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Haiti, Malnutrition

Haiti: Nourishment Through Knowledge

Palm trees. Mountains. Bright blue oceans. A majestic island scene, so stunning it could be straight off the set of a movie. Except, it is not. There is a dark side.

On the other side of the mountain, rather than a lovely, sandy, white beach, there lies a trash-lined shore, created by the ferocious conditions of the last hurricane. Where beauty collides with devastation and trash, lies the tropical island of Haiti -- the poorest country in the Western Hemisphere (Haiti).

Surrounded by breathtaking natural beauty, Haiti's population of 10,646,714 (55.3 percent of which are urban), live in complicated conditions. The Semi-Presidential Republic is led by Jovenel Moïse. Under his leadership, there is little aid from the government toward the country's struggling population (World Factbook).

The average household, consisting of 4.4 people, live in small huts made of mud and a thatch roof. The hut has a window, but no glass to keep the elements out. A hole in the wall serves as the door. They have nothing to keep animals, weather, or intruders out of their homes. Notably absent is electricity and running water (Household Size). Outside the hut, piles of trash have accumulated along the streets. A chicken runs by. A goat wanders past. The reality for the Haitians is that the animals live alongside the people.

Seventy percent of these households are led by single mothers (Household Size). There are 32,000 children in orphanages -- 80 percent of which have at least one parent still alive (Lumos). In many cases, the children were given up because the parents cannot properly provide for them.

The tropical island of Haiti is two-thirds mountainous (Global Security). There is no sustainable livestock production, and the farms that exist offer very little in terms of agricultural productivity and income (Haiti).

With minimal water sanitation, diseases run wild. People fall ill to numerous water-borne illnesses, such as bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever. In a more advanced society, these diseases may be treatable and are less of a concern. However, with inadequate healthcare, many Haitians die from curable illnesses (World Factbook).

People in Haiti hold jobs such as street merchants and farmers, but 82 percent of the population is unemployed (Malnutrition Statistics). This is a shocking amount. Wages are low, and nearly 50 percent of

Haitians earn less than a dollar a day (World Food Program). In addition to the low income, it is noted that three out of every four people live in poverty (Malnutrition Statistics).

Haitians who hold the occupation of a farmer, raise sugarcane, coffee, bananas, cocoa, and rice. The average farm size is 2.5 acres, which is planted, harvested, and tended to by hand. With the lack of government regulations and funding, programs designed to provide protection -- like crop insurance -- are unheard of (Agriculture in Haiti).

The country is ranked as the third most affected by catastrophic weather events. Considering the region is hit with devastating hurricanes earthquakes, flooding, landslides, and drought, tragic damage to homes, crops, farmland, and livestock cannot be fiscally protected (World Food Program). Over time, the problem can do nothing but intensify.

Education is scarce in Haiti. With 15,200 primary schools, 90 percent are private and managed by communities, non-government organizations (NGOs), and religious organizations (Education). Great strides in improving their education systems have been made in recent years, but there is still much room to grow.

Fifty percent of the jobs in Haiti come from agriculture, yet Haiti fails to produce enough food for its own population. This is due to the less advanced agricultural production techniques. The main staple in Haitian diets is rice (Haiti-Agricultural Sector). Unfortunately, more than 80 percent of their rice has to be imported to the island (World Food Program). Clearly, food is scarce in Haiti.

The Haitian people typically have two meals a day, a small breakfast and a larger supper. In addition to rice, their diets are supplemented with eggs, legumes, fruits, vegetables, and limited amounts of beef, pork, goat, and fish. Malnutrition is a huge problem, especially in Haitian children. It is noted that "1 in 5 children in Haiti are malnourished; 1 in 10 are acutely malnourished; and 1 in 14 will die before reaching the age of 5," (Malnutrition Statistics). Startling statistics, such as these, are the unfortunate reality for the natives.

The common problem of malnutrition that floods Haiti, mounts to shocking numbers. One in every five children in Haiti are malnourished, and seven percent will die before their fifth birthday (Malnutrition Statistics). With a primarily grain diet, there is a definite lack of protein, minerals, and essential nutrients in their diets. Because there is very little nutritional value in their meals, people, especially children and childbearing women, suffer greatly from deficiencies and overall compromised health.

Vitamin A is an essential mineral in the human diet -- an essential vitamin that one third of preschool-aged Haitian children are lacking. Deficiencies of vitamin A are the leading cause of preventable blindness worldwide (American Academy). It affects the pigments in the eyes, which it needs to produce and nourish parts of the eye, such as the cornea (American Academy). This extreme lack of vitamin A causes devastating health problems in pregnant women and children. "An estimated 250,000 to 500,000 children [worldwide] become blind every year because of vitamin A deficiency (VAD). Half of these children die within a year of losing their sight,"(American Academy). Pregnant women are also affected

with the increased risk of night blindness and maternal mortality (American Academy). Thousands of people are affected worldwide by the monstrous effects of VAD, an epidemic all too familiar to Haitians.

