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Haiti: Improving Nutrition Of Haiti's soil

Introduction

Haiti is located on an island that neighbors the country of the Dominican Republic. Haiti faces many significant challenges in food security and economic stability. Haiti has approximately 11.7 million people (CIA World Factbook). The country's biggest struggle is with food security, which is primarily caused due to environmental disasters that are highly prone in the region, and another common factor, with a lackluster political stability. Haiti is run by a semi-presidential republic that combines the parliamentary and presidential systems. Therefore, almost 5.4 million Haitians or roughly half the population lack consistent access to food (World Food Program). However many people live in rural areas 40.6% (CIA World Factbook) It is difficult to farm in rural areas due to poor soil, deforestation, and high severity of weather conditions referring to hurricanes and droughts. (World Bank climate change knowledge portal) Even though Haiti has an astounding 62.7% of the land being used for farming, the farm sizes are about an average 2.5 acres. Haiti still has its major dependence on food imports instead of having a wider dependence on its own agricultural needs and stability (Trading economics). Some of Haiti's crops are rice, corn or maize, yam, and sweet potatoes (Britannica), and exports are the textile industry and vegetable oils (Trading Economics). Thus, this wraps up my introduction to the country of Haiti, which has a hot and humid tropical climate, typically varying around 19 °C to 28 °C (World Bank climate).

Background

A typical system of a Haitian family consists of four to five members in a household. (ArcGIS Online). Many families rely on access to food from Street Markets and often use kitchens outdoors to cook their food. Their diets include rice, beans, vegetables, seafood, and meats. Access to a hardy balanced diet is very limited. Workers often struggle with low wages. Almost around 174,000 HTG or USD 1,740 per year(worldldata). Well, inflation is very high in Haiti; there is also a very large conversion rate being 100 HTG per one USD. These low wages, often combined with lack of clean drinking water source for the common day people to use with only 50% having access to electricity. (statista) An abysmal lack of sanitation is evident by the garbage piles in the middle of the streets in Haiti due to them not having proper garbage men or garbage systems in some parts. Education and Healthcare are a very low abundance in Haiti, with only 50% of Haitians going to Primary School, this being tied back to the extremely low wages, with most schools being paid entry, most parents cannot afford to send their children(University of Nebraska). Only 60% of Haitians can afford Healthcare or even have access to it in the first place (National Institutes of Health). The abstinence of healthcare is not the biggest crisis, but would probably be the basis infrastructure is in one of the most poor conditions making it very hard for everyday life and rural areas with very hard struggle for clean drinking water and electricity. Piled up with the constant threat of natural disasters and the economic struggles of the country with very high political issues which continue to affect everyone in the nation making food security one of the most hardest things to achieve (worldbank). Some other interesting things would be: National disasters are very high in the area, such as Cyclones, floods, droughts, and landslides. Buildings destroyed by these almost a decade ago from natural disasters have not been repaired or stolen by the Rebels due to not having the economic funds to take care of or to get rid of the debris. But the worst part of what we are going to solve by the end is that these environmental disasters cause high erosion in the sediment and soil of the area, causing crops to be less common and harder to grow in some areas due to it getting rid of the fertilizer in the natural soil.

Haiti is plagued by malnutrition. Nearly half of the 5.4 million people are in critical danger of malnutrition (World Food Programme). From 2020 to 2024, assistance increased from 42% to 46%, a 4% growth (Worldmeter). The primary factors contributing to this trend are climate change, border landscaping management, and outdated farming techniques. Poverty and malnutrition tend to be higher in rural areas, which have less access to resources compared to urban areas. Malnutrition in rural regions is often characterized by people being underweight or lacking sufficient food, while in urban areas, wasting is more prevalent; however, both regions struggle with malnutrition (World Bank). Therefore, poverty is both equally stricken in rural and urban populations. Young children, Women, and Infants are the most affected by malnutrition, and with Haiti's importance on women bearing children, it is not a good thing that so many women do not have proper access to food or proper diets that consist of rich nutrients for childbirth.

