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Haiti, Factor 16: Education

Haiti: Improving the Disaster

I'm sure that whenever someone mentions Haiti, many who were old enough to remember think of the terrible 7.0 magnitude earthquake that leveled the country in 2010. It was estimated then that over 3 million people had been affected by it, but now, the entire country suffers from the chaotic natural disaster. You could call it an "aftershock" of the earthquake itself. More than five years after January 12, 2010, and Haiti has still not recovered due to many setbacks even though there were many developed countries who responded with humanitarian aid after the earthquake. Many Haitians lived and slept on the streets, in shanty towns, or abandoned cars, and after almost half a year, almost close to none of the rubble had been cleared. To make things worse, in mid October of 2010, an epidemic of cholera, an infectious and fatal bacterial disease that is contracted from poor water sources and causes severe vomiting and diarrhea, broke out across Haiti. The disease was most likely introduced by foreign aid workers from other third world countries. This epidemic crippled the recovering communities, and many anti-U.N. riots broke out, killing at least 45 people, blaming them for the spread of disease.

From 2011 to now, relief efforts had removed almost half of all debris in the areas affected by the quake, and spent almost all of the \$468 million dollars of its donations, but the cholera epidemic has continued and more than a quarter million people are still homeless. To make things seem even more despairing, the people of Haiti have another problem to put on their shoulders. Food has become scarcer than it was before the 2010 earthquake due to fires, hurricanes, and impending drought. All of these contributing factors make the formula for the perfect food crisis. In order to keep a working economy, Haiti has been exporting about sixty percent of its food product, leaving only forty for consumption by the population. There are families who cannot even get enough food daily for their starving relatives ("Haiti Progress Report 2010."; "A Serious Food Crisis Is Brewing in Haiti – Here's How to Stop It.").

The average size of a family in Haiti is about 4.2 per household mostly composed of a father, mother, and two children. In Haiti, coffee, cocoa, coconuts, avocados, oranges, limes, and mangos are all native plants and grow on the island, but what is farmed are the domesticated versions of these plants which have been cultivated for hundreds of years. But the average Haitian diet is more concentrated on starch-filled foods like rice, corn, and beans, and only let the people consume about 1,977 calories per day, which doesn't even amount to the minimum requirement of calories consumed per day. In Haiti, there is one doctor for 9,846 people and Haitian people only live to be about 58 years old; in the U.S., the life expectancy of an African American is 73 years ("Haiti." *Compare The United States To*).

The average farm size in Haiti is about 1.5 hectare, which converts to around 3.7 acres. That's compared to the average farm size in Iowa, which is 333 acres. With about one eleventh the size, these farms have to be able to support families and the country's economy. While most of Haitian exports comes from corporate farms much larger than the average size, rural Haitian families depend on their own fields to make a living, and survive on what is left for them to eat. A common crop to small rural farms is red and black beans. They serve as a source of protein in the diets of millions of Haitians. They also consume many other vegetables that grow on the island, such as cabbage, corn, lettuce, potatoes, and spinaches, but they are grow more in small, personal gardens. Haitians eat two meals a day with limited, small snacks. Breakfast, known to us as the most important meal of the day, is the smallest of the two, with the afternoon meal consisting of more rice, beans, and a very small amount of meat.

Another food crop is Haitian rice, which has been grown in Haiti for over two centuries, was the staple food for its people until around the 1980's. From the 1980's to the 1990's, the yield of rice decreased and Haiti could not keep up with the supply and demand that the rice brought. Due to this, Haiti was and is still flooded with "Miami rice" from US imports that have impacted rice production. This has made the chance of a rebound of Haitian rice production even harder than before.

The farmers of Haiti stick to more classical farming practices, as most modern day agricultural advancements are very uncommon; the use of pesticides, irrigation and chemical fertilization are not traditional in the country. Although, lower class farmers do use some natural fertilizers from the environment like organic mulch and manure. They use hand tools for most of their planting, maintenance and harvesting; these tools can be as complex as the serpette, a knife-like tool indigenous to Haiti, or as simple as a stick with one sharpened end. Modern machinery such as combines and tractors are exclusive to corporate farms; most rural farmers find the large equipment impractical for their own fields and prefer the traditional ways of their agricultural practices ("Land Use and Farming Technology.").

