yield, and that it would be possible to earn income from the trees. That verdict could have come straight from the mouth of Haitians. Hwang et al. (1994), Leakey and Tomich (1999), and Herrador and Dimas (2000), take similar stands justifying subsidies and incentives. But other observers have misgivings about the impacts of subsidies (Arnold and Dewees 1999; Bunch 1999; Napier and Bridges 2002).

Anti-subsidy voices in Haiti were varied. Hard-liners wanted farmers to pay full price for seedlings. Soft-liners wanted a symbolic penny per-seedling, about 10% of production costs. (Soft-liners often alluded to character-building themes. People would be 'spoiled' if they get free handouts.). Had hard-liners prevailed, no trees would have been planted. Had soft-liners prevailed perhaps 1000 farmers per year all over Haiti would have bought 10 or 20 wood trees each, yielding a 20-year total of 20 000 households planting

400 000 trees (and that is probably a speculative overestimation). With our joint venture mode, in which farmers supplied land and labor and the project supplied a modest average $20-per-participant seedling subsidy, 350 000 households planted 65 million trees. In retrospect we now know with certitude that a 'character building' decision on our part to exact at least a penny per seedling would have been an exercise in institutional idiocy. It would have suppressed over 99% of the tree planting that occurred with absolutely no sustainability benefits. A project in which peasants pay for 10% of the seedlings is no more sustainable than one in which the project simply donates seedlings.

We can go further and quantify the damage done by anti-subsidy interventions. Some 10 years into the project a USAID director opposed to subsidies ordered PADF, under threat of de-funding, to desist from purchasing and delivering free seedlings to farmers. If they want wood trees, let them pay full price. No farmers did, of course. This led to the shutting of the 36 NGO nurseries that had emerged during the previous decade with PADF as their sole or principal purchaser, and which had been pumping out about ten million seedlings a year onto peasant land. (Such anti-subsidy sentiment is often selective and whimsical. The same director who withheld free trees from villages continued to instruct his subordinates to endow the same villages with abundant flows of free contraceptives).

The seedling flow was reactivated under his successor, who reversed his order, but under hastily constructed new nurseries the volume never recuperated. The original nurseries had lost their investment in infrastructure and no longer trusted USAID or PADF. We can calculate that, had those nurseries not been closed, they would have distributed during the decade of the 1990s as many as 80 million, rather than 14 million, seedlings. At 200 trees per participating household, this 66 million-seedling gap translates into more than 300 000 rural Haitian households who were blocked from initiating or repeating the planting of tree seedlings. An annual multi-million-seedling flow that had taken ten years to create and nurture was stopped by the dogmatic flick of an anti-subsidy pen.

Philosophical dogmatism divorced from empirical reality but linked to administrative power can indeed be destructive. One powerful empirical fact that should have been honestly confronted by an American agency before cutting off the free seedling flow to impoverished Haitians is the *tree-subsidy policy of the U.S. government toward its own farmers*. The U.S. Department of Agriculture has a national cost-share program in the 2002 Farm Bill called the Forest Land Enhancement Program (FLEP) that provides up to $10 000 per landowner per year for tree plantation and management practices (http://www.fl-dof.com/Help/FLEP.html). FLEP is not unique, and was preceded by other similar programs, such as the Forest Incentive Program (FIP) and the Conservation Reserve Program, among others. If a U.S. farmer can receive $10 000 per year in tree subsidies without lethal damage to the American economy or to the moral character of the recipient, we would appreciate arguments as to why the same is not true of a one-shot $20 seedling subsidy to a Haitian villager.

The issue of sustainability

Will farmers continue agroforestry once project support has ceased? The question must be broken down into two components. (1) Will they protect and manage coppice and volunteer seedlings? (2) Will they henceforth purchase wood seedlings commercially or begin producing them in their backyards? The answer to the first question is an empirically solid yes. We have already indicated not only that farmers have left some trees standing as a bank of value, but also that they have creatively managed coppice regrowth and volunteer seedlings long after project-termination.

We have no evidence, however, that they will on their own, without container subsidies, establish backyard wood-seedling nurseries and we doubt that they will purchase seedlings commercially. To our knowledge neither of these behaviors has occurred (in Haiti), nor have any studies addressed these specific questions. We know well that coppice and wildling management will sustain only a modest percentage of the trees for several years at most. Without new inputs of germplasm, plots that received trees are in danger of reverting eventually to their former treeless condition. No matter how attractive they are, the returns from tree planting are still too far down the road to compete with more immediate cash needs. This is as true for the prosperous American farmer who will not plant trees without a $10 000 per-annum subsidy program, as it is for the Haitian farmer who will perform amazing agroforestry feats with the modest $20 seedling grant which our project supplied.

Are we declaring wood-tree planting to be impossible without subsidies? Of course not. Georgia Pacific, Weyerhaeuser, and similar companies have a long record of planting, managing, and harvesting wood trees without any public support. We can, in

sanctimonious avoidance of subsidies, leave the re-greening of the landscape to these powerful economic giants. If the goal, however, is to involve impoverished tropical smallholders in the transition to domesticated wood, in our view there is no magical mantra, no quick-fix educational or motivational gimmicks, that can circumvent the need for sustained public or philanthropic seedling support in the foreseeable future.

To conclude, in arguing for the approach used in Haiti, we are not peddling panaceas. The approach adopted here cannot by itself protect natural forests and cannot by itself provide total coverage of a watershed. It was not meant to. What it will do can be stated with simplicity and focus: It will enable local shifts into the domesticated production of the wood that was formerly scavenged from nature. We now know with certitude that a latent readiness to make this shift existed in Haiti. We believe that that same readiness for wood-tree planting exists in other world regions and other cultural settings as well, able to be activated on as massive a scale as was activated in Haiti. The catalyzing impact will come only if conservationist homilies and protectionist penalties are replaced with a rich supply of seedlings made available to villagers *under the same tenure and market assumptions that govern other crops*. The Haitian peasants have taught us a major lesson. We now know that it is possible, through anthropologically and technically sound project planning, to create the conditions by which even impoverished smallholders can participate in the exciting transition now occurring, as humans replicate the food-domestication achievements of their Neolithic ancestors and now bring even the wood tree itself into that subset of flora that humans plant, tend, and harvest.

Acknowledgements

The authors sincerely appreciate the candid comments and suggestions made by the reviewers, which greatly improved this chapter. Florida Agricultural Experiment Station Journal Series Number R-09895.

End Notes

1. Murray G. 1979. Terraces, trees, and the Haitian peasant: An assessment of 25 years of erosion control in rural Haiti. USAID, Port-au-Prince.
2. Murray G. 1981. Peasant tree planting in Haiti: A social soundness analysis. USAID, Port-au-Prince.
3. Smucker G. 1981. Trees and charcoal in Haitian peasant economy: A feasibility study of reforestation. USAID, Haiti.
4. Buffum W. 1985. Three years of tree planting in a Haitian mountain village: A socio-economic analysis. Pan American Development Foundation, Port-au-Prince.
5. Buffum W. and King W. 1985. Small farmer tree planting and decision making: Agroforestry extension recommendations. Pan American Development Foundation, Port-au-Prince.
6. Conway F.J. 1986a. The decision-making framework for tree planting in the Agroforestry Outreach Project. University of Maine Agroforestry Outreach Research Project, Port-au-Prince.
7. Conway F.J. 1986b. Synthesis of socioeconomic findings about participants in the USAID/Haiti Agroforestry Outreach Project. University of Maine Agroforestry Outreach Research Project, Port-au-Prince.
8. Lauwerysen H. 1985. Socioeconomic study in two tree-planting communities (St. Michel de L'Atalaye and Bainet). Pan American Development Foundation, Port-au-Prince.
9. Grosenick G. 1986. Economic evaluation of the Agroforestry Outreach Project. University of Maine Agroforestry Outreach Research Project, Port-au-Prince.
10. McGowan L.A. 1986. Potential marketability of wood products, rural charcoal consumption, peasant risk aversion strategies, and the harvest of AOP trees. University of Maine Agroforestry Outreach Research Project, Port-au-Prince.
11. Smucker G. 1988. Decisions and motivations in peasant tree farming: Morne-Franck and the PADF cycle of village studies. Pan American Development Foundation, Port-au-Prince.
12. Smucker G. and Timyan J. 1995. Impact of tree planting in Haiti: 1982-1995. Haiti Productive Land Use Systems Project, Southeast Consortium for International Development and Auburn University, Petionville, Haiti.
13. Some readers may wonder at the absence of a separate educational rubric as a key project component. This will be discussed below.
14. The project was also implemented by CARE in a separate region of Haiti, in the semi-arid Northwest.
15. Balzano A. 1986. Socio-economic aspects of forestry in rural Haiti. University of Maine Agroforestry Outreach Research Project, Port-au-Prince.
16. Balzano A. 1997. A Haitian community: ten years after. Presented to The Society for Anthropology in Community Colleges, 1997 Annual Meeting, Toronto, Canada, April 16-19, 1997.

References

Arnold J.E.M. and Dewees P.A.A 1999. Trees in managed landscapes: factors in farmer decision making. In: Buck L.E., Lassoie J.P. and Fernandes E.C. (eds). Agroforestry in Sustainable Agricultural Systems. CRC Press, Lewis Publishers, Boca Raton Florida, USA.

Ashby J.A., Alonso Beltrán J., del Pilar Guerrero M. and Fabio Ramos H. 1996. Improving the acceptability to farmers of soil conservation practices. J. Soil Water Conserv. 51: 309–312.

Balzano A. 1989. Tree-planting in Haiti: Agroforestry and rural development in a local context. Ph.D. dissertation, Rutgers University, USA.

Bannister M.E. and Josiah S.J. 1993. Agroforestry training and extension: the experience from Haiti. Agroforest Syst 23: 239–251.

Bannister M.E. and Nair P.K.R. 2003. Agroforestry adoption in Haiti: the importance of household and farm characteristics. Agroforest Syst 57: 149–157.

Bannister M.E. and Nair P.K.R. 1990. Alley cropping as a sustainable technology for the hillsides of Haiti: experience of an agroforestry outreach project. Am J Alt Agr 5: 51–57.

Bunch R. 1999. Reasons for non-adoption of soil conservation technologies and how to overcome them. Mt Res Dev 19: 213–220.

Ehrlich M., Conway F., Adrien N., LeBeau F., Lewis L., Lauwerysen H., Lowenthal I., Mayda Y., Paryski P., Smucker G., Talbot J. and Wilcox E. 1985. Haiti Country Environmental Profile: a field study. USAID, Port-au-Prince, Haiti.

Escobar A. 1991. Anthropology and the development encounter: The making and marketing of development anthropology. Am Ethnol 18: 658–682.

Ferraro G. 1998. Cultural Anthropology: An Applied Perspective (third edition). West/Wadsworth, New York. 397 pp.

Garcia J.N., Gerrits R.V. and Cramb R.A. 2002. Adoption and maintenance of contour bunds and hedgerows in a dynamic environment. Experience in the Philippine uplands. Mt Res Dev 22: 10–13.

Harris M. and Johnson O. 2000. Cultural Anthropology (5th Edition). Allyn and Bacon, Boston, 374 pp.

Herrador D. and Dimas L. 2000. Payment for environmental services in El Salvador. Mt Res Dev 20: 306–309.

Holdridge L.R. 1947. Determination of world plant formations from simple climatic data. Science 105: 367–368.

Hwang S.W., Alwang J. and Norton G.W. 1994. Soil conservation practices and farm income in the Dominican Republic. Agr Syst 46: 59–77.

Leakey R.B. and Tomich T.P. 1999. Domestication of tropical trees: from biology to economics and policy, pp. 319–338. In: Buck L.E., Lassoie J.P. and Fernandes E.C. (eds). Agroforestry in Sustainable Agricultural Systems. CRC Press, Lewis Publishers, Boca Raton Florida, USA.

Murray G. 1984. The wood tree as a peasant cash crop: An anthropological strategy for the domestication of energy, pp. 141–160. In: Foster C.R. and Valdman A. (eds). Haiti – Today and Tomorrow. University Press of America, Lanham, MD.

Murray G. 1987. The domestication of wood in Haiti: A case study in applied evolution, pp. 223–242. In: Wulff R.M. and Fiske S.J. (eds). Anthropological Praxis: Translating Knowledge into Action. Westview Press, Boulder CO.

Nair P.K.R. 1993. An Introduction to Agroforestry. Kluwer, Dordrecht, The Netherlands, 499 pp.

Nanda, S. and Warms R. 1998. Cultural Anthropology. West/Wadsworth, New York, 429 pp.

Napier T.L. and Bridges T. 2002. Adoption of conservation production systems in two Ohio watersheds: a comparative study. J Soil Water Conserv 57: 229–235.

Osembo G.J. 1987. Smallholder farmers and forestry development: a study of rural land-use in Bendel, Nigeria. Agr Syst 24: 31–51.

Peoples J. and Bailey G. 1997. Humanity: An Introduction to Cultural Anthropology. West/Wadsworth, New York, 446 pp.

Podolefsky A. and Brown P.J. (eds) 1989. Applying Anthropology: An Introductory Reader. Mountain View, Mayfield, CA, 324 pp.

Robbins R. 1993. Cultural Anthropology: A Problem-based Approach. F.E. Peacock Publisher, Itasca, IL, 222 pp.

Rogozinsky, J. 2000. A Brief History of the Caribbean: From the Arawak and Carib to the Present (Revised Edition). Penguin Putnam (Plume), New York. 415 pp.

Simons A.J. and Leakey R. 2004. Tree domestication in agroforestry in the tropics (this volume).

Smucker G.R., White T.A. and Bannister M.E. 2002. Land tenure and the adoption of agricultural technology in Haiti, pp. 119–146. In: Meinzen-Dick R., Knox A., Place F. and Swallow B. (eds). Innovation in Natural Resource Management: The Role of Property Rights and Collective Action in Developing Countries. Johns Hopkins University Press for the International Food Policy Research Institute, Baltimore, MD.

Timyan J. 1996 Bwa yo: Important Trees of Haiti. South-East Consortium for International Development, Washington, D.C., 418 pp.

Weil T.E., Black J.K., Blutstein H.I., Johnston K.T., McMorris D.S. and Munson F.P. 1973. Area Handbook for Haiti. U.S. Government Printing Office, Washington, DC. 189 pp.

Zobel B.J. and Talbert J.T. 1984. Applied Forest Tree Improvement. John Wiley & Sons, Inc., New York, 505 pp.

Zuvekas C. 1979. Land tenure in Haiti and its policy implications: A survey of the literature. Soc Econ Stud 28: 1–30.

A History of

Landscape-level Land Management Efforts in Haiti

Lessons Learned from Case Studies Spanning Nine Decades

A report commissioned by the World Bank

October 2015

Andrew Tarter, PhD
Katie Kennedy Freeman
Pierre-Olivier Collier
Klas Sanders

WORLD BANK
Publications

EXECUTIVE SUMMARY

A variety of public and private institutions have initiated landscape-level land management projects in Haiti since the first multilateral development project of the United Nations was implemented there in 1948. The rubrics guiding these projects have been diverse: *integrated rural development*; *sustainable rural development*; *integrated landscape management*; *agro-ecosystem management*; *agroforestry*; *watershed management*; and *ecosystem stewardship*—to name just a few. Despite this vast nomenclature that reflects real differences in landscape management approaches and policies, most such projects implemented in Haiti have moved along a temporal trajectory toward the following set of shared, complementary objectives:

i) Natural resource conservation, management, and/or restoration;
ii) Improving and/or increasing agricultural productivity; and
iii) Bettering the lives of project beneficiaries.

The success or failure of landscape-level land management projects in Haiti has not been determined by these complementary objectives, but by the differential emphasis of overall project approaches and policies toward achieving these objectives.

The present report opens with a brief history of ecological degradation in Haiti—a necessary exercise for two reasons: (1) understanding how ecological degradation has proceeded historically in Haiti is required for mitigating future degradation; and (2) as the rural landscape has been altered significantly since the earliest landscape-level projects were implemented, a grasp of current ecological conditions in Haiti is also necessary.

After providing a brief ecological history, the report then shifts to examine fifteen different landscape-level land management projects executed in Haiti between 1948 and 2014, detailed in the form of brief but summative case studies that highlight salient projects features, and differences in approaches and policies. The primary findings presented below emerge from these fifteen case studies, the ecological history, and a review of many documents presented in the bibliography of this report.

The primary findings from the review of literature and case studies suggest:

- There is wide consensus on the need for landscape-level land management in Haiti, and increasing consensus on watersheds as the appropriate location for effective project implementation.
  The majority of Haiti's population is embedded in an agrarian landscape that relies on agricultural production as their primary livelihood strategy. Agricultural possibilities will continue to decline without effective landscape-level land management strategies. Centuries of deforestation and climatic drying have made access to water a major determiner of on-going agricultural production. Since rainfall is increasingly variable and unreliable in deforested Haiti, watersheds represent one of the most effective locations for landscape improvement efforts.

- There have been two common approaches or models to landscape-level land management projects that have been enacted in Haiti.
  The 'macro-level' approach favors complete landscape coverage at the expense of social and ecological heterogeneity. The 'plot-based' approach favors highly adaptive, plot-specific policies at the expense of full landscape coverage. The former has tended to emphasize ecological outputs through command-and-control models, while the latter has tended to emphasize both social and ecological outputs, developed through beneficiary participation in all levels of project identification, formation, implementation, and ownership.

- 'Macro-level' approaches to landscape-level land management are frequently marked by the following features:
  - Macro-level approaches tend to target entire watersheds, but still often fail to achieve 100% coverage;
  - Macro-level approaches tend to come with *a priori* assumptions and solutions developed by experts, which frequently rely on a complete restructuring of local agricultural or land management practices, rather than building on existing structures. This trend frequently results in less-than-enthusiastic participation or in resistance to participation.
  - 'Participation' from the perspective of macro-model project implementers is frequently viewed as beneficiaries initial adoption of technologies or practices, and the contribution of time or labor.
  - One of major reasons for the failure of macro-level landscape management projects in Haiti has been the adoption of a laundry list of project objectives meant to address the complexities of integrated landscape management—an emphasis on breadth over depth, but an emphasis applied indiscriminatingly across all lands and inhabitants within a watershed. The attempt to implement wide-ranging objectives through a top-down manner frequently results in project funds and personnel stretched thin, with few project objectives ever fully realized.

- 'Plot-based' approaches to landscape-level land management are frequently marked by the following features:
  - Plot-based approaches tend to account for the inter- and intra-heterogeneity of land, society, markets, roads, etc., of watersheds;

- Plot-based models rely on prior and ongoing research to assess and address these levels of heterogeneity;
- Plot-based approaches adapt policies in an iterative, farmer-driven process;
- Plot-based approaches necessarily involve local participation all stages of project identification, implementation, ownership, management, and continuity;
- Plot-based approaches rarely achieve 100% project coverage within a given watershed; and
- Plot-based approaches have proved the most successful in terms of project adoption by beneficiaries and continuity after the end of the project cycle.

- Diachronic case studies show a clear trend away from 'macro-level' approaches, toward 'plot-based' approaches.
  The 15 case studies presented in this report, and other cases reported on in the literature review, indicate that 'plot-based' approaches are not only more effective, but are increasingly embraced over 'macro-level' models. This is especially true of arable land holdings, which is highly fragmented across landscapes. In certain instances, such as large tracts of government-owned land, or uninhabitable areas, the case for 'macro-level' approaches may still be made; however, the long-term success of such approaches—marked by a lack of local project investment and ownership—is bleak.

- Despite a trend away from 'macro-level' models toward 'plot-based' models, both have failed for some of the following reasons:
  - One historical determinant of landscape-management project success or failure has been the differential emphasis placed on varied project policies. Project policies selected for emphasis often appear to be driven by the *a priori* ideological assumptions of donors or implementing agencies, emphasizing a particular technology, approach, or model that is not widely applicable in the Haiti context. The results have been low adoption rates or low continuity after project timeframes expire;
  - Unsuccessful projects were frequently weighted down by praiseworthy but unrealistic 'laundry lists' of objectives that recognized the interrelated complexity of landscape management but simultaneously stretched project resources thin in an effort to address this complexity;
  - Successful programs pragmatically limited the scope of what might be accomplished within the confines of the project timeframe, and focused instead on a few clearly defined policies tied to even fewer and more-clearly defined objectives;
  - Successful programs frequently took a substantial period of time to align the visions of donors, varied project partners, stakeholders, and beneficiaries;
  - Successful programs involved local participation at all levels, including project identification, formation, and implementation; and

- Allowing processes of stakeholder alignment and multi-tiered collective participation permitted successful programs to identify meta-objectives that addressed a multitude of concerns important to all project stakeholders, leading to higher levels of project adoption, participation, ownership, and ultimately success.

- Land tenure is not an impediment to beneficiary participation. Haitians utilize both informal and formal systems of land tenure, which permit the inheritance, management, leasing, sale, and purchase of land. While these tenure systems are complex, and frequently misunderstood as insecure, they are highly functional and do not represent an impediment to the implementation of 'landscape-level land management projects in rural Haiti. As the leasing of land is a common, established practice in rural Haiti, *access to land* appears to be a larger determiner of investment incentives to farmers than informal or formal tenure status.

- Land security is a potentially volatile issue that deserves reflection. Considering historical and contemporaneous land grabs and forced displacements, land insecurity from external forces represents a real concern, particularly with projects that target large parcels of arable land. However, the vast majority of arable plots in rural Haiti have been divided into fragments that are discontinuously dispersed across landscapes, serving as a *de facto* protective measure against external threats to land security. Larger plots of land are collectively owned by kin groups, but typically agriculturally unproductive, which may protect them against external forces.

- Participation is a more effective model than command-and-control approaches.
  The historical command-and-control approaches to landscape-level land management, including watershed management, have been met with skepticism and suspicion on the part of local project beneficiaries. Levels of participation have been low, and levels of adoption have been virtually nonexistent. Participatory approaches are crucial to long-term project success. Since local farmers occupy watersheds and are the direct project beneficiaries, their inclusion in all aspects of project identification, management, and implementation is crucial to project success and continuity. Successful project approaches included multiple stakeholders, such as members of local government, and local governing groups, community groups, church groups, and other solidarity structures.

- Effective government participation is limited by overlap between project and political administrative delineations.
  Nearly all watershed management projects in Haiti wrestle with the fact that rivers and their tributaries do not adhere to either the political boundaries of Haiti's departments or subsequent administrative units, or to the distribution of ecological zones in the country (Delatour et al. 1984). The differences between ecological zones have been greatly diminished (Ehrlich 1985), adding doubt to models that delineate watersheds and policies based exclusively on ecological life zones.

- Project continuity
  As of yet, every single attempt to implement a landscape-level land management scheme in Haiti has suffered from issues of funding and project continuity after donor cycles have concluded. Virtually all support has been through non-governmental donors. It is unclear whether profitability in the best-case-scenario

would be sufficient to continue a given project's activities, absent donor support of government subsidies.

Some six decades later, landscape-level management projects continue to be implemented in Haiti, and many continue to suffer avoidable historical shortcomings. The broader development community and project beneficiaries in Haiti have much to learn from the past in order to most-effectively design and implement successful landscape-level management projects in the future. This meta-analysis has been crafted for this very audience, as a point-of-departure for future efforts at landscape management in Haiti. The key findings listed above represent abbreviated complexity parsed from a review of the literature and from the fifteen case studies summarized in this report. The reader interested in a more nuanced, in-depth understanding of how these individual cases played out is encouraged to consult the extensive bibliography of sources at the end of this report.

BACKGROUND

Centuries of deforestation in Haiti have played out on an overwhelmingly mountainous terrain that receives seasonal rains and torrential downpours from frequent tropical storms and hurricanes. The standard of living for many rural Haitians has been negatively impacted as a result of deforestation and removal of the vegetative cover. Some of these impacts, such as the loss of valuable topsoil, have been directly observable, but other impacts have been insidious. While ecological and human vulnerabilities are intrinsically linked, they are conceptually treated below as distinct forces that act on each other in an iterative cycle in rural Haiti.

Ecological Vulnerabilities

From a strictly ecologically standpoint, deforestation in Haiti has either fueled or added to:

- Damage to Haiti's riparian systems and the soil-silting of lakes and unique coral reefs.

  The lack of a protective vegetative cover has led to an increase in the rapidity of surface water runoff out of watersheds, reducing the ability of rainwater to recharge the aquifers. Since Haiti's rivers are aquifer-fed, river water levels have been lowered, and in many cases permanent rivers have become seasonal (see Figure 1). Soil-silting of lakes is raising water levels, changing water salination levels, and destroying or threatening fresh-water, brackish water, and ocean fish habitats (Hotz and Christian 2015).

- A decline and loss of Haiti's diversity of endemic flora and fauna;

  Haiti is home to some of the highest levels of biological diversity in the Caribbean (Swartly and Touissant 2006). The loss of rare, endemic flora and fauna represents a tragedy of unknown proportions, as potentially valuable genetic material, millions of years in the making, is lost forever. The erosion of specific soil profiles results in a decreased ability of native flora to regenerate, paving the way for invasive species that lower overall biological diversity due to homogenized fauna habitat.

- Increased climatic drying;

The absence of a protective vegetative layer subjects Haiti's land to increased evapotranspiration—the drying of soil through direct exposure to sun and wind, which work together to wick away surface moisture. The heat rising from arid land drives away higher moisture air, in many cases reducing the likelihood of rain, and causing the pseudo-drought phenomena experienced throughout much of rural Haiti. The social science literature is replete with well-documented testimonies of Haitian farmers who contribute drought and pseudo-drought conditions directly to the over-cutting of trees.

- Increased terrestrial vulnerability to the effects of tropical storms and hurricanes;

  Without complex root systems to hold Haiti's mountainous terrain in place, entire mountainsides frequently wash out during tropical storms and hurricanes. Streams and rivers swell from immense groundwater runoff, causing flooding, increased erosion and widening of riparian systems, and the soil silting of lakes and ocean habitats. Individual trees and remaining tree stands are subject to higher exposure from wind than trees aggregated in forests, resulting in the widespread downing of remaining arboreal stands. The effects of tropical storms and hurricanes are not only exacerbated due to Haiti's deteriorating ecosystems, they also contribute to that deterioration in an iterative, degenerative terrestrial cycle.

Human Vulnerabilities

Since most rural Haitians are embedded in an agrarian landscape and rely on agricultural production as their primary livelihood strategy, the ecological and landscape degradation noted above directly contributes to:

- Nationwide declines in agricultural productivity;

  The production of soil takes thousands of years but major losses of topsoil may transpire in a single storm. As the majority of Haiti's population is understood to be dependent on agricultural production as a primary livelihood strategy, the loss of valuable topsoil has an insidious and deleterious long-term effect on agricultural productivity. The silting of freshwater, brackish water, and reef habitats have caused a dramatic decreases in viable fish and aquatic resources, which has adversely affected the livelihoods of those rural residents dependent on fishing as their major livelihood strategy.

- A resultant widespread rural out-migration;

  Decreased agricultural productivity in many areas of Haiti has increased rural out-migration, as few other economic opportunities currently exist in rural areas. While many rural Haitians would rather stay in the countryside, the degraded conditions, absent agricultural programs and projects that could improve production, incentivizes the trend to leave the countryside that started in the 1930s. Rural Haitians have migrated to larger towns and cities, the capital, or have become members of the expansive Haitian diaspora abroad. The capital city of Port-au-Prince, initially constructed to hold tens of thousands of people, had swelled to a greater metropolitan area of approximately three million people by the time of the 2010 earthquake.

- Increased exposure to environmental hazards;

  Regrettably, the crowded and marginalized urban spaces where many rural Haitian migrate frequently present more environmental health hazards than those found in

the deteriorating ecological conditions of rural areas. The rapid spread of cholera and the chikungunya viruses, and the high mortality levels of the 2010 earthquake, are testament to the deplorable conditions of many urban areas in Haiti.

- Increases in hunger, malnutrition and under-nutrition.

  Those Haitians that abandoned rural areas lose access to year-round and seasonal supplementary food sources from rivers, streams, woodlands, orchards, communal courtyards, and gardens, which would otherwise augment their diets. Instead, they are forced to rely on purchased foodstuffs, frequently imported and of low nutritional value. The traditional rural breakfast of corn or sorghum porridge has been replaced by spaghetti, topped with mayonnaise and ketchup. The traditional rice varieties of the Artibonite valley are increasingly replaced with lower-cost but less nutritious imported white rice from Miami. Citrus and other fruit juices that are available in rural areas are increasingly replaced with high-sugar energy drinks, and rural-produced bread is replaced with sugar biscuits and crackers.

