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Jamaica: Increasing Crop Yields and Reducing Drought

Jamaica is a nation of diverse landscape; beaches on the outside and large mountains inhabited by people who do not have the proper technology or education on how to improve crop yields. A typical farm size in Jamaica is on average four hectares. Crops produced on the land can vary from a wide spectrum of things; cucumbers, yams, avocados, mangoes, and corn (Allard). On average Jamaican families have seven children. Jamaican people eat a lot of locally farmed produce including cod, red fruits, and goat meat. When and where children attend school depends on their economic background. Most students attend preschool from age's three to six and then move on to primary school until the age of twelve. Secondary schools including high school are from ages twelve to eighteen. Entering high school requires a series of competitive exams meaning admission is limited. Secondary schools can also be expensive but government aid is available. Most large towns and cities have a hospital. Medical clinics are community-based and available across Jamaica. The public health care system covers basic care for all citizens at low cost or for free. Payment might be required in some cases, especially for more complicated care. Piped water is also safe to drink. Income is a limiting factor in relation to increasing crop yields; seeds with higher technology to produce higher crop yields are more expensive. To be able to maximize crop yields; soil fertility and plant health must be achieved through the proper use of fertilizer, herbicides, and fungicides.

Norman Borlaug intelligently noted "I now say that the world has the technology – either available or well advanced in the research pipeline – to feed on a sustainable basis a population of 10 billion people. The more pertinent question today is whether farmers and ranchers will be permitted to use this new technology? While the affluent nations can certainly afford to adopt ultra low-risk positions, and pay more for food produced by the so-called "organic" methods, the one billion chronically undernourished people of the low income, food-deficit nations cannot."

To increase crop yields, methods of biotechnology must be used. Organic food is expensive and does not use land as effectively as seeds with biotechnology. Jamaican families are not producing enough food because the seeds that use biotechnology are more expensive, but the end result would dramatically increase the yields of the crops. The farms are not earning sufficient income because of educational lack in proper tillage techniques (Fastwik). Lacking adequate nutrition in children is a problem in Jamaica but opposed to other nations it is a small problem. This problem can be fixed by growing crops that are engineered to withstand drought and crop diseases. On family farms they generally grow their own food, produce their own meat, and buy the rest of the food they need from markets inside of town.

The major problem with bio-engineered seeds is distribution. "The evidence unmistakably indicates that you have to spend money to make money," says Sully Blotnick (Blotnick). This quote is extremely accurate. Local charities and non-profit organizations can truly help in the utilization of using genetically modified organisms. Developing different types of seeds for Jamaica's diverse landscape would also be necessary. There would be many different ways to distribute these crops depending on the location of the farmer and what kind of crops they are using. The most efficient way would be to have a crop laboratory in Jamaica, but only with special funding and donations could that be possible. The infrastructure in Jamaica is not in high function. Roads are poor for transportation to get the crops where they need to be. Infrastructure needs to be improved in Jamaica because that is a major contributor to poverty.

The current Prime Minister of Jamaica is Portia Simpson-Miller. She is doing her part to help decrease poverty in Jamaica, although the former Prime Minister Patrick Allen of Jamaica was focusing more on poverty in his country. Portia Simpson-Miller is focuses on civil rights for lesbian, gay, bisexual, and transgender citizens. Patrick Allen's main focus was improving transportation in rural lands outside of cities, which is most important in Jamaica.

The topic of increasing yields affects agriculture immensely. If crop yields are raised the average income of family farmers increases. A large factor in not producing enough food is crop disease. Disease and pests can spread very easily through non-engineered crops, also, crops without herbicides or pesticides will have much lower yields. That being said, the first step that needs to be taken is educating the small scale of Jamaican farmers on proper use of herbicides or pesticides (Yunus). If the chemicals are used improperly the results could be catastrophic. Prevention is key when it comes to pests and weeds. Also, providing seeds that can withstand longer time periods without water is important. Norman Borlaug intelligently states:

“If people want to believe that the organic food has better nutritive value, it's up to them to make that foolish decision. But there's absolutely no research that shows that organic foods provide better nutrition. As far as plants are concerned, they can't tell whether that nitrate ion comes from artificial chemicals or from decomposed organic matter. If some consumers believe that it's better from the point of view of their health to have organic food, God bless them. Let them buy it. Let them pay a bit more. It's a free society. But don't tell the world that we can feed the present population without chemical fertilizer. That's when this misinformation becomes destructive.”