For most rural farmers, agriculture is not a source of income, but a source of food, and many have secondary jobs to help support the family for other necessities such as clothing and shelter. The most common of these jobs are wage-labor, mining, and making goods to sell at an urban market. Almost all members of a family work in some way. The children will help their parents; because of this, the parents get an additional wage, usually about five to twenty-five cents. For one person, the average paycheck per day is equal to about two dollars and fifty cents USD. Almost all of this money is spent on necessities of life.

With a tropical climate, and nice temperatures all year long, you'd think that Haiti would be one of the best places to have an agricultural revolution, but that is not so. Located in the Western half of the Caribbean Sea on the western half of Hispaniola, Haiti is battered by environmental giants. Throughout the course of one year, Haiti can go from being a place of extreme drought, to one of extensive flooding. It is hit by hurricanes and other natural disasters constantly. All of these things put together make the ultimate fighting machine against an active agricultural community. Haiti has taken deafening blow after blow, and it seems close to impossible to fight back, but adapting to these natural factors could be Haiti's salvation.

There is a little over half of the population who can read and write, but only 18% of the population obtains a high school education and higher. There are almost no public secondary schools that a low-income, impoverished family could send their children. Almost 90% of schools in Haiti are privately run, and they ask for tuition fees that are too expensive for most rural and urban families to afford. Only a third of girls go to school, and out of all the children going to school, one third will quit school before the third grade. Out of the other two thirds of children, 60% of them will abandon school before the sixth grade ("Haiti Statistics."). There is a huge learning gap between the lower class, and the 18% that can afford a higher education. This 18% is also apart of the upper class, meaning they can afford good nutrition and clean water to drink; they live in sound houses that can protect them from most of the elements, excluding tropical storms and hurricanes. Close to all of this 18% live in the bigger urban cities such as Port-au-Prince and Carrefour.

But there are still problems to Haiti's education sector. Many of their curricula is outdated and very few schools are given new and updated books and supplies, and only 15% of teachers have all the basic qualifications for teaching the primary grade levels ("Haiti Statistics."). This is because of the low education rate and amount of financial support given to Haiti, Problems with the economy and unemployment result in the high dropout rates, and low enrollment rates for children whose family has made the decision for them to get a job instead of an education. Due to these factors, the education sector of Haiti has become privatized, giving control of the money from the government to a private holding. All

of these factors make it almost impossible for the parents of a lower income family to provide a non-outdated education for their children (Luzincourt & Gulbrandson).

Rony Charles, a rice grower who lives in Verrettes, Haiti, was asked how he thought the food crisis could be solved in his country. He politely answered a reporter's question stating, "Instead of foreigners sending us food, they should give us the chance to grow our own." I totally agree with Mr. Charles, but I do think that the United States could give the Haitian people, most of whom have never had an education past elementary school, not just a full education, but ways to genetically engineer their popular crops to be more resilient against Haiti's harsh and unforgiving environment and modern agricultural practices.

According to a new article published by Science News by Kate Baggaley, a new technology used by scientists allows them to reinstate "wild genes" into domesticated crops. The scientist noticed that wild versions of plants fare better in unsuitable conditions than their domesticated relatives. This kind of editing of the DNA make the crops similar to the wild plants, yet still domesticated and harvestable. This science can allow the struggling crops of both commercial and rural farmers to survive droughts and floods.

When domesticated crops are bred, many traits essential to the survival of the plant in extreme conditions are lost, like a form of inbreeding. These plants were bred over and over until the breeder had created a true-breeding plant, or a plant that if allowed to be self-pollinated, would make offspring that was an exact copy of itself. These true-breeding plants would have all the qualities that the scientist wanted in the plant, and as long as there was a single survivor, the continuation of the plant would be secured (Baggaely).

If Haitian farmers and families were taught more than just general education, but also sciences like simple genetics and botany, they could learn to engineer their own new hybrids of crops. They would not need a fancy lab or special machine to make them, but go back to the basics that Gregor Mendel, the father of genetics, set out for us with his famous pea plants. The traditional way to do this, would to cross domesticated plants with wild versions that have desirable traits like deeper roots, or bigger leaves. Although, this traditional way of genetics is also known to bring out traits in plants that are not wanted or suspected. The way to resolve this problem is through constant trial and error.