  Those Haitians that elect to remain in rural areas also suffer from increasing levels of hunger, malnutrition, and under-nutrition. The deterioration of natural resources has decreased the availability of many traditional sources of dietary supplementation. Declining soil fertility correlates with lower levels of nutritional value in produce. The traditional strategy of mitigating crop failure—reducing the number of meals consumed a day—is fast becoming a norm of rural Haiti, as rains come less-frequently and soil fertility declines.

- Increased human vulnerabilities to tropical storms, hurricanes, and extreme climatic events.

  Despite large increases in rural-out migration, the majority of the Haitian population continues to reside in rural areas. These populations face tropical storms and hurricanes that cause landslides, frequently taking houses and lives with them. Landslides also block important road systems, preventing access to hospitals, and to important transportation routes for farmers dependent on marketing their agricultural goods at regional and national markets. Typically, there is no support for rehabilitation of damaged infrastructure and local residents must mobilize with hand tools to clear the roads that are crucial to their internal market systems.

The increased awareness and acknowledgement of these historical and contemporaneous trends in human and ecological vulnerabilities, and how they act on each other, has given rise to an emphasis on landscape-level approaches to rural development in Haiti. Landscape-level approaches attempt to address these interrelated vulnerabilities in the context of projects that focus on improving or introducing new livelihood strategies that simultaneously ameliorate ecological deterioration and degradation and improve the lives of beneficiaries.

This report reviews the available research as an initial point-of-departure, providing a diachronic overview of six decades of landscape management research and integrated landscape project activities in Haiti. The reporting period spans the early efforts of the first integrated development program of the United Nations in Haiti in 1949, through the 2014 consummation of project activities associated with the USAID-funded Watershed Initiative for National Natural Environmental Resources (WINNER).

Section I of the report opens with a brief environmental history of Haiti, followed by an analysis of the current state of environmental conditions, and closes with an examination of contemporary human and landscape vulnerabilities to acute and chronic environmental degradation and extreme climatic events. Section II of the report provides a summary of 15 regional or national landscape-level management projects enacted in Haiti since the middle of the 20th century. Section III concludes the report with a summary of important themes and applicable lessons that crosscut the history of landscape-level management projects in Haiti. Section IV provides a bibliography of important documents related to the issues examined in this report. The bibliography is intended serve as a resource for future researchers, policy-makers, program administrators, project implementers, and project beneficiaries.

SECTION I: The Historical and Contemporary Environment of Haiti

Looking Back To Move Forward

Proceeding from the logic that development programs seek to improve the lives of project beneficiaries, an understanding of the drivers of ecological degradation in Haiti is paramount and should be a first step for future research or landscape-level management project formation and implementation.

The Historical Deforestation of Haiti

The gradual removal of the original forests of Haiti is a complex process that spans five centuries and continues today. Popular accounts frequently rely on a gross simplification of this process, framing deforestation in Haiti as the result of an ecologically-disconnected peasantry, with little forethought to the consequences of their environmentally deleterious actions. To illustrate, deforestation in Haiti is frequently contributed to the production of charcoal, though the vast majority of Haiti's original forests fell far before the charcoal trade roared to life in the early decades of the 20th century. The brief history of deforestation provided here corrects these misconceptions, offering a pragmatically abbreviated chronology with particular focus on acute events and chronic trends that are likely to have a direct bearing on the success or failure of future landscape-level management plans for Haiti.

The Colonial Period

The ecology of the island of Hispaniola remained fairly unexploited for most of the 16th century, as Spanish colonial interests were focused on the procurement of gold rather than the extraction of natural resources or agricultural production (Lindskog 1998). In the late 17th century the environment of the island began to change rapidly with the renewed human presence of French emigrants and enslaved people from West and Central Africa.

Anthropogenic influences on the environment of Haiti began to register a visibly notable change during the agricultural intensification activities promoted by 18th century colonial powers (Moya Pons 2007). Cultivation of the initial colonial export crops—sugar, tobacco, indigo and cotton—saw the clearing of lowland plains (*ibid.*). The colonial plantation strategy of cultivating lowland agricultural production was pursued on several grounds: (1) lowland areas are more accessible by roads; (2) plains in Haiti are predominantly coastal and in closer proximity to maritime vessels; (3)

uniform plains had higher levels of moisture or were otherwise irrigable; and (4) many of the lowlands of Haiti contain rich, alluvial soil deposits.

The initial low-elevation locus of agricultural production in Haiti did spare the removal of trees and vegetative cover from surrounding mountain ranges. The booming colony required wood for a variety of purposes, but principally for construction and fuel-wood used in sugar refinement for the increasing number of plantations (Catanese 1999). Later, trees were cleared from higher elevations to cultivate coffee—a lucrative export crop (*ibid*.). Records from the early colony and the new Republic are replete with mention of the felling of large hardwood trees, and the encroachment of less desirable tree species.

In particular, the colonial period saw the commencement of a wood-extraction based economy. French ships carrying enslaved people from the African continent returned to Europe with hulls loaded with valuable timber (Diamond 2005). While the more easily accessible areas of Haiti suffered arboreal denudation during this period, many remote forest stands remained protected by relative isolation due to the lack of accessible inroads.

The Post-Independence Period

Toward the end of the 13-year Haitian revolutionary period, lowland colonial plantations were burned and destroyed. After the 1804 declaration of independence, the vast majority of Haitians fanned out throughout the mountainous areas of the country, establishing the traditional *lakou* (collective kinship habitations) of rural Haiti. Through the *lakou* system, Haitian farmers successfully resisted multiple attempts by early leaders of the Republic to reinstate the plantation model of agriculture (Moral 1961).

The historical dispersal of humans from lowland plains and their subsequent resettlement in mountainous areas resulted in an unusual occurrence: the reestablishment of the lowland forests of Haiti. Analyses of tree pollen from a sediment core extracted from Lake Miragoâne in southern Haiti noted a large arboreal expansion after 1804 (Brenner and Binford 1988). This regenerative arboreal expansion has direct bearing on the current state of Haiti's ecology—a point that will be revisited subsequently, and which has policy programming implications for landscape management in the current era.

While the lowland areas of Haiti temporarily reestablished with trees after the destruction of the colonial plantation system and a decentralizing nationwide migration, it was only a temporary reversal of the predominant trend—an on-going removal of arboreal and vegetative covers.

Deforestation during the post-colonial era was not caused by the production of charcoal, which did not commence on a large scale in Haiti until the early decades of the 20th century. Two principal forces drove tree removal in newly-independent Haiti: (1) Haitian government payments on a war indemnity to France, financed by timber concessions; and (2) the clearing of land for agricultural production, enacted by hundreds of thousands of farm families spread throughout the rural countryside (Tarter 2015).

Haitian president Jean-Pierre Boyer agreed that Haiti would pay France a post-war indemnity of 150 million francs—a paralyzing amount for the new Republic—as reparations to French slave and plantation owners for income lost after the world's first successful slave revolt. The indemnity agreement, ostensibly established to ensure that France would not reinvade Haiti, is a historically curious concession, considering France's multiple, failed attempts to retake the former colony.

The Haitian government supported indemnity payments to France largely by selling forest concessions to foreign timber corporations. In 1838, the indemnity was renegotiated to nearly half of the original amount, with the requirement that the remaining amount be paid in full in 30 years (Moya Pons 2007; Bulmer-Thomas 2012). Four years later, legal mahogany exports doubled, and in 1842 exceeded 4.0 million cubic feet (Moya Pons 2007).

Despite this surge in timber exportation, hardwood trees were still abundant in Haiti late into the 19th century. As one observer noted in 1878, 'the variety of [hardwood] production seems to be almost infinite, and the supply inexhaustible' (Stuart 1878: 267).

After many of the easily-accessible lowland areas of Haiti had been exploited for wood, the principal means of extracting timber shifted to dragging felled trees into small mountain stream beds that form the tributaries of Haiti's multiple watersheds (Chandler 1842). With the arrival of annual torrential rainfall, these seasonally dry or low-flowing streambeds would swell, carrying the felled trees into increasingly larger rivers and eventually toward deltas where they could be prepared for export by maritime vessels (*ibid*.). Despite this shift deeper into the interior of Haiti, the mountainous nature of the country and the difficulty of accessing remoter areas protected many remaining hardwood stands.

Deforestation in the 20th Century

The 20th century saw the removal of most remaining forests stands in Haiti. The early decades of this century are marked by the US Marine occupation (1915-1934) and their establishment of a network of new roads and the improvement of earlier roads constructed by French colonialists (Leyburn 1941). The new network of improved roads facilitated increased travel between rural and urban areas. While roads also encouraged urban migration, the increased urbanization during this period was not unique to Haiti—it was a phenomenon experienced globally. As Haiti increasingly urbanized—like many countries of the Caribbean—the rural production of charcoal swelled to meet urban cooking-fuel demands.

As Haitians in areas of close proximity to urban centers overexploited the few remaining stands of nearby trees, charcoal production shifted to the next geographically proximate location that was accessible by roads. As existing roads were limited to the national highways and lesser roads of poor condition, deforestation on a national level continued in a geospatially differential manner. When newly targeted areas became exhausted of wood supplies, charcoal production shifted again. From east of Port-au-Prince, charcoal production shifted offshore, to the island of La Gonâve; from La Gonâve, charcoal production moved to the northwest peninsula; from the northwest peninsula, charcoal production swung to the more remote southern peninsula, and to a lesser extent to the central plateau (Smucker 1981; Conway 1979; Voltaire 1979). The result of this trend was the near-to-complete arboreal denudation of easily accessible areas, largely following in a sequential order based on geographical proximity to the ever-swelling capital city.

The latter half of the 20th century saw the establishment of hundreds of kilometers of new roads, which opened up the vast majority of the rest of the country. The community-based organization *Harmonisation de l'Action des Communautes Haitiennes Organisees* (HACHO), operating in the northwest of Haiti, shifted to focus on road construction in 1968. By 1982 HACHO had constructed a network of over 600 kilometers of unpaved roads (Brinkerhoff et al. 1983). In the mid-1970s, USAID financed the Agricultural Feeder Roads Project, constructed over 300 kilometers of new roads by December 1982 (USAID 1983). Multiple road projects in Haiti also originated at the hands of local community councils and were spurred by the initiative of local churches or foreign missionary groups (Smucker et al. 1979).

Considering just the USAID and HACHO projects, more than 900 kilometers of new roads were established in Haiti from around the 1970s through to the early 1980s. Nine hundred kilometers of new roads is a remarkable addition to a country that does not exceed 300 kilometers at its lengthiest continuous extent (Tarter 2015b). Since new roads were constructed off of existing arterial highways, their construction opened up many of the more-remote locations in Haiti. These new roads reversed the historical phenomenon of just a few accessible areas targeted for charcoal production, and original charcoal-producing areas experienced significantly less pressure than in former decades. Toward the end of the 20th century charcoal production became decentralized on a national level, profoundly influencing the current state of the environment of Haiti (2015b).

The Current Condition of the Rural Environment of Haiti

Centuries of deforestation in Haiti have played out on an overwhelmingly mountainous terrain that receives seasonal rains and torrential downpours from frequent tropical storms and hurricanes. Exacerbated and accelerated by the exposed agricultural fields of a densely populated rural countryside, deforestation and alluvial soil erosion have produced predictable environmental consequences: the loss of topsoil, decreasing soil fertility, overall agricultural decline, and rural out-migration. A less-predictable consequence of deforestation was the widespread encroachment of exotic tree and shrub species, to collectively cover approximately 3/4ths of Haiti's land surface by approximately 2010 (Tarter 2015b; Churches et al. 2014; White et al. 2013).

As early as 1830, the space created by the absence of original hardwood forests was rapidly filled by at least two exotic tree species: mesquite[1] (*Prosopis juliflora*), and to a lesser extent, logwood[2] (*Haematoxylum campechianum*) (Tarter 2015b). By 1930, the former tree species was the most common tree in the dry forests that dominate the majority of Haiti's varied ecosystems, and the most utilized tree species for charcoal production (Gill 1931). By the 1940s, *Prosopis juliflora* was the most common tree in some 80 different forest-transect surveys conducted in an area north of Port-au-Prince (Curtis 1947). In 1976, the author of the first in a series of preliminary reports, which would eventually lead to the largest tree-planting project in the history of Haiti, concluded that managed *Prosopis* plantations could meet all of Haiti's domestic wood needs (Earl 1976). Multiple authors of the widely-cited 1985 Haiti Environmental Profile report noted the widespread extent of *Prosopis* trees and the long tradition of Haitian farmers managing the species for wood and for charcoal production (Ehrlich et al. 1985).

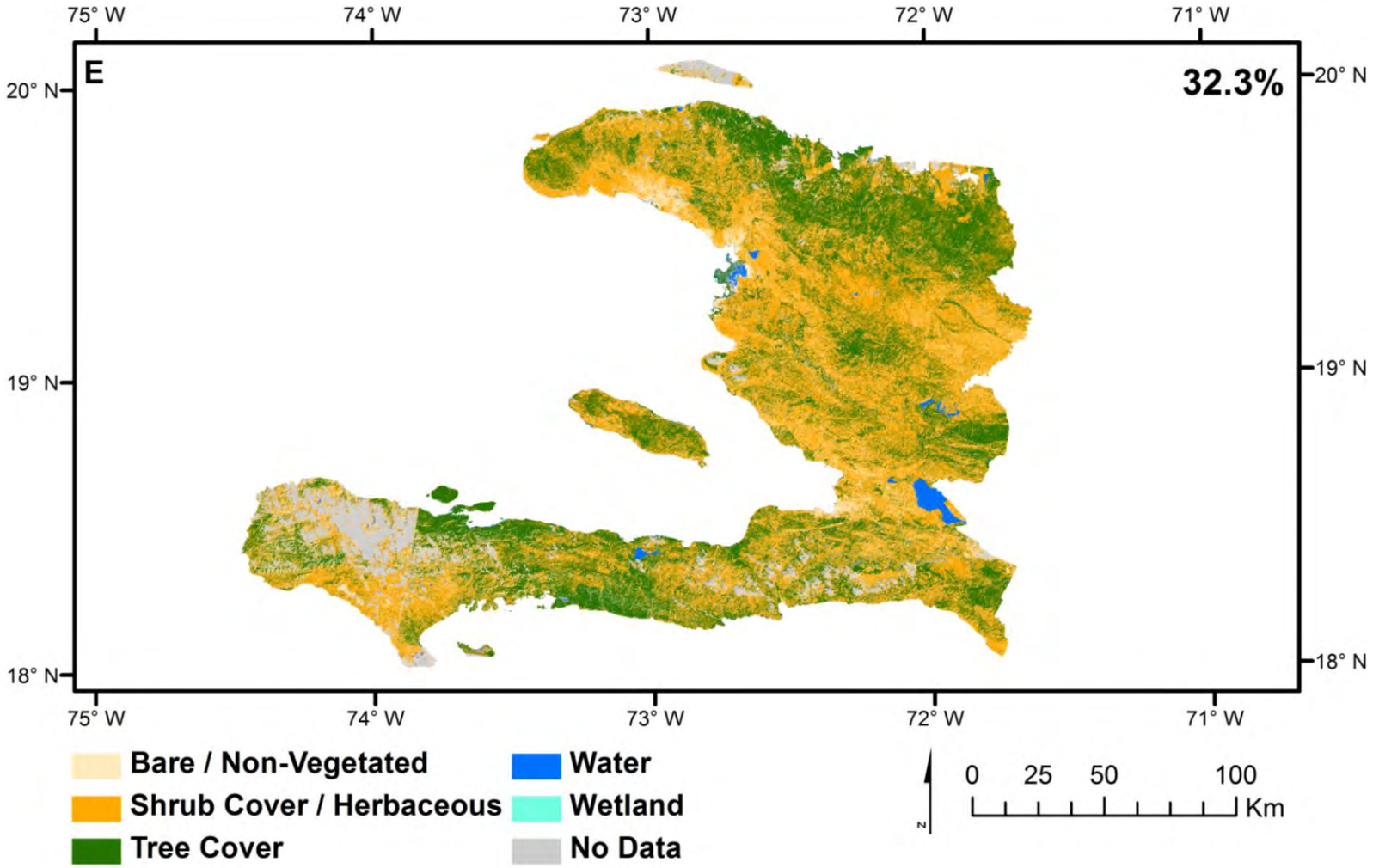
By 1991, the World Bank reported that natural *Prosopis* stands dominated approximately 1/10th of Haiti's land surface (World Bank 1991). In a recent nation-level remote-sensing analysis of high-resolution satellite imagery from 2010 and 2011, trees were found to cover approximately 1/3rd of the surface of Haiti, and trees and woody shrubs combined to cover 3/4ths of the surface of Haiti (Churches et al. 2014). Similar percentages of tree and shrub coverage were reported in an analogous study of the large offshore island of La Gonâve, based on high-resolution satellite photos from 1990 and 2010 (White et al. 2013). While forest cover on La Gonâve has decreased, it has been replaced by woody shrubs, largely in the form of *Prosopis*, which are managed for charcoal production[3]. Figures 1 and 2 represent our most recent and most empirically-grounded estimates of arboreal coverage in Haiti.

The sum of these analyses is clear: while most of Haiti's original hardwood forests are gone, much of the land is now covered by a combination of trees and woody shrubs (see Figures 1 and 2). This currently reality stands in stark contrast to depictions of Haiti as a desert island, devoid of trees.

[1] *Bayawonn* or *bayahonn,* in Haitian Creole.
[2] *Kanpèch*, in Haitian Creole.
[3] White, personal communication.

Ultimately this difference depends on how terms like ‘forest’ and ‘tree cover’ are understood. The phenomenon begs at least three important questions: (1) how did this arboreal encroachment occur; (2) how has it gone largely unnoted; and (3) what implications does this new landscape, which dominates much of contemporary rural Haiti, have on efforts to initiate landscape-level management schemes in Haiti?

FIGURE 1. The Current Extent of Tree and Shrub Cover in Haiti in 2010.



(Churches et al. 2014: 212)

The arboreal landscape that currently dominates the Haitian countryside is the result of several phenomena and their interactions in an iterative cycle (Tarter 2015b). The historical deforestation of Haiti simultaneously removed original hardwoods and depleted many of the soil profiles necessary for the regeneration of original hardwood species. Deforestation also exacerbated a drying trend on Hispaniola that began as early as the middle of the Holocene epoch (Higuera-Gundy et al. 1999). Climatic drying led to further cutting of original trees for wood and charcoal, as a necessary result of declining agricultural possibilities.

Another permissive influence in the spread of these tree species can be indirectly traced from the Haitian land succession system, which is based on the Napoleonic Code of the colonial period. In this system, all agriculturally productive land in Haiti is inherited bilaterally and divided equally amongst all siblings, male and female. While certain unproductive familial land is considered sacred, inalienable, and is never divided (Herskovits 1937), in contrast, arable plots become smaller every successive generation at every new cycle of inheritance (Murray 1977).

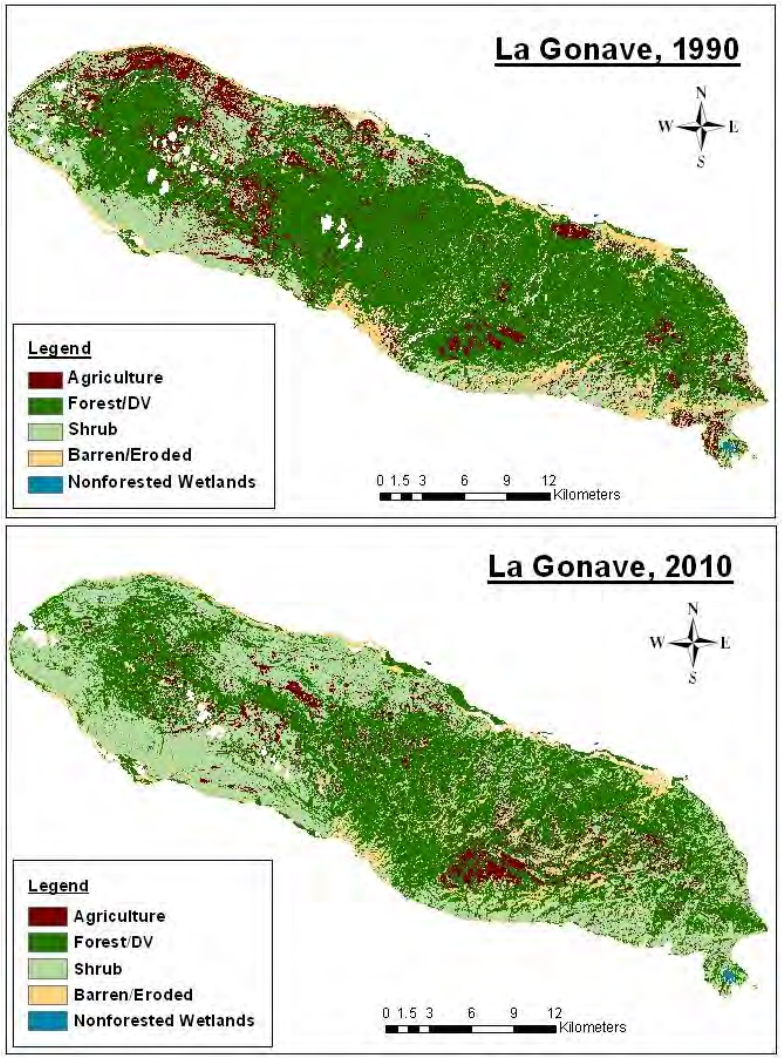
The inheritance of land plots that may be prohibitively small for agricultural production was initially met by an adaptive strategy on the part of Haitian farmers, which aligns with the theory of economist Ester Boserup (1965): the agricultural fallow period was shortened or eliminated (Murray 1977). While the land fallow-shortening strategy worked for a time, the associated agricultural intensification ultimately accelerated processes of declining soil fertility, climatic drying, and erosion.

The invasive tree species (*Prosopis juliflora* and *Haematoxylum campechianum*) that now dominate much of the rural landscape of Haiti are highly adapted to poor soils, low moisture, and prolonged drought (Tarter 2015b). Much of the land that was eventually rendered agriculturally useless in Haiti became covered by these tree species, which are prolific seeders, propagate in a variety of novel ways, rapidly encroach into new territory, and are protected from foraging animals by thorny trunks and branches (*ibid*.).

The predominance of these trees provides some ecosystems services, such as nitrogen fixation and the protection of the soil from chronic weathering by the elements and by acute weather from tropical storms and hurricanes. The deep taproots and lateral rooting of these species helps break apart the limestone substrate that underlies much of Haiti's topsoil, permitting a more rapid regeneration of soil in areas of extreme degradation, and a more rapid percolation of surface water into the aquifer. In some cases, fast growing-trees in Haitian farmer-managed woodlots have served as *de facto* nurseries, providing the necessary conditions for the regeneration of indigenous hardwoods, other trees and plant, and as habitat for animal species (Smucker and Timyan 1995).

Yet the most-immediate benefit of Haiti's current arboreal encroachment is not in the form of ecosystem services, but as an economic input to the farmers who manage these species sustainably for continued charcoal production (Tarter 2015b). *Prosopis juliflora* and *Haematoxylum campechianum* coppice aggressively from the stump; where original hardwoods disappeared when cut, these rapidly spreading exotic continue to return after multiple cuts, making them ideal species for charcoal production (*ibid*.). Charcoal production of this nature is not attractive; it is labor intensive and pays less than agricultural food crops. But managed charcoal production is nevertheless a welcome possibility in rural Haiti the light of declining harvests and increasingly chronic crop failures.

FIGURE 2. The Current Extent of Tree and Shrub Cover on the Island of La Gonâve, Haiti: 1990 and 2010.



(White et al. 2013: 500)

The trees and woody shrubs that populate much of rural Haiti in the form of managed woodlots failed to spread at the national level in the first part of the 20th century because charcoal production was centralized in a few accessible locations: not only were original forests rapidly depleted of original trees, but overexploitation of wood resources also prevented a notable establishment of these subsequent exotics. But the advent of 900 kilometers of new roads took pressure off these few original locations, decentralizing charcoal production at a national level and permitting the spread and reproduction of exotic species at a rate that eventually contributed, in part,[4] to their current extend in the rural Haitian landscape (see Figures 1 and 2).

This brief history and our understanding of currently levels of tree coverage in Haiti challenge at least one misguided narrative that pertains to landscape-level development projects in Haiti. The first is that charcoal production is responsible for the denudation of Haiti's forests and that the key to successful reforestation is the elimination of the charcoal trade. On the contrary, much evidence exists that the charcoal trade in Haiti occurred after much of the deforestation of original forests and that charcoal practices are currently meeting urban energy needs, decades beyond the dire warnings of analysts during the wood crises decades of the 1970s and 1980s.

Land Inheritance, Land Tenure and, Land Security

Many common misconceptions repeatedly find their way into the development literature on Haiti, regarding land inheritance, land tenure, and land security. An illustrative example of such misconceptions is the notion that Haitian farmers do not have secure tenure of their land. However, numerous studies have taken up the issue and all have reached the same conclusion: land tenure in rural Haiti is secure and not an obstacle to landscape-level land management (Murray 1977, 1978b, 1987; White and Runge 1994, 1995; White 1992; White and Jickling 1995; Smucker et al. 2005, 2007).

Several general features pertaining to land inheritance, tenure, and security, which may inform landscape-level land management processes, hold true across much of rural Haiti:

Land Inheritance

- All land is inherited bilaterally and equally between siblings, male and female;
- While all inherited land is capable of division, and all inheritors may claim an equal share of land, not all inherited land is immediately divided;
- Arable land is usually divided immediately, rendering land suitable for cropping into successively smaller and more fragmented plots each generation;
- Manly arable plots of land are frequently too small to meet the needs of a single farm family; the phenomenon of fragmented arable plots is circumvented by the strategy of most farm families to acquire several such parcels through purchase; as a result, arable plots are not only fragmented and small, but typically distributed in a discontinuous pattern across the landscape; most arable land plots are alienable, and the selling and purchasing of such plots is widespread and common.
- In many areas of Haiti, farmers also have access to land collectively held by kin members. Such land is typically much larger in size because it has been neither informally nor

[4] It is undeniable that the current the arboreal expansion in Haiti may be partially contributable to other causes, such as the nationwide tree-planting efforts of the 1980s and 1990s. However, rural out-migration, the abandonment of formerly productive land, and an increase in pseudo-drought conditions all provide the necessary conditions for the spread of the species thought to dominate much of the rural countryside at this time in history.

formally divided, frequently owing to the land's lower capacity for agricultural crop productivity. Such lands typically have steeper slopes, a less preferential aspect (rain and sun exposure), poorer soils, and are generally less desirable than flatter, frequently lower-elevation, arable lands. These lands are typically used for the production of charcoal, as a location to tether foraging animals, and sometimes as fruit orchards and coffee groves. These collectively own lands also meet other needs, including non-material needs, such as a location for the veneration of the ancestors and other spirits of the Vodou (voodoo) pantheon (Tarter 2015a). The utilization of such land functions through a complex internal system that permits kin members to enter and equitably access available resources. However, due to reluctance or a lack of impetus to divide such lands, several generations of kin members may claim access to the land, complicating the management of the land's resources, and increasing the likelihood that the land will remain undivided.

Land Tenure

- Rural Haiti operates on two complimentary systems of land tenure; one is informal and the other is formal (Murray 1977);
- The informal tenure system has high internal security; it is widely recognized and respected within communities; and often functions on agreements between neighbors or kin, in the presence of neighbors or kin, and therefore may a traceable material record of use and access;
- The formal land tenure system functions and is legitimized through the legal apparatus of the Haitian Government, and has higher levels of external validity than the informal system;
- Both the formal and informal tenure systems are secure in different ways, and Haitians rely on both systems for different needs.
- Rural Haitians also benefit from a land leasing system, which may be an informal agreement between the land-owner and lessee, or may be formalized by the use of a local notary.

A basic understanding of land tenure is important for any effort to promote or institute landscape-level management projects in rural Haiti. The current land tenure systems are complex but not an impediment to project participation, investment, and ownership. The occasional misconception of the necessity of land tenure reform is likely the result of a failure to understand the complexity of two systems that work in tandem to provide a high level of internal and external tenure functionality. In Haiti the system is complex, but functional.

The vast majority of rural Haitian farmers are content with their current land tenure systems, which are not only functional, but are also historically adaptive (Murray 1977). Land tenure reform is rarely listed in the litany of needs expressed by Haitian peasants themselves, though access to land arable is an on-going frustration expressed by younger members of society, at least historically (Murray 1977, 1981).