Moreover, 25% of children in Haiti who are affected by malnutrition can experience a thing called stunting. Stunting can make it so the children cannot achieve the highest cognitive capabilities as everyone else, and their physical strength is lessened (UNICEF). The highest marginalized group at risk in Haiti of malnutrition are rural Farmers, low-income families, refugees, and immigrants. They also have an increased chance of disease and have limited access to resources. Many environmental effects are being caused by people trying to treat malnutrition at the moment, such as overfarming, deforestation, soil erosion, all of which are in the push to have better food security. Unfortunately, it pushes communities to exploit natural resources and that expands the need to deepen the crisis even more. This creates a cycle where Environmental stability worsens, causing malnutrition to spike, and then furthering the need for a solution, which repeats. Again, malnutrition is a huge crisis in Haiti with many people suffering and dying from it every year and is only one of the huge problems we see. . In this country, another problem

that contributes to malnutrition is gang violence. Many gangs throughout Haiti take control of farms and hold them captive, not allowing food trucks to take the food necessary to keep people alive outside of the farm. These farms are held hostage by gangs and are another contributing factor towards the many and countless deaths in Haiti.

Solutions

There are three supposed solutions for the crisis in Haiti. I'm going to explain them to you and list the good and the bad. The first solution would be agricultural support. Haiti uses many old farming techniques, which have not improved over the years. Some of the old farming techniques that I refer to are using hand tools instead of machinery such as machetes and shovels instead of modern tractors and equipment. Haiti still follows slash-and-burn agriculture. It is a great way to get nourishment back into the soil but can lead to devastating forest fires or even soil depletion worsening erosion. Haiti is not necessarily a less developed country; they do not use typical irrigation as most countries do nowadays. By using irrigation systems they still rely on buckets, canals, and just rain fed agriculture. So as we can see the sheer lack of crop yields in Haiti leading to a high import rate is due to the lackluster information of past generations. The generations only passing down what they knew about farming and not getting information from outside of Haiti, and improving on it only using stuff passed down. So, we could distribute booklets in Haiti that would provide proper farming techniques, better information on fertilizers, instructions on how to make homemade tools, and other resources that could help them farm more effectively or better equip their systems. This would meet the needs of most Farmers helping them have better information to use in their daily life, this hasn't been done before. We can take a look at the (Haiti Food and Agriculture Organization) . It could help with agricultural growing stability but there is a downside: nothing is stopping natural disasters from ruining all progress and destroying the fertilizer in the soil and making a famine in Haiti.

The next solution would be the harvesting of human waste. Now the idea of collecting human waste is not only a beneficiary to making fertilizer, it also creates a facility to have better hygiene because most of Haiti do not have restrooms in their house in the poor communities and it is not uncommon to find Human waste on the side of the road. We could ask for civilians to collect their waste and provide it to the government to be used to make fertilizer now there would be screenings to see if people are healthy enough to donate but other people would just be allowed to use the facilities improving the general hygiene of the public, human waste makes a great fertilizer due to all the nitrogen in it. This would meet the needs of everybody, people with no proper sanitation at home. With many people in Haiti not even having proper sanitation, anyways, most using rivers or even bags to go in the first place (National Geographic). Could easily acquire bags or other transportable equipment to drop off or ship this waste to a collection facility for further use. Waste farming has been done before in Haiti, but only 0.25% contribute and send in at the moment out of the population. This could have a huge impact if we further the demographic group by asking for more people to donate, and maybe gain a tax deductible if enough human excrement was donated by a significant Patron. We have an untapped eleven million people, and could estimate that this would generate a significant amount of fertilizer. Not all of it needs to be used immediately, but it could be allocated to address issues related to deforestation and farming. This could serve as storage following the numerous natural disasters that have struck Haiti.

One potential solution is to utilize nitrogen-rich plants such as clovers, peas, beans, soybeans, peanuts, and black locusts. These plants are high in nitrogen, which is crucial for preventing soil degradation caused by the excessive use of the same crops without crop rotation or seasonal changes. This approach can satisfy everyone's needs by establishing a new sustainable food source while making farmland more efficient in the future. Nitrogen farming has been successfully practiced in the past, as

discussed in this article (gardenia.net). The Dominican Republic has taken steps to tackle the same challenges that Haiti faces. They have provided training for most of their farmers to improve crop cultivation techniques, and they also use organic matter for composting to create better fertilizer after natural disasters.

My recommendation for the best source of fixing malnutrition out of all my recommendations, is the idea of nitrogen-rich plants being the most effective and profitable in the area. This is due to the numerous threats of erosion that exist. These plants promise rich soil and no downtime after natural disasters, leading to less famine or a higher increase in malnutrition, but propose to keep it at a stable rate or even decline it, which is considered the best idea overall.

