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Haiti: Conquering Malnutrition Through School Community Gardens

Beyond the mountains are more mountains. This ancient Haitian proverb means a lot more than meets the eye. One might say this saying describes Haiti's rough and mountainous regions. In a literal sense, it most certainly does. However, the proverb actually means that beyond present difficulties, lay more difficulties. This is the history of Haiti. Under French control, Haiti once produced half of the world's coffee and nearly one-third of its cane sugar. Of course, this could not have been done without the labor of slaves. Haitian slaves worked strenuous twelve hour days under the hot, blistering tropical sun. But in 1791, the largest slave uprising took place in Haiti. For the next thirteen grueling years, Haitian rebels fought against three consecutive attempts to re-enslave them. They first fought plantation owners and French soldiers, who were aided by U.S. artillery. Later, Britain attempted to gain slaves and the bountiful sugarcane land when it was at war with France. In the third and final attempt, Napoleon tried to reinstate slavery and regain what was once French territory (New York Times). Unaided, the Haitians battled through disease, famine and war. What kept the Haitians alive was their resilience.

In 1804, Haiti declared independence. Due to the rebellion, Haiti's plantations were devastated; its population was nearly cut in half; and Haiti was deeply in debt. However, the sweet taste of freedom was long overdue. Unfortunately, the battle for independence was not the only challenge Haitians had to face. Located in the middle of hurricane belt and subject to natural disaster, Haiti experienced severe storms and droughts (CIA). On January 12, 2010, a 7.0 earthquake in Haiti took everyone by surprise. Three million five hundred people were affected by the quake and an estimated 300,000 people were injured and 220,000 people had died. Approximately 270,000 Haitian houses were either damaged or destroyed which left one and half million people living in camps (Disasters Emergency Committee). The earthquake left people injured, homeless and without food. Now, Haiti is the poorest country in the Western hemisphere and 6.7 million people out of a population of 10 million people are considered food insecure (World Food Programme).

Due to the high levels of food insecurity, having no food in homes is a daily factor in the lives of Haitian children. Most times, children rely on schools as their only source of food. For instance, in the slum of Port-au-Prince, the capital of Haiti, a two story school of children eagerly wait for the 10:30 a.m. bell to ring. The aroma of rice and bean sauce wafting through the air tantalizes the taste buds of students who had little to nothing to eat on the weekend. Beaming with a smile, five year old Pascal Papou says, "I come to school because I know I will have something to eat." When the bell finally rings, the children quickly empty their classrooms and pour into the cafeteria. Principal Joseph Jean Silence describes the scene as a traffic jam (World Food Programme). Throughout the developing country of Haiti, the food crisis is widespread and severe.

Urban families, like Pascal Papou's, face food insecurity every day. An urban family in Haiti is composed of four members. Typically, poor or extremely poor households have more children, about twice as many children as middle class families (World Bank). When families are fortunate enough to have food on table, it usually consists of starchy staples such as rice, corn and beans. However, due to poor weather and soaring costs of food, some cities like Cite Soleil resort to "mud-cakes." Mud-cakes are made from clay, cooking oil and salt, and then baked in the sun (The Guardian). Though these mud-cakes are more economically available to people, they do not have the essential micronutrients that need to be in a diet. Micronutrients are needed in miniscule amounts but without them, there are severe consequences that affect proper growth and development. According to the World Health Organization, the lack of

micronutrients “represents a major threat to the health and development of population, particularly children and pregnant women.”

After food, education is the principal cause of spending for all wealth groups. In the capital city Port au Prince, only ten to fifteen percent of schools are publicly funded. The other ninety percent of private schools require students to pay for the programs and book fees. Haitians who live on the edge of survival can barely survive on their income. If the very poor were to cut their outlay on food to expend the same on education as the better off Haitians, they would only be able to consume a mere thirty-six percent of their food needs. Since the schools are private, the very poor parents have a choice of not sending their children to school. This way, the very poor could meet one hundred percent of their basic food needs. However, many very poor households are willing to sacrifice food security because they know that education is the only hope for a better future (USAID). On the other hand, there is also an immense need for health care in Haiti. There is no implemented infrastructure for health care. The few urban healthcare clinics that are in Haiti are run by charities to provide what they can. These clinics are understaffed and unequipped. For example, in Carrefour MSF hospital, there are 400,000 patients and only 275 beds (New Internationalist). Diseases, such as cholera, have somewhat simple treatments but doctors in Haiti are unable to cure their patients because they do not have the simple basic tools and antibiotics.