Land Security

The situation in Haiti is different in regards to land security, particularly against external influences. Haiti has a long history of urban elites and rural *gran don* (a wealthy rural middle class) attempting to control the peasantry through opportunistic land purchases, 'legal' maneuvering, and varied strategies of displacement (Trouillot 1990; Steckley and Shamsie 2015). A subsequent case study on the Peligre Dam provides an illustrative example of this well-documented historical trend. It is entirely possible that aspects of the land tenure system in place in rural Haiti developed in part as a strategy to mitigate land insecurity. Given that the

vast majority of arable land in Haiti is represented as a patchwork of discontinuously dispersed and privately owned fragmented plots of land, the issue of land security is perhaps less than in earlier historical periods when the aggregation of arable land in the hands a fewer land-owners might engender a higher tendency to land grabs and predatory land acquisition.

History suggests that while land security, land inheritance practices, and land tenure systems in rural Haiti are complex, they are fully functional and in no way impede the 'plot-based' approaches to landscape-level improvement projects. However, given the fragmented nature of most land plot holdings, 'macro-level' approaches to landscapes are unlikely to meet much success at this point in the history of rural Haiti.

Soil Conditions in Haiti

The loss of soil is the most immediate and observable effect from the initial deforestation of Haiti. The UNESCO Haiti Pilot Project noted degrading soil conditions as an issue of concern as early as the mid-20th century. The decline of agricultural productivity due to soil degradation has since been systematically documented in Haiti (Zuvekas 1978; Pierre-Louis 1985; Bargout and Raizada 2013).

The effects of erosion, declining soil fertility, and decreasing arable plot sizes have led to a nationwide agricultural decline. Despite this trend, the majority rural-dwelling Haitians continue to pursue agriculturally based livelihood strategies, supplemented heavily by remittances sent from Port-au-Prince and particularly from the diaspora abroad.

Soil and the Relationship to Ecological Zones of Haiti

One of the most commonly employed systems for the classification of ecological zones in tropical and subtropical areas was developed by forester L.R. Holdridge in the early 1940s, but has since been adapted and applied on a global scale. Because Holdridge's system was developed in Haiti, for Haiti, it continues to be the primary classificatory schemes used in much of the literature related to the ecological aspects of landscape-level management in Haiti. The system delineates nine different zones based principally on the metrics of annual precipitation, mean annual temperature, the potential evapotranspiration ratio (PET), and considerations of elevation (Holdridge 1947, 1967).

Four of the Holdridge Life Zones (HLZ) cover less than 1% of Haiti's land, while the remaining five constitute notable percentages (Delatour et al. 1984). The largest zone, *Subtropical Moist Forest*, represents approximately half the entire land area of Haiti, is found at an elevation of ~800 meters, receives 1,200-1,800 mm of annual rainfall, and supports the largest percentage of small-holding peasant farms (Delatour et al. 1984; Ehrlich 1985). The *Subtropical Moist Forest* zone was traditionally home to large stands of mahogany and tropical oak, now replaced principally with avocado and mango trees (*ibid*.).

The second largest HLZ is *Subtropical Dry Forest*, which constitutes 19% of the Haiti's land, falls under 400 meters of elevation, receives an annual mean rainfall between 800-1,000 mm, experiences seasonal droughts, but has deep, irrigable soils, and is highly agriculturally productive (Delatour et al. 1984). Common trees in the *Subtropical Dry Forest* zone include *Phyllostylon brasiliensis, Prosopis juliflora* and *Guaiacum officinalis*. Viable crops include mangoes, limes, tobacco, cotton, plantains, sugar cane, and sisal.

While these two HLZs constitute approximately 70% of Haiti's land surface, they and the other zones are unevenly distributed across Haiti's landscape. Thus, it remains a challenge to incorporate 'one-size-fits-all' program policies at the landscape level. A private consulting firm consolidated

and adapted Holdridge's ecological zones for Haiti in order to incorporate population density levels and more detailed crop production profiles (Capital Consult 1982, as noted in Delatour et al. 1984). This improved classification system nevertheless still fails to account for the uneven distribution of ecological zones across Haiti (*ibid*.).

Another phenomenon affecting ecological classificatory schemes for rural Haiti concerns the fact that the rural landscape has been so drastically altered that few zones currently represent the original characteristics outlined by Holdridge (Ehrlich et al. 1985). This is largely due to the removal of arboreal and vegetative cover, and subsequent loss of flora and fauna defining topsoil.

Curtis noted that in one area of Haiti with evenly distributed rainfall, the plant communities that demarcated varied ecological zones were determined by soil texture and topography (Curtis 1947). The loss of topsoil and the subsequent exposure of underlying and more uniform soil profiles, coupled with on-going climatic drying and less predictable season rains, has made moisture the new *de facto* determinant of ecological zones in Haiti. This is most evident in the spread of *Prosopis juliflora* well beyond the lower elevation zones where it initially established; on-going climatic drying increased the habitat of this and other drought-tolerant invasive tree species. Recognition of this leveling of ecological features in traditionally dissimilar ecological zones suggests that strictly ecological approaches to watershed management in Haiti are increasingly less important—a crucial point that will be returned to subsequently.

As moisture increasingly dictates the ecological and agriculturally productive capacities of the current Haitian countryside, many landscape-level land improvement projects have shifted increased focus toward watersheds as the appropriate unit of intervention in meeting the three complementary goals mentioned at the onset of this report.

Hydrology in Haiti

There are approximately 160 major rivers and hydrological basins in Haiti (see Figure 3), representing around 30 principal rain catchment areas[5] (Ehrlich et al. 1985) (see Table 1). Only a small percentage of watersheds in Haiti fall principally within nationally recognized conservation areas: *Fonds Verettes, Grande Anse, Cul de Sac, Roseaux-Voldrogue, Ravine du Sud, Rivière l'Acul, Rivière Port-à-Piment, Rivière les Anglais, Rivière Cavaillon, Rivière Glace, Rivière Roseaux* and *Grande Rivière de Jacmel Basins* (Swartely and Toussaint 2006: 18). The vast majority of watersheds in Haiti fan out across governmental administrative boundaries, ecological zones, and the privately and securely owned plots[6] of millions of small family farms (*ibid*.).

[5] Swartley and Toussaint 2006 suggested 33 major watersheds, while Smucker et al. 2007 suggested there are 54 major watersheds.

[6] The average plot size in Haiti is approximately 1.4 hectares (Zuvekas), though most Haitian farmers own several different plots of land.

TABLE 1. Principal Watersheds of Haiti

River/hydrological basin/zone	*Catchment area/km²*
Artibonite	9500
Cul-de-Sac	1580
Cayes-Jacmel-Anse à Pitres	1219
Bombardopolis-Gonaïves	1147
St Marc-Cabaret	1090
Limonade-Ouanaminthe	1065
Côte de Fer-Baînet	1060
Môle St Nicolas-Moustique	987
Trois Rivières	897
Corail-Anse à Veau	877
Estère	834
St Louis du Sud-Aquin	706
Grande Rivière du Nord	699
La Quinte	690
Ile de la Gonâve	680
Petite Rivière de Nippes-Grand Goâve	661
Tiburon-St Jean	660
Léogane-Carrefour	651
Cayes	634
Grande Anse	556
Port de Paix-Port Margot	543
Roseaux-Voldrogue	540
Grande Rivière de Jacmel	535
Grande Rivière de Nippes	459
Cavaillon	380
Jérémie-Les Irois	364
Limbé	312
Cap Haïtien	312
Fonds Verettes	190
Ile de la Tortue	179

Sources: OAS – Mission d'Assitance Technique Intégrée 1972: 491 (as reported in Delatour et al. 1984: 33; Swartley and Toussaint 2006: 14-15)

While the permanent rivers and streams of Haiti are spring-fed through a vast network of aquifers, it must be recognized that the aquifers themselves are recharged by rainfall capture (Swartley and Toussaint 2006). Rain falls variably in Haiti, with precipitation driven by the north-eastern trade winds.

With the exception of the slowly flowing Artibonite—the country's largest river—many rivers in Haiti are both short and swiftly flowing. Vegetative cover and arboreal root systems in some watersheds prevent rapid runoff, and allow the rainfall to percolate through the limestone substratum that represents some 80% of Haiti's underlying land formation (Swartley and Toussaint 2006).

In contrast, rain in denuded watersheds rapidly descends into streams and rivers and ultimately leaves the watershed with a reduced rate of percolation into aquifers. This trend is reflected in the 15% of the country that is composed of plains and valleys but which contains approximately 85% of Haiti's available groundwater (Knowles et al. 1999: 14). The remaining 15% of groundwater is found in mountainous areas, and comes from springs that originate from multiple aquifer types, including karstic, fractured, low permeability, and indigenous aquifers (Knowles et al. 1999: 15-17).

By 1978, 12 of the 30 major watersheds in Haiti were completely deforested, and by 1985 the most forested watershed supported only 37% arboreal coverage, and was expected to be entirely deforested by 2042 if trends continued (Ehrlich 1985: 28-31). Overall the ability of aquifers to recharge has decreased with deforestation to the point where the water table now fluctuates seasonally by up to 15 meters in many parts of the country (Knowles et al. 1999). Freshwater is nevertheless still available locally from varied aquifers, including fractured limestones, sandstones, conglomerates, and schist aquifers (Knowles et al. 1999: 17).

SAWYER

AN IN-DEPTH LOOK AT SAWYER WATER FILTERS

CONTENTS:

WHY CHOOSE A SAWYER FILTER

THE 0.1 MICRON ABSOLUTE DIFFERENCE

- Sawyer's fiber walls are thicker and more robust than other Hollow Fiber Membranes. This allows for higher pressure both for filtering and for backwashing. Sawyer filters can handle 60 PSI forward and 20 PSI backwards.
- Sawyer has a proprietary process of making all pores more uniform in size.
- Sawyer's proprietary process allows for more pores giving better flow and less cleaning.
- Sawyer's proprietary design has a self priming mechanism to eliminate air locks making them much easier to restart.
- Sawyer 100% tests all filters to insure no pore is larger than 0.1 micron.
- Sawyer 100% flow tests all filters to insure adequate flow.
- Sawyer 100% tests filters after final assembly to insure quality.
- There is nothing to wear out inside the filter. If water is flowing, it's good.

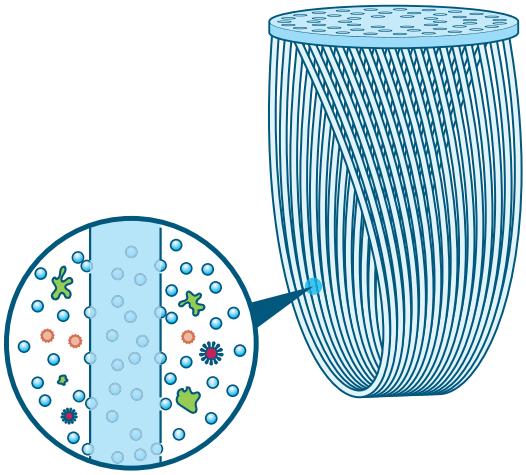


FIGURE A.1

THE 0.02 MICRON ABSOLUTE DIFFERENCE

- The 0.02 micron purifier has all the advantages of the 0.1 micron filter but with 0.02 micron pores.
- It is the only filter that removes viruses so effortlessly. Gravity does all the work.
- There are no harmful chemicals or heavy metals in the filter.

SAWYER FILTER REMOVAL RATES

	WATERBORNE DISEASES	EPA REQUIREMENT	EXCEEDS EPA REQUIREMENT	SAWYER REMOVAL RATES
PURIFIER / FILTER	**BACTERIA WHICH CAUSE** I.E.: Cholera, Botulism, (Clostridium botulinum,) Typhoid, (Salmonella typhi), Amoebic Dysentery, E. Coli, Coliform Bacteria, Streptococcus, Salmonella	**99.9999%** 6 log	**YES**	**99.99999%** 7 log
	PROTOZOAN (CYSTS) I.E.: Giardia, Cryptosporidium, Cyclospora	**99.9%** 3 log	**YES**	**99.9999%** 6 log
	VIRUSES I.E.: Hepatitis A (HAV), Poiliovirus, Norwalk, Rotavirus, Adenovirus, Hepatitis E (HEV), Coxsackievirus, Echovirus, Reovirus, Astrovirus, Corona Virus (SARS)	**99.99%** 4 log	**YES**	**99.9997%** 5.5 log

***SAWYER Filters DO NOT remove VOC's, heavy metals, or chemicals in solution such as fluoride and arsenic**

THE BENEFIT OF CONTINUOUS BACK FLUSHING CAPABILITIES

At this point we do not know what the lifetime limitations of the fibers are. We have working filters that have been in continuous use for over six years and we have filters which have filtered hundreds of thousands of gallons of water. Sawyer's fibers are so robust, they can be backwashed and reused perpetually.

- When backwashing, even the stubborn dirt can be forced off the fibers.
- Sawyer's robust fibers will not "wear out" over time.
- Sawyer fibers will not break or become damaged if dropped. Only breaking the sealed casing and "playing" with fibers or freezing the cartridge after it is wet could damage the fibers.

CONTINUAL IMPROVEMENTS

Since 2008, Sawyer has made numerous improvements to make the filter system easier to use and to accommodate cultural nuances.

- When people started opening the filters to see and touch the fibers we welded the casing closed.
- When they dropped the filters and broke them, we increased the strength of the filter casing.
- We include pictorial guides for both cleaning and set-up.
- We include a picture label affixed to the bucket showing how to clean the filter.
- We changed to special colored tubing that will not show the dirt nor promote algae growth in the tube.
- We designed an easier method to remove the filter for cleaning which also allows it to be used on standard 28mm plastic bottles. This adds a whole new portable dimension for the user.
- We designed a bucket fitment that is more forgiving if the hole is not perfectly round and also prevents kinking of the tube.
- We added a removable cap to keep the end of the filter clean.
- We developed a cleaning coupling that can be used to backwash the filter with a plastic bottle in case the syringe is lost or damaged.

CURRENT BUCKET FILTER

OLDER VERSION OF THE BUCKET FILTER

LONG TERM / SHORT TERM WATER STORAGE

Sawyer filters are designed for on-demand use. Their fast flow makes storage of water unnecessary. However, we realize some people will want to store water they have filtered. We recommend that if they do, they need to clean and sanitize their storage vessel thoroughly before adding the filtered water to it. They also need to make sure the storage vessel has a lid that seals tight against bacteria. Ideally, a very small amount of disinfectant such as chlorine would also be added to the water. This could be an amount below the threshold of taste. However, the longer the water is to be stored, the more disinfectant that would need to be added to the water – either initially or over time. We do not recommend storing water beyond a few days.

FOR BEST RESULTS

- Frequent backwashing – The more frequent the better, especially with turbid (muddy) water. Do not let the filter dry out when it is dirty. If the filter is clogged with dirt go back and forward with warm water (water no hotter than you can put your hand in) to loosen up the dirt.
- Always discard the first few ounces of water after backwashing.
- Never run soap through the filter, use bleach water or clean water. If you do not have bleach water, flush the filter thoroughly with clean water.
- If there is a calcium build-up, soak the filter in vinegar for an hour then backwash with warm water.
- The push pull caps add an extra layer of protection. Use them and regularly clean them.
- Keep the outside of the filter clean and away from animals.
- When properly taken care of there is no reason for the filter to fail for many, many years.

UNDERSTANDING COLIFORMS

WHAT ARE THEY

Coliforms are a broad class of bacteria found in the environment.

WHERE DO THEY COME FROM

Both the harmful and non-harmful bacteria primarily come from the feces of humans and other warm-blooded animals. They can also come from rotting vegetation. The presence of non-harmful coliform bacteria in drinking water may indicate a possible presence of harmful, disease-causing organisms.

HARMFUL VS. NON-HARMFUL

Most Coliform bacteria do not cause disease. Coliforms are broken into 3 groups:

Total Coliforms They include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste.

Fecal Coliforms both harmful and non-harmful: They are the group of the total coliforms that are considered to be present specifically in the gut and feces of warm-blooded animals

E. Coli - a sub group of the Fecal Coliforms: Some strains of E. Coli can cause serious illness.

PROLIFIC VS. NON-PROLIFIC

E.Coli is generally not found growing and reproducing in the environment. Total Coliforms (of the non-harmful type) are very prolific and once introduced to a surface can spread quickly. These non-harmful types include both fecal and non-fecal Coliforms.

COLIFORMS AND CLEANLINESS

The spread of Coliforms can be combated through good Hygiene. Simple washing with soap and water will prevent the spread of them.

SPREAD OF COLIFORMS

Coliforms can spread by touching the clean end of the filter with a dirty hand, by animal contact, or even by dust particles. Proper hygiene techniques must be taught with the use of the filters. Otherwise contamination of the discharge side occurs. This is supported both by the Tuft's study and the Messiah/John Hopkins study referenced later in this handout.

TESTING FOR COLIFORMS

Because Total Coliforms reproduce very quickly they are easy to test for. A high indication of total Coliforms is usually a good and inexpensive way to determine if water needs treatment but it does not guarantee the presence of E. Coli. This type of testing is broad and encompasses most of the non-harmful types of Coliforms.

COMMON MISTAKES MADE WITH TESTING

Because the Total Coliform testing is inexpensive most people believe it is a simple way to see if the filter is working. What they really end up testing is not that the filter is working, but whether or not the discharge end has been contaminated. It only takes a small amount of Coliform bacteria on the discharge to contaminate the sample. Once contaminated the bacteria very quickly grow in the test solution giving a positive test result.

HOW TO PROPERLY TEST A FILTER

There is no quick and easy field test to see if a filter is working. Even an E. Coli test can yield false positive results if the discharge end of the filter is not clean. Tufts University proved this in their study. First the filters failed and then after cleaning they passed the E.Coli test. However, the proper test protocol would have been to sanitize the filter and then challenge the filters with a known affluent and measure the counts in the effluent. This testing needs to be done in lab conditions using very strict lab procedures. Simply running water through the filter and doing a total Coliform test does not prove if the filter is working or not. Unless the filter's discharged has been cleaned of ALL bacteria, you are going to get a false positive result. People believe that because they processed their sample correctly, they tested the filter correctly. They do not take into account the contamination that could have occurred on the discharge side of the filter and wrongly assume the filter is not functioning. Every time we hear of filter failure it always turns out to be procedural errors. Backwashing and flushing will remove the harmful bacteria, but will not remove all the bacteria. The small amount of non-harmful bacteria that remain will multiply very quickly and yield a false positive test result.

Photo courtesy of Compassion International

SAWYER FILTERS ARE BEST PRACTICE

FIJI MINISTRY OF HEALTH DETERMINES

Since 2008, Give Clean Water has been installing Sawyer Filters in rural Fijian villages. Their model for training and sustainability has been so successful, the Health Ministry of Fiji has awarded Give Clean Water an MOU for Fiji's "Best Practices" for rural water treatment. As a result, the Ministry of Health has partnered with Give Clean Water to assist in the implementation of the filters. In a short time, all rural villages in Fiji will have access to safe water primarily with Sawyer Filters.

A FEW TESTIMONIALS FROM FAMILIES IN FIJI:

In August of 2008, Prakesh and his family received the very first Sawyer Point One filter in Fiji. Their well continues to be contaminated with harmful bacteria, but since the installation of their Sawyer filter system the family has been drinking bacteria free water. Their health improved dramatically. Stomach sickness went away, and their persistent cough and sore throats went away as well. Give Clean Water's system of follow up interviews created sustainable behavior change for the family where they use and clean their filter every day. In 2013, Give Clean Water revisited Prakesh and his family. Their original filter from 2008 was still working properly. For a "job well done" in maintaining their filter, Give Clean Water upgraded them to the latest Sawyer filter design. As of September, 2015, the family continues to drink bacteria free water from their Sawyer filter.

84 year old Mohamed's story: In 2010, Give Clean Water installed filters in Varavu village where Mohamed was the recipient of a Sawyer point one filter. He is 84 years old now and continues to use and clean his filter every day, and is in great health. His stomach sickness and cough have disappeared for the past 5 years. His village recently began receiving a treated government water supply. Mohamed said he still uses his filter every day because the government water supply is not always reliable.

The Pradeep Kumar family has only a dirty well for a water source. The well is very contaminated with bacteria and lots of sediment. The wife in the family, Prem Wati, gave the testimony of having a cough for 20 years. She had gone to the doctor numerous times over the years. She was given antibiotics, cough syrup and other treatments, but nothing ever seemed to work. The first week of August, 2015 Give Clean Water installed a Sawyer Point One filter in her home. 3 weeks later we followed up with the family and Prem's cough had completely gone away. As of October 8th, 2015, she is still cough free!

MARASA VILLAGE TESTIMONIAL:

August, 2015 twenty families in the Marasa Village (89 adults, 23 children age 0-5, 39 children age 6-17) received Sawyer Water Filters. Prior to receiving the filters:

Before receiving filters:

- 43 days of diarrhea per month were reported among children 0-5 years old.
- 53 days of diarrhea per month were reported among children 6-17 years old.
- 76 days of diarrhea per month were reported among adults.
- The cumulative children population missed an average of 53 days of school per month due to diarrhea.
- The cumulative adult population missed an average of 82 days of work per month due to diarrhea.
- The village population spent $955 USD per month on medical costs due to water borne sickness prior to receiving filters. That is $47.75 per family in savings per month.
- The village population spent $820 USD per month to purchase clean water prior to receiving filters. That is a savings of $41 per family per month.

Follow up conducted in October, 2015:

- There have been ZERO days of diarrhea reported by anyone in the village.
- There have been ZERO school days missed due to diarrhea.
- There have been ZERO medical costs spent on water borne sickness.
- There have been ZERO costs associated with purchasing clean water.

BOLIVIA STUDY

SAWYER FILTERS IN THE AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE

(PUBLISHED MAY, 2014)

A CLUSTER RANDOMIZED CONTROLLED TRIAL TO REDUCE CHILDHOOD DIARRHEA USING HOLLOW FIBER WATER FILTER AND/OR HYGIENE–SANITATION EDUCATIONAL INTERVENTIONS

Erik D. Lindquist*, C. M. George, Jamie Perin, Karen J. Neiswender de Calani, W. Ray Norman, Thomas P. Davis Jr and Henry Perry.

Department of Biological Sciences, School of Science, Engineering and Health, Messiah College, Mechanicsburg, Pennsylvania; Department of International Health, Program in Global Disease Epidemiology and Control, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; Fundación contra el Hambre–Bolivia, Zona Sopocachi, La Paz, Bolivia; School of Science, Engineering and Health, Messiah College, Mechanicsburg, Pennsylvania; Department of International Health, Health Systems Program, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; Food for the Hungry–USA, Phoenix, Arizona

ABSTRACT.

Safe domestic potable water supplies are urgently needed to reduce childhood diarrheal disease. In periurban neighborhoods in Cochabamba, Bolivia, we conducted a cluster randomized controlled trial to evaluate the efficacy of a household-level hollow fiber filter and/or behavior change communication (BCC) on water, sanitation, and hygiene (WASH) to reduce the diarrheal disease in children less than 5 years of age. In total, 952 households were followed for a period of 12 weeks post-distribution of the study interventions. Households using Sawyer PointONE filters had significantly less diarrheal disease compared with the control arm during the intervention period, which was shown by diarrheal prevalence ratios of 0.21 (95% confidence interval [95% CI] = 0.15–0.30) for the filter arm and 0.27 (95% CI = 0.22–0.34) for the filter and WASH BCC arm. A non-significant reduction in diarrhea prevalence was reported in the WASH BCC study arm households (0.71, 95% CI = 0.59–0.86).

SUMMARY OF RESULTS

Diarrheal disease prevalence and stratified diarrhea prevalence ratios are specified in Figure 3 and Table 2 (shown in the full published study) and were based on CGV reported monthly reported data. The diarrhea prevalence ratio (DPR) effect estimate compared with the control group for the filter arm was 0.15 (95% confidence interval [95% CI] = 0.10–0.22) or a mean reduction in diarrheal disease of 85% after controlling for clustering within geographic clusters. Additionally, the filter and WASH BCC arm DPR effect estimate was 0.22 (95% CI = 0.16– 0.30) or a 78% mean reduction in diarrheal disease. The lower mean reductions in diarrhea prevalence were significant for both the filter and filter and WASH BCC study arm households compared with the control arm households; both had identical P values of 0.0286 using the Wilcoxon rank sums with the exact method.

For the complete article, visit:
www.sawyer.com/boliviastudy

Photo courtesy of MAP International

TUFTS UNIVERSITY STUDY
A BREAKDOWN

Tufts University published an article in the Journal of Water Sanitation and Hygiene titled “Fouling in hollow fiber membrane microfilters used for household water treatment (2015) Murray, A., Goeb, M., Stewart, B., Hopper, C., Peck, J., Meub, C.,Asatekin, A. & Lantagne, D. J. WASHDev 5 (2), 220–228ttdoi:10.2166/washdev.2015.206”

TUFT’S STUDY CLAIMS: Field effectiveness data has found bacterial contamination in 18-54% of tested filter effluent water in studies ranging from 3 months to 3 years of use.

SAWYER’S RESPONSE: There are many types of coliform (bacteria) but not all are harmful (see page 7 for further explanation). Testing for coliforms in untreated water in general is a good inexpensive way to see if water needs to be treated. There is a 90% chance that if in untreated water any coliforms are present that the harmful E. Coli are also present. However, the presence of coliforms in treated water is not an indication as to if a filter is working or not. Sawyer’s filters remove the harmful coliforms. To confirm that E. Coli (a harmful coliform) is removed, a more thorough test is required. When that more thorough test was completed on 2 properly cleaned filters, the test confirmed that the filters did not allow the harmful E. Coli to pass through.

The Tufts study actually supports Sawyer’s claim that the filters were still removing all E. Coli:

“There was no bacterial growth on the EMB or MAC plates from the new filter’s effluent, indicating the absence of total coliforms and fecal coliforms. Plates from both used filter effluents showed dark pink lactose(þ) growth on the EMB plates, and light pink presumptive of lactose (þ) growth on the MAC plates, indicating potential total coliforms in effluent from both used, cleaned filters. MUG-agar plates of these two filter effluents exhibited no fluorescence, indicating the absence of E. coli in effluent from the cleaned filters.”

TUFTS STUDY CLAIMS: In this investigation of poorly functioning PointOnes used for 23 months for household water treatment, we identified an internal membrane that: exhibited a dense, highly cohesive irreversible fouling layer of inorganic particles, organic biomacromolecules, and biofouling on the exterior membrane fiber surface; was fouled on the inner fiber surface; and appeared to have burst fibers.

SAWYER’S RESPONSE: There is no irreversible fouling as suggested. Dirt traps on the outside of the fibers which can be cleared by backwashing. Calcium deposits can form on the fibers if the water has high calcium content and the fibers are allowed to dry. If the cap is placed on the filter after each use this will not be a problem as this prevents drying out. However, should the filter become fouled with calcium a simple cleaning (soaking) with household vinegar will dissolve it and restore the fibers to new condition.

The two pictures of the cut-aways show a new vs. a used filter. The picture indicates that the filters were not cut in same place. The new filter was cut high enough that the fibers were not disturbed. The used filter was cut down into the top of the fiber bundle where the fibers were probably damaged. The fibers are rated to 60 PSI. The casing will burst at 40 PSI as a safe guard on the fibers. To suggest that the fibers “burst” when the picture indicates damage when cut, is a premature conclusion. To be fair early filters were easy to be forced open and the filter-user may have opened the filter to see what was inside and “played” with the fibers and broke them. (Current filters and those produced for several years have been modified so they cannot be easily opened.) But the picture shows more likely the damage is a result of cutting the filter too close to the fibers.

A more detailed response from Messiah College on the flaws in the Tuft’s research is on the following page.

