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### **Addressing Haitian Agricultural Volatility**

Food insecurity is a global concern. Nevertheless, certain nations are often impacted more extensively than others. This is evident by analyzing the current situation in Hispaniola – the island that encompasses the Republic of Haiti and the Dominican Republic. Although these nations have almost identical geographical and agricultural contingencies, they are dissimilar when evaluating food security and nutrition. The Dominican Republic was ranked 99<sup>th</sup> out of 188 in the 2016 Human Development Index while Haiti was ranked 163<sup>rd</sup>. These rankings qualify the countries in the “High Human Development” and “Low Human Development” categories respectively (“Human Development Reports”). The populations live very different lives, and while the outlook for the Haitian population may appear bleak, certain proactive measures can augment the nutritional situation such as greater governmental intervention in agricultural research and development, agricultural infrastructure, and the formal grocery sector. These efforts have proven beneficial through the Dominican Republic’s recent cultural and economic progression.

The Republic of Haiti is located on the second largest island in the Caribbean. This tropical nation, located directly west of The Dominican Republic, is home to 10.85 million people, 60.9% of whom live in urban neighborhoods, and the remaining 39.1% live in isolation or rural communities (“The World Factbook;” “Field Listing”). Hispaniola was initially an instrumental port in the slave-trade industry of The Americas. Consequently, 95% of the population is of African descent (Main, Kerrie). African customs are prevalent in Haitian culture including a high reverence for religion and family. Extended families often live together in two-room structures with thatch roofs and mud walls (Ferguson, James). Although family is important in Haitian culture, family sizes have decreased recently. Currently, families living in more affluent communities such as Croix-des-Bouquets and Port-au-Prince average 2.9 people per household; conversely, impoverished areas of the country – such as Cite Soleil – have 4.3 people per household (“IDP Registration”).

In her article, Kerrie Main makes it clear that although “Haitian women can work outside the home, they are also responsible for taking care of the house and children” (Main, Kerrie). Nearly 32% of contemporary Haitian households are headed by a female. (“IDP Registration”). Women consistently rank near the bottom in various gender equality surveys. In fact, married women were legally minors until 1979 (“Cultural Competency”). Additionally, poor living conditions can be observed through the unusually low life expectancy for Haitians - only 63.1 years (“Human Development Reports”). Nationwide infant mortality rates are higher than global averages at 46.8 deaths per 1,000 births (“Country Comparison”).

Currently, Haitian economic performance is not conducive to sustainable lifestyles. The annual per capita income for The Republic of Haiti is only \$350 USD compared to \$14,480 USD in The Dominican Republic (“Haiti Outreach;” “GNI Per Capita”). 71% of Haitians live under the global poverty line compared to only 9% of Dominicans (“2017”). Contributing to this demographic, education is not esteemed in Haitian culture and literacy rates are dramatically lower than regional averages. Less than half of Haitian children regularly attend school and fewer partake in higher education (“Education”). Moreover, limited access to electricity further hampers development in the country. Currently, only 25% of Haitians have daily access to electricity (U.S. Embassies Abroad). Therefore, families must cook over a gas stove or open flame bread, stews, vegetables, and other available produce (“A Day”). Unfortunately, much of the progress regarding electricity made in the early 21<sup>st</sup> century was lost due to the devastating

earthquake in January 2010 (U.S. Embassies Abroad).

With much of the Haitian population living in utter poverty, this nation observes high rates of food insecurity. Food insecure does not only denote a lack of food, but also classifies individuals who are malnourished due to insubstantial diet. Currently, 40% of Haitian households are not sufficiently nourished (“Haiti”). Alarmingly, hunger impacts children and the elderly more extensively than middle-aged adults. Fortunately, progress is being made toward alleviating malnutrition. This progression is evident through decreased malnutrition and hunger rates for the region (“Haiti”). This trend can be attributed to marginally augmented nutritional education efforts and smaller families compared to recent years. Notwithstanding, a quarter of Haitian children are stunted and one-tenth are dangerously underweight (“Agriculture and Food Security”). The effects of malnutrition are exacerbated by the fact that only 40% of Haitians have access to healthcare and 55% of children lack necessary vaccines (“Health;”). Although these issues do not solely derive from a simple lack of food, accessibility of necessary nutrients is a major concern. When evaluating food supply, Haiti ranks last out of all Central and South America nations. Thus, the country does not have enough nutritious food for the population. Haitians consume 26% fewer calories than the rest of the world and rely heavily on chronic food aid (“2017”).

