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Jamaica, Factor 6: Sustainable Agriculture

### **Jamaica: Sustainable Farming Methods**

People rushing to get to the grocery store and buy all the food they may need for the next week or even just for the night. It is around closing time so the scene is chaotic. This definitely is not the best time to grocery shop as it causes strain on the customer to get food for their evening meal. Employees are shutting off lights in the produce aisle and getting excited to go home. When people are in a hurry to get their shopping done before the store closes, simple questions they might normally have about food and where it comes from are lost in the rush. Some questions that might be asked are, "How was this item produced? How did this get to the grocery store?" Many people in the United States are becoming more aware of where their food comes from, how it was produced, where it was produced, and how its production plays a role in a bigger picture of sustainability. In the United States there are choices the consumer may make: support small ranches, farms, and larger companies who promote sustainability, or make food choices based on other qualities such as cost, brand name, or availability. The consumer has the option of being an informed shopper and casting their "vote" by supporting the food producer they desire.

This however, is not the case in other countries. Many times the customer does not know if the coffee or cocoa that they are buying was produced with outdated farming practices that are harming the environment or not. Jamaica is one of the countries facing this problem, caused by farming techniques that are outdated. These techniques are not only obsolete, but are also affecting the environment in a negative way. This is a problem that is not going away and if something is not done to change this, Jamaicans could deplete their natural resources, making it difficult to provide food for generations to come. In order to uncover this issue further, a typical Jamaican family must first be defined. Then, the issue of sustainable food production must be discussed. Next, a correlation of how other major issues play into sustainability must be made. Finally, suggestions and recommendations towards solving the issue of sustainability in Jamaica are made.

The discussion of the issue of sustainable farming begins with the typical Jamaican farm family. The average size for a family in Jamaica is three: two parents and one child. Couples usually only have one child because they may only have enough room for one and/or they feel that they cannot provide for more than one child. The main dishes for dinner and supper are curry chicken, steamed fish, stew peas, and cow feet. For special occasions curry goat is served. For breakfast, eggs, banana porridge, and sardines are mainly eaten. These dishes are so regular because these foods are local and convenient for people to acquire. Much of what Jamaicans eat and live off of is either grown themselves, traded with other farmers around, or occasionally purchased at a local market.

Jamaicans feel that family is one of the most essential things a person could ever possess. To Jamaican children, their parents are not friends or a companion, but instead are a constant guiding force in life. To many Jamaicans, it is never too late in life to get scolded by a parent. Parents are very strict about school. They want their kids to do well in everything they do. The problem is that many parents can not have their kids go to school for too long, because they need them to help out with the bills. This is why many boys go to grade school, then go directly into the work force. More girls go on to high school, because the boys are working. The literacy rate for young adults between the ages of fifteen and twenty five in Jamaica is 95.3%.

Sustainability is how biological systems stay diverse and remain productive for successive years. In the

agricultural industry, Jamaica is facing major issues with sustainability. The main crops that are grown in Jamaica are citrus, coffee, pimento, sugar cane, bananas, and cocoa. Many of these products have to be manually weeded or picked. Crops such as bananas and coffee have to be spaced out, which leaves soil exposed. This causes soil erosion and poor soil drainage. Poor drainage of the soil in Jamaica is a large problem because the main soil there is Crystal Soil. This type of soil is mainly brown clay and the next layer is about 26 inches down and is gravelly soil. Plants like sugar cane and citrus plants are better because they are spaced closer together and have larger roots so the soil won't erode as much. Jamaica has many different regions such as mountainous regions, rocky hillsides by the sea, and flat regions as well, which make it easier to farm all of the different products. For example, sugar cane is better grown on flat surfaces while citrus fruits are best grown on hillsides or sometimes by rocks.

One of the largest industries in Jamaica is sugar cane which is very hazardous to cultivate. Sugarcane is a plant that grows about seven to eight meters high until the plant can no longer support itself. The plant is then considered mature and can be cultivated. The people who cultivate the sugar cane have to use machetes to cut the plant from its roots. This manual way of harvesting sugarcane is very dangerous because of the machetes. Many people are injured in machete accidents. There also are long term effects such as musculoskeletal injuries. Once the sugar cane is taken to the mills, the plants are crushed and the juice is extracted by heavy rollers. The juice inside is mixed with chemicals and other ingredients with lots of heat. This juice is then evaporated so that it becomes more concentrated. Next in the process is centrifugal treatment. This is the process of separating the sugar from the juices. The final product is brown sugar. If white sugar is needed, it is then refined even further.