A review of: Fouling in hollow fiber membrane microfilters used for household water treatment (2015) Murray, A., Goeb, M., Stewart, B., Hopper, C., Peck, J., Meub, C., Asatekin, A. & Lantagne, D. *J. WASHDev* 5 (2), 220–228 doi:10.2166/washdev.2015.206

Erik D. Lindquist, W. Ray Norman and Thomas Soerens

Erik D. Lindquist (corresponding author)
W. Ray Norman
Thomas Soerens
School of Science, Engineering and Health,
Messiah College,
One College Avenue,
Mechanicsburg, PA 17055,
USA
E-mail: *quist@messiah.edu*

Over the past 5 years, hollow fiber membrane microfilters have been introduced into much of the developing world to combat waterborne illness stemming from microbially compromised water sources. One such filter, the PointONE™ Filter (Sawyer Corporation) has performed well in laboratory trials, in the 5 and 6 log reductions of protozoan parasites and bacteria, respectively (Hydreion LLC 2005). In a field study conducted in Cochabamba, Bolivia and recently published by Lindquist *et al.* (2014), households using PointONE filters had significantly less diarrheal disease compared with the control arm during the intervention period. Diarrheal prevalence ratios of 0.21 (95% confidence interval [95% CI] = 0.15–0.30) were observed for the filter arm and 0.27 (95% CI = 0.22–0.34) were observed for the filter and WASH BCC (education) arm. These diarrheal disease reductions occurred in only a 3-month intervention period, and showed marked improvement in the health of children under the age of 5 years old. An *in situ* study on long-term filter performance has been an important need for organizations that are currently using or are considering using these filters in the developing world. The relatively new introduction of the PointONE filter has precluded long-term study of its performance before this time.

In this issue of *Journal of Water, Sanitation and Hygiene for Development*, Murray *et al.* (2015) endeavor to contribute to this needed body of information. In particular, their study suggests several potential shortcomings of the PointONE filter after household use over the course of nearly 2 years. These include: filter fouling, sediment buildup, discolored membrane fibers, and membrane rupture. Admittedly, if such shortcomings were verified through rigorous scientific study, they would certainly cast doubt on the long-term effectiveness of hollow fiber membrane microfilters for household level point of use in the developing world. A long-term field study of the PointONE filter is an admirable undertaking and has the potential to answer important questions on log-term filtration efficacy, filter longevity, and effective life cycle.

In review of this research article, we deem it necessary to bring to light several substantial concerns we encountered with respect to the methods used and the claims made. Shortcomings in this article can be seen in the following areas: (1) poor pre-analysis filter storage conditions; (2) crude filter cartridge entry; (3) small sample size; and (4) inconsistencies in the article figures.

POOR PRE-ANALYSIS FILTER STORAGE

In our view, the most significant oversight of this study is that, to the best of our understanding, the investigators took filters collected in the tropics (Honduras), sealed them in a plastic bag, and undertook the cleaning and analysis 2 months later. Microbiologically, these conditions would appear to promote microbial growth and thriving from the moment of sealing. If water from the input side of the filter were to have spilled into the inner surface of the storage bag, chances are good that they could have reached the output side of the

doi: 10.2166/washdev.2015.000

filter. This potential for contamination is too great to be ignored. Likewise, if the transport of the bag-stored filters was in the cargo hold of an aircraft where freezing occurred, the water held in the pores of the hollow fiber membrane could very easily have expanded and applied a tearing force to the fibers. Detail of physical placement and ambient conditions during transportation was not provided. Likewise, insufficient detail was given as to whether all six of the filters were individually sealed in a bag, or collectively were combined into one bag. Had the latter scenario been followed, then the possibility of cross-contaminating input and output water is problematic to this study.

A better method would have been to have each filter cleaned (as per manufacturer's instructions), each side sealed to prevent input–output contamination, single-filter transportation bag storage for transport, then immediately analyzed upon arrival to the host institution laboratory (within 48 hours). However, ideally, the microbiological testing should have been done *in situ*, in a situation where contamination and storage- and transport-related methodologies would not introduce doubt into the methods used.

CRUDE FILTER CARTRIDGE ENTRY

In Figure 2, the crude manner of filter cartridge entry affects the visual interpretation of the photos (Murray *et al.* 2015). It is clearly visible that plastic fragments and powder from the membrane cartridge housing have fallen onto the input end of the filter fibers during the entry into the filter cartridge. We were left wondering how much of this minute plastic debris was depicted as the fouling layer in Figures 3 and 4.

SMALL SAMPLE SIZE

The interpretation of the results should recognize the uncertainty due to the small sample size ($n = 6$) and biased sample. It is unclear if the the six filters selected for evaluation were ones that showed poor results by Goeb (2013), which would not provide a representative sample of the whole. We have included the citation for Goeb (2013) here, but could not locate this article online or in any library resource in order to verify the sample collection methods.

INCONSISTENCIES IN THE ARTICLE FIGURES

This article mentions burst fibers, yet no photo is shown. In Figure 2(b), it does appear as if the entry method into the filter cartridge may have damaged some filter fibers (in the upper left of the image) (Murray *et al.* 2015). We were puzzled as to why the comparative images in Figure 3 did not use equal magnifications for comparison. In the cases where a flaky fouling layer is seen (Figure 3(e) and (f)), magnifications are much higher than the comparator (new filter). This appears misleading, especially if the flakes are minute residues of plastic from the filter cartridge entry method. Figure 4 did use equal magnifications for direct comparisons, yet we had difficulty seeing the fouling that the text discussed.

FINAL REMARKS

Other aspects of this article raised questions. In Lindquist *et al.* (2014), household caregivers were trained on filter usage and cleaning, then were later (2–4 weeks later) tested on these skills. We wondered if the same was done in the Trojes, Honduras communities; not just training. Lastly, the introduction cites many publications by Goeb which we could not locate online or in library resources. Whereas the Murray *et al.* (2015) microbiological methods are known, Goeb's are unknown.

VERIFYING RESULTS IN THE LONG TERM

Although this study raises some potentially important concerns for long-term use of hollow fiber membrane microfilters, many of these seem to be left unsubstantiated in large part due to the study methods selected by the authors. At the same time, this article does point to the need for a microbiological study in the near future on long-term *in situ* filter performance in communities that have been using these filters for extended periods. As such, it is our intention to conduct such a study for filters in use over a 5-year period, and it is our hope that the findings from this study would be welcomed for future publication in the *Journal of Water, Sanitation and Hygiene for Development*.

REFERENCES

Goeb, M. 2013 *Follow-up on Sawyer Filters in the Community of San Francisco de las Quebradas, Trojes, Honduras*. Pure Water for the World, Rutland, VT.

Hydreion LLC (Missoula, MT), 2005 *Microbiological Testing of the Sawyer 7/6B Filter*. Report No. S05-03. Available at: http://sawyer.com/wp-content/uploads/2013/12/field-micro.pdf. Accessed 29 December 2014.

Lindquist, E. D., George, C. M., Perin, J., Neiswender de Calani, K. L., Norman, W. R., Perry, H. & Davis, T. P. 2014 A Cluster Randomized Controlled Trial to Reduce Childhood Diarrhea Using Hollow Fiber Water Filter and/or Hygiene-Sanitation Educational Interventions. *Am. J. Trop. Med. Hyg.* **91** (1), 190–197.

Murray, A., Goeb, M., Stewart, B., Hopper, C., Peck, J., Meub, C., Asatekin, A. & Lantagne, D 2015 Fouling in hollow fiber membrane microfilters used for household water treatment. *Journal of Water, Sanitation and Hygiene for Development* **5** (2), 220–228.

LIBERIA STUDY, 2016

Sawyer is partnering with an NGO to install 100,000 0.1 micron absolute filtration systems in rural Liberia. Under the direction of a university research team, data will be collected over both short term and long term intervals to measure the impact of the filter on the population's health, and to measure the filters sustainability from both the technical and usability perspective.

Photo courtesy of Let Them LOL

IN THEIR OWN WORDS

TESTIMONIALS FROM AROUND THE WORLD

"We have recently completed a test (actually three tests). These test were taken using direct flow from a septic tank. Flow directly from the Jokasu waste treatment tank (This tank actually has another name but we do not pass it on at this time). What I can tell you is the tank biologically treats the water from the septic and lowers the E. Coli Count and the Bacteria count considerably. Then we ran through both and then through the Sawyer Point One Filter. Of course the conclusion was ZERO Bacteria, ZERO E. Coli and ZERO Coliforms." **- BILL DRURY, PURA VIDA AGUA HONDURAS**

"We see signs of improved health in the poorest children: kids we have known for years as listless, underweight, and constantly complaining of parasite symptoms, now show signs of thriving. Their moms and teachers tell us they see a remarkable difference." **-SISTER LARRAINE LAUTER, WATER WITH BLESSINGS, WINNER OF THE PAHO AWARD FOR EXCELLENCE IN VOLUNTARY SERVICE ORGANIZATIONS**

Overall, 1,820 people in Ecuador were effected by the MAP clean water project. There was a 90% reduction in diarrhea among children, as well as a 50% reduction in stomach pain. Before the filters came into the communities, 70% of the families complained weekly or monthly of diarrhea, but afterward, only 6% had continued complaints.

-MAP INTERNATIONAL ECUADOR STUDY

"Another direct effect of water intake was less expenses that diseases had on the families. As we saw before there are 6 recurrent diseases in the families, whose treatment are mostly through purchasing antibiotics, this caused an expense of approximately 40 dollars per month. With the introduction of the filter there is a reduction of 50%. By the end of the study there is an average expense of 20 USD per month.*" **-MAP INTERNATIONAL ECUADOR STUDY**

*In Ecuador, the filter payed for itself in less than 3 months. A $40 water filter saved the families $240 in medical expenses.

"The villages who have implemented the filters correctly have virtually eliminated their abdominal pain, parasites, worms, diarrhea, cholera, typhoid and other deadly disease." **–JANA TURNS, DOCTORS GIVING BACK**

"Before we received the Sawyer filters, 5 to 6 children would die every month due to water related diseases. Since receiving the filters the number of deaths has decreased significantly." **–BISHOP ALEX WABWILE, KENYA**

"School attendance was about 72%. After we installed Sawyer filters into the school, the attendance increased to 90%" **– DR. FEROZ ISMAIL, PAKISTAN**

SAWYER

PROVIDING CLEAN WATER ACROSS THE GLOBE

Haiti: Where Has All the Money Gone?

Vijaya Ramachandran and Julie Walz

Abstract

Since the 2010 earthquake, almost $6 billion has been disbursed in official aid to Haiti, a country with a population of just under 10 million. An estimated $3 billion has been donated to NGOs in private contributions in addition to official aid. The United States Government alone has disbursed almost $2 billion of this total amount and has pledged over $3 billion for relief and reconstruction.

Nongovernmental organizations (NGOs) and private contractors have been the intermediate recipients of most of these funds. The Government of Haiti has received just 1 percent of humanitarian aid and somewhere between 15 and 21 percent of longer-term relief aid. As a result, NGOs and private contractors in Haiti have built an extensive infrastructure for the provision of social services. Yet, these entities appear to have limited accountability; despite the use of public funds, there are few evaluations of services delivered, lives saved, or mistakes made. Most importantly, Haitians are disillusioned with the overall lack of progress, and with the lack of transparency and accountability.

It is likely that NGOs and private contractors will continue to dominate service provision in Haiti for some time to come. In light of this fact, we recommend three options to improve the current situation. One: NGOs and private contractors carry out systematic and widely accessible evaluations of their work. Two: All actors in Haiti be held accountable by publishing data on expenditures and outcomes in Haiti. The International Aid Transparency Initiative may be the perfect vehicle for this and the Unites States government should require NGOs (and possibly private contractors) to report to IATI. IATI compliance might eventually be a prerequisite for receiving US funds. And three: The Government of Haiti procure services through competitive bidding whenever possible, in order to maintain service delivery while building local capacity over the longer term.

Vijaya Ramachandran and Julie Walz. 2012. "Haiti: Where Has All the Money Gone?" CGD Policy Paper 004. Washington, D.C.: Center for Global Development.
http://www.cgdev.org/content/publications/detail/1426185

CGD is grateful to its funders and board of directors for support of this work.

Center for Global Development
1800 Massachusetts Ave NW
Third Floor
Washington DC 20036
202-416-4000
www.cgdev.org

Center for Global Development

CGD Policy Paper 004
May 2012

Contents

Acknowledgments

We would like to thank the UN Office of the Special Envoy for Haiti and Dr. Paul Farmer's New York Office on Aid Delivery for detailed comments. We are also grateful to Tom Adams, Kent Annan, Owen Barder, Nancy Birdsall, Till Bruckner, Michael Clemens, Tom Dickinson, Alan Gelb, Lucy Heady, Cara Kennedy, David Roodman, Enrique Rueda-Sabater, Ian Schwab, Sarah Jane Staats, Gaiv Tata, Meredy Throop, and seminar participants at the Center for Global Development, for comments and suggestions. Alex Main and Jake Johnston provided invaluable insights and guidance on the procurement data. Owen Barder's work on the International Aid Transparency Initiative is both compelling and useful. Till Bruckner's work on donor and NGO accountability was a source of inspiration and ideas. Christina Droggitis compiled a database of NGOs in Haiti and Julia Clark provided input on the section on competitive bidding. We thank them all. The views presented in this paper are solely those of the authors, who also remain responsible for any errors.

Introduction: The Context for Foreign Assistance to Haiti

Haiti's instability is fueled by a long tradition of failed political and economic development, and a volatile relationship with the United States and other foreign countries. French colonialism and the US occupation (1915-1934) left the country with a struggling economy and no local control over industry or trade. The US ended its official occupation without a process to transition the government and few efforts were made to build local institutions or prepare Haitians for leadership. The US kept control of Haiti's national finances until 1947.[1] Even the Haitian army was created by an act of the US Congress, although it never faced a non-Haitian enemy and was disbanded in 1995.[2] Reforms were imposed by outsiders, leaving the country with little ownership of the development of economic and political systems. Haitians were left with a "prickly nationalism," distrust of foreigners, and an economy largely dependent on foreign assistance.[3]

The economic situation has been exacerbated by intense political instability; Haitian history is characterized by short presidencies and periodic foreign interventions. Since 1806, 54 presidents have been elected. Only nine have completed a full term.[4] The US had a hand in forcing five presidents out of office.[5] Transitions of power were usually based on military force, leading to the Haitian Creole adage "constitutions are made of paper and bayonets of steel."[6] In one six-month period between 1956 and 1957, five governments took power until the United States aided in installing Francois "Papa Doc" Duvalier. Haiti became a pawn in larger Cold War politics as the United States aimed to prevent the spread of Communism in the Caribbean and isolate Cuba. Duvalier capitalized on these fears and garnered significant flows of US foreign assistance.[7] Yet his dictatorial rule was based upon massive corruption, cronyism, and repression of human rights. During the most brutal years of 1960-1970, thousands were murdered and tens of thousands fled into exile.[8] American President Kennedy stopped aid to Haiti to protest the repression under Duvalier, yet President Nixon restored aid after Duvalier's son, Jean-Claude "Baby Doc" Duvalier took power and promised reforms. Instead, Jean-Claude continued the abuses of his father's regime. Yet the United States continued to provide the country with aid as an ally in the fight against communism.

---

[1] Buss and Gardner, *Haiti in the Balance*, 24.

[2] Farmer, *The Uses of Haiti.* 379-380.

[3] Girard, *Haiti: the tumultuous history,* 5.

[4] Buss and Gardner, *Haiti in the Balance*, 4.

[5] Buss and Gardner, *Haiti in the Balance*, 3-4.

[6] Granderson *Hard Choices,* 99.

[7] Girard *Haiti: the tumultuous history,* 105.

[8] Talentino, *Military Intervention After the Cold War,* 133.

By 1970, foreign assistance was 70% of the Haitian national treasury revenues; aid levels rose to $35.5 million in 1975.[9] Large-scale corruption meant that this aid never reached the Haitian people and the economic situation remained largely unchanged.[10] As the poorest country in the Western hemisphere, Haiti's GDP per capita declined at an average rate of two percent annually. One study in 1984 estimated that less than 25 percent of the population lived above the absolute poverty line. Long-term development was further hindered by dramatic levels of inequality. Haiti also suffered from a high rate of population growth, deforestation over 97% of the country, and soil erosion. [11] Ironically, F. Duvalier aptly summarized the Haitian system of government:

> Our governments never cared about the national inheritance and never attempted to stop social grievances. They talked a lot about liberty, only to fool the free world instead of using it fairly as a domestic policy. The Country is split into two groups: the exploiters – restless and foolhardy minority – monopolize the administrative power and paralyze the progress of the masses; the exploited – the great majority – [are] victims of a wrongful and cruel system.[12]

This political and economic context led to the rise of populist priest Jean-Bertrand Aristide, known for his vocal opposition to the government and his platform of economic and social reforms. His election in 1990 was supported by the United States and foreign aid rose as a result – by 1991, Haiti received $380 million from abroad.[13] Aristide was ousted in a coup in September 1991 by Raul Cédras and international policy shifted immediately. The Bush Administration suspended aid once again, enacted a harsh economic embargo, tightened sanctions, denied visas, and froze bank accounts.[14] Although basic food items were exempt from the embargos, inputs such as seeds or fertilizer that were essential for Haitians to achieve food security were blocked. Between 1992 and 1993, gross domestic product fell by 20 percent, and unemployment rose to 75 percent.[15] Textile and assembly plants - which constituted over three-quarters of Haiti's exports - were closed, the tax collection system collapsed, and infrastructure crumbled. [16] President George H.W. Bush also began a tough migration ban, blocking Haitian "boat people" from settling in the US.

Aristide became a divisive political issue in the United States, and policy disagreements resulted in a schizophrenic approach towards Haiti.[17] President Clinton ran a 1992

---

[9] Girard, *Haiti: the tumultuous history,* 10.

[10] Girard, *Haiti: the tumultuous history,* 210.

[11] Weiss, *Military-Civilian Interactions,* 117.

[12] Quote from 1957, shortly after Papa Doc took office. Source: Buss and Gardner, *Haiti in the Balance,* 46.

[13] Girard, *Haiti: the tumultuous history,* 125.

[14] "Sanctions in Haiti."

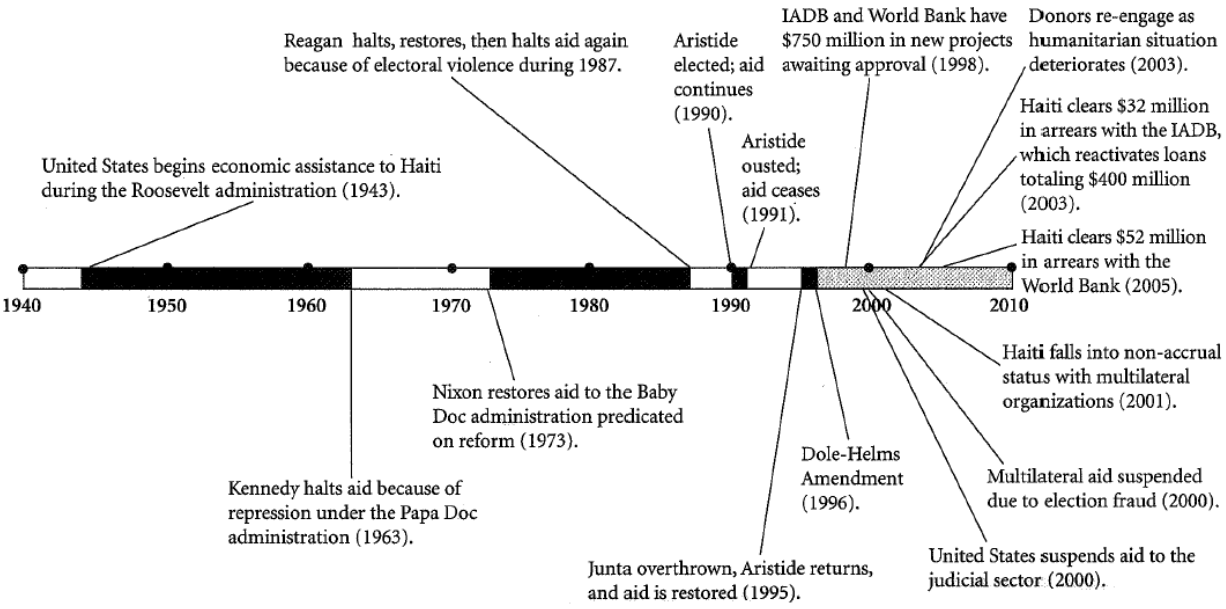
[15] Weiss, *Military-Civilian Interactions,* 119.

[16] Buss and Gardner, *Haiti in the Balance*, 31.

[17] Summary of US foreign assistance from Buss and Gardner, *Haiti in the Balance*, 71-80.

presidential campaign on the promise he would reverse President Bush's policies on Haitian refugees, and enable the return of Aristide. Following the election, the administration changed course, keeping the embargo and aid suspensions. Clinton then supported an invasion of Haiti to restore Aristide, resuming foreign aid in 1995. When the Republican Party took control of Congress in the 1996 elections, it responded to Clinton's Haiti policy with the Dole-Helms amendment: Aristide must reform or the country would lose aid. Haiti's elections in 2000 were widely disputed, resulting in the World Bank, European Union, Inter-American Development Bank, the United States, Canada, France, and the Netherlands blocking all aid to the Haitian government. President George W. Bush's administration continued the aid embargo, blocking multilateral donors from dispersing aid to Haiti that had already been approved. Following the contested removal of Aristide in 2004, foreign policy shifted again and aid began flowing once more. An overall timeline summarizes US foreign aid policy to Haiti:

Figure 1: Foreign Assistance to Haiti



Source: Buss and Gardner, *Haiti in the Balance*, 70

The volatility of official foreign aid to the Haitian government undercut an already weak public sector. To date, the Haitian government has few resources and little revenue. In 2002, the government budget (for a country of almost 10 million) was roughly equivalent to that of the town of Cambridge, Massachusetts (population 100,000).[18] In 2008, the net foreign assistance to Haiti was $92.30 per capita. Yet only *three percent* of bilateral aid went to budget

[18] Farmer, *Haiti after the Earthquake,* 135.

support for the Haitian government.[19] Funding for budget support is also extremely volatile, even during years where foreign assistance to Haiti remained relatively stable. In FY2010 it increased from $93.6 million to $225 million. As of June 2011, it was only $48.8 million for FY2011.[20] This unpredictability further complicates the ability of the Haitian government to create long-term plans for recovery and economic progress.

Extreme volatility in foreign assistance levels has undermined human and economic development in Haiti. Any increments in social progress - increased school enrollment, higher vaccination rates, or judicial reform – during the years that Haiti received aid were offset by decreases in the years when the country was subjected to aid embargoes.[21] Poverty reduction was always a secondary goal in the disbursement of foreign aid; assistance was primarily used as a reward or punitive measure to influence Haitian politics. The most consistent flows of aid were for humanitarian purposes, yet this funding was for short-term immediate relief projects – projects that may have undermined long-term development in some cases.[22] The volatile Haitian political climate and US policy response also had disastrous impacts on foreign direct investment. In the three years between 1999 and 2002, investment fell from $30 million to $5 million.[23] A lack of both donor and investor confidence has likely constrained investment flows, even during relatively stable periods in Haiti's political history.

Donor Pledges to Haiti in the Aftermath of the January 2010 Earthquake

On Tuesday, January 12, 2010, at 16:53, Haiti experienced a 7.0 magnitude earthquake with an epicenter near the town of Léogâne, approximately 25 km (16 miles) west of Port-au-Prince. Haiti is located in the region where the Caribbean tectonic plate meets the North American plate. The Caribbean plate has been moving northward by 7 to 20 mm per year, grinding against the North American plate as it moves forward. This movement has produced two major fault lines, called *strike-slip faults*, to the north and south of Haiti--the Septentrional fault in the north and the Enriquillo-Plaintain Garden fault in the south. The earthquake of January 20101 was likely caused by movement and release of accumulated pressure around the southern fault, plunging an already poor and unstable country further toward disaster.[24]

---

[19] "Has aid changed?", 7-8.

[20] "Has aid changed?", 4-8.

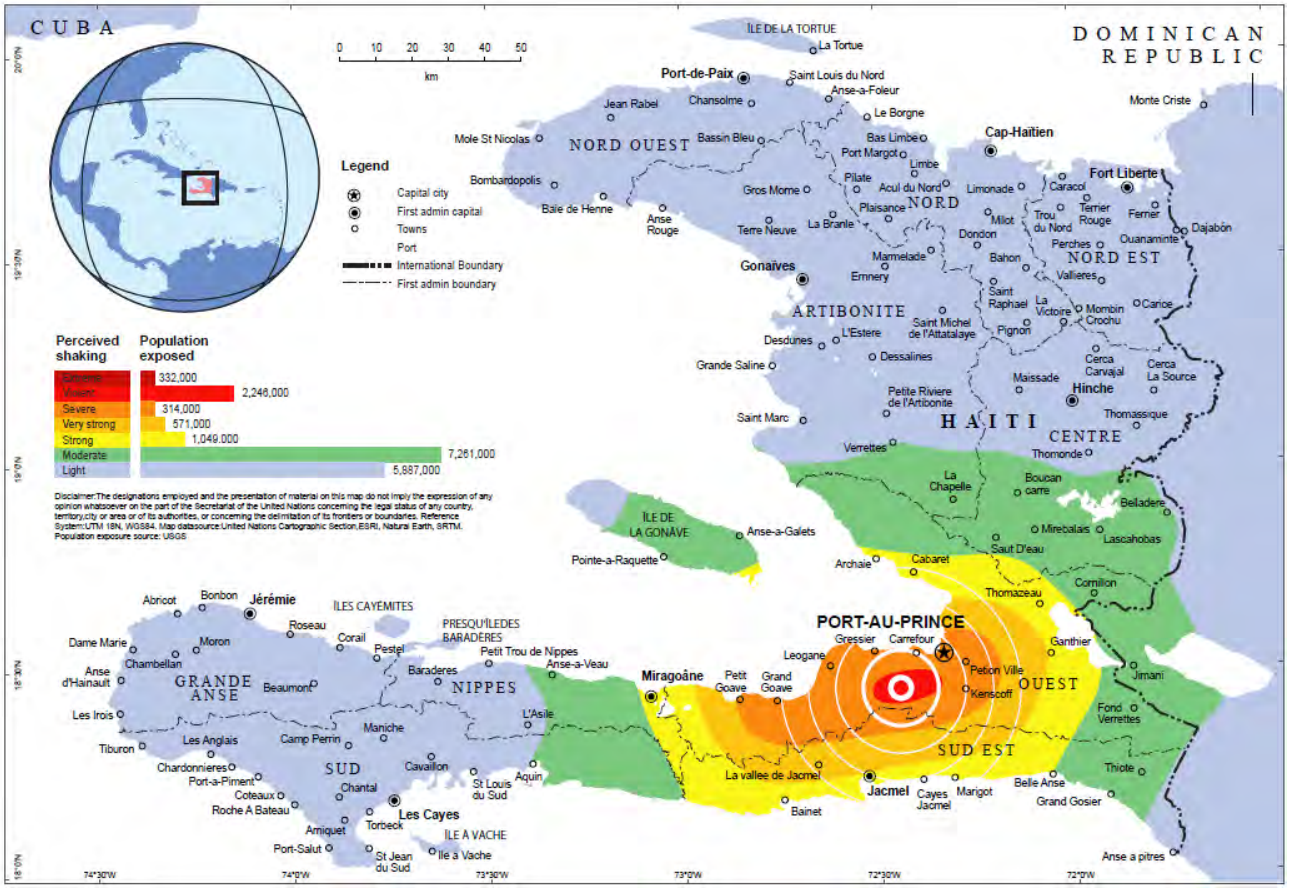
[21] Erickson, "The Haiti Dilemma," 293.

[22] Buss and Gardner, *Haiti in the Balance*, 52.

[23] Erickson, "The Haiti Dilemma," 293.

[24] Some scientists believe that the earthquake was caused by separate *blind thrust faults*, which means that pressure in the southern fault (accumulated over a period of 250 years) has not fully released yet.