The main goal is to not try to achieve an instant solution, but a solution that will promise a very stable solution that would last generations to come. There is not a high limitation to this approach due to the fact that Haiti has such a high economical factor of land due to many of their crops being cash crops. Therefore, a logical idea would be to sell it instead of keeping it for economic gain instead of food security. Some things that would have to be taken into account before this is done are the cultural norms of Haitians, as the daily diets of the families and food allergies, before the widespread of many new agricultural foods in the area to promote Better Health. The government and Farmers would be the head of this policy, implementing nitrogen-rich crops after a disaster or overuse of farming fields. Seeds and farmland are the only two objects needed for this idea, and the funding required for it would just come from taxes or foreign aid. They had to have policies in place to protect the Farmland from violent gangs in Haiti, due to gangs ruling almost 80% of some areas. This would be very necessary to protect farms from being able to get to the people, because in the past, some Haitian gangs have held transport vehicles with food captive until paid with ransom, so that people in this country could not eat, and it caused a famine (Pap news). I find this a very sustainable solution, of almost zero waste of products, and

can hold its sustainability over multiple generations to come, and we may even find better technology to improve this over multiple generations with this in place.

Conclusion

In conclusion, Haiti faces numerous food security challenges, including poverty, climate-related disasters, gang related violence, and limited agricultural resources. Despite the country's reliance on farming, many of them struggle to produce or afford enough food. Furthermore, limited access to education, healthcare, and basic infrastructure is further worsened in this scenario. To address this issue, there is a need to improve farming techniques and enhance farm infrastructure with the help of government funding and foreign aid. They can further advance the study of farming, such as crop rotation, and by investing in these ideas, Haiti can build a stronger and more food-secure country in the future.

Works Cited

Central Intelligence Agency. "Haiti - the World Factbook." *Www.cia.gov*, June 1997,
www.cia.gov/the-world-factbook/countries/haiti/#people-and-society. Accessed 12 Mar. 2025.

Delance, Alain . "Haiti - Agricultural Land (% of Land Area) - 2023 Data 2024 Forecast 1961-2020 Historical." *Tradingeconomics.com*,
tradingeconomics.com/haiti/agricultural-land-percent-of-land-area-wb-data.html. Accessed 12 Mar. 2025.

Esri. "Average Household Size in Haiti." *Arcgis.com*, 2022,
www.arcgis.com/home/item.html?id=c960b357ca004a66a331eaf42e15eced. Accessed 12 Mar. 2025.

"Haiti - Read the Latest from Global Citizen." *Global Citizen*, 2023,
www.globalcitizen.org/en/content/topics/haiti/. Accessed 13 Mar. 2025.

"Haiti in Crisis." *PBS News*, 2016, www.pbs.org/newshour/tag/haiti-in-crisis. Accessed 13 Mar. 2025.

"Human Waste to Revive Haitian Farmland?" *Culture*, National Geographic, 28 Oct. 2011,
www.nationalgeographic.com/culture/article/111026-haiti-waste-poop-fertilizer-farms-soil-science-environment. Accessed 12 Mar. 2025.

Lowney, Dr. Jeremiah . "Haitian Health Foundation – Changing Lives – One Person at a Time." *Haitian Health Foundation*, 1 Jan. 2008, www.haitianhealthfoundation.org/. Accessed 12 Mar. 2025.

"Nitrogen-Fixing Plants to Enrich Your Soil." *Gardenia.net*,
www.gardenia.net/guide/nitrogen-fixing-plants-to-enrich-soil. Accessed 12 Mar. 2025.

patrick. "Agriculture in Haiti - Prosperity in the Seed - R3VOLVE HAITI." *R3VOLVE HAITI*, 5 Oct. 2023, r3volvehaiti.com/agriculture-in-haiti-prosperity-in-the-seed/. Accessed 13 Mar. 2025.

Smits, Jeroen . "Area Database - Global Data Lab." *Globaldatalab.org*, 2016, globaldatalab.org/areadata. Accessed 12 Mar. 2025.

World Bank. "Rebuilding Haitian Infrastructure and Institutions." *World Bank*, 2019,
www.worldbank.org/en/results/2019/05/03/rebuilding-haitian-infrastructure-and-institutions. Accessed 12 Mar. 2025.

"World Bank Climate Change Knowledge Portal." *Climateknowledgeportal.worldbank.org*, 2021,
climateknowledgeportal.worldbank.org/country/haiti/climate-data-historical. Accessed 12 Mar. 2025.

World Food Programme. "Haiti." *World Food Programme*, 2024, www.wfp.org/countries/haiti. Accessed 12 Mar. 2025.

Worldometer. "Haiti Population (2019) - Worldometers." *Worldometers.info*, 2023,

www.worldometers.info/world-population/haiti-population/. Accessed 12 Mar. 2025.