Although many of the poorest Haitians live in the rural farms, the poverty in urban areas is quite prevalent as well. In the poor urban areas, the employment rates are extremely low and wages are even lower. The Haitian wage is currently set at less than twenty-five cents per hour and more than seventy-five percent of people live on less than 2 USD per day and half the population earns less than 1 USD per day (World Food Programme). The very poor urban households earn 9,500-12,500 gourdes, or around 250 dollars, per year, an income insufficient to buy food (USAID). There are two separate sectors of labor, formal and informal. The formal sector is made up of doctors, teachers, and lawyers and their salaries are predetermined. However, in the informal section, there is no such thing as predefined work contracts. The types of employment range from selling charcoal to factory working to street hawking. According to the World Bank, there are substantial differences in the distribution of per capita household income by where one is located. Surprisingly, rural households earn thirty-three gourdes more than poor urban households in the first decile of income distribution in 2001 (World Bank). Poor urban families purchase their foods in regional open air markets sold by women from rural farms (Every Culture). Another source of food is Haiti’s community gardens. On January 22, 2012, Haiti opened its largest urban community garden in Cite Soleil. Formerly a landfill, “Tap Tap Garden” used five hundred tires in one acre of land “to feed 250 neighborhood youth and residents of nearby elderly and disabled persons displacement camp” (PRWeb). This community garden serves as a living classroom, but the idea is rather new and not widespread.

Furthermore, when there are droughts, hurricanes, or earthquakes, agricultural productivity may fluctuate each year. There is never a guarantee of how much food a season will produce. Also, Haiti born Fritz-Gerald Louis, an article writer for the World Bank, says, “the lack of mechanization and knowledge and the difficulty in gaining access to market their produce” is a huge burden to agricultural productivity. Moreover, in a developing country where most of the population is in the rural areas, it is difficult to regulate poverty. Naturally, people tend to migrate from farms to urban areas if the average expected wage is higher in urban areas. However, these “jobs in the city” are in the informal sector. Although there are some openings in these jobs, not everyone who migrates will be guaranteed work. Many who migrated will most likely stay in the city and wait, but they will still remain in poverty (The Haitian Vocation). Another major barrier is gaining access to food markets. As stated by the World Food Programme, food prices higher than the four-year average since 2008. The reason for this is that most of the food grown is exported and over half of the food consumed is imported. In fact, more than eighty percent of the rice is imported (World Food Programme). As a consequence, the people are not getting an adequate nutritional diet.

Since malnutrition is one of the most prevalent problems in Haiti, it begs the question, what is malnutrition exactly? Malnutrition is the deficiency of vital nutrients, vitamins and minerals. Symptoms include weight loss, muscle weakness, fatigue, dizziness, susceptibility to infections, and, in children, swelling of the abdomen (NHS). The incredibly low health status of Haitians caused by malnourishment plays a significant role in a Haitian family's income. Without energy, how can Haitians expect to work or even earn a sufficient income to buy food and support their families? Because of poor diet, deficiencies in micronutrients such as lack of iodine and vitamin A are widespread and it directly affects families in poor urban cities. As stated by Oxford Journals, one-third of five year old children and twenty-five percent of women were anemic because they had an iron deficiency (Oxford Journals). In relation to the World Food Programme statistics, twenty-eight to thirty percent of children in Haiti suffer from acute or chronic malnutrition. Consequently, malnutrition is an extremely severe and incredibly serious situation in Haiti.