Figure 2: Map of the Haiti Earthquake and Population Exposure[25]



Source: United Nations Office of Coordination of Humanitarian Affairs

A third of the country's population was directly impacted by the quake: over 220,000 people died and several million people were displaced to temporary shelters. Damage and losses were estimated at $7.8 billion, which is an amount greater than Haiti's GDP in 2009.[26]

Haiti received an unprecedented amount of support and aid in response. Private donations reached $3.1 billion.[27] Individual Americans gave $774 million in the first five weeks – the rapid response was largely aided by text messaging technology. The Red Cross, which pioneered this fundraising strategy, raised an unprecedented $32 million in $10 donations through SMS technology.[28] Fifty-eight donors made pledges totaling $5.5 billion to help

[25] Source: Relief Web. Available: http://reliefweb.int/sites/reliefweb.int/files/resources/37BA48E03E63ABC6C12576AC002ADA11-map.pdf

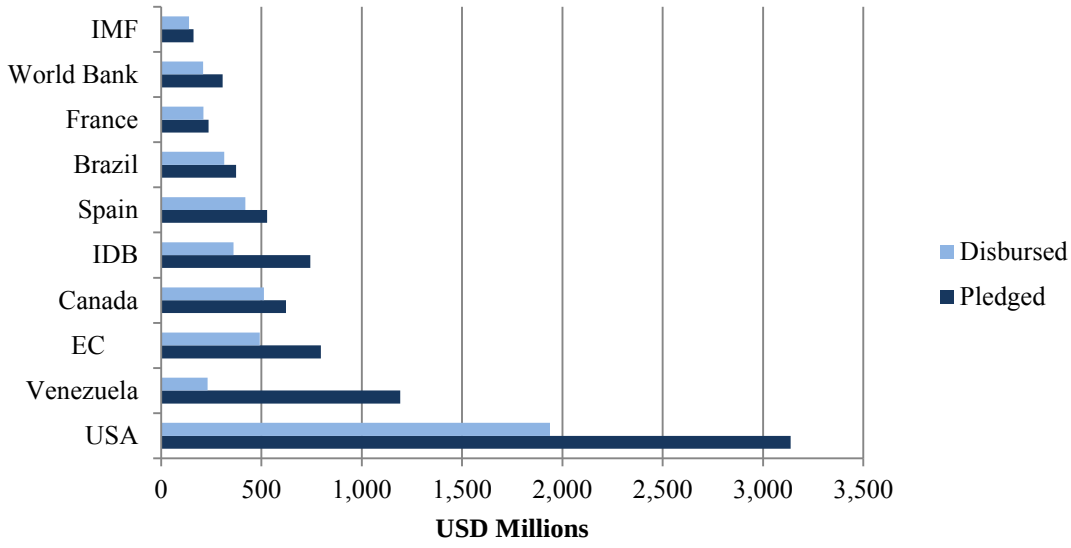
[26] "Action Plan for National Recovery and Development of Haiti."

[27] "Has aid changed?", 12

[28] "Index of Global Philanthropy and Remittances 2011," pg 5-6

Haiti at the International Donor's Conference in New York on 31 March, 2010.[29] According to the report, "Has Aid Changed" from the UN Office for the Special Envoy for Haiti, this represents a tripling of aid flows between 2009 and 2010. In 2010, aid from official donors was 400 percent of the Haitian government's domestic revenue. Figure 3 shows the top ten donors while Figure 4 shows how United States government funds were allocated. Of the relief aid committed or disbursed, 60 percent was in the form of grants while 40 percent was in-kind goods and services.[30]

Figure 3: Top Donors in Haiti Earthquake Response, 2010-2011

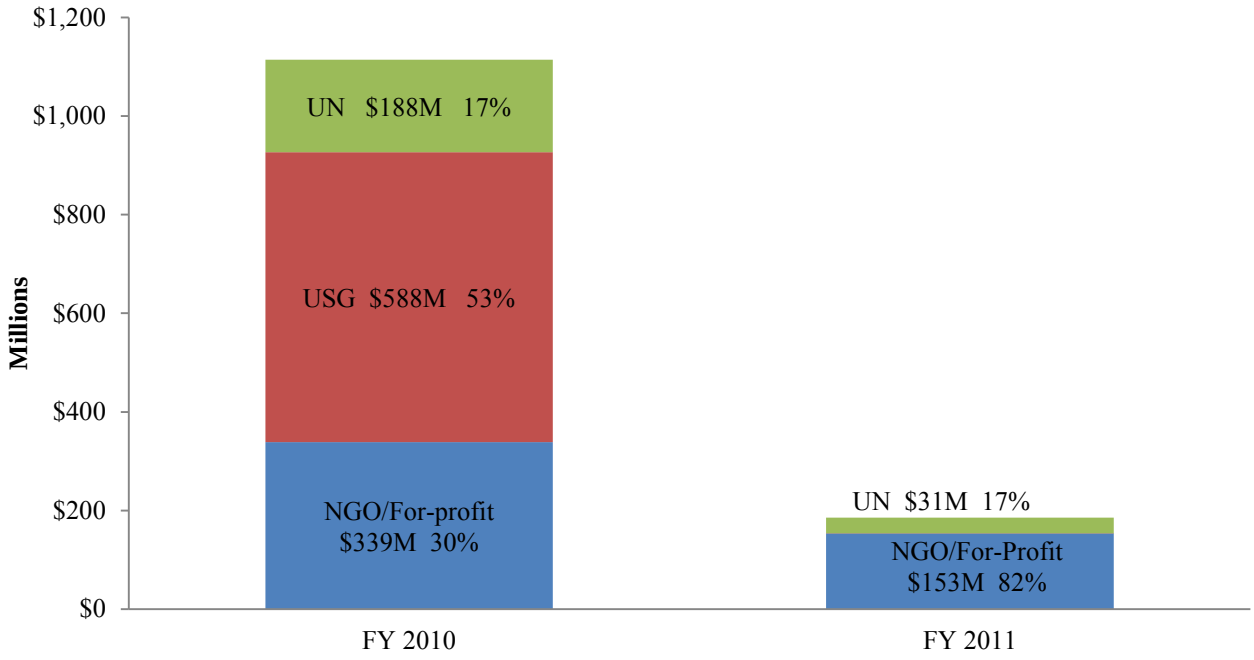


Note: Total from all Public Sector Donors: $8,401.4M pledged and $5,327.7M disbursed. 2010-2011, Overall contributions as of March 2012. Does not include private sector donors. Contributions include Humanitarian Relief (Earthquake and Cholera) funds as well as Recovery and Development funds (excluding debt relief). Source: UN Office of the Special Envoy.

[29] The New York Conference refers to pledges made at the international donors' conference "Towards a New Future for Haiti," held in New York on 31 March 2010. Source: http://www.haitispecialenvoy.org/download/International_Assistance/2-overall-financing-data.pdf

[30] "Has aid changed?" 14.

Figure 4: US Government (USG) Haiti Funding Channels, FY2010-FY2011



Total USAID, State, and DOD Humanitarian Assistance, FY 2010: $1,141,365,477; Total USAID, State, and DOD Humanitarian Assistance, FY 2011: $191,284,091 (Earthquake and Cholera); Totals are for Humanitarian Funding. Represents obligated amounts as of September 29, 2011. Source: USAID Earthquake and Cholera Fact Sheets, FY 2010 is Fact Sheet #73, September 24, 2010; FY 2011 is Fact Sheet #13, Sept 29, 2011; Implementing partner type categorized by authors.

The Office of the Special Envoy for Haiti reports that bilateral and multilateral donors have pledged $9.28 billion in humanitarian and recovery funding for 2010 to 2012.[31] Of these pledges, $5.63 billion (60.7 percent) have been disbursed.[32] Pledges were also made to support the Government of Haiti's Action Plan for Recovery and Development. The eighteen-month budget in the Government of Haiti Action Plan identifies priority sectors and requests for levels of funding.

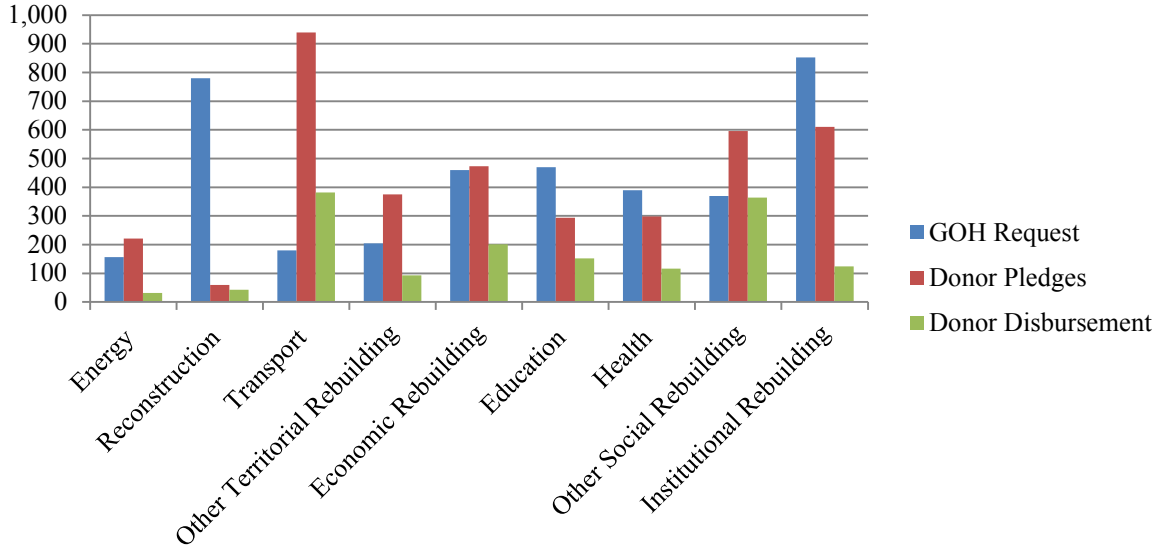
It is clear that the main areas of donor concern do not always align with the Haitian government's priorities, as is evidenced by the differences in requests and pledges (Figure 5). For instance in the transportation sector, pledges were 510 percent ($737 million) more than

[31] This total includes humanitarian relief for both earthquake and cholera responses, and recovery money from the New York pledges as well as other recovery funding. Does not include debt relief

[32] UN Office of the Special Envoy for Haiti, "2010-2012 overall contributions from public sector donors to relief and recovery efforts in Haiti as of March 2012." http://www.haitispecialenvoy.org/download/International_Assistance/2-overall-financing-data.pdf

the Government of Haiti's request. Whereas pledges for strengthening democratic institutions fell short--only 20 percent ($31 million) of the Government of Haiti's request was met by donors.

Figure 5: Government Priorities vs. Donor Pledges and Disbursements (USD Millions)



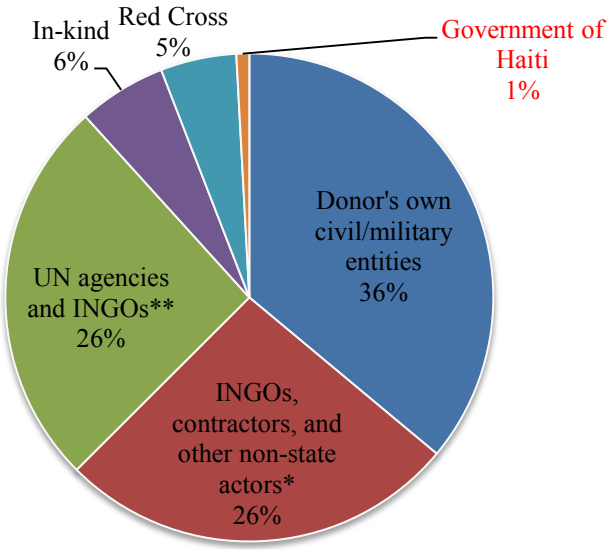
Recovery funding by sector as of March 2012. Source: Office of the Special Envoy for Haiti, Recovery Sector Analysis http://www.haitispecialenvoy.org/download/International_Assistance/7-ny-recovery-sector.pdf

Who Got the Money?

From the available figures, it appears that NGOs and private contractors are the primary intermediate recipients of this assistance for relief and reconstruction, with very little money going directly to the Government of Haiti. Funding is broken into two categories: humanitarian aid is immediate relief funding, whereas recovery funding is longer-term financing for reconstruction and development. Humanitarian agencies, NGOs, private contractors, and other non-state service providers received 99 percent of humanitarian aid – less than one percent went to the Government of Haiti.33 Figure 6A shows the breakdown of the $2.29 billion in humanitarian aid from all donors committed or disbursed in 2010 and 2011. However, none of the $1.28 billion disbursed in humanitarian aid from the United States went to the Haitian government (Figure 6B).

[33] "Has aid changed?"4.

Figure 6A: Recipients of Humanitarian Aid to Haiti from all donors



* Excluding Flash Appeal. ** Under Flash appeal. INGOs are International NGOs. Total funding is $2.29 billion in Humanitarian funding committed or disbursed by bilateral and multilateral donors in 2010 and 2011. And additional $168.2 million went to cholera response. Source: UN Office of the Special Envoy for Haiti Key Facts as of March 2012.
http://www.haitispecialenvoy.org/download/International_Assistance/1-overall-key-facts.pdf

Figure 6B: Recipients of US Humanitarian Funding

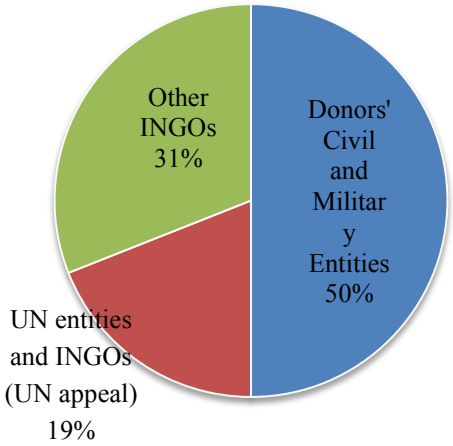
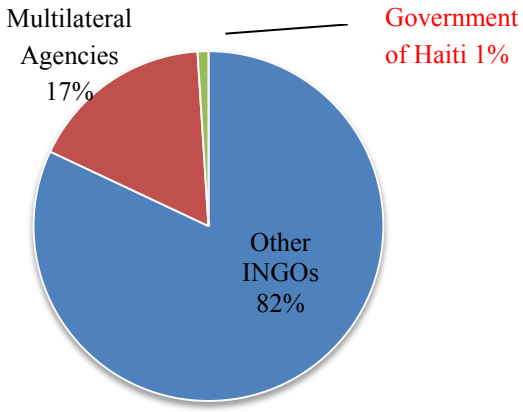


Figure 6C: Recipients of US Recovery Funding



Note: Total *disbursed* US Humanitarian funding is $1.28 billion and Recovery funding is $655 million as of March 2012. Source: Office of the Special Envoy for Haiti, United States Fact Sheet
http://www.haitispecialenvoy.org/download/Home/Donor_Status/us.pdf

A slightly higher percentage of disbursed long-term *recovery* funding has been channeled to the Haitian government. Somewhere between 15 and 21 percent of recovery funding has

been channeled to the Haitian government from donors globally, depending on how the financing is categorized.[34] The United States, however, only disbursed one percent of recovery money to the Government of Haiti (Figure 6C).

Aid to the government remains very low, despite the fact that budget support to the treasury is the Haitian government's preferred channel for aid. General budget support can also be given indirectly through the Haiti Reconstruction Fund (of which the World Bank acts as a trustee).[35] In the immediate aftermath of the earthquake, the Haitian government had very limited capacity as almost all government buildings were destroyed and agencies were operating in a state of emergency. Yet months, and years, later, donors continue to be reluctant to fund the government. Valid concerns arise about the lack of capacity within the Government of Haiti, as well as entrenched systems of patronage, corruption, and inefficiency. Yet government capacity will never be built or improved if donors continue to bypass local institutions in favor of NGOs.

Even if we believe that non-profit organizations and private contractors may be more efficient in disbursing immediate aid, longer-term recovery requires government leadership. By circumventing the Haitian government, donors are prolonging this process and continuing to undermine the public sector. The Interim Haiti Recovery Commission (IHRC) was created to provide a platform for collaboration between donors and the Haitian government. The commission was co-chaired by Bill Clinton and Jean-Max Bellerive and was made up of government officials and donor representatives. Yet IHRC only had an eighteen month mandate, which can be argued was too short to deal with the situation on the ground.[36] There was also criticism of its effectiveness. A report by the US Government Accountability office found that over a year after its creation, IHRC was still not fully operational.[37]

The "trickle down" effect of development financing also may be an important element in tracing where the money went. For donor's civil entities, INGOs, and UN agencies there are often multiple layers of sub-contracts and sub-grants before reaching the groups that are implementing programs on the ground in Haiti. A large donor may provide a grant to a large INGO which may channel money to smaller NGOs, faith-based organization, or Haitian community groups. Each layer in this process may absorb seven to ten percent in administrative costs, which significantly reduces the amount of money used to implement programs on the ground.

---

[34] Recovery aid (longer-term aid) is distinguished from humanitarian aid (immediate needs) by the UN Special Envoy for Haiti based on the funding pools used. See Appendix 1 for a breakdown in estimations about budget support to the GOH and other direct financing.

[35] "Has aid changed?" 25-26.

[36] Farmer, *Haiti after the earthquake* 156-7.

[37] GAO report, "Haiti Reconstruction."

Not all NGOs have received aid—in fact, the main recipients were large, international non-profits and some UN agencies. (Figure 7). The U.S. Department of Defense (DOD) took responsibility for all security in Haiti in the aftermath of the quake. This included restoring and managing the runway at the airport in Port-au-Prince, triaging aircraft landings in Port-au-Prince from a command center in Tampa, Florida, and maintaining security in Haiti's capital. As such, DOD received the largest amount of relief aid to carry out these activities. The remainder of the funds went to large international NGOs, private contractors, and other agencies of the U.S. government such as the Federal Emergency Management Agency (FEMA) and Health and Human Services (HHS).

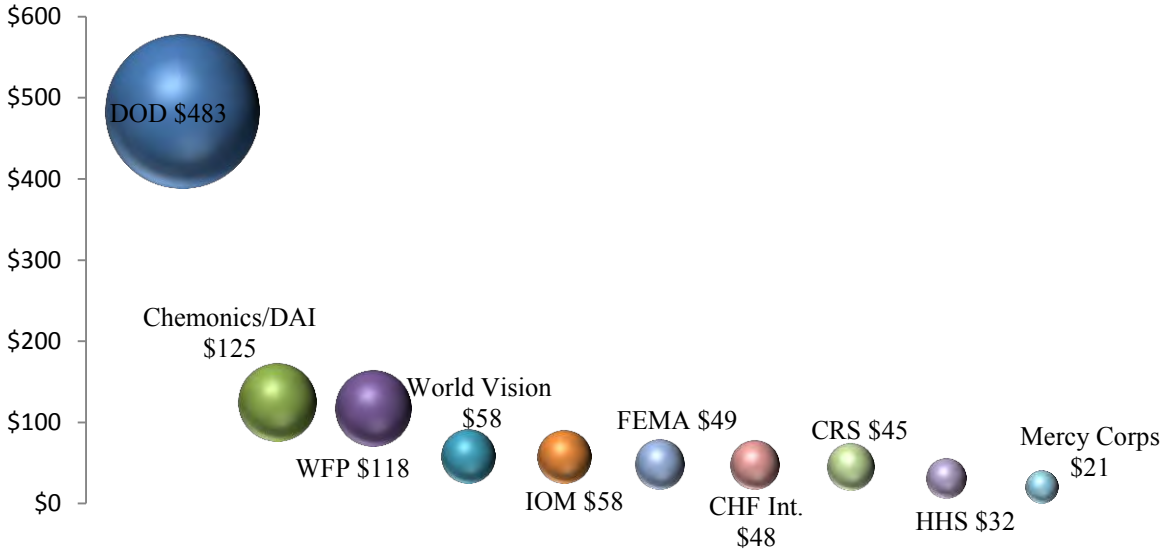
Private contractors have also benefitted a great deal from the Haiti quake. A cable found on WikiLeaks referred to the private contracting process as a "gold rush," and questions have been raised about the contracts awarded in the aftermath of the quake.[38] Figure 8 shows the top ten private contractors that received funds. However, Haitian-led NGOs have largely been excluded from relief or reconstruction funds.[39] The initial UN appeal included only needs of international NGOs – Haitian NGOs were completely excluded. In later versions, ten Haitian NGOs were included and they requested $5.4 million, which was equivalent to 0.4 percent of the total request. Only two Haitian organizations received funding at a total of $0.8 million – less than 15 percent of the money requested by the ten organizations.[40]

[38] Herz and Ives, "WikiLeaks Haiti," The Nation.

[39] Till Bruckner, a former employee of Transparency International Georgia, argues that "in Georgia, NGOs could not have run the relief operations, they were not strong enough. But it's worth asking why they were STILL not strong enough after over a decade of "local NGO capacity building" by donors and INGOs. Main problems: (1) donors distrust LNGOs and do not give them large grants, (2) INGOs poach the strongest LNGO employees with better salaries, (3) LNGOs lack core funding."

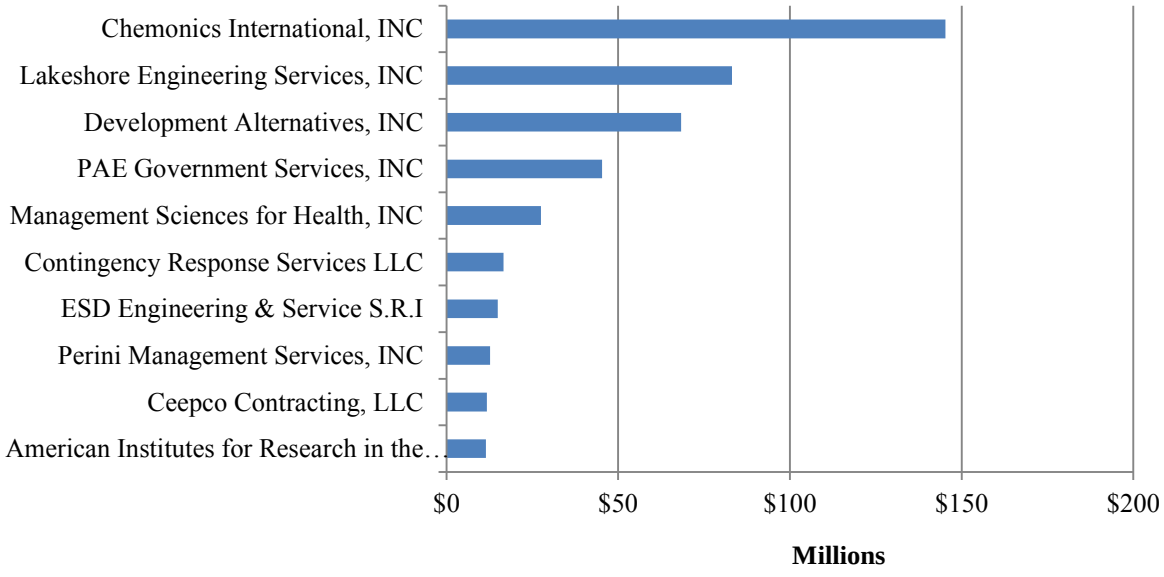
[40] "Has aid changed?" 15-16.

Figure 7: Top Recipients of USG Haiti Earthquake Funding, FY 2010-2011 (Millions)



Total Humanitarian Assistance from USAID, State, and DOD. USAID and State are not listed since their money was re-allocated to the implementing partners above. Represents obligated amounts as of September 29, 2011. Source: USAID Earthquake and Cholera Fact Sheets, FY 2010 is Fact Sheet #73, Sept 24, 2010. FY 2011 is from Fact Sheet #13, Sept 29,

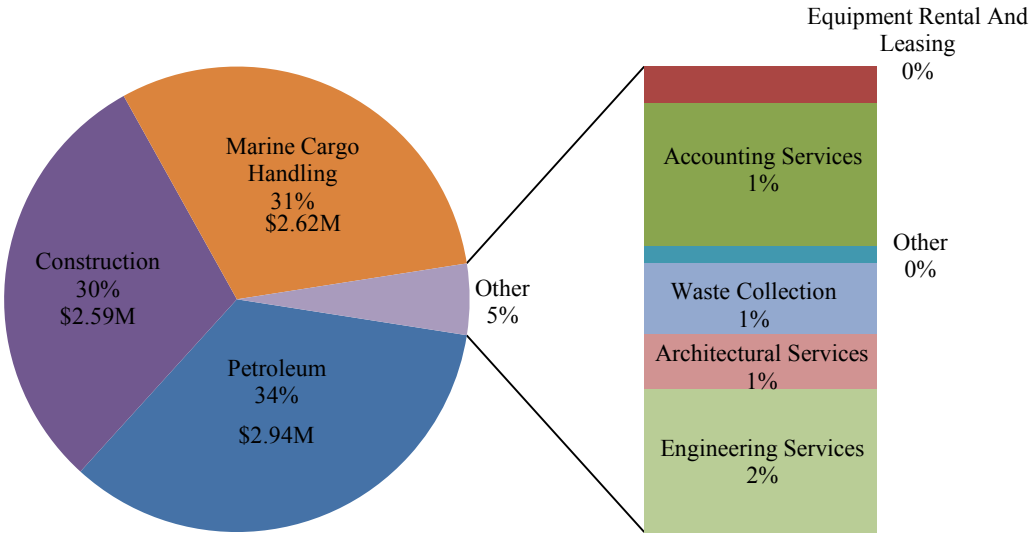
Figure 8: Top Private Contractors for Haiti, Jan 12, 2010 – March 1, 2012



Source: Federal Procurement Data System; total funding in millions of dollars

Contracts to Haitian firms are also few and far between. Figure 9 shows that about $9 million were used to purchase services from Haitian vendors, according to the Federal Procurement Database System. Only 12 vendors were involved in these transactions. Figure 10 shows that contracts to Haitian firms have all but stopped—in 2011, the amount spent on local procurement fell off sharply compared to 2010. Following a request from Haiti Relief and Reconstruction Watch Blog (HRRW) run by the Center for Economic and Policy Research, USAID released the names of its local contractors in Haiti in April 2012. These data show that the contracts add up to $9.45 million, which is far less than one percent of more than a billion dollars spent by USAID. Over 75 percent of USAID funds went to private contractors inside the Beltway (located in Washington DC, Maryland, or Virginia).[41]

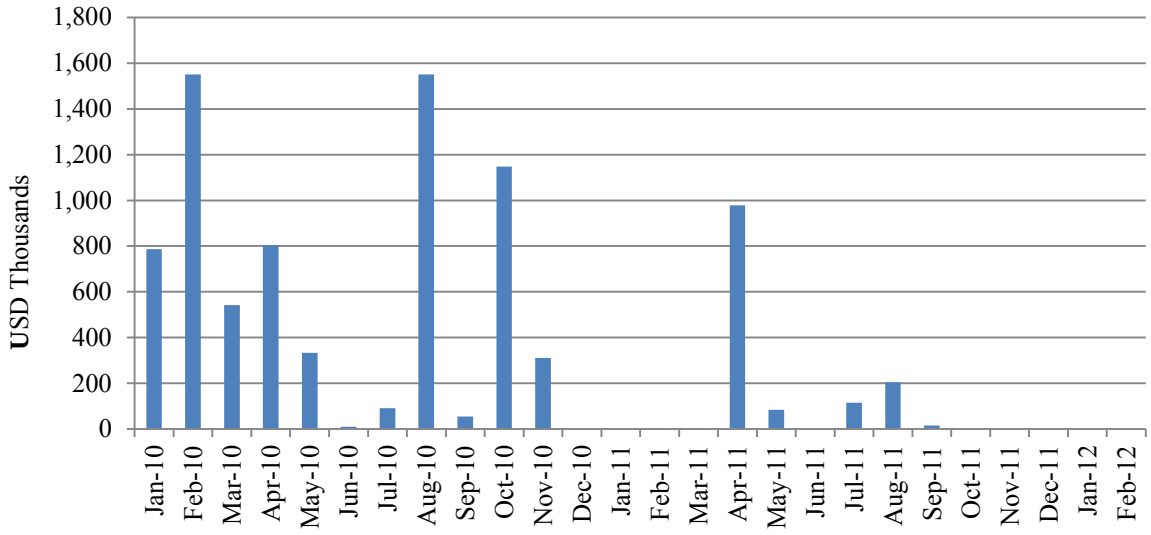
Figure 9: Contracts to Haitian Firms (12 Vendors)



Notes: Contracts from Jan 12, 2010 to March 1, 2012. Source: Federal Procurement Data System

[41] HRRW, "USAID's Disclosure of Local Partner Info Raises Troubling Questions," 30 March, 2012.