As previously stated, many Jamaican farmers have very old ways of farming. One of these old techniques is deforestation, which causes problems with mud slides and floods. Deforestation also makes the soil less desirable because the silt that that was once under the clay is moved to the top and when it rains, the exposed silt soil is washed away. Deforestation is mainly caused by people who are involved in the illegal lumber business. It is very easy to cut down a tree to make a quick buck, but the long term affects on soil abundance, quality, and fertility are not being considered.

Another old farming technique that is used in Jamaica is the slash and burn technique. This is where people go through an area and cut down all the living trees and plants so that it will give nutrients to the soil. This may sound like a good way to farm but this only gives nutrients to the soil for about one year then all the top soil is washed away leaving the farmer with worse soil than he had in the first place. These techniques are affecting how much food they are able to produce; which is in turn hurting the economy.

These old practices are affecting many farmers and the economy of Jamaica; with outdated practices comes fewer products to be sold thus much more food needs to be imported. Jamaicans spend about two billion dollars per year importing food but only two hundred million on food from their own country. These numbers affect the U.S. because products are bought from Jamaica and with less supply and the same amount of demand, the prices for products will go up. Jamaica is making an effort to educate the people about better farming techniques so these problems are lessening as time goes on, but this definitely is a problem that needs to be solved as soon as possible.

A large barrier to improving agricultural productivity is that many farms in Jamaica are small family farms. An average family-owned farm in Jamaica is about 1.2 acres. Family-owned farms are usually very small. Many small land owners have acquired their land from their family. Others may have purchased the land but haven't been educated on proper ways of farming the land. Some people might own their own piece of land and work on a larger company owned farm. The majority of large farms in Jamaica are company owned, accounting for about 70 percent of Jamaicans food production. Companies know better ways of farming due to the fact that the owners had to be trained to do their job. Often the people who live and work on the small privately owned farms aren't using current farming techniques, though. One

possible reason for not using current machinery is the lack of money to buy equipment; therefore, Jamaicans have to do a lot of work by hand. This can cause many problems for the environment. One problem with working without modern machinery is that when farmers rely just on rain to water their plants instead of irrigation the soil can become dry and not usable for cultivation.

Outside of food production, there are other factors that are playing a role in agricultural sustainability in Jamaica. One of these problems is the pollution caused by poor practices of air, water, and land conservation. Some types of poor practices are not disposing of waste properly, not throwing trash away or recycling it, and not using air filters on cars. Mass tourism in Jamaica has caused poorly planned waste and sanitation disposal practices. This has caused water to become contaminated in areas where tourism is prevalent. Air pollution has also become a major problem in Jamaica. In Jamaica, there are air quality monitoring stations near the cities so that if the pollution gets too high for a day they can tell the factories to close and have fewer people drive. Factories will also stop working for as long as they need to for the air to get back to normal. This means that most or all of the workers will have to stop working for that time period causing them to lose some of their average wage of 235 JA dollars. Even though this would cause harm to the people who are working something still needs to be done when there is too much pollution. A problem with this is that 41 of the 56 factories are owned by the Bauxite Company which is a major coal company in Jamaica. This obviously raises questions of having a bias opinion on when it's time to shut off production.

Another issue in Jamaica is Human Immunodeficiency Virus (HIV). There are many programs to help with this: Ministry of Health, UNICEF, and CDC. They educate Jamaicans about HIV, but in adults, there is only 1.7 percent prevalence to it. This is an extremely low percentage of people who either already have it or can contract it. The price for the treatment of HIV is high because it is hard to find educated medical help. It is difficult for some Jamaicans to get health care.

Over 1 million Jamaicans live below the poverty line, which amounts to twenty percent of the Jamaican population. The Jamaican government is trying to make a difference by raising the minimum wage. The minimum wage was raised on January 2014 from five thousand to five thousand six hundred dollars for a forty hour week. This however will not help all of the financial troubles because the Jamaican dollar is very inflated. In Jamaica they use the same money as in the United States but the Jamaican dollar is ten cents to the dollar of the U.S.'s. Jamaicans that live off of this wage have to spend their money very wisely because just a simple trip to the grocery store can cost about 2,000 JA dollars.

Jamaica has a large problem with obesity; yet, they also have a problem with malnutrition. Obesity spiked in the 90's when fast food first made its mark in the country. Since this time, obesity has become a growing problem. Eating at a fast food restaurant is faster, easier, and cheaper; so many people use fast food as an alternative to home-cooked meals. The down side to this is that many people are getting diabetes from eating too many fatty foods. Fast food restaurants attract people on lower incomes because it is affordable. In the poverty-stricken parts of Jamaica, many people are malnourished. Many children are harmed by this. One in every four children lives in poverty. This means that many of them are not being fed enough or they are fed things that aren't healthy. Poor nutrition depletes immune systems which causes diseases to spread more rapidly.