Additionally, Haiti's environmental degradation is extremely high. Sources from the United Nations conclude that Haiti loses three percent of forests every single year. Deforestation has catastrophic consequences on soil fertility. It is said that the nation loses 1.35 tons of soil per square kilometer yearly due to erosion (Nations Encyclopedia). Haitian farmers also widely use DDT, an agricultural chemical, to farm. This not only affects rural farmers, but also the urban poor who cannot afford higher quality food. These agricultural chemicals and the use of oil with high lead content are a substantial cause of toxic waste. Although this is indirectly related to malnutrition, it is directly related to the quality of produce. If the quality of the food is not up to par, then Haitians are exposed to toxic chemicals that may degrade their health status.

To make matters worse, urban poor women in Haiti are particularly disadvantaged. Because of Haitian culture, there are many gender stereotypes, so many women face discrimination. Many women are also economically dependent of their husbands because they are not given equal status in the working environment. The potential skills of women are not appreciated, so they are not given the same jobs as men. For example, urban Haitian women are not considered in construction training. Women can potentially earn income but they are never given the opportunities. If poor urban women were given the opportunities to earn money, this would directly help decrease malnutrition. With more income, they are able to fulfill their families' basic needs such as food.

Fortunately, trends of malnutrition are improving. The Standardized Monitoring and Assessment of Relief Transitions is used by UNICEF to analyze and ensure reliability of nutrition data. It is based on two indicators – nutritional status of children under five and mortality rate of the population. The SMART survey conducted in 2012 by UNICEF shows that the pervasiveness of underweight children decreased from 18 percent in 2005-2006 to 10.6 percent in 2012 (UNICEF). Although the statistics are improving, it is only by a slight amount. It took six to seven years to decrease 7.4 percent; in other words there are still 3.7 million children underweight. There is a lot of potential change for the poor urban cities of Haiti. But if agricultural methods are not improved, pollution problems are not resolved, and women equalities are not met, then the urban poor conditions will only worsen.

If the Haitian malnutrition crisis were improved or even resolved, the results would benefit the economy and, more importantly, the people. In one way or another, malnutrition affects all aspects of life, whether it is directly to the people or indirectly to environment. Once people fulfill their nutrient deficiencies, the health status of Haitians would dramatically increase. People would not have to worry when their next meal will be, but rather focus on how to get a steady income and develop their country. This would lead to economic development and eventually end poverty reduction. With a higher income and, eventually, economic prosperity, Haitians will be able to afford higher quality food and no longer buy chemically sprayed and low quality produce that pollute the environment. Sooner or later, improved methods will replace environment harming techniques and preserve environmental sustainability. Poor urban children will also now be able attend school and concentrate on their studies and adults would have the mentality,

physical ability and energy to work. Once malnutrition is resolved, Haiti would finally become the flourishing, independent and healthy country Haitians dreamed of.

Since malnutrition is connected to many factors, other major issues such as urbanization and education are closely related. Since 1982 to 2010, urbanization has increased from 24.5 percent to 52 percent (World Bank). The urban population annual growth rate is also a hefty 4.12 percent. Rural Haitians want to migrate to urban cities in hope of finding jobs. Since there is a surplus of people and not enough jobs in the urban areas, the urban poor statistics are also steadily increasing, which, thus, increases the overall poverty. A factor to take into consideration is that employment plays a key role in improving the livelihoods of urban dwellers. In decades to come, if there are not enough jobs in the poor urban areas, there is not enough income to support a family and buy food. Without the proper nutritional diet, there will be an increase in malnutrition rates. Another very important factor is education. The poverty level can be measured in adult illiteracy. From 2000-2011, the adult literacy rates increased from 39.5 percent to 49 percent (United Nations Data). Although the literacy rate has improved, it is more difficult to teach the basic skills to adults because their educational performance is low. However, there is hope. Starting from now, if children were educated with an emphasis on nutrition education, malnutrition rates would significantly be lowered. Once there is a steady ratio of urban dwellers and rural farmers and also an improved rate of literacy and education quality, the wellbeing of poor urban families and their communities in the decades ahead will significantly increase.