Figure 10: USG Contracts to Haitian Firms over Time



Notes: Contracts from Jan 12, 2010 to March 1, 2012. Source: Federal Procurement Data System

The Rise of the Quasi-Private State in Haiti

Due to the limited capacity of the Haitian government and weak national institutions, non-governmental organizations (NGOs) and private contractors have risen to play a prominent role in Haiti. The immense volatility in Haitian politics and US reluctance to give aid directly to the Haitian government resulted in NGO and contractors becoming the main thoroughfare for foreign assistance. Funding for international charities continued to flow even when aid to the Haitian government was prohibited. NGOs, private firms, and multilateral banks quickly became the preferred recipients of aid as they were more stable and could be held more accountable to international donors than the Haitian government. Prior to the 2010 earthquake, one estimate was that 70 percent of aid money to Haiti flowed through charities and non-profit organizations.[42]

Some researchers describe how NGOs have become key players in nation building and governance, with some having greater influence over local politics than the local population.[43] It is clear that international organizations and NGOs have access to disproportionate levels of funding in comparison with the government. NGOs are a primary channel through which money can be siphoned off. Local politicians often seek support and funding from foreign NGOs to aid in election campaigns and secure successes. Various

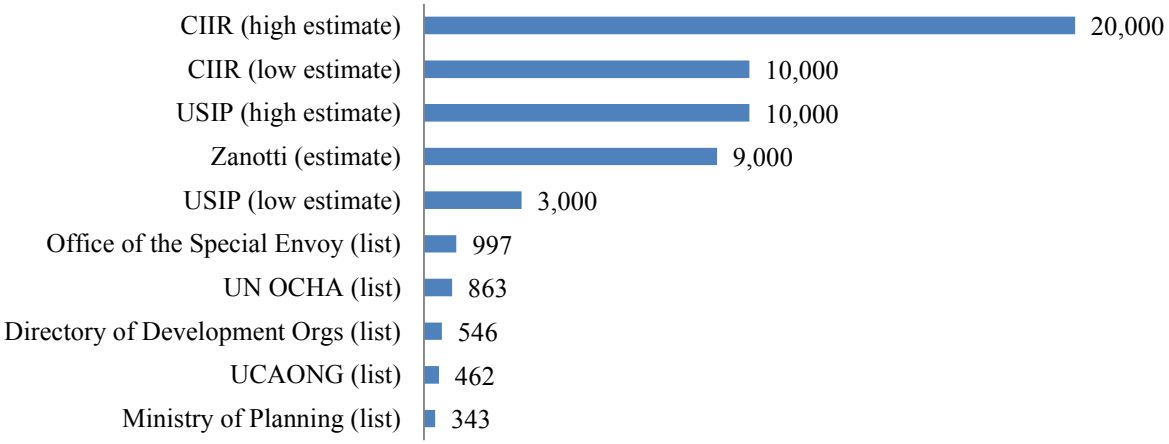
[42] De Cordoba ,"Aid Spawns Backlash in Haiti."

[43] Zanotti, "Cacophonies of Aid," 759.

organizations, based in the United States and elsewhere, have been accused of funding the opposition to President Aristide.[44]

It is difficult to even determine the number of NGOs that are operating in Haiti. Estimates vary greatly, and only a small proportion of organizations are officially registered with the Ministry of Planning (Figure 11). A comparison of some of the most recent and frequently cited sources show great disparities in existing estimates.

Figure 11: Estimates of the Number of NGOs in Haiti



Note: "List" means that source lists individual organizations. "Estimate" means source gives ballpark figures. Sources: Catholic Institute for International Relations, "Haiti: 2004," 18. US Institute for Peace (USIP) Brief, "Haiti: A Republic of NGOs?" April 2010. Zanotti, Laura, 757. Office of the Special Envoy: http://csohaiti.org/. UN Office for the Coordination of Humanitarian Affairs, Haiti: http://bit.ly/sW1YJ2. Directory of Development Organizations: http://www.devdir.org/files/Haiti.PDF. Unite de Coordination des Activites des ONG (UCAONG): http://www.mpce.gouv.ht/ongreconnues.pdf. Ministry of Planning estimate from 2004, Schuller, "Invasion or Infusion?"

The inability of the Haitian government to count or register NGOs further highlights the weakness of the public sector in comparison with the parallel non-profit system. Programs and activities run by NGOs are usually not included in government planning and may lack long-term sustainability. There is no method for ensuring accountability or coordination amongst various organizations which are often operating under similar mandates and running identical projects. The Office of the Special Envoy has assisted the Government of Haiti in its effort to regulate and oversee non-state providers, so that work programs and funding might be better aligned with government priorities.

[44] Zanotti, "Cacophonies of Aid," 759.

InterAction has pioneered the Haiti Aid Map, providing project-level statistics for 65 NGOs currently operating in the country (Figure 12).[45] Yet the task of expanding these projects to include the smallest charities remains daunting.

Figure 12: InterAction Haiti Aid Map, Active Projects in Haiti (12.7.11)

Although it remains almost impossible to identify exactly how many NGOs are operating in Haiti, it is worthwhile drawing out characteristics and trends from the data that we do have. The Office of the Special Envoy for Haiti/Inter-American Development Bank CSO portal has the most comprehensive directory of organizations, listing slightly fewer than one thousand Civil Society Organizations and NGOs. Using that directory along with individual websites and annual reports of NGOs, we were able to build a dataset of 980 NGOs operating in Haiti.[46] Bias is introduced as we are relying only on organizations that have a website or are registered on a database, thus likely excluding many local Haitian organizations without access to the Internet and/or the means to register. There is a large amount of variation, with listed organizations having anywhere between three and 500,000 employees.

As Figure 13 shows, NGOs are not new players in Haiti, and their growth in recent decades is dramatic.[47] A relatively small and stable number of charities registered between the late

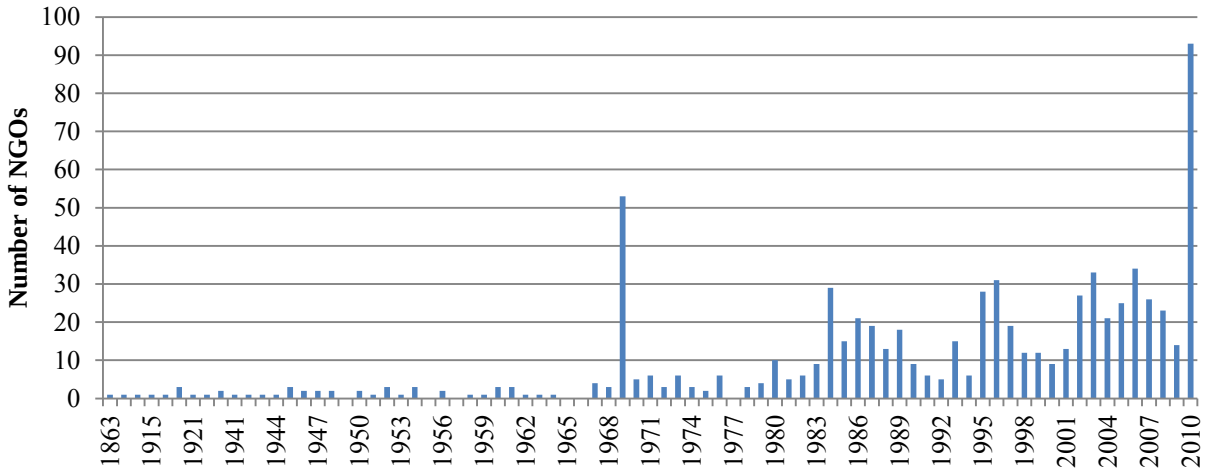
[45] As of December 7, 2011. InterAction, "Haiti Aid Map."

[46] Although for many of these organizations we could find nothing more than a name – we lack data on where it is located, what sectors it works in, etc. Thus our sample sizes for the following analyses varies greatly (sample size is listed on each graph).

[47] In our database years are recorded as the year the organization was founded (for very large global NGOs this may not correspond with the date that they actually began operations in Haiti).

1800s and the 1960s. By the late 1960s the numbers began to grow, along with the birth of the international NGO movement globally. Throughout the 1990s, fluctuations in registration may be correlated with domestic and foreign policies, including the 1995 restoration of Aristide and the resumptions and suspensions of US foreign aid. The most dramatic spike can be seen following the January 2010 earthquake – almost one hundred new NGOs were registered in the aftermath of the quake. According to the registry through the Office of the Special Envoy, an average of 23 new NGOs were founded per year between 2000 and 2009. This quadrupled in 2010 when 93 NGOs were created.

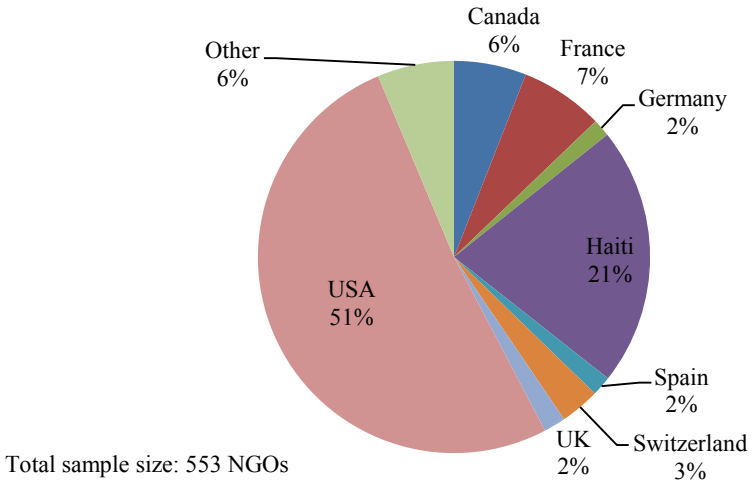
Figure 13: Date of Birth of NGOs Operating in Haiti



We find that 51 percent of NGOs operating in Haiti are headquartered in the United States (Figure 14). 48 This is not surprising given the political history between the two nations, geographic proximity, and the large number of Haitians residing in the U.S. The majority of these organizations have offices and branches based in Haiti, yet are headquartered in the U.S. Only one-fifth of organizations are actually headquartered in Haiti. NGOs operating in Haiti span the globe – from an Armenian Church Association, to a Lebanese Mission providing shelter for the distressed, to the Taiwan International Cooperation and Development Fund providing cash-for-work programs and emergency assistance. Surprisingly, only three organizations from the Dominican Republic are listed.

[48] Once again, it is important to note the bias toward small Haitian organizations that do not have a website or footprint on the internet. We may be excluding small Haitian organizations that maintain a low profile and work in isolated areas. Yet by relying on organizations that have a website or information online, we are also likely excluding the large number of fraudulent or non-existent orga
nizations.

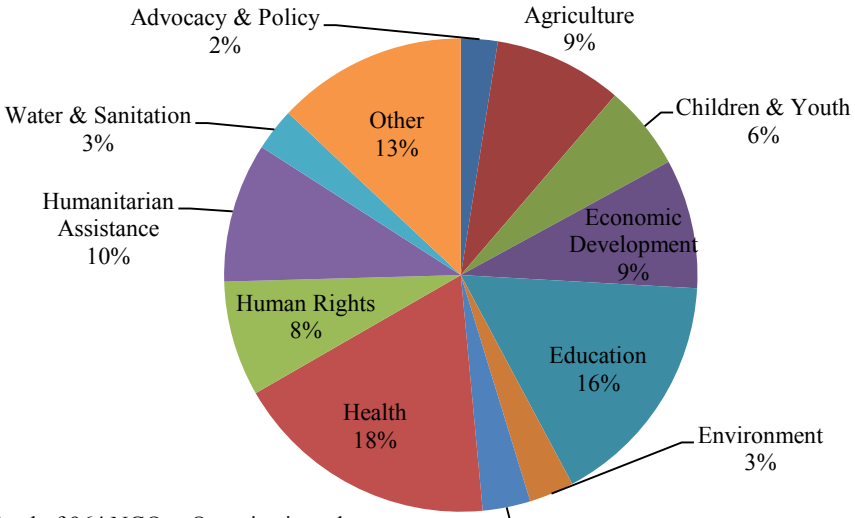
Figure 14: Location of Headquarters



Total sample size: 553 NGOs

Despite where they are located, many NGOs operating in Haiti share the same priorities. Health and education are their main areas of operations--34 percent of all organizations work in at least one of these two sectors. (Figure 15). Humanitarian assistance, general economic development, agriculture, and human rights are also common areas of focus. Both NGOs headquartered in Haiti (Figure 16) and those in the US (Figure 17) seem to share the same priorities.

Figure 15: Sector Breakdown of All NGOs in Haiti



Note: Total of 964 NGOs. Organizations that listed more than one sector are counted for each sector.

Figure 16: Sector Breakdown of Haitian NGOs

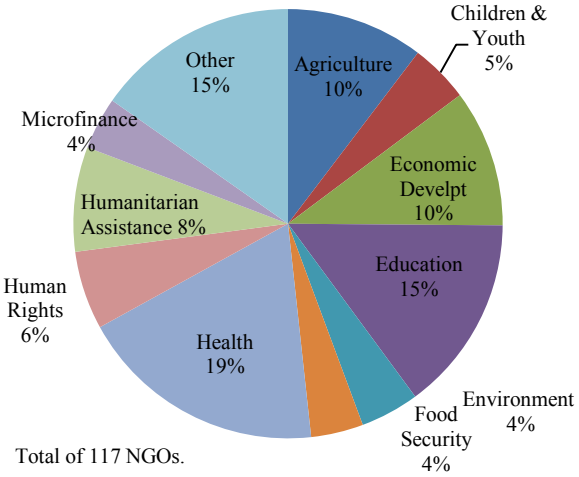
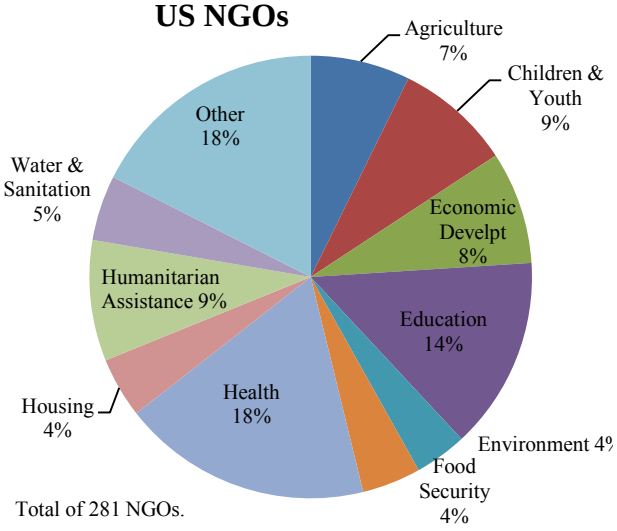


Figure 17: Sector Breakdown of US NGOs



The available evidence suggests that NGOs and private contractors provide almost four-fifths of social services in Haiti.[49] One study conducted before the January 2010 earthquake found that NGOs provided 70 percent of healthcare while private schools, mostly run by NGOs, accounted for 85 percent of education.[50]

[49] De Cordoba, "Aid Spawns Backlash in Haiti."

[50] Zanotti, "Cacophonies of Aid."

Whether this involvement is an "infusion" or an "invasion" of NGOs is contested.[51] International non-profit organizations bring much-needed expertise, human and financial resources, and a stable stream of funding to the country. Yet it is likely that the strength of NGOs further constrains the limited capacity of the Haitian government. NGOs have built an alternative infrastructure for the provision of social services, creating little incentive for the government to spend scarce resources on the social sector. A "brain drain" from the public sector to the private, non-profit sector is also observed, pulling talent away from government offices.[52] NGOs provide almost one-third of all formal sector jobs, often the most well-respected and well-paying positions.[53] This has resulted in the Haitian concept of the *"klas ONG"* (NGO class).[54] Often, money spent by the NGOs does not stay in the local economy as many non-profits provide contracts to larger international businesses and service providers. There is consequently little contribution to the generation of value added in Haiti.[55]

Accountability of NGOs and Private Contractors in Haiti

How have NGOs performed with regard to service delivery in Haiti? The bottom line is that twenty-eight months after the earthquake, it is still very difficult to tell. There is little publicly-available evidence on the performance of NGOs and what is available is hard to find. Some of the large international NGOs do compile annual reports and publish financial data, but these are few and far between. The non-profit Disaster Accountability Project issued a report on accountability and transparency of NGOs operating in Haiti one year after the earthquake.[56] Out of 196 organizations identified, only eight had public and regularly updated situation reports on their activities in Haiti. Almost 65 percent of organizations did not have reports available, rather provided emotional appeals or anecdotal case studies on their websites.[57] Only 38 organizations responded to the Project's request for a survey and more information. Most easily available assessments from NGOs focus on case studies or other descriptive instances of success. Negative outcomes or failures are almost never documented, at least in publicly available papers.[58] Reports in the media have described inadequate supplies, inaccurate representations of successes, and questionable financial tracking, but we have very little direct evidence from NGOs or private contractors to confirm or refute these allegations.

---

[51] Schuller "Invasion or infusion?" 96-7.

[52] Schuller, "Gluing Globalization," 90.

[53] Schuller "Gluing Globalization," 91.

[54] Schuller, "Gluing Globalization," 92.

[55] Zanotti, "Cacophonies of Aid," 760.

[56] Disaster Accountability Project, "One Year Follow Up Report."

[57] Revkin, Andrew "Report Faults Haiti Aid Groups on Openness."

[58] Werker and Ahmed, "What do Non-Governmental Organizations Do?" 79.

Evaluations can be difficult to find and are often not accessible on the implementing organization's website. We found two external organizations which aggregate evaluation and lessons learned reports from organizations operating in Haiti since the earthquake: UN OCHA's ReliefWeb and the Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP). [59] Merging these sources, we categorized 45 Haiti evaluation reports conducted since January 2010 and assessed how many reports included characteristics we would like to see in rigorous evaluations: an independent evaluator, clear methodology, project data, budget or cost report, a discussion of value for money and other alternatives, and recommendations for future operations. The reports include evaluations carried out at various levels: program, organization, sector or system-wide, and donor agency. Some of the reports focus on coordination between a series of organizations in one location or sector, in which case project data or budget reports are not directly applicable. In the tables below, we present the data for all reports and also for those reports that are evaluations of programs and organizations only (i.e. excluding donor agency and sector wide reports).

Table 1: All Evaluation Reports (Total: 45 reports)[60]

	Independent Evaluator	Methodology	Project Data	Budget/ Cost Report	Discussion of alternatives	Recommendations
No	25	20	23	37	42	3
Yes	20	25	22	8	3	42
%Yes	44%	56%	49%	18%	7%	93%

Table 2: Program and Organization Reports (Total: 23 reports)[61]

	Independent Evaluator	Methodology	Project Data	Budget/Cost Report	Discussion of alternatives	Recommendations
No	14	11	9	19	22	2
Yes	9	12	14	4	1	21
% Yes	39%	52%	61%	17%	4%	91%

[59] List of all reports included in Appendix 2. A third effort, which we did not use in this paper but is worth mentioning, has been led by the University of Haiti and Tulane University. Their Haiti Humanitarian Aid Evaluation Database categorized all evaluations, maps, briefs, and papers written on Haiti. Available here < http://www.drlatulane.org/groups/meta/haiti-humanitarian-aid-evaluation-database-explorer>.

[60] Includes 7 program reports, 16 organization reports, 16 sector or system reports, and 6 donor reports.

[61] Includes 7 program reports and 16 organization reports.

While most reports made recommendations, they fell short in other categories. Less than half of the reports were conducted by an independent party and only slightly over half detailed the methodology used. Of those that explained how the evaluation was done, most involved some combination of data collection, desk research, interviews with field staff, surveys of beneficiaries, and field visits. For program and organization evaluations, we find that *more than one-third of the reports do not have specific project data*.[62] Especially of concern is the lack of budget or cost data. *Only four program and organization reports have any detail about how the money was spent* (how much tents cost, how much money was given per cash transfer, or what percentage of funds went to transport vs. logistics). Furthermore, only one of the reports has any discussion about providing the best value for money and what the alternatives might be to the program currently being implemented.

There are some good examples of comprehensive evaluation. One is from Christian Aid, which published a briefing paper in January 2012 that evaluated its program of unconditional cash transfers.[63] It clearly explains the objectives of the program and why aid was given in the form of unconditional cash transfers instead of as cash-for-work, vouchers, or other types of direct assistance. The brief includes a map of where each program was run, how much money was given, and how many times money was given to each recipient. The report then illustrates the impact of the program, based on a survey of over 400 beneficiaries in eight different locations. It concludes with a detailed list of successes and lessons from this program. Although cash transfers are a specific type of program that may lend itself to more direct impact evaluation, this is a very good example of a careful evaluation.

Another good example is a Medecins Sans Frontieres (MSF) report from January 2011.[64] It includes qualitative analysis about MSF's programs in the first year, coupled with a very detailed table presenting data about every activity that MSF has carried out (from the number of beds provided to the number of patients treated for sexual violence). Budget data is partially included; there is a table with the major operational spending categories is so that we can see what percentage of funding went to staff salaries versus transport and logistics costs. This is a positive step, although more detail on specific expenditures would be good. Overall, both reports exemplify the type of transparency that is very useful in evaluation reports.

The majority of the reports we found do include qualitative analysis gathered from discussions with staff and beneficiaries on program successes or challenges in implementation. Over 90 percent have recommendations for future operations. Interviews and surveys are very important in understanding a program's impact, the implementation process, collaboration with other agencies, and project sustainability. Yet quantitative data,

---

[62] Reports that only had broad generalizations ("We reached 5,000 people") we counted as a "No" if there was no detail about how these people were reached.

[63] ChristianAid, "Haiti: Unconditional Cash Transfers – Lessons Learnt."

[64] MSF, "Haiti One Year After."

especially on project outcomes and budget or cost reporting is crucial to supplement this analysis. It allows donors, recipients, and other stakeholders to understand how money is being spent (especially if it is public money), and helps to identify best practices for future operations.

NGOs are not alone; there is an absence of data even in USG reviews. An external review of USAID's activities in Haiti lacks data completely, and there is very little in the report on accountability with regard to aid flows. A quote from the "Opening Note" sums it up well:

> We had hoped to invest greater efforts in measuring more accurately the quality of aid and its impact on beneficiaries. However, a disquieting lack of data on baselines against which to measure progress or even impact forced this task to the back burner. We realized that devoting more energy to this task could take up all the time and human resources we had available. Thus, some useful lessons in that direction remain unclear.[65]

It is hard to understand why there is a "disquieting lack of data." USAID and other U.S. agencies have been operating for several decades in Haiti, as have many of the large international NGOs. Yet, almost nothing is known about how the money has been spent in Haiti, in the years leading up to the quake and in the twenty-eight months following, when several billion dollars were channeled through intermediaries for service delivery to the Haitian people.

The report makes passing references to the lack of beneficiary and local involvement, the large number of NGOs operating in the country, and the fact that many organizations came to Haiti with no previous experience in disaster management. Yet it states that "due to time and resource constraints, we were unable to explore these topics in great detail." Also, the report says that "no clear baseline or reporting mechanism was established" for organizations receiving USAID funding. NGOs and private contractors operate instead with little oversight, despite the fact that they continue to be the main channels through which the money is disbursed.

Criticisms of NGOs and Private Contractors

A lack of budget and program transparency has sometimes led to investigations. The Red Cross has been the subject of negative attention about its operations in Haiti since the earthquake.[66] Two reporters—Jacqui Charles and Frances Robles—at the *Miami Herald* have asked some pointed questions about NGO expenditures and outcomes in Haiti. Robles points out that NGO costs are high--it costs $3,500 per month to rent an SUV, $30,000 per

[65] Ghua-Sapir, Debarati, et al.

[66] For instance: HRRW "Scrutiny of Red Cross Effort Grows" and "Why doesn't the American Red Cross Want People to See "Haiti: Where Did the Money Go?"

month to cover warehouse fees (Oxfam), $150,000/month on trucking water (Oxfam), and $30,000/month for electricity (Project MediShare, University of Miami).[67] These types of expenditures may well be justified given the tough working conditions in Haiti, but it is hard to make that case without data on inputs, outcomes, or lessons learned.

It makes sense that appeals on NGO websites tend to filled with heart-warming case studies and pictures. The Catholic Relief Services (CRS) webpage for Haiti exemplifies this. The page headline titled "You're the Hero in a Real Life Drama," says: "In all cases, you pray, you advocate and you give, often never knowing how much or how many people you are helping. In some cases, the benefits of your care will last for generations after the actual work is done."[68]

It is likely the case that NGO websites are aimed at maximizing private donations, a goal that makes sense for organizations that rely on both public and private funds, as well as volunteers. But the lack of publicly-accessible evaluations that include budget reports is troubling. CRS does provide a breakdown of spending in Haiti which documents how much funding went to general operational categories, yet detail on more specific expenditures is needed.[69] One CEO of a large international NGO says, "I don't look back and see mistakes. I think we saved lives and made lives better. I know we got more kids in school."[70] With no data and few evaluations, it is difficult to confirm this claim. Organizations receiving large amounts of public funding and operating with influential budgets should be held to higher standards of accountability.

There is also little evaluation of the private contractors operating in Haiti. The authors of the Center for Economic and Policy Research's (CEPR) Haiti Relief and Reconstruction Watch (HRRW) blog have done groundbreaking work monitoring the use of funds in Haiti, especially by USAID-funded private contractors. They argue that many of the top recipients of relief aid are operating with little to no oversight, despite a history of inadequate performance. HRRW details how Chemonics has received hundreds of millions of dollars for operations in Afghanistan. Subsequent General Accounting Office (GAO) and USAID Inspector General Investigations found significant problems with their programs, stating that Chemonics failed to "address a key program objective," and there was inadequate support and documentation for the reported results. Despite this history, Chemonics became the largest recipient of USAID contracts in Haiti. A 2011 audit by USAID's Inspector General found inadequate results with their cash-for-work projects in Haiti, a lack of oversight, and no financial reviews of their implementing partners. [71] This story is not

---

[67] Robles, Frances, "many question whether Haiti quake donations put to best use."

[68] Accessible here: http://crs.org/united-states/you-are-the-hero-in-a-real-life-drama/

[69] Accessible here: http://crs.org/emergency/haiti/financials.cfm

[70] Robles, Frances, "Many question whether Haiti quake donations put to best use."

[71] HRRW, "With Poor Track Records For-Profit Development Companies Team UP to Fight Reform," 1 December 2011.

unique to Chemonics. Many other contractors have been involved in controversies in Iraq, Afghanistan, or Hurricane Katrina relief, yet continue to receive large contracts in Haiti. These include Development Alternatives Inc (DAI), CH2M Hill Constructors, Flour Enterprises, Inc, The Shaw Group, MHW Americas, and the Kuwait-based Agility Logistics (formerly PWC Logistics), among others.[72]

The lack of oversight of large contractors means that it is nearly impossible to track the amount of money flowing to both contractors and subcontractors. There are no publicly-accessible reports on what private contractors are doing, and whether or not their efforts have worked. It is a weakness that USAID has recognized on its website:

> Unfortunately, the Agency does not have the systems in place to track sub-grants and sub-contracts so it is not possible to state precisely the number of partners or the percentage of USAID funds that flow to local nonprofit organizations (or, for that matter, to local private businesses) through these indirect arrangements.[73]

Yet, (according to HRRW), a leaked contract between USAID and Chemonics says that Chemonics is required to "track and report on the overall monthly commitments and disbursements for all activities and non-activity expenditures." Chemonics is also "required to provide a detailed budget and vouchers for all subcontractors." A USAID Inspector General report from 2010 found that while other branches of USAID had conducted financial reviews of their partners, USAID/OTI had not carried out this task. Given that private contractors are receiving hundreds of millions of dollars of taxpayer funds, the lack of evaluation is very troubling. A key priority of the USAID Forward reforms is to increase local procurement and improve capacity to track spending through contractors and subcontractors. In response, private contractors have formed a lobby called the *Coalition of International Development Companies*, to "increase visibility" with the USG and other entities.[74]

By and large, efforts to obtain information from USAID on NGO and private contractor activity in Haiti and other countries have not been very successful. Jake Johnston at CEPR describes his experience with a Freedom of Information act (FOIA) request to get information on two USAID contracts with Chemonics in Haiti. He received task orders and documents with no specific targets or projects:

> Of all the various documents and financial reports that the contractor was required to submit to USAID, none of them were released, nor were they even withheld. It

---

[72] HRRW: "Katrina Redux: New Disaster, Same Contractors," 11 June 2010. "Blacklisted Contractor Continues Receiving Government Money through Haiti Contracts," 2 December 2011. "Contractor Accused of Waste in Katrina Reconstruciton Lands USAID Contract in Haiti, "4 January 2012.

[73] "Building Local Development Leadership: USAID's Operational and Procurement Improvement Plan," http://forward.usaid.gov/node/316.

[74] Rogin blog post "Corporations Unite to Fight for Development."