Consultation from United States and other developed countries can also help. With only a primary education, rural farmers only know the basics of sciences, and can be taught much more. The setup of temporary labs and schools resembling that of a MASH unit, or mobile army surgical hospitals which were used from 1945 to 2006. MASH units allowed skilled surgical doctors to live around and closer to the action of the war; they let severely wounded patients be sent straight to a doctor that could help save the soldier's life with extensive medical surgery. The doctors lived in the unit camp and were on call 24/7 (King & Ismailil; "MASH – MOBILE ARMY SURGICAL HOSPITAL."). This same idea can be used today, only instead of surgeons and nurses assisting wounded soldiers and civilians, imagine botanists and biologists helping educate the rural farmers of Haiti on plant science and genetics. MASH units are transportable, rootless, and non permanent structures that can be set up almost anywhere. They can be settled wherever needed and taken down to be moved to a new community. A mobile academic center of study, or MACS, could help strengthen Haitian food sovereignty.

A multitude of things could be taught at the MACS. Each MACS could either teach many different principles of agriculture or specialize in just one to later have another MACS come and teach another principle to the people. Some of the things taught could be new and simple farming practices, where experts could show Haitians new and easier ways for irrigation, fertilization, planting, and harvesting. Others could teach about genetics and hybrids, showing the people new variations of crops that would be

planted. Certain MACS could teach simple sciences like biology to adults and children. Some MACS could even just be around to teach math or reading and writing skills. The curriculum is endless.

I believe for a MACS to teach effectively, it would stay in the same area for about one to two months, making sure that their curriculum was received well by the community. Later on, Haitian farmers could pass down the practices taught to them by the MACS to their children, much like the farmers of the early Midwest did for their children. MACS would also impact younger generations by raising the literacy rate and understanding of the world around them.

The effect of just one of these MACS could be exponential. Word of mouth from just one person has a snowball effect, especially in third world countries where there is something that is helping the community. It's also proven that you trust things suggested by your friends, family, and neighbors over other forms of advertising due to personal ties (Mielach; Whitler; O'Connor & Davenport.). It is hoped that these centers would become a welcoming place of learning for all Haitians, rural and urban; new jobs would be created for Haitians who decide to make a career in this field as botanists, biologists, and assistants. The economy would bounce back; since Haitians could grow their own food, they wouldn't need to import "Miami rice" from the United States or any other countries. They could become self-reliant like they once were at the beginning of the nation's history. Government money could be used to treat illness and disease instead of hunger and malnutrition, and productivity would bubble in employment, economy, and agriculture.

The education of even just the 18% of secondary educated Haitians would help the country. Since this 18% of Haitians has already been exposed to complex ideas, the teachings of genetics and bioengineering wouldn't be far off the mark, like giving high school students a college class before they graduate. Small farm holders would be benefitted by the one-on-one interaction between them and the consultants and other Haitians. Since these rural farmers might not be open to consultation with people from other countries, a fellow countryman or woman would likely help the process along. These farmers would then be able to get the necessary help needed for their welfare.

I believe that the small rural farmers of Haiti would enjoy learning more about their profession, and I also believe that if they were told how much this factor would help not just them, but the whole country, they would jump on the bandwagon immediately. No one wants to see people suffer from hunger, parasites, and disease. I would hope that the incentive of just helping their country and being an advocate to urban people with little access to food daily, would stir them to want to learn and want help from others. I know for a fact that when something bad happens in our country, almost all of us find a solution for it and band together to make a change. Our patriotism moves us to help our fellow countrymen, and I know that there is a great source of community in Haiti. These people have been through earthquakes and aftershocks, hurricanes and tropical storms, floods and drought; they become strong in their fragile state by coming together and helping each other. Most Haitians will share what they have with other friends, families, and Haitians, no matter the size of the resource. They realize that they are in this together and in order to get out, they must work together as a people.

It is very true that foreign aid to Haiti has failed in the past. Haitians have been known to be a resisting people when it comes to foreign aid, but only because they have wanted to return to the self-sufficiency that they once had. Haitians are a proud people who do not like to admit when they are down. Mistrust has also risen due to horrible foreign aid in the past; many Haitians believe the recent cholera outbreak was a result of poor aid from UN workers, but the education given by the foreign consultants could hopefully bridge the gap between Haiti and the outside world, making new government ties with other countries and allowing trust to flow again (Buss).

The only way the environment would be degraded by this factor would be by careless waste management, pollution, gluttonous use of resources, and introduction of new substances from foreign consultants of the MACS who are not aware of the effect they have on their surroundings. As most of these foreign aid workers live in an advanced and developed countries, they are not very aware of their carbon footprint in their own environment. Placing these people in a less stable location could have negative effects on that ecosystem and perhaps do more harm than good unless the foreign aid workers were educated about Haiti and took a lesson on what to expect in Haiti and how to live there before traveling (Arvin, Dabir-Alai, and Lew; "Foreign Aid and the Environment: Still A Curse?").