If the nutritional needs of the people were to be met, lives would be saved, families could stay together, and new hope would sweep over the country of Haiti. The answer may lie in the hands of scientists who have used advancements in biotechnology to create a new and improved crop: Golden Rice. This new rice was created by Profs Ingo Potrykus and Peter Beyer. By altering just three genes, out of the 30,000 genes in rice, they have created a rice crop which can provide vitamin A for those who are deficient (Paarlberg). These two scientists were able to show that “production of β -carotene [provitamin A] could be turned on in rice grains using a minimum set of transgenes.” The rice is intended to help those who do not get enough nutrients from their primarily rice dominant diets (Golden Rice).

From the beginning, the Golden Rice Project has been “a public-good project under the guidance of the Golden Rice Humanitarian Board.” The project was intended to help those suffering from VAD. It is noted that consuming only 40 grams a day can prevent death and blindness. Vitamin A production from the rice has proven to be as effective as consuming eggs or milk (Golden Rice).

Like any advanced project, there were trials that generated less than ideal results. The first prototype needed improvements made to the provitamin A content. A research team from Syngenta, a crop production company, successfully increased the amount of provitamin A. Now the rice is being used in developing countries, such as the Philippines. If the rice is proven to be successful on a larger scale (in the Philippines), it will be headed to China, India, Bangladesh, Indonesia, and Vietnam. New types of rice have been developed in order to best suit the climate of Asia (Golden Rice).

The project has been funded by many organizations and donors, including: the Rockefeller Foundation, the Bill & Melinda Gates Foundation, United States Agency for International Development, the Philippine Department of Agriculture, HarvestPlus, the European Commission, Swiss Federal Funding, and the Syngenta Foundation. The project has also been supported by a handful of companies who have offered “free access to their patented technologies necessary to generate Golden Rice,” (Golden Rice).

As with many innovative technologies, some people are reluctant to accept the rice. The misconceptions they hold limit their open-mindedness. The stigma generally associated with genetically modified (GM) foods, can cause them to be unreached by the developing countries, who severely need it. The sad truth is: There is technology to help them, but because people -- oceans away -- do not accept the new technology, innocent people suffer. In an effort to combat this misfortune, the rice received a personal blessing from Pope Francis. “An official blessing of the church ... could do a great deal to build support.” The Golden Rice Project says it hopes the action will increase support behind GM foods and Golden Rice, thus creating the ability for it to be widely used (Golden Rice).

Continued funding of the project is essential. It is noted, those in dire need of the rice are also the people who can not afford a balanced, nutritional diet, thus they do not have the fiscal means to convert to the new rice. The creators of Golden Rice have taken this into consideration. Beyer and Potrykus have worked with Syngenta to make the latest version of the rice available to countries who desperately need it.

“Golden Rice [is] available for humanitarian use in developing countries, free of charge.” (Golden Rice)
The availability of Golden Rice to countries who need it, without charge, would stand to make an impact on their crisis.

Although the Golden Rice is a great way to combat malnutrition, it is important to realize the Golden Rice would only be the beginning of the solution. The yield of Golden Rice is equivalent to that of white rice, and, because Haiti currently only produces about 20 percent of the rice they consume, replacing their current rice crop with Golden Rice would not entirely solve the problem (Golden rice, World Food Program). Much research and extended planning would have to be done in order to ensure no details are left out, and that the project is a success. Other programs would have to be implemented, along with the rice initiative, to ensure the elimination of Vitamin A Deficiency in Haiti.

The overarching problem stems from many different aspects. Political, economic, and cultural issues are just a few examples of the problems that are feeding the fire. More can -- and should -- be done in order to eliminate this problem permanently.

One way to eliminate the problem, is to continually strengthen the education systems in Haiti, specifically, educating the people on what malnutrition is and the effects it has on the Haitians' health. Educating farmers on the proper care and production of the rice should also be done, to ensure an optimal rice crop. In recent years, much help has been sent to Haiti, but, unfortunately, too much of it lacks longevity and sustainability. To combat this recurring tendency, a system to educate Haitians should be implemented, thus empowering them to control as many factors as possible.

Educating future generations of Haitians will give them the greater probability for an improved tomorrow. Even after the rice has been planted, there is still the possibility of failure. The possible pitfalls are seemingly endless: the rice may not grow correctly; farmers may not know the best way to tend to the crops; weather may ruin the crops; and the yield could be lost. The list goes on and on (Golden Rice).

To avoid the potential pitfalls, hands-on, education systems should be established. The education systems would include programs to teach native Haitians about malnutrition, what the rice is, and how to care for it. By preparing future generations of educated farmers, scientists, and citizens today, a strong foundation will be in place for tomorrow. Teaching farmers the proper way to grow and care for the rice would be key to keeping the agricultural and nutritional programs strong. The education system could later be expanded to include education that would encourage children to pursue successful careers promoting sustainable agriculture, such as scientists or farmers. Educating the people would generate greater odds that the rice program will remain sustainable, and that the problems would be permanently solved.

The devastation of Vitamin A Deficiency (VAD) and malnutrition as a whole, in Haitians, is overwhelming. By introducing Golden Rice into Haiti's agricultural system, and sustaining it by educating the people, malnutrition can become an issue of the past for the people of Haiti. As people of a wealthy country, it is easy to turn away from those who need help. It is time that we truly make a lasting change and impact on a fellow country who needs a helping hand. Being a nation that excels greatly in the agricultural industry, it is part of our job to educate others on the accomplishments that we have had. It is time to extend our knowledge to the world. It is time to make a change and come together as one. It is time to let knowledge become nourishment.

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