So, what needs to be done to effectively alleviate malnutrition? Based on my research, my personal recommendation in achieving food security and conquering malnutrition is building school community gardens. The project will be called "From Garden to Garden." It is a simple idea, but it can potentially produce massive results. Not only will people be able to harvest fresh, wholesome fruits and vegetables in the cities, but poor urban students and adults can learn about eating nutritious diets. Another factor to consider is the need to update the agricultural culture and practices. Many farmers abandoned farming because it was becoming an increasingly challenging trade. There are numerous small plots with each family getting approximately 2.5 acres (Western Washington University). Haitian families lease and share crop fields since they are too poor to afford individual farms. Haiti's primary practice is monoculture. Monoculture can be detrimental to a developing country and in Haiti's case, it is. Haiti is focused on growing coffee, indigo, sugarcane, and tobacco and exporting those crops. The food produced is not especially beneficial health-wise or going back to the Haitian people. It is important to include and consider broadening the selection of farm produce. Plants like sweet potatoes and bamboo do not require much sunlight or water and they are versatile, meaning they can be used commercially and industrially. Furthermore, prior to the 2010 earthquake, Haitian farmers used the most basic and simple tools, such as hoes and axes. This requires backbreaking manual labor since people did not use plows or animal power. Manual labor does not cause degradation but it does dramatically slow down productivity. After the earthquake, farmers lost the tools that were buried in the hillsides and soil erosion increased greatly.

However, food sovereignty can still be accomplished. Cuba serves as an example for sustainable urban agriculture. Cuba depended on the Soviet Union to import food. In 1989, the Soviet Union collapsed, leaving Cuba with extreme shortages known as "The Special Period." Cuban citizens, including those who lived in the city, began to plant on their balconies and empty lots. By 1994, the Ministry of Agriculture established seed banks, free land, fertilizer centers, and over saw horticultural clubs. Both formal and informal organizations contributed in forming state-owned gardens and family gardens. As food shortages decreased, urban agriculture expanded. According to the North American Congress of Latin America, 400,000 Cubans are employed in urban agriculture and because Cuban urban farmers

receive part of the sales, they even earn more than government employees. Cuba is the success story that Haiti can follow. Not only can Haitians be employed, but urban reforestation reduces air pollution, beautifies cities, and decreases food transportation miles.

In order to do so, we will first need an economic solution. An outside source is needed to establish funding, technology and education in Haiti. It is critical for developed countries, like the United States and Britain, to take the lead and encourage agricultural companies to provide funding. Big companies, such as Adler Seeds and Fresh Del Monte Produce, can establish a partnership with the Haiti government to help build school community gardens for a limited time, about five years. The collaboration will let Haitians receive profits and, potentially jobs, from the gardens. Cuban advisors for urban gardens can also provide a wealth of knowledge since they live in similar climates and experienced the same food shortages as Haiti. But, we must also be careful of exploiting the Haitians and using them for cheap labor. Thus, non-government affiliated organizations, such as the United Nations and World Bank, should also oversee the entire process to avoid corruption and to ensure the produce gets in the hands of the people. This would be a win-win policy for everyone involved. The Haitians will be able access food more easily and increase their food security. Agricultural companies would benefit by contributing to Haiti's economic, political and social success. The involvement with Cuba may also help ease tensions between the American and Cuban governments because of their trade sanctions. The extent of the aid would involve the following areas: updated biotechnology, infrastructure for roads, and irrigation methods.

Conquering malnutrition and spreading food security is a Millennium Development Goal. I recommend investing in the idea of school community gardens. It takes a substantial amount of money buy tools, and seek knowledge of the Cubans if this plan were to be implemented throughout the country of Haiti. However, it does not take long to see results. If major agricultural companies and Hatian government build a trustworthy relationship and proper funding is provided, it is possible to achieve this goal by 2015. Similar but small-scale projects in Haiti are already being realized in Haitian communities. Partners of the Americas and a Haitian agribusiness called Makouti Agro Enterprise are teaming up to help fifty families in Lory, Haiti create home vegetable gardens. In 2011, they were able to produce over 4,000 tomato plants and 50 families were producing vegetables. Benito Jasmin, the Makouti Agro Enterprise leader, realized that community members, especially the women, were "ready to learn new and put in practice what they [have learned]" (Global Giving). They need 16,000 USD to achieve their goal, but so far only 1,650 USD was raised. The money goes into buying watering cans and seedlings, and hiring project coordinators. If this local project was could be scaled up successfully, it would cover the costs of seeds, tools and training for a home gardens. The investment would go directly back to people of Lory and, hopefully, spread to other communities to help achieve food security.