There are also problems that the whole world faces that are also affecting Jamaica's agriculture sustainability. One of the major problems that the world faces is climate change. This would affect agriculture production, as well as pollution that has already been discussed. Another thing that affects agriculture production is population growth. In Jamaica the population growth is about 5% each year. With more people living in Jamaica and needing more food, there is more demand than supply. This means more food has to be imported to Jamaica, causing more strain on the economy.

Sustainability is not something that can occur overnight. In order for Jamaicans to feed their growing population while maintaining sustainability, a plan of action needs to be implemented. This plan would involve all sectors of Jamaican population as well as assistance from outside sources as well. Ideas to help with food sustainability are in the following paragraphs. The problems with farming sustainability could be helped immensely if the family owned farms were educated in better farming techniques. Feeding the World is a program that could benefit Jamaicans. This program is based in the United States and goes to countries that they feel need help with education. The volunteers of this program not only educate in agriculture but also in general education, health, and sex education. Many countries that have had this help are in Asia and Africa. Studies have shown that the countries that were helped by Feeding the World had definite benefits in production. Some of the things that are taught are what crops are best to grow there based on the soil, climate, and water availability. Also, they are taught how to use mechanical machinery.

Another technology that could be beneficial to Jamaica are GMOs. As many people know, there is great controversy as to if this is a good idea or not. Some people in Jamaica are wanting to start using Round Up Ready Crops. Round Up Ready crops can be sprayed with Round Up for weed control. By spraying weeds, plants can become more productive because they do not have to compete with the weeds for nutrients. Many people do not want to do this because it would alter the genetic makeup of the plant. In the United States there is great controversy surrounding the production of GMO food products. Although GMOs have proven to be safe, there are still skeptics. Another problem is that introducing GMO plant varieties would need to be funded by a research group or the government because most small farm holders would not be able to afford this.

An additional idea is to have the Jamaican government rent out machinery to farmers. Some machinery that would be beneficial is irrigation equipment. With many farmers relying just on rain water it would be more productive to have irrigation systems to provide additional moisture. I feel like this would be a win-win situation. The government would get money from renting out machinery and the farmers would have more modern ways to farm. Also the farms would be more productive with the new machinery. With the unemployment rate in Jamaica at 15.2 percent and the youth unemployment rate at 30 percent, it would be beneficial for people without jobs to be trained to do up-keep on the equipment. I do think, however, that machinery should not be rented out without the farmers being educated about how to run it first. This is where a program such as Feeding the World would be used.

The Rural Agriculture Development Authority (RADA) has opened greenhouses in Jamaica through volunteer work and contributors pay. The goal of the RADA is to create a place for people to learn about plants, health and wellness, and how to be able to live healthier lives. Sadly not many Jamaicans have access to places like this due to low funds and lack of volunteers.

A project that is specifically a project in Jamaica is called Agriculture and Community Farming. This is a project where people who want to volunteer can go to Jamaica and help with farming potatoes. Jamaicans are now starting to use greenhouses because they take less land to plant and grow them, helps with keeping bugs away, and they maintain the weather. They have different jobs that volunteers can do; some examples are taking samples of the soil for testing, assisting farmers with literacy, and research in irrigation methods. Another project in Agriculture and Community Farming is helping schools have a small garden so that schools can be more self-sufficient.

The role of the communities and national government is to help fund these ideas. If the U.S. gets products from Jamaica then it would be in the United States' best interest to fund missions like Feed the World and Agriculture and Community Farming, so that in the long run more products are able to be exported. Communities should be trying to move forward with technology as much as they can. There are certain

limitations to what some of them can do, but if they don't change the old farming techniques, there will soon be no good land left for farming. The average farmer can help this problem by becoming educated about old farming techniques like slashing and burning. In the long run the soil will be better if the farmers don't cut down the forage.

The issue of sustainable farming methods in Jamaica has been uncovered. First, a typical rural Jamaican family was described. Then, the issue of sustainable food production was discussed. Next, a correlation of how other major issues play into sustainability was made. Finally, suggestions and recommendations towards solving the issue of sustainability in Jamaica was made. Now that the different ways of farming have been described, will you take the extra time to ask yourself the simple questions about the food you are buying at the grocery store? Will you be an educated customer? Will you support the companies or will you support the small family owned farms? Although sustainability in Jamaica was the topic of discussion, it is imperative to understand that sustainability is an issue that stretches throughout the world. By making informed decisions in the local grocery aisle, a vote can be cast for preserving our biological systems for future generations.

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