Unfortunately, without governmental intervention, the agricultural industry in Haiti will continue to deteriorate rapidly. Over the past 30 years, farmers have not been able to keep up with the expanding population. Agricultural productivity has diminished due to many different unforeseeable events. Recently, this region has been ravished by earthquakes, hurricanes, and other natural disasters. For example, flooding makes farming in certain areas impossible, and earthquakes have destroyed irrigation systems – negating recent agricultural innovation (“Environment”). Nevertheless, plentiful opportunities exist for governmental stimulation of agricultural processes.

The representative nature of Haiti’s government allows for great progression. Although not a direct democracy, semi-presidential governance gives the population input in politics through presidential elections. The president then appoints the Prime Minister. Together, these two leaders form the nation’s executive powers. Moreover, the two chambers of the National Assembly form the legislative power. The executive and legislative powers determine duties for other administrative divisions. A third facet, the judicial branch, oversees governmental practices and ensures that implementations are lawful. The most logical approach to alleviating food insecurity in Haiti is to increase governmental programs that impact many aspects of Haitian life. The food and agricultural potential of Haiti and The Dominican Republic are comparable, and recommendations for lessening hunger can be formulated by isolating the beneficial policies of The Dominican Republic. In theory, these two republics that share mountainous terrain, experience the same tropical climate, and have similar industries will benefit equally from policies (Britannica, The Editors; “Haiti Climate”). With guidance from The Dominican Republic through The United Nations, The Republic of Haiti will develop into a healthy country by replicating the agricultural success of The Dominican Republic.

Agriculture is a major industry on Hispaniola. Over 14% of Dominicans work in the agricultural sector while 70% of Haitians operate small farms (“The Economy;” “Haiti Industry Sectors”). In the Dominican Republic, agriculture is further developed as fewer farms produce sufficient food. Haitian farmers, however, are unable to expand their practices into major operations because the industry is not advanced enough to allow for dramatic growth. Approximately two-fifths of Haitian land is cultivated, yet farming estates in Haiti are extremely small (Lawless, Robert and Christian Antoine Girault). The average Haitian farmer tends to one hectare and hardly harvests enough to sustain his or her family (“Haiti - Agriculture”). Comparatively, the average Iowan farmer tends to 138 hectares (Eller, Donnelle, and Christopher Doering). Predictably, governmental contributions to Haitian agricultural will increase production and decrease national hunger.

By implementing propositions from interventionists, the federal government will directly support Haitian farmers by funding agricultural research and initiatives. Currently, the government contributes little money to agricultural advancement. When compared to regional nations, Haiti subsidizes few agricultural initiatives and ranks last in this aspect of the 2017 Food Security Index. Simple agricultural research such as identifying successful techniques that other countries employ would yield auspicious growth. This is apparent as The Dominican Republic spends more on agricultural research and development than The Republic of Haiti. Consequently, Dominican farmers are more efficient and less susceptible to abject yields than Haitian farmers. In addition, if the Haitian government would research and modify the genetics of the most lucrative crops for the nation – bananas, cassavas, and arabica coffee – agricultural volatility could be diminished. In short, contributing more funds to agricultural research will benefit national well-being. However, Haiti will also profit from greater emphasis placed on augmenting agricultural infrastructure.

Many components constitute agricultural infrastructure including road, port, and crop storage facility quality and accessibility. In Haiti, each of these is dramatically less developed than other nations worldwide. In fact, Haiti ranks last in agricultural infrastructure when compared to regional countries. Inarguably, enhanced road quality between the republic's major municipalities will permit farmers to widely distribute produce. Also, the nation must focus on improving port quality to increase exports. In the most recent analysis of Haitian trade, "Haiti exported \$1.11 billion and imported \$2.95 billion, resulting in a negative trade balance of \$1.84 billion" ("Haiti Exports"). Accordingly, The Republic of Haiti has a trade balance deficit of \$1.85 billion. Obviously, Haitian economics would benefit if the federal government would make improving road and port infrastructure a priority. Unfortunately, it is unlikely that The Republic of Haiti will address agricultural infrastructure without intervention and encouragement from The United Nations.

In addition to limited opportunities for farmers to distribute harvests, there is a substantial lack of crop storage facilities. Consequently, Haiti loses more food to spoilage annually than any other regional nation. According to The University of Wisconsin-Madison, many requirements constitute crop storage adequacy and safety. First, a farmer must consider how long the produce will be stored. Short-term storage facilities preserve crops for up to 60 days while long-term facilities are utilized for up to 12 months. Additionally, temperature regulation is a major concern. Humidity must be controlled to avoid fermentation. Finally, proper ventilation is imperative to avoid accumulation of ethylene – a flammable gas that threatens a farmer's crop viability (Sanford). Obviously, crop storage facility regulation would benefit the agricultural industry as spoilage rates would decline and more food would be available for consumption and export. However, in order for the nation to address spoilage, governmental entities and farming estates must be trained regarding proper practices. Humanitarians from The United Nations can recruit experts to intercede in Haitian agriculture and strengthen the nation's well-being. With this heightened involvement, the Haitian government would engage in global commerce, contribute to domestic economic activity, and encourage healthy lifestyles..