If the Haitians have the desire to improve their lives, the community school gardens can and will help them attain their dreams. In order to do so, communities must support one another and learn together. National government and agricultural corporations are the backbone because they financially sustain the project. Organizations, such as the World Bank and United Nations, should oversee and maintain the operation. Of course, the key players of implementing the school community gardens are the students and families. Both rural farm and urban families involved will learn how to grow, build and sustain a garden. Although a lot of hands-on work and effort will go into project, the results produced will benefit the civilians and country of Haiti. In the long run, malnutrition will one day be eliminated.

In conclusion, malnutrition is currently a very critical problem in Haiti and also a cause of food insecurity. Both the urban poor and smallholder farmers face micronutrient deficiencies that affect their daily lives and stop them from doing daily tasks. Throughout history, Haitians have battled one challenge after another. Daily problems range from water scarcity to sustainable agriculture, so food security is only one of Haiti's many worries. Moreover, there are still many developing and third world countries and it would be nearly impossible for the United Nations or the World Bank to tackle every problem in the world or

solely focus on one country. However, these daily obstacles have built resilience in the Haitian people. They have battled for freedom, spent years repaying debt, suffered from famine, and survived a massive earthquake that devastated the entire country.

Nonetheless, in the end, Haitians will still stand up tall and keep on moving forward. Haiti holds a tremendous amount of promise and potential. With the assistance of global organizations, the government, and corporations, there is still hope. I believe that community school gardens are an achievable feat that can really make a difference and impact in Haiti and move people's lives in a positive, healthy direction. People would potentially be able to access fresh and nutritious foods that can not only help guarantee food, but also regulate their diet. When everyone is at the appropriate health status, they will be physically and mentally fit to help sustain their families and provide income. It is also a learning opportunity for children to gain knowledge of nutrition education. Instead of saying "I come to school because I know I will have something to eat," poor urban children like Pascal Papou will also one day be able to say, "I come to school because I want to learn how to grow what I just ate and why it is beneficial to my body."

Yes, it is true that there will be many obstacles along the way and many mountains to overcome. But, there is also another Haitian proverb that says, "*Men anpil, chay pa lou.*" In other words, it means that *many hands make the load lighter*. When everyone comes together, we can face every challenge and climb every mountain, including conquering malnutrition in Haiti.

