

Ryven Mangundayao
Brophy College Preparatory
Phoenix, Arizona
Cuba, Food/Water Scarcity and Renewable Energy

Cuba: Promoting the Transition To Renewable Energy and Ensuring Food Security and Clean Water

Cuba is a long and narrow archipelago island located in the northern part of the Caribbean between the North Atlantic Ocean and the Caribbean Sea, approximately 150 kilometers south of Florida. Cuba's area is 110,860 square kilometers, which is slightly smaller than the state of Pennsylvania. On this land lives a total population of 11,115,396 people, with most of the population living in large groups throughout the country, especially in the capital of Havana which has a population of 2.136 million. In fact, 77 percent of the Cuban people live in urban areas ("The World").

Cuba is a world leader in sustainability. According to the World Wildlife Fund, Cuba had been the only country in the world to reach a sustainable development, as they do not risk future generations in order for present day success (Beeler). Although Cuba is experiencing growth in sustainability, various embargoes and sanctions hold Cuba back from attaining the capital it needs to create an even better society. Due to Cuba's socialist government under the reign of Fidel Castro, the United States placed a crippling embargo on the country, forcing it to rely on the Soviet Union until its collapse in 1989. With the collapse of the Soviet Union, Cuba lost its largest trade partner and protector, therefore being forced to reorient its economy to focus more on internal agriculture ("Cuban").

Agriculture has been an essential part of Cuba's economy for hundreds of years. At present, Cuba has the highest agricultural growth rate in the Caribbean, even rivaling the other Latin American countries in Central and South America. About thirty percent of land use is for agriculture and it employs around twenty percent of the Cuban population ("Agriculture"). This reason for Cuba's success is that instead of having overarching state companies, there are now thousands of smaller regional farms that do not follow one singular set of rules but make decisions at the local level. The mean size of these private farms is 32 acres, which is about 24 football fields (Altieri). These farms cultivate about seventy percent of all agricultural products in Cuba. They are allowed to sell 20 percent of their crop to markets, while the other 80 percent goes to the state ("Cuban").

The tropical climate with mostly flat to rolling plains makes it ideal to cultivate agricultural products such as sugarcane, tobacco, and citrus, among others. Sugarcane was once the ideal crop to produce in Cuba, with the country producing about 7.5 million tons per year in the 1980s. Almost 75 percent of the sugarcane produced in this decade was being exported to the Soviet Union. But when the Soviet Union collapsed in the late 1980s, the Cuban sugarcane industry took a heavy toll. As of 2013, the Cuban sugarcane harvest dropped to just 1.4 millions tons. Another cultivated crop in Cuba is tobacco, which is the second most valuable crop in the country. Nearly 173,000 of land is used for cultivating tobacco, most of these being private farms. In 2010, Cuba earned \$368 million USD in cigar revenue. Additionally, Cuban farmers grow citrus, which is mostly exported in forms of juices or extracts. An increase in citrus

production in Cuba could come from investment into this industry from countries such as Chile and Israel (“Cuban”).

The traditional father, mother, and children model of families is not always the norm in today’s Cuban society, as 54 percent of Cuban households are considered nuclear (“Household | Cuba”). Society’s key nucleus has been evolving due to many social factors. For example, the Cuban Revolution of 1959 fostered an increase in equality for women which was a turning point in Cuban family life. Women began to work outside of the household and attend school. Because of this, grandparents often provide childcare for these nuclear families (Skaine). The average household size is 3.2 members, and one cause of this is Cuban couples putting off raising a child because of financial problems. In fact, only 57 percent of Cuban households have at least one member under twenty years old. Most of the dwellings Cuban families reside in are built by the state, and more than half of all dwellings are made of concrete and brick (“Household | Cuba”). The diets of these families consist of three meals a day. Because of years of embargoes and government-enforced rationing, agriculture products that are readily available have become a staple in the Cuban diet, such as rice and beans (Airman). Educationwise, the state runs the system at all levels. Because of this, Cuban students at all levels have a free education (Saidi). As a result, 99.8 percent of the population fifteen and over can read and write (“The World”). Likewise, healthcare in Cuba is also free. The average life expectancy is 78.9 years in Cuba, which is just one year below the United States (“The World”). However, its healthcare infrastructure is dilapidated and is in need of technological advancement and stable electricity and water (Warner).