Chemicals need to be used and the plants need to be bio-engineered to help the third world country of Jamaica get back on their feet. Controversy is discussed within whether bio technologies should be used. Cases have been found where food is produced in mass and many people have an allergic reaction to the food. But, tests can be done and more precautions can be taken to solve that.

In Jamaica very few people are using genetically enhanced crops and very few are properly using chemicals on the plants. The situation is somewhat severe because farmers may not be able to produce enough food for the families let alone be able to make a profit.

If a profit is not made, money is being lost and the farmer may not be able to grow crops for the next season of rotation. Although, in Jamaica many of the crops they grow are on trees. That means once produce is collected it starts growing back instantly. They don't have to buy a new set of seeds every time the next growing season comes around. Tillage practices are poor in Jamaica; the farmers plow up the top layer and can let it sit for weeks. While the stirred up soil is sitting it can easily get blown away leaving a sandy, clay mixture that is not very suitable for growing produce. Women that live on farms in Jamaica usually stay on the property and do house chores unless they have a job working with children, but that is very rare for farmers' wives.

Trends on crop yields and biotechnology are improving at a slow but gradual rate. Nothing extensive has been done but at least they are moving in the right direction. Trends are measured in two main ways: by actual yield production or income per farm. The situation of increasing crop yields is slowly changing for the better, at the rate it is currently moving at it would take approximately 75 years to get to the production level that the United States is at. In other words, resources need to be more accessible to small rural farms. Resources not only in terms of increasing plant yields, but resources in education on proper tillage practices and proper chemical use to produce a higher expectations of agriculture in Jamaica.

To improve yields a higher start up cost will have to be included because herbicides, pesticides, germicides, and stronger seeds with more resistance to drought are more expensive. To help the environment sustain what it has, tillage techniques need to be taught, also the proper education on chemical usage. The population is growing very rapidly. People are already going hungry. When the population grows it takes away from valuable farm land that could help to feed millions. In Jamaica people are building on very fertile farm land. Another problem is using wind energy. Wind turbines are a good, clean energy source. But they take away from the area that crops could be produced on. The water in Jamaica is safe in most places of the country. Jamaica has a lot of fresh water streams that come from

high in the mountains. To reduce poverty in Jamaica donations are going to have to be made. The reason that the Jamaican economic system is steadily improving is because they have a demand for their crops. Jamaica has a high tourism rate with a lot of resorts and beaches that people enjoy visiting.

Many people have many different steps and techniques to reduce poverty. First education on proper practices needs to be taught in the public schools of Jamaica, this way when the students graduate they have information on what to do if they get the opportunity to do it. "We have an opportunity for everyone in the world to have access to all the world's information. This has never before been possible. Why is ubiquitous information so profound? It's a tremendous equalizer. Information is power." –Eric Schmidt. We need to have more non-profit organizations that people volunteer their time to. This way it ensures when someone is donating to a cause they are not paying a person who is sitting at a computer working. A very important step is recognizing the potential as an entrepreneur in every single human being on earth. Next, it is important to use technology to advance the earth. If everyone wants to get feed technology it is most definitely going to have to be used. Studies have shown that young kids before the age of 5 that get proper nutrition have a grade point average 1.2 points higher than kids that don't get proper nutrition. Without getting proper nutrition the brain activity is extremely lower because the body grows the most between the ages one-four (Heerschap).

That being said, early childhood nutrition programs need to be put in place. 30 percent of young women living in poverty are kept home to save money. Many experts agree that it is possible for poverty to be halved by 2015. It is possible, only if millennium development goals are set and achieved. One goal is to use farm machinery to help increase productivity per farm. Farm equipment is expensive ,but non-profit donation services can help with the donation of them; year round tree crops that only require one seed would be recommended to cut down start up expenses; and last but not least the government needs to advance investment in time to educate people. Truly focusing on farm education and money management could be a huge advance for Jamaican people.

The Jamaican government should help improve education laws about agriculture, international research agencies should find a way to make an inexpensive seed that has been genetically improved so that third world countries can afford to purchase them. The World Bank should help set up financial institutions that help Jamaican people with money management to increase productivity. Rural farmers can keep trying to improve their farming practices and that will steadily give them more money to expand their farms and become a thriving nation again. Jamaica is a beautiful country and they need assistance, the United States can provide everything that they need. We just have to take the first great leap forward. It is possible. Hope cannot be lost.

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