Other major factors that would affect this plan would be funding and materials for the MACS and other expenses, like travel, food, water, and equipment. Cooperation between the Haitian and other governments would be crucial to finding a solution to this problem. Taxes and donations from people would go to the government, who would give the money to the UN, NGOs, and various development agencies. This money would then go to the local government and organizations and then to the people of Haiti (Bullen).

I feel the only way to address this issue is to not lose hope that it will work. We have plenty of way to stop world hunger, but they are not all effective for every country. Education to me is the proper way to address Haiti's food crisis. Giving these people food will not make it easier for them to become independent, but it will make them even more dependent on other people and governments. The aid that is given to this country should be more medicine, water, and education than food. Haiti was fully capable of producing their own food before being pummeled by horrible natural disasters. If we give them the tools need to become like they were, than Haiti can work to improve other major factors plaguing them.

I personally do not believe that the situation in Haiti can be solved by 2015, but if it could, there are many Millennium Development Goals that would be solved in Haiti because of this. It would help eradicate extreme poverty and hunger. More food brought to urban market from rural farms would allow more people living in the cities to get more adequate food supplies. Better nutrition and healthy citizens would lower the child, infant, and maternal mortality rates; the rise in agricultural productivity would allow the sustenance of a larger population (*Millennium Development Goals*).

I believe for any of this to work, not just in Haiti but anywhere, there needs to be an acceptance of the facts on both sides of the coin, the giver and the receiver. Haiti needs to be aware of the help that is being offered to them, and the outcome that it can give them, but the developed countries that would offer this help need to be aware of the negative effects that they can put on Haiti. There are many pros and cons to any partnership between countries, and this is no exception to that. I would just ask for cooperation between the two. None is better than the other, but none is worse off. As visitor's in their country, foreign aid workers need to be aware of the impact that we can make on Haiti, good and bad; when we leave, we will not have to live with our consequences because they will. Corporate farms in Haiti could also lend a hand in helping their fellow farmers and associates with the support the Haiti would be receiving by giving guidance in what has worked for their co. The UN could help in gathering minds from across the globe and working for funds to pay for the charge that would come with an idea such as this one.

Since the MACS are based off of a United States Army MASH, I find it would be beneficial for the United States government to shed light on the subject, showing us how to run one effectively, and what goes into one being successful. The records of past MASH's and people who were apart of a MASH would lend a hand to revising this concept to work for today's problems such as plant science education. Other international research agencies could add to this equation by volunteering experts to become a part of a team that would go to Haiti and educate the people.

The proper role for everyone involved would be to work together for a common goal and purpose. Compromising and teamwork would be essential in making an impact on Haitian lives. This factor could work for many different countries, and success in Haiti could lead to improvements in plant education and food production everywhere. The need and want to help our fellow brothers and sisters of the human race needs to be high on our list of priorities. World hunger should be something we all should vow to help eradicate from the world, because with it gone, many other issues plaguing developing countries could become as miniscule as they are in the US. Healthier citizens of the world would lead to more young minds lending their voice to a troubled and problematic world.

I really didn't realize the impact that world hunger had on our Earth and the people living on it until I tackled the challenge that this essay posed. Taking in all the pieces that makes the puzzle that is Haiti, and trying to find an efficient way to put it all together while still benefitting the citizens of the country was a test in itself. Then having to pick a factor that could help alleviate the problem and give my ideas on how was even tougher. Even when I was given a requirements sheet and checklist from the World Food Prize Iowa Youth Institute, this paper was a real trial and test of my strengths and weaknesses. I changed my factor about four times while drafting my paper, but finally came to the conclusion that education was the best chosen factor.

You hear the phrase, "Knowledge is power," probably more than you think, and I do believe that it is true. Without my schooling, I would never have been able to write this sentence, let alone this six page paper. Education is the key that opens the door to all the opportunities in the world. So shouldn't we as individuals, who have this key and use it, let others who are not so fortunate have the same opportunities? Proper education about the world around you and your job make it easier for you to make better decisions. When you understand and are educated about the things that are apart of your life, you are far more likely to be able to take those things and make a better life for you, your family, your community, and your nation. There's really no telling of the benefits that will be reaped when you sow the seeds of education into the minds of those ready to learn and ready for a better world.

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