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Jamaica, Factor 6: Sustainable Agriculture

In 1494, Columbus discovered a land mass and named it, “Santiago”. The name changed from “Yamaye” to “Jamdung” to “Xaymaca”. Eventually, its abbreviated name “Ja” mashed with “Xaymaca” and Jamaica was born. The climate is deemed tropical, with temperatures ranging from 55 degrees in the mountains to 81 degrees in the lowlands. The rainy season is from May to June and September to November. The months of August to November is classified as the hurricane season. ("Countries and Their Cultures."). With its 4,244 square miles, what the island lacks in size, it makes up for in population density. An average of 656 people live every square mile, Jamaica is the 49th most densely populated country on Earth. In 2012, the island celebrated 50 years of independence with a population high of 2.8 million, making Jamaica the 136th most populous country ("WPR. ").

Jamaica has a rich history of Spanish and British heritage. It was a Spanish colony from 1494 to 1655 and became a British colony until 1962. When Jamaica became independent in 1962, it was split into fourteen parishes. Kingston became the capital when one quarter of the population lived there in 1872. 39 percent of Jamaica’s population resides in parish capitals, and about 1.04 million live in Kingston. Kingston alone has 88 percent of the country's’ parishes. 53 percent of the population lives in an urban area, leaving 43 percent to provide for the rest of the nation. This has caused food insecurity in the nation ("Countries and Their Cultures. ").

Family life in Jamaica ranges significantly. For the average middle class rural family, breakfast includes a “drinking tea” which is boiled bananas, salted cod and chocolate tea, lunch is either fried dumplings or fried plantains, and finally for dinner, stewed beef, boiled yams and rice, with fried fish. The average of two children of the family are required six years of primary schooling, funded by the Jamaica Movement for the Advancement of Literacy Foundation. More often than not, most boys will only finish grade school and the girls will go on to high school. Jamaica ranks 137th out of 215th in literacy ranks, with 87 percent ( Web. 25 Aug. 2015.). The mother of the family would stay at home, while the average father would be working in agriculture. Many men work in the sugar plantations. Most of the time, the father is rarely seen in the family unit. Children of the poor families are often shifted from household to household within the extended family for support. By the age of five to six, the children are put in charge of helping with the family farm afterschool ("Countries and Their Cultures. ").

The Ministry of Health is in charge of all forms of health care in Jamaica. They provide sufficient means for all citizens in Jamaica. The island has 364 government-operated health centers with five levels of care. There was an estimated 85 doctors and eight dentists per 100,000 people in 2004. The government-operated hospitals cover everything from epidemic control to tuberculosis. HIV/AIDS treatment is available, and advances in child care have been made ("Access to Quality Health Care Advanced in 2013 - Jamaica Information Service. ").

The mothers and grandmothers of the extended family would be in charge of the average farm, (about three hectares), used for growing sugar, plantains, bananas, yams, and other winter crops. Land that is used for subsistence farming in Jamaica is historically infertile, it is rarely purchased, and only gained through inheritance. Sadly, the only land that the average family can afford to buy have been destroyed and left barren by revolutionary battles. Fortunately, in 1973, Project Land Lease was introduced. This act gave farmers a small amount of land, with fertilizer and technical advice. This project helped over 23,000 farmers work about 18,000 hectares. An estimated 14 percent of idle land out of Jamaica's 25 percent was restored through the Project Land Lease. However, many people saw this as inadequate and uneconomical so the program ended in 1977 ("Jamaica - Agriculture.").

Since the 1980's, the government has been in favor of privatization and commercialization of agriculture. This has caused major issues in the lives of rural Jamaicans. Smallholders represent 82 percent of the total number of farmers, yet account for just 16 percent of the total land under agriculture ("New Agriculturist").

In response to large areas of land being used commercially, many small farmers have had to use mountainous parts of the island to farm. Farming in overly steep parts of the country has caused serious problems to the topsoil, making production difficult. More than 75 percent of the country has a slope of ten degrees or more, which severely limits its potential for agricultural production ("New Agriculturist"). Yields are about  $\frac{1}{3}$  of that of a commercial farm. Ten percent of the island's land is considered suitable for tree crops and pasture with extreme shortcoming for cultivation. Thirty-four percent is suitable for farming but with 'strong' or 'moderate' limitations, leaving only three percent, which is considered usable with no limitations.

Communities responded to this by having each family specialize in one to two crops and sharing within the unit. Even with this system, communities were still suffering from malnourishment. Technological advances are almost at a standstill in the rural areas of Jamaica. Machetes are the only tool used in the communities and fertilizer and pesticides are not readily available. Yields are not only smaller, quality lacks as well ("Jamaica - Agriculture.").