> was as if they didn't exist. Further, all of the cost information, including overhead and labor costs, was redacted on the grounds that this is considered the proprietary information of the contractor and could cause competitive harm.[75]

This experience is not unique; FOIA attempts for USAID and NGO data in other parts of the world have followed the same pattern. Figure 18 shows the results of a FOIA request made by Till Bruckner (a former employee of Transparency International Georgia), to USAID, and posted on the popular blog, Aid Watch. After 14 months, Bruckner received a heavily redacted document which contained no information. Despite various statements by NGOs regarding their openness, one is left with the impression that transparency is still very much lacking when it comes to NGO operations and expenditures. In his final post on Aid Watch (excerpted here, dated October 1, 2010), Bruckner had this to say:

> Sixteen months after I first filed a Freedom of Information Act request with USAID for the budgets of American-financed NGO projects in Georgia, I have reached the end of the road. Rejecting my appeal, USAID has confirmed that it continues to regard NGO project budgets as "privileged or confidential" information, and will not release budgets without contractors' permission.
>
> The opacity of USAID's subcontracting makes it impossible for researchers to get access to comprehensive and comparable data that could inform debates about the effectiveness of delivering aid through NGOs. For example, the issue of aid fragmentation within NGOs could only be raised because Oxfam GB voluntarily provided a researcher with a list of all its projects abroad.
>
> USAID is on very thin ice when it tries to push developing country institutions to become more accountable. The next time USAID lectures an African official on the importance of transparency in public procurement, I hope she will pull out a list of blacked-out budgets and argue that her ministry is following American best practice when it treats all financial details of its subcontracting arrangements as "privileged or confidential."

Bruckner goes on to say:

> This FOIA journey has shown one thing above all: NGOs (save Oxfam GB) simply do not want outsiders to see their project budgets, full stop. Not a single NGO has used this forum to announce its willingness to give beneficiaries or other stakeholders access to its project proposals and budgets in the future, even though every country director has these documents on his hard drive and could attach them to an email within two minutes.

---

[75] Johnston, Jake. "Op-Ed: Haiti's Fight for Transparency."

Project budgets are shown only to those stakeholders who have the power to force NGOs to open their books: donors, headquarters, and audit institutions. The poor and powerless have to be content with whatever information NGOs choose to provide.[76]

[76] Bruckner, Till, "TransparencyGate: the end of the road" 1 October, 2010.

Figure 18: Response to FOIA Request for Information by Till Bruckner

CNFA Budget for Georgia Agriculture Voucher Program
3 month period

DETAILED BUDGET

BUDGET LINE ITEMS	UNIT COST	YEAR 1 QTY UNITS	YEAR 1 COST	TOTAL COST
I. FIELD COSTS				
SALARIES AND WAGES				
CCN CONSULTANTS OR CONTRACT STAFF				
Local Staff				
District Manager	[redacted] /month			
Sakrebulo Coordinators [redacted]	/month			
Monitors [redacted]	/month			
Procurement and Logistics Staff	/month			
Accountant	/month			
Program Assistants [redacted]	/month			
SUBTOTAL SALARIES AND WAGES				
FRINGE BENEFITS				
Local Staff				
District Manager				
Sakrebulo Coordinators [redacted]				
Monitors [redacted]				
Procurement and Logistics Staff				
Accountant				
Program Assistants [redacted]				
SUBTOTAL FRINGE BENEFITS				
TRAVEL, TRANSPORTATION AND PER DIEM				
Ground Travel	[redacted] /km			
Car Service [redacted]	/month			
Per Diem	/day			
SUBTOTAL TRAVEL, TRANSPORTATION AND PER DIEM				
SUPPLIES AND EQUIPMENT				
Office Equipment				
Laptop Computer	/unit			
Printer	/unit			
Memory Sticks	/unit			
Office Furniture	/unit			
Digital Camera	/unit			
Office Supplies				
Office Supplies	/month			
WindowsXP Software	/unit			
Anti Virus Software	/unit			
Equipment & Software Installation	/unit			
SUBTOTAL SUPPLIES AND EQUIPMENT				
RENT AND UTILITIES				
Office Rent	[redacted] /month			
Office Utilities	/month			
SUBTOTAL RENT AND UTILITIES				
COMMUNICATIONS				
Mobile Phone Usage	[redacted] /month/phone			
Landline phone	/month			
Postage and Delivery	/month			
SUBTOTAL COMMUNICATIONS				

Source: Bruckner, Till on AidWatch, "The accidental NGO and USAID transparency test," 18 August, 2010.

It is certainly the case that NGOs and private contractors in Haiti work under very difficult conditions, and are often staffed by dedicated professionals who sacrifice much to deliver services. Yet, there is considerable dissatisfaction all around. Haitians are, in general, not very happy with the international community. NGOs are variously described in Haitian Creole as "vòlè" (thieves or crooks), "malonèt" (liars) and "kowonpi" (corrupt). Much of the Haitian population is angry about the volatility in the delivery of basic services. Says UN Deputy Special Envoy Paul Farmer, "There's graffiti all over the walls in Port-au-Prince right now saying, 'Down with NGOs'…I think people in the NGO sector need to read the writing on

the wall."77 Figure 19 shows the level of frustration—all major NGOs are crossed out with a red X with the caption below indicating that all are complicit in the misery of Haitians.

Figure 19 : Haitian Frustration with NGOs, Private Contractors, and the UN

Bottom of the wall reads: "Tout Komplis Nan Mize Nou" – "All are complicit in our misery." Source: Daniel Morel, in Valbrun, "Amid a slow recovery, Haitians question the work of aid groups," 10 January 2012.

The Case for Transparency and Accountability

It is a contradiction that donors push the Haitian government to improve transparency in their budget projects and efficient allocation of funds when the international aid community itself fails to provide this information to the public. Transparency and organizational accountability can play a crucial role in improving development cooperation in Haiti. It is an issue at the heart of many discussions among donors globally, as it not only strengthens relationships between governments and citizens, but also builds trust and confidence in the programs that are being implemented. Even a country such as Haiti that is seemingly run by donor agencies and INGOs could experience dramatic improvements in development cooperation through the availability of easily accessible data.

Initiatives such as InterAction's Haiti Aid map are important steps to mapping where projects are actually being implemented, but a comprehensive and mandatory system for project reporting and geocoding is needed. In an ideal world, this type of transparency would lead to coordinated and complimentary projects. For instance, the government could construct a road through an area where a donor agency or NGO is already working to increase agricultural productivity so that the investments work together and result in greater impact. The predictability of aid is also crucial as governments lack the ability to create long-

[77] Elfrink, Tim, "Paul Farmer at Barry."

term project plans or budget estimates with no sense of how much aid they will receive. One study estimates that the cost of unpredictability is 15-20 percent of the value of aid.[78]

The difficulty that we have had piecing together even allocation data on Haiti illustrates the fragmented and disjointed nature of current data systems. There is no comprehensive source for anything other than donor pledges and disbursement data. We know that the information we have compiled in this paper on contracts or implementing partners is not complete, and there is a dramatic absence of information on sub-contracting or actual project implementation. We can tell a patchy story about where the money is going, but gaping holes on specific data from donor aid agencies, NGOs, and private contractors remain. In theory, the Government of Haiti should take the lead in coordination and assistance tracking, but their capacity to do so remains a serious concern.[79]

It would be of help to no one if every NGO and private contractor in Haiti packed up and left the country next week. But it is equally problematic that they continue to operate on multi-million dollar contracts with no accountability and no requirement for publishing public budget and project data. What we need to create is a system that fosters transparency, holds these organizations accountable, and forces them to operate in a competitive market.

Policy Options

This exercise raises some big questions—would Haiti have been better off without any aid following the 2010 earthquake? Almost $600 has been spent on each Haitian since the 2010 quake but what do we have to show for it? Would a $600 cash transfer made directly to each Haitian have been better than service delivery contracts with private firms and NGOs that are often shrouded in secrecy?

It is very likely that NGOs and private contractors will dominate service delivery in Haiti for some time to come. With this in mind, we recommend three things to address the current situation. *One*, that NGOs and private contractors be transparent about what they are doing in Haiti, by publishing easily-accessible, systematic evaluations of their work. *Two*, that they provide data on expenditures and outcomes, first on an interim basis, and then via a common platform known as the *International Aid Transparency Initiative*. And *three*, that the Government of Haiti procure services through competitive bidding whenever possible.

---

[78] Kharas, Homi, "Measuring the Cost of Aid Volatility," Wolfensohn Center for Development at the Brookings Institution, Working Paper 3, July 2008.

[79] Till Bruckner argued in comments on this draft that coordination must happen at a level above NGOs, ideally the host government. The Government of Haiti could limit the number of donors (as India has done) or number of INGOs authorized to receive institutional donor funding. Yet engagement on this level requires both an interest in doing so and the capacity to do so. (8 May 2012).

[1] Systematic and Widely-Accessible Evaluations

There is a great need for systematic evaluation of the $6 billion spent in Haiti since the earthquake. Evaluations are not, by any means, confined to randomized control trials. Evaluation is defined as a systematic and objective performance assessment of the design, implementation, and results of a project or program. Guidelines for development evaluation from the Organization for Economic Cooperation and Development's Development Assistance Committee (OECD-DAC) emphasize relevance, effectiveness, efficiency, impact, and sustainability.[80] How were the program's objectives achieved? Were activities cost-efficient and timely? How many people have been impacted? How did the benefits of the project continue after funding ended? There are six key criteria that we would like to see in evaluations:

- Independence (should be carried out by a third party not the organization itself)
- Clear methodology, which explains how the evaluation was conducted
- Clear project data about the number of services provided and number of people benefiting
- Cost break-down or budget report
- Discussion of alternative programs, cost comparisons, or other uses for the money
- Recommendations for improvement

In addition to harmonization and improved planning, transparency in aid flows lowers the risk of corruption or diversion of aid. A series of case studies undertaken by AidInfo found that the priority for citizens in developing countries was not data on aid allocation, but execution.[81] Where does the money actually go? How much is lost to consultants or donor regulations before reaching the country? Who are the contractors and subcontractors actually building the houses or buying the textbooks?

Evaluation of NGO projects in Haiti is complicated by the number of agencies and programs operating in Haiti. The system is fragmented and it is difficult (but not impossible) to measure the effects of any given intervention. Many Haitians do not make the distinction between which projects are coming from which organizations, and often view the donor community as one collective agency.[82] Thus, when evaluations are based solely on surveys or interviews of the recipient population, interviewees may not be talking about individual

---

[80] "DAC criteria for evaluating development assistance."

[81] These findings are described by Owen Barder in his blog post "Eight Lessons from Three Years Working on Transparency" http://www.owen.org/blog/4433. The case studies mentioned are available at AidInfo here http://www.aidinfo.org/resources/case-studies.

[82] ALNAP report, "Haiti Earthquake Response: Mapping and analysis of gaps and duplications in evaluations." P.12

project or operations but rather of some unspecified combination of projects. Outcomes and beneficiary feedback is crucial, but it should be only one aspect of evaluation. Evaluations should focus equally on the input side of the equation – how much was provided and for what cost. And ideally, all evaluations should be run by independent, external entities at arm's length. The donor funding the project should not be the entity that also funds the evaluation.

USAID and other USG contracting agencies need to clarify reporting mechanisms for recipients of public money and require third-party evaluations based on OECD standards. These organizations are currently operating with little oversight and no clear guidelines for baseline measurement or reporting standards. Evaluations that meet the above criteria should be requirements for all organizations that receive contracts from USG agencies.

Imagine what Haiti might look like if donors and NGOs operated with greater transparency. Organizations would not be running dozens of independent (yet overlapping) programs. If citizens and recipient governments could see comparable, reliable, and current project and budget information from various organizations, they would be equipped to make better choices. Cost comparisons would pressure the worst-performing organizations to reform or they would lose business. Public data also fosters public learning, and provides venues for discussion on feedback, best practices, and a better understanding of what works and what does not.

[2] The International Aid Transparency Initiative

NGOs and private contractors can greatly improve the reporting of data on expenditures and outcomes. There is an existing platform that encourages such accountability and transparency for all aid players – donor agencies, large foundations, UN agencies, and NGOs. The International Aid Transparency Initiative (IATI) is a multi-stakeholder initiative that has developed a standard for publishing information about aid spending. Donors, partner countries, and civil society organizations can publically disclose information on volume, aid allocation, and results of development expenditure. The IATI declaration says: "We will urge all public and private aid donors, including bilateral and multilateral organizations, and philanthropic foundations, and those who deliver aid on our behalf, to work with us to agree and then implement these common standards and format."[83] Large donors such as the US and the UK are IATI signatories, along with international institutions and agencies from the World Bank to The Global Fund to Fight AIDS, Tuberculosis and Malaria. Organizations such as Oxfam Great Britain and the International HIV/AIDS Alliance have published data to IATI as well.[84]

---

[83] International Aid Transparency Initiative Accra Statement.

[84] For more information, see www.aidtransparency.net

Donors currently report allocation and aid information to a variety of systems and users –the Development Assistance Committee's Creditor Reporting System (DAC CRS database), the Financial Tracking Service, country treasuries and parliaments, journalists and researchers, embassy or donor websites – the list continues. It is not only burdensome for the aid agencies to provide separate reports with varying levels of data, but it is not user-friendly. With information scattered across multiples sites, data is often difficult to find and inconsistent. IATI might solve these problems. It is a reporting standard – think of it like an accounting standard. It does not aim to 'merge' these different systems, but rather to provide a single, coherent, underlying, machine-readable data set from which all these different systems can draw. The IATI standard format also plans to geocode aid spending, which means that both donors and NGOs would be able to easily access geographic information about all projects and programs. This initiative would foster aid traceability – enabling us to follow money from taxpayer to activity on the ground.

There are a growing number of country-level efforts to track aid, as over 40 countries have established Aid Information Management Systems (AIMS). Efforts have been underway to establish an AIMS in Haiti since 2009, with support from the United Nations Development Programme. Developing national capacity to analyze, communicate and make decisions based on high-quality information about aid is extremely important. Yet relying solely on AIMS is difficult as individual efforts are often plagued by poor data or extreme time lags, and data may not be comparable or widely accessible.[85] For instance, in the Democratic Republic of the Congo, country data were collected manually from donors and were incorrect in comparison to standardized IATI data. Several recipient country government officials have voiced their preference for IATI data from donors, not manually collected information.[86] IATI offers the benefit of a universal reporting standard, it is more comprehensive than the DAC-CRS database and often more accurate and timely than specific country efforts. Yet IATI needs to be very closely linked to country-level efforts, reinforcing government planning processes, and building local capacity to better manage aid. Efforts to analyze how IATI can best link with AIMS and other national systems should be continued.

There are potentially large benefits for all the players in Haiti if every organization reports project-level data to IATI. Although it may sound like a pipe dream, perhaps it is not all that unreasonable to expect. The UK government has spearheaded the process of IATI compliance; their Department for International Development (DFID) is currently requiring the NGOs which get the biggest grants to implement IATI, as outlined in the UK Aid Transparency Guarantee.[87] It has not yet required all NGOs and contractors to implement

---

[85] 'Why does IATI Matter for Partner Countries?" http://www.aidtransparency.net/partner-country-perspectives.

[86] Email from Owen Barder to authors, May 1, 2012.

[87] http://www.dfid.gov.uk/What-we-do/How-UK-aid-is-spent/What-transparency-means-for-DFID/UK-Aid-Transparency-Guarantee/

IATI, nor has it yet required that the obligation be passed on to sub-contractors. But the UK government is actively considering how it can extend the requirement to implement IATI to these players as well. As of March 2012, nine NGOs had already published IATI-compliant data and by June 2012 more than 60 other DFID grantees will do the same.[88] There are clear instructions on how NGOs can become IATI compliant and extensive guidance on how to develop an open information policy.[89] The assumption (backed by evidence from the early publishers) is that if an NGO must be IATI-compliant for money received from DFID, they will publish along the same standards for the rest of their grants and operating budgets. This is an unprecedented step with tremendous potential for improving aid transparency and accountability globally. The US government might learn from these efforts and actively collaborate with the UK on a single, uniform platform of IATI compliance.

We strongly recommend that the United States, as the largest donor and home to the most active NGOs and private contractors in Haiti, adopt the IATI process in a timely manner. The US signed on to IATI in November 2011 and has committed to work for more transparency and accountability in its aid processes. We welcome the fact that the USG is a signatory and look forward to publication by USG of its first IATI data. In her keynote address at the Busan High-Level Forum, Secretary of State Hillary Clinton announced the US commitment to IATI and stressed the value of transparency. "All of us must live up to the international standards that the global community has committed to…. Transparency helps reveal our weaknesses so we can improve our work."[90] It is important that the US should now make it clear what this means for NGOs and firms receiving USG money. In addition, the US should put its weight behind the work now underway in IATI to increase geocoding, publish project and transaction level details, and build traceability into the standard.

If implemented effectively, IATI will provide a platform through which both the American and the Haitian public can hold organizations accountable for the money they are receiving and the work they are doing. In turn, a single process may well reduce the reporting burden of NGOs. Admittedly, full compliance to IATI will be difficult to achieve in a timely manner. As the USG and partner organizations work toward full compliance, steps can be taken to release all available data in the short-term. USAID should render public, the financial reports from primary contractors and grantees in Haiti. Since implementation of standardized reporting requirements is likely to take time, it would be very useful for USAID to simply release these documents and build the capacity needed to track grants and sub-grants, so as to provide some form of transparency in the interim.

---

[88] See here for examples of the reporting from these agencies on operations in Haiti: http://www.aidview.net/activities?Country=HT

[89] For more info, see http://www.bond.org.uk/pages/iati-resources.html

[90] Clinton, "Keynote at the Opening Session."

[3] Competitive Bidding and Building Local Capacity

The state may be able to re-establish its credibility by jump-starting service delivery in weak institutional environments through contracting out, while donors simultaneously invest in building state capacity for service delivery over the long-term. However, it is particularly important that donors recognize the time frame required for this transition to occur. Experience in other fragile states suggests that it will be over decades, not years.

Perhaps the strength of the NGO sector in providing services could be leveraged to the advantage of the Government of Haiti. New Public Management (NPM) -style contracts to provide services like transportation, health and school construction could help order the NGO landscape in Haiti through a competitive bidding process, while increasing service supply and efficiency. With careful design, they might also increase accountability between donors, NGOs and the Haitian government.

Contracting out—purchasing services from external sources instead of providing them through public entities—began in rich countries like the UK and New Zealand as a means to "promote cost-savings, efficiency, flexibility, and responsiveness in the delivery of services" through market-like competition.[91] It has since spread to poorer countries. Notably, the World Bank found financial and efficiency gains for road maintenance, port management, and water supply services when these were contracted out to private firms in Brazil, Malaysia, and Guinea, respectively.[92] Of course, there have been less successful attempts at contracting. Weak governments may lack the capacity to regulate, monitor, or evaluate contracts and run the risk of becoming over-dependent on non-state actors. Traditional channels of government-citizen contact are interrupted, and entrenched patronage system may lead to further corruption or rent-seeking behavior.[93]

Although Haiti lacks a robust private sector, market competition is possible since there are several thousand NGOs to compete for contracts. Donor funding for specific projects could be channeled through this model, and competition would help to eliminate the inefficient organizations. Contracts can be contingent on IATI compliance. This process can bring order to the proliferation of NGOs and create an enforcement mechanism for the policy recommendations discussed above.

Contracting private entities to provide basic services is not new in Haiti. Beginning in 1999, USAID hired a US-based consulting firm to contract directly with Haitian-based NGOs to provide basic health services, including immunizations, prenatal and maternal care.[94] NGOs were reimbursed for services provided based on measured outcomes. The project was

---

[91] Larabi, "The New Public Management Approach," 27.
[92] World Development Report, 1997.
[93] Larabi, "The New Public Management Approach," 32.
[94] OECD, "Contracting Out Government Functions."

successful in increasing the rate of coverage, immunization and assisted birth.[95] However, the project sidestepped the government, doing little to improve its future capacity to administer public health projects. Indeed, USAID's stated goal was to improve the capacity of *NGOs* to delivery services.

A better example is the 1998 contract between the Haitian government and PSI (a US-based NGO active in Haiti) for the procurement and marketing of condoms, funded by the World Bank and supported by UNFPA. Although negotiations were lengthy—the Haitian government was wary of private provision and there were questions regarding procurement and costs—PSI reported that donor support and involvement was pivotal in ensuring the legitimacy and execution of the contract.[96]

The perceived weaknesses, corruption, and lack of capacity within the Government of Haiti poses a key challenge, yet building the state is one of the most important role in reconstruction and long-term development in Haiti. A recent report entitled "Voice of the Voiceless" highlights that the main priorities of many Haitians is that they want their state to *be* a state. [97] This approach may maintain the status-quo of service provision through NGOs. However, the Government of Haiti would take an active role, shifting the balance of power and creating a new source of accountability for the NGOs. There is the opportunity for capacity building within the government as well, if officials work closely with the private firm or NGO. Of course, such an approach may not be viable for certain sectors –market competition might translate better to construction firms than it does to providing a high quality education in schools. Contracting also requires clear, measurable deliverables, some of which (road construction) may be more feasible than others (school test scores), given Haiti's lack of data and administrative problems.[98]

There is no doubt that there are many questions to be resolved with contracting. For example, would the Haitian government or donors be responsible for soliciting and evaluating tenders? How could the Government of Haiti gain donor confidence to receive a greater share of funding? What concrete steps can be taken to develop and demonstrate successful action by the Government of Haiti, particularly where the donors are concerned? How should non-state actors work with and support government-led action? Nevertheless, piloting contracts for select services may be a worthwhile experiment.

---

[95] Eichler & Levine, "Performance Incentives for Global Health."

[96] Rosen, "Contracting for Reproductive Health Care."

[97] "A Voice for the Voiceless."

[98] In written comments, Meredy Throop of Partners in Health argues for a rights-based approach to service delivery in Haiti. She is skeptical of the scope for competitive bidding and says that rather than creating parallel service delivery systems that drain away resources from the private sector, Partners in Health and its local sister organization, Zanmi Lasante, have worked with the Ministry of Health to strengthen the public health infrastructure. She argues that a "collaborative approach is critical in the Haitian context where institutions remain weak and universal access to basic services is desperately needed." (May 2012).

While beyond the scope of this paper, a larger question is how to shape broader policy given that the NGOs and private contractors are already providing many services. The answer might be for government and donors to have a stronger emphasis on *core* functions, in particular "core governance": security, civil service, public financial management and corruption, core infrastructure, and legal and regulatory reforms. These are areas where NGOs cannot provide services, and are vital for any sustained recovery. Building (or rebuilding) in these areas will take time and various metrics can be used to chart progress. For example, the initial World Bank re-engagement program in the Democratic Republic of Congo in 2001, had a strong emphasis on core governance and infrastructure, and might serve as a model for donors and the Haitian government. [99]

Conclusion

The dominance of international NGOs and private contractors in Haiti has created a parallel state more powerful than the government itself. These entities have built an alternative infrastructure for the provision of social services, but do not have much accountability to the Haitian government or people. In forthcoming papers, we will look at USG procurement policies in more detail and explore the scope for local procurement in Haiti. We will also carry out comparative research, looking at the cases of Rwanda, Afghanistan, and Aceh, to put the Haitian story in perspective.

There is not any particular evidence to support the view that simply abolishing NGOs and private contractors, or cutting off aid, will cause the population to seek a more accountable government. But it is clear that NGOs and private contractors need to be more effective and more accountable. They do need to improve cooperation with each other and with the Government of Haiti, and be held to common principles, in order to achieve better outcomes. Systematic and widely-accessible evaluations by NGOs and contractors, compliance with the International Aid Transparency Initiative, and increased use by the government of competitive bidding—may help to hold international organizations accountable and rebuild government capacity while maintaining the delivery of services to the people of Haiti.

[99] World Bank, "On the Road to Recovery."

Appendix 1: Disbursed Recovery Funding to the Government of Haiti (in Million USD unless otherwise noted)

Country	NY Pledges	Other Funding	Total Funding	% Budget support	Budget support (NY)	Budget support (Total)	% GOH	GOH (NY)	GOH (Total)
Brazil	114.20	0.20	114.40	0.13	14.85	14.87	0.13	14.85	14.87
Canada	240.50	112.40	352.80	0.04	9.62	14.11	0.04	9.62	14.11
EC	187.80	117.20	305.10	0.37	69.49	112.89	0.39	73.24	118.99
France	175.60	0.00	175.60	0.29	50.92	50.92	0.28	49.17	49.17
IDB	360.50	0.00	360.50	0.24	86.52	86.52	0.26	93.73	93.73
IMF	138.60	0.00	138.60	0.00	0.00	0.00	0.00	0.00	0.00
Japan	106.80	0.00	106.80	0.00	0.00	0.00	0.73	77.96	77.96
Norway	76.50	0.00	76.50	0.20	15.30	15.30	0.20	15.30	15.30
Spain	295.20	34.40	329.60	0.08	23.62	26.37	0.06	17.71	19.78
US	179.00	476.00	655.00	0.01	1.79	6.55	0.01	1.79	6.55
Venezuela	222.60	0.00	222.60	0.00	0.00	0.00	0.00	0.00	0.00
WB	210.00	0.00	210.00	0.20	42.00	42.00	0.22	46.20	46.20
Totals	**2,307.30**	**740.20**	**3,047.50**		**314.10**	**369.53**		**399.57**	**456.66**
					13.61%	**12.13%**		**17.32%**	**14.98%**

The twelve countries listed are the top donors with individual profiles that detail recipients of disbursed funding. Authors' calculations are based on recipient percentages from donor profiles available from the Office of the Special Envoy here: http://www.haitispecialenvoy.org/relief-and-recovery/international-assistance/. This chart is missing flows from other smaller donors – approximately $193 Million. ($2.48 billion from NY pledges and $760.5 Million in other recovery funding have been disbursed for a total of $3.24 billion). All data is as of March 2012.

The Office of the Special Envoy's Key Facts as of March 2012 presents these data: "Of the $2.48 Billion funding disbursed from the New York pledges, an estimated 21 percent has been disbursed to the government using its systems." This total includes $337.2 million in budget support and an estimated $193.8 million in other funding that has used country systems. The report also lists that "$246.6 million (9.9 percent) in budget support directly to the Government of Haiti" and "196.9 million (7.9 percent) in loans and other financing to the Government of Haiti." All of these totals, however, only reflect recovery funding from the New York Conference pledges and do not include other recovery funding.