Works Cited

- “Adult Literacy Rate.” *Statistics*. United Nations Data. 2013. Web. 28 June 2013. <<http://data.un.org/Data.aspx?d=SOWC&f=inID%3A74>>.
- Carlson, Peggy, and Benito Jasmin. “Accomplishments and Next Steps in Lory.” *Project Report*. Global Giving. 14 October 2012. Web. 29 June 2013. <<http://www.globalgiving.org/projects/vegetable-gardens-for-improved-nutrition-in-haiti/updates/>>.
- Carrol, Rory. “Haiti: Mudcakes Become Staple Diet as Cost of Food Soars Beyond a Family’s Reach.” *Global Development*. The Guardian. 28 July 2008. Web. 22 June 2013. <<http://www.guardian.co.uk/world/2008/jul/29/food.internationalaidanddevelopment>>.
- Dixon, Sam, and Julius Holt. “An Assessment of Food and Livelihood Security in Port-au-Prince.” *Port-au-Prince Urban Baseline*. USAID. May 2009. Web. 22 June 2013. <http://www.fews.net/docs/Publications/ht_baseline_urban_Port%20au%20Prince_en.pdf>.
- Ekine, Sokari. “Haiti’s Struggling Healthcare System.” *New Internationalist Blogs*. New Internationalist. 25 February 2013. Web. 28 June 2013. <<http://newint.org/blog/2013/02/25/haiti-healthcare/>>.
- Frempong, Kwaku, Lyda Gatewood, Kuvibidila, Ann Metzinger, and Theresa Nicklas. “Prevalence of Anamemia and Iron Deficiency in Urban Haitian Children Two to Five Years of Age.” *Journals of the Tropical Pediatrics*. Oxford Journals. 1998. Web. 28 June 2013. <<http://tropej.oxfordjournals.org/content/44/3/133.short>>.
- Gerrmond, Rosalie C., Sheena Sokolowski, and Amanda Edwards. *Haiti: Agricultural and Ecological Recovery*. Bellingham, WA: Resilience Institute; Western Washington University, 2010. Print. 2 September 2013
- “Haiti.” *The World Factbook 2013-14*. Central Intelligence Agency. 2013. Web. 22 June 2013. <<https://www.cia.gov/library/publications/the-world-factbook/index.html>>.
- “Haiti’s Largest Urban Community Garden.” *News Center*. PRWeb. 31 January 2012. Web. 28 June 2013. <<http://www.prweb.com/releases/2012/JadenTapTap/prweb9156617.htm>>.
- “Haiti Earthquake Facts and Figures.” *Facts and Figures*. Disasters Emergency Committee. 2011. Web. 29 June 2013. <<http://www.dec.org.uk/haiti-earthquake-facts-and-figures>>.
- “Haiti- Enviroment.” *Haiti*. Encyclopedia of the Nations. 2008. Web. 28 June 2013. <<http://www.nationsencyclopedia.com/Americas/Haiti-ENVIRONMENT.html>>.
- Hochschild, Adam. “Haiti’s Tragic History.” *Sunday Book Review*. New York Times. 29 December 2011. Web. 22 June 2013. <http://www.nytimes.com/2012/01/01/books/review/haiti-the-aftershocks-of-history-by-laurent-dubois-book-review.html?pagewanted=all&_r=2&>.
- Mattila-Litvak, Anna-Maijia. “Greenhouses Creating Agricultural Revolution in Haiti. 10 June 2013. Web. 2 September 2013. <<http://iipdigital.usembassy.gov/st/english/article/2013/06/20130610275827.html>>.
- “Micronutrients.” *Nutrition*. World Health Organization. 2013. Web. 28 June 2013. <<http://www.who.int/nutrition/topics/micronutrients/en/index.html>>.

- Rudovsky, Noah. "Urban Agriculture in Cuba." *Photo Essay*. North American Congress on Latin America. 18 October 2012. Web. 5 September 2013. <<http://nacla.org/news/2012/10/18/urban-agriculture-cuba-photo-essay>>.
- Schwartz, Timothy. "Culture of Haiti." *Countries and Their Cultures*. Every Culture. 2000. Web. 28 June 2013. <<http://www.everyculture.com/Ge-It/Haiti.html>>.
- "Social Resilience and State Fragility in Haiti." *Haiti: A Country Social Analysis*. World Bank, 29 Apr 2006. Web. 30 Jun 2013. <<http://www.wfp.org/photos/gallery/haiti-when-bell-rings-it-s-traffic-jam>>.
- Suh, Suzanne. "New Survey Shows Rates of Child Malnutrition are Decreasing in Haiti." *At a Glance: Haiti*. UNICEF. 18 June 2012. Web. 28 June 2013. <http://www.unicef.org/infobycountry/haiti_62654.html>.
- "Symptoms of Malnutrition." *Malnutrition*. NHS. 2 April 2013. Web. 28 June 2013. <<http://www.nhs.uk/Conditions/Malnutrition/Pages/Symptoms.aspx>>.
- "Understanding Urban Poverty." *The Haitian Vocation*. Blogspot. 5 March 2013. Web. 28 June 2013. <<http://rayinhaiti.blogspot.com/2013/03/understanding-urban-poverty.html>>
- Tremblay, Stephanie. "Haiti: When the Bell Rings, It's Like a Traffic Jam 01" *Photos*. World Food Programme. 20 December 2012. Web. 21 June 2013. <<http://www.wfp.org/photos/gallery/haiti-%E2%80%9Cwhen-bell-rings-it%E2%80%99s-traffic-jam%E2%80%9D>>.
- Verner, Dorte. "Making Poor Haitians Count." *Policy Research Working Paper*. World Bank. 24 March 2008. Web. 28 June 2013. <http://www.wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2008/03/24/000158349_20080324112210/Rendered/PDF/wps4571.pdf>