In 1948, the right to adequate food was established by the Universal Declaration of Human Rights committee in Article 25 (“Universal”). In 2010, the United Nations (UN) declared access to clean drinking water a human right (“Human”). Unfortunately, access to an adequate food source or water has been restricted in rural areas of developing countries, such as Cuba. Cuba is a model nation that has been trying to solve a national food and water crisis. Along with militaristic tension, Cuba has an issue with food and water security that needs immediate attention before the repercussions are too large to rebound from.

Cuba has constantly struggled to provide enough freshwater for its people. Cuba is undergoing one of its worst droughts in one hundred years (Derks). This is partly due to the unorganized water distribution throughout regions in Cuba. For example, water distribution is very unorganized in Havana, where a truck comes weekly to give the people a meager supply. Although drinking water is provided by the government, a deteriorating and worn out infrastructure cause these shortages along with a lack of rain. 5.1 percent of the population does not have access to an improved drinking water source, most prominently in rural areas where 10.2 percent of the population lack this. (“The World”). “50 percent and more of the available water is lost to a leaking drainage system and state water officials must manually change the flow of water in the pipes every day to ensure an equal water divide between houses and neighborhoods. Even so, some cities in Cuba only have running water once every five days, and only for a few hours at a time” (Derks).

Concerning food security, Cuba ranks 67th within the Caribbean according to the 2015 Human Development Index (Cuba). According to a study by the U.S. National Institutes of Health, around 41 percent of patients in Cuban hospitals suffered from malnutrition, and 11 percent had a severe

undernourishment (Penié). Large amounts of tourists has led to a surge in demand for Cuban food and triggered rippling effects across the country; not to mention that Cuban agriculture has been producing below its potential. This underproduction is due to a lack of motive for Cuban people to become farmers due to low rates of internal investment, low wages, inadequate equipment, and a lack of care (Derks). These issues in Cuba are frightening with the immediate concern being to address food and water shortages soon, otherwise it will be too late to recover from the repercussions of a starving and dehydrated public body.

This crisis is in part due to unorganized rationing of food and water, especially in populous cities like Havana. Furthermore, the role of a farmer within the country has been overshadowed and belittled due to little pay and inadequate equipment. This has led to a severe underproduction of food and thus, a starving Cuban families (Derks). This food and water emergency requires the aid of several organizations that are working to ensure Cuban people of quality rations. Furthermore, the Cuban embargo has held heavy effects, especially concerning trade with the United States. Trading with the United States would lead to increased production, as Cuba would be able to tax trading enterprises.

The UN has made efforts to increase access to food and water through the MDG, or the Millennium Development Goals. This implemented eight goals that were aimed to reduce the number of malnourished people globally, which was established following the Millennium Summit of the United Nations in 2000. Hoping to reach said goals in 2015, the MDG program worked to halve the number of starving people from 1990 to 2015. Despite years of financing sustainable agriculture and rural development, in 2005-2007 there was little change in the percentage of starving people across the developing world at sixteen percent (“Water”). This issue is still at large with many global and Cuban individuals going without food or water. With the global population growing, this issue will only increase in magnitude until a solution is reached.

If Cuba wants to reduce restriction of water distribution and food supply, it will have to act with greater concern. There are several corporations that have been working to aid the food and water security crisis in Cuba. For example, the organization, La Via Campesina, has enforced the term “food sovereignty”: the right of people and states to decide their own agricultural policies to produce needed food (Hiday). The World Food Programme (WFP) has been working to strengthen local agricultural value chains, ensuring the quality of food supplies for social protection (“Cuba”). They have also been working to strengthen local water distributors, ensuring the quality of water for social protection. Additionally, a breakdown in the trade barrier between Cuba and America could lead to increased agricultural production. In short, Cuba has to invest more in beneficial programs, technology, third party organizations, which have shown to reap beneficial impacts, and expand trade to other countries such as the US in order to solve the food and water crisis.

One of the main goals for Cuba is to establish a greater presence in world affairs. One of the largest ecological issues Cuba is facing is rising sea levels, which also threatens the future of the Cuban people. This issue is in a large part due to the enormous carbon dioxide emissions of other countries. For example, Carbon dioxide emissions in Cuba are approximately 3.5 metric tons per capita compared to the estimated 16.4 metric tons per capita in the United States (“The World”). The Cuban people should not have to bear the weight of the global community alone. Cuba can help other countries in their

sustainability projects as well as receive aid in return. Efforts have also been made to increase sustainable energy, with twenty percent of the country running on renewable sources and this number is expected to grow within the next decade.