Appendix 2: Reports Included in Survey of NGO Evaluations

Organization	Title of Report	Date
Context Merlin	Evaluation to assess Merlin's Emergency Response in Haiti	Mar-12
IFRC	Case Study: Two-Way SMS Communication with Disaster Affected People in Haiti	Mar-12
Joint (IFRC, UNHCR, UN Habitat)	Shelter Projects 2010	Feb-12
PAHO, WHO	Health Response to the Earthquake in Haiti - January 2010	Jan-12
Development and Peace	Development and Peace Haiti program: 2-Year progress report	Jan-12
Cash Learning Partnership - Christian Aid	Unconditional Cash Transfers – Lessons Learnt, Humanitarian briefing paper January 2012	Jan-12
Inter-Agency Standing Committee	Inter-agency real-time evaluation of the humanitarian response to the earthquake in Haiti - 20 months after	Jan-12
MSF	OCG response to cholera in Haiti, October 2010 – March 2011	Dec-11
IFRC	An Evaluation of the Haiti Earthquake 2010 Meeting Shelter Needs: Issues, Achievements and Constraints	Dec-11
Netherlands	Assisting Earthquake Victims: Evaluation of Dutch Cooperating Aid Agencies (SHO) Support to Haiti in 2010	Nov-11
Ushahidi Haiti Project	Independent Evaluation of the Ushahidi Haiti Project	Nov-11
InfoAid	Ann Kite Yo Pale: Let Them Speak - Best Practice and Lessons Learned in Communication with Disaster Affected Communities: Haiti 2010	Nov-11
IOM	Evaluation of the International Organization for Migration's Ongoing Activities on Support to the Flash Appeal for the Haiti Earthquake and Cholera Outbreak	Oct-11

Organization	Title of Report	Date
HelpAge (through UK Disaster Emergency Committee)	Evaluation of the AgeUK/DEC funded HelpAge project in Haiti Phase 1 and Phase 2.1	Oct-11
DG ECHO (European Commission Humanitarian Aid Office)	Real-time evaluation of humanitarian action supported by DG ECHO in Haiti 2009 - 2011	Aug-11
Oxfam	Haiti earthquake response: evaluation of Oxfam GB's DEC-funded programme	Jun-11
UN OCHA	OCHA Evaluations Synthesis Report, 2010	May-11
UN Environmental Programme	UNEP in Haiti: 2010 Year in Review	Apr-11
IFRC	A Review of the IFRC-led Shelter Cluster - Haiti 2010	Apr-11
CRS	CRS Haiti Real Time Evaluation of the 2010 Earthquake Response: Findings, Recommendations, and Suggested Follow Up	Mar-11
Disasters Emergency Committee	Urban disasters-lessons from Haiti: Study of member agencies' responses to the earthquake in Port au Prince, Haiti, January 2010	Mar-11
CARE, Int'l Planned Parenthood Federation, Save the Children	Priority Reproductive Health Activities in Haiti	Feb-11
International Council of Voluntary Agencies	Strenght in Numbers: A Review of NGO Coordination in the Field - Case Study: Haiti 2010	Feb-11
DG ECHO (European Commission Humanitarian Aid Office)	Beyond Emergency Relief In Haiti	Jan-11
UN OCHA	Evaluation of OCHA Response to the Haiti Earthquake	Jan-11
MSF	Haiti: Despite massive aid response, significant needs remain one year after earthquake	Jan-11
Plan	Plan Haiti: One Year After The Earthquake - Response and priorities for the future	Jan-11

Organization	Title of Report	Date
Inter-Agency Standing Committee	Inter–Agency Real–Time Evaluation Of The Humanitarian Response To The Earthquake In Haiti	Jan-11
Save the Children	Misguided Kindness: Making the right decisions for children in emergencies	Dec-10
Humanitarian Accountability Partnership	After Action Review of the HAP Roving Team Deployment to Haiti	Dec-10
DARA International	DARA Humanitarian Response Index - Crisis Reports: Haiti	Dec-10
CARE, Save the Children	An Independent Joint Evaluation of the Haiti Earthquake Humanitarian Response	Oct-10
Handicap International	Nine months of action by Handicap International	Oct-10
Govt of Australia	Australian Government Response to the Haiti Earthquake of 12 January 2010	Sep-10
USAID	Audit Of Usaid's Cash-For-Work Activities In Haiti	Sep-10
British Red Cross	British Red Cross - Mass Sanitation Module - 2010 Haiti Earthquake Response: Post Deployment Learning Evaluation	Aug-10
Various	Inter-agency real-time evaluation in Haiti: 3 months after the earthquake	Aug-10
World Economic Forum	Innovations in Corporate Global Citizenship: Responding to the Haiti Earthquake	Aug-10
Inter-Agency Standing Committee	Response To The Humanitarian Crisis In Haiti Following The 12 January 2010 Earthquake: Achievements, Challenges And Lessons To Be Learned	Jul-10
United Nations in Haiti	Haiti: 6 months after...	Jul-10
Christian Aid	A Real- Time Evaluation of Christian Aid's Response to the Haiti Earthquake	Jun-10
Tearfund	Real Time Evaluation of Tearfund's Haiti Earthquake Response	May-10
Govt of France	Real-time evaluation of the response to the Haiti earthquake of 12 January 2010	Apr-10

Organization	Title of Report	Date
UN Children's Fund	Children of Haiti: Three Months After the Earthquake	Apr-10
Govt of Norway	Norwegian humanitarian response to natural disasters: Case of Haiti Earthquake January 2010	Mar-10

Source: Reports pulled from ReliefWeb and the ALNAP Evaluative Reports Database

Bibliography

"Action Plan for National Recovery and Development of Haiti: Immediate key initiatives for the future." *Government of the Republic of Haiti.* March 2010.

Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP), Evaluative Reports Database, n.d. Web. 12 April 2012. < http://www.alnap.org/resources/erd.aspx>

Active Learning Network for Accountability and Performance in Humanitarian Action (ALNAP), "Haiti Earthquake Response: Mapping and Analysis of Gaps and Duplications in Evaluations," February 2011.

Barder, Owen, Personal communication, May 1, 2012.

Bruckner, Till. Series of post in AIDWATCH blog from August to October, 2010.< http://aidwatchers.com/tag/transparencygate/>.

Buss, Terry F., and Adam Gardner. *Haiti in the balance: why foreign aid has failed and what we can do about it*. Washington, D.C.: Brookings Institution Press, 2008.

ChristianAid, "Haiti: Unconditional Cash Transfers – Lessons Learnt," Humanitarian Briefing Paper, January 2012.

Clinton, Hillary, "Keynote at the Opening Session of the Fourth High-Level Forum on Aid Effectiveness," Speech given 30 November 2011. < http://www.state.gov/secretary/rm/2011/11/177892.htm>.

"Corruption Perceptions Index: Transparency International." *Corruption Perceptions Index: Transparency International*. N.p., n.d. Web. 26 Jan. 2012. <http://cpi.transparency.org/cpi2011/>.

"DAC Criteria for Evaluating Development Assistance," OECD-DAC, n.d. Web. 11 April 2012. < www.oecd.org/document/22/0,2340,en_2649_34435_2086550_1_1_1_1,00.html>

De Cordoba, Jose. "Aid Spawns Backlash in Haiti." *Wall Street Journal,* New York, 10 Nov. 2012.

"Directory of Development Organizations ." *Directory*. N.p., n.d. Web. 7 Dec. 2011. <http://www.devdir.org/index.html>.

Disaster Accountability Project, "One Year Follow Up Report on the Transparency of Relief Organizations Responding to the 2010 Haiti Earthquake," December 2010/ January 2011. <http://www.disasteraccountability.org/assets/docs/pdfs/reports/HaitiReportUpdated1-6-11.pdf>

Ebrahim, Alnoor, "Accountability in Practice: Mechanisms for NGOs," *World Development*, Vol 31, No 5 (2003): 813-829.

Eichler, Rena and Ruth Levine, "Performance Incentives for Global health: Potential and Pitfalls," Center for Global Development Brief, 2009.

Elfrink, Tim, "Paul Darmer at Barry: NGOs Aren't Doing Enough to Help Haitian People," Miami NewTimes Blog, 30 March 2010. < http://blogs.miaminewtimes.com/riptide/2010/03/paul_farmer_at_barry_ngos_aren.php>.

Erickson, Daniel. "The Haiti Dilemma." *Brown Journal of World Affairs* Volume X. Issue 2 (2004): 285 - 297.

Farmer, Paul. *The Uses of Haiti*. 1994. Reprint. Monroe, Me.: Common Courage Press, 2006.

Farmer, Paul, and Joia Mukherjee. *Haiti after the earthquake*. New York: PublicAffairs, 2011.

Girard, Philippe R. *Haiti: the tumultuous history--from pearl of the Caribbean to broken nation*. New York: Palgrave Macmillan, 2010.

Granderson, Colin. "Military-Humanitarian Ambiguities in Haiti." In *Hard Choices: Moral Dilemmas in Humanitarian Action*, ed. Jonathan Moore. Boston: Roman and LittleField Publishers, 1998.

Gugerty, Mary Kay, "Models of NGO Self-Regulation: Theory and Evidence from Africa," Daniel J Evans School of Public Affairs, University of Washington, Working Paper 2007-04, September 2007.

Ghua-Sapir, Debarati, Thomas Kirsch, Shayna Dooling, Adam Sirois, and Maral DerSarkissian, "Independent Review of the U.S. Government Response to the Haiti Earthquake," Macfadden and Associates, Inc, funded by USAID, 29 March 2011. <http://pdf.usaid.gov/pdf_docs/pdacr222.pdf>.

"Haiti Aid Map." *Haiti Aid Map*. InterAction, n.d. Web. 7 Dec. 2011. <http://haiti.ngoaidmap.org/>.

"Haiti: Funding Received." *Financial Tracking Service (FTS: Tracking Global Humanitarian Aid Flows*. UN OCHA, n.d. Web. 6 Feb. 2012. <http://fts.unocha.org/pageloader.aspx?page=emergencyCountryDetails&cc=hti&yr=2011>.

Haiti Relief and Reconstruction Watch (HRRW), Center for Economic and Policy Research. Various blog posts cited. < http://www.cepr.net/index.php/blogs/relief-and-reconstruction-watch/>.

"Has Aid Changed? Channeling Assistance to Haiti Before and After the Quake." *Office of the Special Envoy for Haiti.* N.p. June 2011. <http://www.haitispecialenvoy.org/download/Report_Center/has_aid_changed_en.pdf>.

Harris-Curtis, Emma, "NGO Codes of Conduct: An Exploration of the Current Debate," International NGO Training and Research Centre.

Herz, Answl and Kim Ives, "WikiLeaks Haiti: The Post-Quake "Gold Rush" for Reconstruction Contracts," *The Nation*, 15, June, 2011.

Hope, Kempe Ronald, "Investing in Capacity Development: Towards an Implementation Framework," *Policy Studies*, Vol 32, No 1 (2011): 59-72.

"The Index of Global Philanthropy and Remittances: 2011," The Hudson Institute, Center for Global Prosperity, 2011. < http://gpr.hudson.org/>

"International Aid Transparency Initiative, Accra Statement," 4 September 2008. <http://www.aidtransparency.net/wp-content/uploads/2009/06/iati-accra-statement-p1.pdf>

Johnston, Jake, "Op-Ed: Haiti's Fight for Transparency," *Caribbean Journal*, 3 May 2012. <http://www.caribjournal.com/2012/05/03/op-ed-haitis-fight-for-transparency/>

Larbi, George A, "The New Public Management Approach and Crisis States," UNRISD Discussion Paper No, 112, 1999.

Lloyd, Robert and Lucy de las Casas, "NGO Self-Regulation: Enforcing and Balancing Accountability," One World Trust. <www.oneworldtrust.org>.

Loechl, Cornelia, Marie Ruel, Gretel Pelto, and Purnima Menon, "An Operations Evaluation of World vision's Maternal and Child health and Nutrition Program in Central Plateau, Haiti," Final Report partnership between IFPRI, Cornell University, World Vision Haiti Team, 27 February, 2004.

"Key Facts as of March 2012." *U.N. Office of the Special Envoy for Haiti.* N.p. March 2012.< http://www.haitispecialenvoy.org/download/International_Assistance/2-overall-financing-data.pdf >.

Medecins Sans Frontieres, "Haiti One Year After: A Review of Medecins Sans Frontieres' Humanitarian Aid Operations," 10 January, 2011. Moore, Jonathan. *Hard Choices: Moral Dilemmas in Humanitarian Intervention*. Lanham, Md.: Rowman & Littlefield, 1998.

OECD, "Contracting Out Government Functions and Services in Post-Conflict and Fragile States: Examples from the Health Sector in Latin America and the Caribbean", Partnership for Democratic Governance, workshop discussion paper, OECD, 2011."Population, total | Data ." *The World Bank*. N.p., n.d. Web. 15 Dec. 2011. <http://data.worldbank.org/indicator/SP.POP.TOTL>.

"Recovery grant activities by sector as of December 2011 in USD millions." *Office of the Special Envoy for Haiti.* 12 Jan 2012. <http://www.haitispecialenvoy.org/ download/International_Assistance/7-ny-recovery-sector.pdf>.

ReliefWeb, Evaluation and Lessons Learned Database, n.d. Web. 12 April 2012. <http://reliefweb.int/taxonomy/term/6?search=Haiti&sl=environment-term_listing%252Ctaxonomy_term_data_field_data_field_primary_country_tid-113?>

Revkin, Andrew, "Report Faults Haiti Aid Groups on Openness," *New York Times*, 12 July 2010. <http://dotearth.blogs.nytimes.com/2010/07/12/report-faults-haiti-aid-groups-on-openness/>.

Robles, Frances, "Many Question Whether Haiti Quake Donations Put to Best Use," *The Miami Herald*, 12 January 2010. <http://www.miamiherald.com/2012/01/09/v-fullstory/2581629/many-question-whether-haiti-quake.html>

Rogin, Josh, "Corporations United to Fight for Development," *The Cable blog on Foreign Policy*, 22 June 2011. < http://thecable.foreignpolicy.com/posts/2011/06/22/ corporations_unite_to_fight_for_development>

Rosen, James E, "Contracting for Reproductive Health Care: A Guide", report prepared for the HNP/Population and Reproductive Health Thematic Group of The World Bank, 2000.

"Sanctions in Haiti : Crisis in humanitarian action." Program on Human Security, Working Paper Series. Harvard Center for Population and Development Studies. Cambridge. November 1993.

Schuller, Mark. "Invasion or Infusion? Understanding the Role of Contemporary NGOs in Haiti." *The Journal of Haitian Studies* Vol 13. No 2 (2007): 96-119.

Schuller, Mark. "Gluing Globalization: NGOs as Intermediaries in Haiti." *PoLAR: Political and Legal Anthropology Review* Vol 32. Issue 1 (2009): 84-104.

Talentino, Andrea Kathryn. *Military intervention after the Cold War: the evolution of theory and practice*. Athens: Ohio University Press, 2005. Print.

"Tips for NGO Registration Procedure," OneResponse, NGO Coordination Support Page, <http://oneresponse.info/Disasters/Haiti/Pages/NGO%20Coordination%20Support.aspx> Accessed 02 Feb 2012.

"U.N. Office of the Special Envoy for Haiti." *U.N. Office of the Special Envoy for Haiti*. N.p., n.d. Web. 10 Oct. 2011. <http://www.haitispecialenvoy.org/>.

United States Government Accountability Office. "Haiti Reconstruction: US Efforts Have Begun, Expanded Oversight Still to Be Implemented." *US GAO Report* GAO-11-415 (2011): 1-70.

Valbrun, Marjorie, "Amid a slow recovery, Haitians question the work of aid groups," IWatch News, 10 January 2012. < http://www.iwatchnews.org/2012/01/10/7838/after-quake-praise-becomes-resentment-haiti>.

"A Voice for the Voiceless: An initiative to include the Haitian people's views for the 31 March 2010 Donor's Conference," *Office of the Special Envoy for Haiti.* N.p., March 2010. < http://www.haitispecialenvoy.org/download/Report_Center/Voice_of_the_Voiceless_original.pdf>

Weiss, Thomas George. *Military-civilian interactions: humanitarian crises and the responsibility to protect*. 2nd ed. Lanham: Rowman & Littlefield, 2004.

Werker, Eric and Faisal Ahmed, "What Do Non-Governmental Organizations Do?" *Journal of Economic Perspectives,* Volume 22, Issue 2 (2008): 73 – 92.

World Bank, *The World Development Report 1997: The State in a Changing World.* Oxford University Press, New York, 1997.

World Bank, "On the Road to Recovery: Progress and Challenges for the Democratic Republic of the Congo," Brussels, 20 December 2001.

"The World Factbook." *Central Intelligence Agency.* N.p., n.d. Web. 7 Dec. 2011 <https://www.cia.gov/library/publications/the-world-factbook/>.

Zanotti, Laura. "Cacophonies of Aid, Failed State Building and NGOs in Haiti: setting the stage for disaster, envisioning the future." *Third World Quarterly* Volume 31.No 5 (2010): 755-771.

Purdue Journal of Service-Learning and International Engagement

Volume 3 | Issue 1 Article 18

2016

Partners in Haiti

Maggie Del Ponte
Purdue University, mdelpont@purdue.edu

Christa Cheatham
Purdue University, cheathac@purdue.edu

Montana Campbell
Purdue University, campb130@purdue.edu

Rachel Stowers
Purdue University, rstowers@purdue.edu

Kelli Teskey
Purdue University, teskey@purdue.edu

PURDUE JOURNAL OF SERVICE-LEARNING
AND INTERNATIONAL ENGAGEMENT

Partners in Haiti

Maggie Del Ponte, Christa Cheatham, College of Agriculture, Montana Campbell, College of Engineering, Rachel Stowers, and Kelli Teskey, College of Agriculture

Abstract

In this article, a group of Purdue Students describes their service-learning experience in Haiti. They highlight what they learned about Haitian culture, the country's need for agricultural and economic sustainability, and how Purdue students contribute to meet these needs. Maggie Del Ponte is a senior in biological engineering, Rachel Stowers is a sophomore in agricultural economics, Montana Campbell and Kelli Teskey are seniors in animal sciences, and Christa Cheatham is a junior in animal sciences.

Université Anténor Firmin (UNAF)

Tucked away in the center of crowded, downtown Cap-Haïtien, Haiti lies a school called Université Anténor Firmin (UNAF), where students can receive a quality education. The partnership between UNAF and Purdue University originated about six years ago when a Purdue professor, Dr. Mark Russell, visited Cap-Haïtien and met the president and founder of the school, Gedeon Eugene. Based on this encounter, Dr. Russell created a service-learning, study abroad course to Cap-Haïtien, which currently takes about 20 students each winter break.

Eugene came from a poor family in Haiti and attended college in France, where he received master's degrees in sociology, education, and theology. Many Haitians do not believe that they are entitled to an education, but Eugene has a passion for education and believes it is vital to the development of Haiti. From the beginning, he had a vision of constructing a university. Eugene envisions helping younger generations take on the responsibility of future development of the country, and dreams of providing work opportunities for young people in Haiti. He is dedicated to equipping them with the skills they need for success.

Poverty is a significant issue in Haiti: many people want to attend college after high school, but they cannot afford it. Most of the schools in Haiti cost about $3,000 US for one year. This is affordable for the middle class, but it creates problems for those in the lower class, which comprises approximately 80% of the population. Eugene aims to address this issue by setting tuition at $300–350 US per year, so students might one day be

Gedeon Eugene, President and Founder of UNAF. Courtesy of Bethany Weldon.

able to move into a higher socioeconomic class. Currently, many students go elsewhere for their education, such as the Dominican Republic. These students often do not return to Haiti.

Eugene opened his dream university in 2007. He began with eight professors and 140 students. Only 80 students finished school the first year. Today there are 160 professors and over 2,600 students. Instructors are selected through a review of their resume. Full-time instructors must teach 10 hours per week, which allows them to teach elsewhere as well. Many professors earned their master's degrees from universities in Canada, France, or the United States. There are also some teachers who have earned their doctorates from universities in Chile and Columbia.

After the earthquake in January of 2010, the structural integrity of the buildings in Haiti were in question. As a result, Eugene purchased a unit of land for a new building, designed by engineers and architects, and built by a team of workers. UNAF is the only university in the center of Cap-Haïtien that owns its own building.

Photo taken outside of Université Anténor Firmin (UNAF). Courtesy of Bethany Weldon.

UNAF now offers several degrees. Students can obtain their Bachelor of Science degrees in education, business, computer science, or nursing. UNAF also offers five-year Bachelor of Science degrees in agricultural science and engineering. Many parents still prefer to send their children to the Dominican Republic or to Port Au Prince for medical science degrees. Therefore, Eugene decided to invest in a medical school and began construction at another site in Cap-Haïtien. This school will be focused on health sciences, including nursing, laboratory school, and clinical psychology. There will be buildings for both students and instructors to live in, as well as administration and laboratory buildings. He has finished construction on a UNAF chemistry lab and is currently developing a food technology lab—both partner projects between Purdue and UNAF. The chemistry lab is taught by Professor Jodbelem Chery, who is passionate about helping students learn. The lab has been running for about two years, primarily serving the students in agricultural science. Our team approach at Purdue is to understand and help achieve Eugene's goals. This entails reaching out to experts at Purdue and the surrounding area, conducting research, and developing designs for the classroom in order to provide him with multiple options to move forward.

Fruit Processing

The lab originated with Eugene's idea about food processing, as Haiti has many different fruits that they have been unable to transform. Fruit products such as juice, jam, and powdered juice are generally imported, but they could be processed locally. This lab is still in the design phase, but the classroom has been selected and the money is committed. Dr. Russel's service-learning class is currently designing the lab layout, bench design, protocols for producing juice (mango, pineapple, and orange), and a food science curriculum. The professor for this lab will be Mr. Chery, as he is dedicated to becoming an expert in food and water safety. The Cap-Haïtien community will benefit from this lab, which ensures that their food is safe.

Lakou Lakay

Approximately 20 years ago, a gentleman named Mr. Etienne opened his home to the public as a hotel and cultural center, called Lakou Lakay, which means "our home" in Creole. Etienne was concerned that Haiti's younger generations are not preserving the culture, so his goal was to teach people about the culture and keep it alive. Visitors are able to enjoy traditional Haitian music and meals including yucca root, meatballs, plantains, conch, rice, and assorted vegetables. There is a potential partnership with Mr. Etienne because he is interested in processing the fruits of Haiti, and Purdue students can help him do that.

University Partnerships and the Symposium

The UNAF and Purdue partnership is anchored on a three-day symposium at UNAF that takes place during our study abroad trip over winter break. Students from

Professor Chery (middle) uses the Rapitest soil testing kit. Courtesy of Nichole Chapel.

other universities also attend. The symposium consists of lectures and demonstrations for each of our projects. The goal of our presentations is to equip them with new, applicable knowledge and skills. The topics for the 2016 symposium included animal management, soil science, food technology, food science, water filtration, and biodigesters. Eugene believes that the symposium helps stimulate new interests and methodologies among his students.

Centro de Técnologia e Educação a Distância (CTEAD) is another university in Haiti that seeks to educate adults about better agricultural practices, including irrigation and simple soil analyses that help to determine the best places to grow crops. In November 2015, another university called Université Républicaine d'Haiti (URH) was founded. URH is a comprehensive, independent university that delivers challenging, high-quality educational experiences to a diverse group of learners. CTEAD and URH have partnered together, and Purdue students visited their research farm. On this farm, they grow many crops including lettuce, sugarcane, corn, peppers, and cabbage. They use several irrigation methods for experimental purposes, and techniques such as grafting, to produce better crops. They also have an experimental greenhouse on their property.

Jean Claude Pierre-Louis was our contact from CTEAD throughout the trip. We learned beside the Haitian students, and we realized they aren't much different from us when it comes to taking charge of our education and future. We all asked questions throughout the day and worked together to create irrigation ruts in the earth. Several of their students also attended our symposium to learn about poultry, food safety, food technology, and water filtration.

Heifer International

While in Haiti, we visited the Heifer International Headquarters, whose vision is to teach Haitians how to properly filter and sanitize water for drinking and cooking. They currently use a chemical to purify the water. Their goal is to eliminate poverty through the use of breeding and selling livestock within villages.

Heifer International Organization. Courtesy of Nichole Chapel.

Meds and Food for Kids

Meds and Food for Kids (MFK) is a nonprofit organization founded by pediatrician Patricia Wolff. Dr. Wolff witnessed the effects of malnutrition on infants and young children during her experience with Doctors Without Borders and has made it her mission to eliminate malnutrition within Haiti and beyond. After learning about ready-to-use therapeutic food (RUTF) used in similar settings, she founded MFK in Cap-Haïtien; MFK's product is called "Medika Mamba," or "peanut butter medicine." The processing center for the peanut butter is relatively small scale; sacks of labeled peanut bags are stacked across MFK's facility. MFK partners with local Haitian farmers in addition to receiving peanut imports. Peanuts are tested for aflatoxins to ensure that the end product meets proper standards. A variety of bags are used to store the peanuts, including Purdue Improved Cowpea Storage (PICS) bags to help protect against mold, fungi, and parasites.

MFK's goal is to train Haitians on how to operate such a facility so that they can adopt similar production plans for other crops. Behind the facility there are research and demonstration plots dedicated to sorghum where MFK grows different varieties and investigates best practices for use in the development of sorghum-based snacks. The system of growing sorghum in Haiti needs improvement. We visited two plots that were filled with sorghum—one was a robust, healthy plot, and the other was a stunted, almost dead plot. This showed us how genetic variety adaptations to climate compare to traditional Haitian farming methods: without irrigation/watering, fertilizer, or pesticides. The rest of the land is filled with organized, irrigated peanut plants. A few rows of peanut plants appear more robust—this is because they are native to Haiti. The native strain is naturally drought resistant and produces mass quantities of peanuts in comparison to the American strains, also grown by MFK. However, the size of the Haitian peanut is incredibly small compared to the American variety. It is MFK's hope that a hybrid can be created in the near future.

It can be hard to imagine how a simple food such as peanut butter could be considered a medicine, but to the children suffering from malnutrition, Medika mamba is nothing short of miracle peanut butter. Inside the business offices of MFK, pictures of malnourished Haitian infants with potbellies and red hair stare back at passersby. Next to them, a healthy infant stares back—the same child after three weeks of Medika mamba. The nutritionist at MFK monitors the growth of the children receiving treatment, and is able to tell when the children haven't taken the product. Why wouldn't the parents of a malnourished child feed them a product that saves their life? "It's a cultural barrier," Dr. Wolff explained. "Mothers have a hard time accepting something new, since their mothers fed them rice growing up and they're fine. Mixing in this product with the meal is untraditional. Sometimes mothers will sell the product to buy a bag of rice instead." MFK works closely with the families to improve the culture and the health of the child.

Currently, three different peanut butter products are produced by MFK: one for infants, one for toddlers, and one for school children. Essential nutrients are added to the peanut butter packets. Who says medicine has to taste bad? The toddler version tastes like a peanut butter cracker. It is Dr. Wolff's dream that Haitian farmers and residents will learn to grow and distribute sustainable products, eliminating the need for MFK.

The trip to Haiti was an exciting opportunity to develop existing partnerships and form new relationships. We aimed to immerse ourselves in their culture in order to better understand the people we are trying to serve. As a result, we learned how to communicate across cultures, work with each other, and think creatively.

Acknowledgments

To our faculty mentor, Mark Russell, and to our writing mentor, Patricia Darbishire.

Del Ponte, M., Cheatham, C., Campbell, M., Stowers, R., & Teskey, K. (2016). Partners in Haiti. *Purdue Journal of Service-Learning and Engagement, 3,* 70–74. http://dx.doi.org/10.5703/1288284316180

Reflections and Notes

Record your impressions and thoughts here and put responses to specific questions that we will pose throughout the trip.

Haitian Proverbs we have been pondering

May 7 "Dlo manyòk pa lét" "Cassava milk is not water" Not everything is as it seems	May 8 "Chita tande, mache wè" Sit and Hear, Watch and See listen to advice but experience for yourself
May 9 "Chen gen kat pat; see yon sel chemen li fe" “A dog has four paws, but it takes only one path” One thing at a time	May 10 "Pye bwa ki wo di li wè lwen, gren pwomennen di li wè pase l'" The tall tree says it sees far, The wandering seed says it sees more. Travelling opens one’s eyes
May 11 "Lé ou pral lwen, ou bay bourik ou dlo" When you are going far , you give your donkey water Plan ahead	May 12 ""Bonjou" se paspò ou." "Good morning" is your passport Good manners will get you anywhere
May 13 "Mande pa vòlé" Asking is not stealing It never hurts to ask	May 14 Men ale, men vini fé zanmi dire A hand going out, a hand coming back makes a friendship last Helping each other makes a friendship last
May 15 "Se anpil dlo ki lave kay té" "It takes a lot of water to wash a mud hut" It is difficult to change the ways of the country folk	May 16 "Kafou pi gran pase gran chemin" "A crossroad is greater than a wide road" Having choices is good
May 17 "Pito dlo a tonbe, kalbas la rete" It's better that water spills and the gourd remains It is better to lose the product than the source	May 18 "dlo ki pou ou, se li ki tonbe nan ja ou" The water that's your is what falls in your jar Fate.You get what comes to you
May 19 “Byen prese pa rive” In a hurry you will not arrive	May 20 Deye mòn gen mòn" Behind mountains there are mountains.

Grand Valley State University

1 North Campus Drive
Allendale, MI 49401
(616) 331-5000

Behavioral Contract – Haiti Study Abroad Participants

This contract will be placed on file by the Faculty Director at the start of the Haiti faculty-led study abroad program. All information is considered confidential and will be kept on files up to one calendar year after the trip's conclusion.

This contract is between Grand Valley State University and _____ to
(STUDENT NAME)
participate in the Water, Environmental Issues, and Service Learning Program in Haiti, taking place from

May 20th, 2018 to June 19th, 2018.

I understand that as a participant of the aforementioned program, I am expected to conduct myself in a professional and safe manner for the duration of the trip and will strive to be a responsible and positive representative of Grand Valley State University.

I understand that my participation in this trip is a privilege that will be immediately revoked if I violate any of the following standards:

1. I will travel with a designated "buddy" from the group at ALL times and will not venture out by myself *especially* after dark.
2. I will check in with the program leadership both whenever I leave the hotel/guest lodge/service sites *and* when I return.
3. I will attend all meetings/sessions as assigned by the program leadership.
4. I will arrive on time to all designated travel departures, and I understand I may have to seek alternate transportation at my own expense if I am not present at departure time.
5. I will abide by all policies as prescribed by the Grand Valley State University Student Code of Conduct.
6. I will not drink alcohol in excess resulting in drunk and disorderly conduct.
7. I will not use marijuana or any other recreational drug, regardless of its legal status in Haiti.

I understand that any violation of the standards listed above may result in immediate termination of my participation in this program and required travel back to Gerald R. Ford International Airport in Grand Rapids, MI, at my expense.

Emergency Contact Information:

Name: _____ Relationship: _____

Phone Number(s): _____

Address: _____

By signing this Behavior Contract I agree to the aforementioned conditions for participating in this faculty-led program abroad.

Printed Name: _____ Signature:_____ Date: _____