While there are plentiful opportunities for the government to directly augment the agricultural industry and indirectly impact food security, the Haitian population would also benefit from governmental intervention to increase access to vital nutritious elements. Currently, only 57.7% of Haitian people have daily access to potable water compared to the average of 88.3% worldwide ("2017"). The federal government can alleviate hardship by accepting aid from civil engineers endorsed by other nations who are experienced in efficiently securing water for third-world populations. Individuals will benefit and health will increase. In addition to inaccessibility of clean water, Haitians also have significant vitamin deficiencies.

When compared to regional nations, Haitians lack vitamin A, quality protein, and animal and vegetal iron.

The traditional Haitian diet is primarily fruit such as papaya and melons. Moreover, vegetables that are readily available and easily grown in Haiti are not abundant in necessary vitamins. Vitamin A, for example, is often secured through vegetables such as carrots, kale, and broccoli – none of which are lucrative crops in Haiti. Additionally, Haitian climate is conducive to crops such as bananas and cassavas but not to many fruits or vegetables that are considerable sources of iron. In turn, many Haitians rely on meat and animal organs for this essential vitamin. Unfortunately, without an organization as prominent as America’s Food and Drug Administration (FDA), Haitian meat is not dietarily supplemented, monitored, or quality-checked (“2017”). Moreover, most meat produced in Haiti is not safely preserved and has been nutritionally diminished. If the Haitian government were to collaborate with The United Nations to implement nutritional education and food regulations, individuals would become healthier.

By increasing the presence of the grocery sector, individuals would have greater access to nutritious, regulated food. Presently, the Haitian grocery sector ranks last in an assessment of formal grocery sector influence in Central and South America countries (“2017”). Unfortunately, proponents of reforming the grocery sector may encounter resistance from the locals as they may not be willing to change their food and shopping habits. Nevertheless, it is undeniable that the contemporary Haitian reliance on local gardens and malnourished livestock for nutrition fails to sustain health. This can be remedied by greater governmental efforts to educate its citizens to be more conscientious of nutrition. While the citizens of Haiti can support these efforts by being receptive of aid and suggestions, most of the reformation effort must initiate from greater, external powers. Indisputably, many measures can be taken to improve food security in Haiti. By increasing funding for agricultural research and development, governmental involvement regarding agricultural infrastructure, and regulation of the grocery sector, Haiti can develop into a healthy and food-secure entity.

When considering the magnitude of these propositions, one must consider funding opportunities. In order for Haiti to contribute funds to these efforts, the government may consider reducing expenditures in other aspects of governance. Understandably, this may not be feasible. Certainly, however, the nation cannot increase tax rates as the impoverished population will be unable to afford it. Consequently, Haiti may need to rely on greater global powers such as The United Nations for financing. Haiti has been a member-state of the United Nations since its formation on October 24th, 1945 (“The Formation”). The United Nations has several primary goals that include ending poverty, and securing nutritious food and safe water. (“UN Careers”).

The United Nations prioritizes sustainable agriculture and food security. Therefore, as a member-state, Haiti has direct access to aid from one of the world’s most influential humanitarian groups that is an established “change-maker.” Fortuitously, the Dominican Republic is also a member-state of The United Nations, and is bound by Article 1 of the Charter of the United Nations to help as it states that The United Nations works “to achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character” (“Charter”). Therefore, with a well-organized plan and the cooperation of entities worldwide, The Republic of Haiti will evolve into a prosperous and healthy nation.

It is inarguable that certain nations are impacted more dramatically by food insecurity than others. While natural disasters and the subsequent carnage – such as the devastation of the earthquake that struck the nation in 2010 – are unavoidable, there are means in which the government can strengthen agriculture and the grocery sector to make Haiti more resilient and minimize food-security volatility. The fault hardly lies with the population, but rather with the refusal or indecisiveness of the federal government to identify potential solutions. This is depicted as The Dominican Republic is more food-secure than The Republic of Haiti regardless of similarities between them. Thus, the fundamental differences between the two republics are governmental processes. The Republic of Haiti can combat hunger and malnutrition by increasing governmental regulation and involvement in many facets of Haitian life.



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