Due to fertilizers not easily being obtained, the slash and burn technique is used almost exclusively in Jamaica. This practice is used by killing all living organisms like trees and bushes so all of their nutrients will nourish the soil. Although this does work, by the next growing season, the deforestation will have the reverse effect, because the topsoil is washed away from erosion. This practice is not only unethical, but dangerous. In times of drought, hundreds of acres of land are caught on fire and equipment is damaged. It is extremely important for the government and rural population to utilize and promote sustainable agricultural practices ("Jamaica - Agriculture.").

Poor soil drainage is inevitable with many of the Jamaicans farming techniques. Since the top two crops in Jamaica, coffee and bananas, require space between them, soil is left exposed. Soil type plays into the problem as well. Jamaica has crystal soil. This essentially means that brown clay lays about 26 inches thick on top of a gravel-type soil. The only crops that seem to thrive in this soil type are sugarcane and citrus plants, due to their ability to grow in close plant spacing.

Jamaica is known for its booming coffee business. The coffee made in Jamaica is one of the best in the world. Coffee beans thrive while growing in the mountains, where it is high and moist. Most beans are grown two to five thousand feet above sea level. One pound bags of the famous Blue Mountain Coffee were sold in the United States for about \$40. Unfortunately, after the United States' economic slump in 2012, demand was a record breaking low, and many farmers had to abandon their livelihoods and start over somewhere else. To make matters worse, Jamaica was hit with multiple storms that year, destroying the coffee trees. This caused the cost of tending an acre of coffee trees to raise substantially, from about \$3,400 to \$7,070. Many farmers were quoted saying that they would rather work for fertilizer than money, so they could keep their business going. Also, Japan was once Blue Mountain Coffee's number one consumer, buying 99 percent of the company's supply, but when prices of the coffee skyrocketed, it went down to 60 percent. This caused a huge depletion in the country's exports. Another major blow to the coffee business is the invasive species, the borer, Borer are beetles that are attracted to coffee plants. The bug is smaller than a sesame seed and is only able to be taken out by hand, The government is funding a small portion of research to find more practical ways to eliminate this bug ("Jamaica's Famed Coffee Industry Facing Tough Times.").

Unfortunately, the slash and burn method is used yearly in the coffee business. To combat this, the Jamaican Agricultural Society (JAS) is enforcing educational programmes to fix this issue. The president of JAS told the *Jamaica Observer* that the new practices that they will be teaching will be safer and will boost productivity. This was all brought into light after a 15 day bushfire in prime coffee land in St. Andrews. This fire devastated over five hundred acres of land and caused two hundred million dollars in damages. JAS has sent in volunteers from the Peace Corps, who have gone through ten weeks of training to help teach young farmers new practices like contouring and composting. The Peace Corps will spend two years in Jamaica to help farmers learn and better these techniques. This Plan will work in two parts, Educational and Environmental. The educational team will work with the schools and communities to set these practices into the families and the environment will go straight into the farms ("Farmers to Be Trained in Environmentally-friendly Practices - News.")

One plan that the Ministry of Agriculture and Ministry of Fisheries have come up with is the Diversification of the Caribbean Livestock Sector through the Production of Small Ruminants. The main idea of this plan is to more efficiently raise sheep and goats, This program will end in 2016. If these plans were put into action, then the average family would be able to buy and grow more healthy food, and would no longer be malnourished. Banana Export Expansion Programme (BEEP) is another plan that could significantly change rural Jamaica. The original plan of this program is to have one man per hectare of plantation to increase exports and minimize labor costs. Land must have proof of land tenancy and the farmers must show proof of all purchases so the government can help pay. Farmers will also receive help with transporting the yield ("MOAF - Projects.").

The Diversification of the Caribbean Livestock Sector programme which is currently in place in Jamaica and Trinidad and Tobago, was thought up in 2011 to better the mutton and chevron production in those countries. The government has been helping these farmers raise and sell goats and sheep to increase productivity in sales. The food quality is thought of to be better and safer due to farmers being taught

better hygiene standards. Also, the government is helping with selling the animals by sending them to a private market and producer. In 2012, the government distributed over five hundred imported goats and sheep and started the programme ("Project Details.").

To better the Diversification of Caribbean Livestock Sector , the Jamaican government could make it mandatory that goats and sheep are raised on the rocky hillside of the mountains, so crops can be grown on flat land in place of the animals, where quality is better and chances of erosion are slimmer.

Another practice would be growing bananas on the steep land. Bananas, have the ability to grow just about anywhere, this would allow the necessary crops to be grown in place of the bananas. BEEP is expected to grow 37 tons of bananas per hectare per year ("MOAF - Projects."). Not only would this fix malnourishment, but governance would also be helped. Families would be more comfortable in their food situation, and be better able to make a profit from their yields.

When you think of Jamaica, you think of sprinters, Reggae music and a free spirited lifestyle, but in the future, you should think of agriculture. Agriculture plays a major role in Jamaica's rural population. With focus on sustainable agriculture practices by the government and the population, prosperity is inevitable.

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