Cuba's strides towards sustainability are impacted by the global community as Cuba is expected to see a 1.5 meter rise in sea level by 2100 ("Cuba's"). The key to a successful solution is to not only ensure that their economy is sustainable but to also keep others in check as the globe is irrefutably interconnected. Even if Cuba was successful in becoming 100 percent sustainable, they would still be faced with rising sea levels if others do not work with them, making a combined effort necessary. If greater partnership can be achieved there can be mutual prosperity for the Cuban people and other countries within the United Nations.

To ensure this, Cuba must collaborate more closely with the United Nations Environmental Programme (UNEP). The UNEP works in nearly 170 countries with three main goals: sustainable development, democratic governance and peacebuilding, and climate and disaster relief. Part of this program's work includes keeping track of the global community's transition to renewable energy and its carbon footprint. Countries faced with the largest challenges to limiting emissions tend to be those in the process of maturing. The heart of the issue is to find a way to allow the developing world to grow but at the same time, to make sure that their growth does not lead to catastrophic global impacts. Agenda 21, proposed in 1993, has been one potential solution in ensuring sustainable development by also taking into account that developed countries emit twenty to forty times the stable amount of greenhouse gases per capita ("Agenda"). It has been suggested that a major way to help developing countries, such as Cuba, while limiting their carbon dioxide production, is through technological advancement. Examples include other sources of energy, such as wind, solar, and geothermal energy. Additionally, increasing output without increasing the input as well as appealing to societal trends is needed, since the public decides where technology advances.

To conclude, Cuba must act as a model to the rest of the Caribbean as the world's carbon emissions directly affect the future of the Cuban population. Other Caribbean countries that follow in the footsteps of Cuba will not only assist in the preservation of their country through inexhaustible resources, but also neighboring nations. Cuba can increase the use of renewable energy and influence reduction of carbon emissions, considering that it has one of the lowest carbon emissions in the world, by sharing environmentally safe tactics and promoting beneficial programs throughout Cuba and the United Nations.

Works Cited

- “Agenda 21 .. Sustainable Development Knowledge Platform.” *United Nations*, United Nations.
- “Agriculture, Forestry, and Fishing.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc.
- Airman, Jeffrey Brian. “What Food Do Cubans Eat?” *USA Today*, Gannett Satellite Information Network, 24 Apr. 2018.
- Altieri, Miguel A. “The Paradox of Cuban Agriculture.” *History Studies International Journal of History*, vol. 10, no. 7, 8 Jan. 2018, pp. 241–264.
- Beeler, Carolyn. “The US Has a Lot to Learn from Cuba about Sustainable Agriculture.” *Public Radio International*, 15 Mar. 2016.
- “Cuba.” *World Food Programme*.
- “Cuban Agriculture & Farming Economy.” *Anywhere, Anywhere*, Inc.
- “Cuba's Sea Level Rise Would Be Greater than Expected, Officials Warn.” *ACN*, 28 May 2019.
- Derks, Sanne. “Watering down a Revolution: Cuba's Struggle for Water.” *Al Jazeera*, Al Jazeera Media Network, 11 Apr. 2017.
- Hiday, Haley. “La Via Campesina: Success in Food Sovereignty.” *BORGEN*, The Borgen Project, 3 Apr. 2019.
- “Household | Cuba.” *United Nations*, United Nations, 2018.
- “Human Right to Water.” *United Nations*, United Nations, 29 May. 2014.
- Penié, Barreto. “State of Malnutrition in Cuban Hospitals.” *Cuban Group for the Study of Hospital Malnutrition*, Apr. 2005.
- Saidi, Alan. “15 Facts on Cuba and Its Education System.” *ACEI*, 7 May 2015.
- Skaine, Rosemarie. *The Cuban Family: Custom and Change in an Era of Hardship*. Jefferson, NC: McFarland, 2004. Print. 40
- “The World Factbook: Cuba.” *Central Intelligence Agency*, Central Intelligence Agency, 1 Feb. 2018.
- “Universal Declaration of Human Rights.” *United Nations*, United Nations.

Warner, Rich. "Is the Cuban Healthcare System Really as Great as People Claim?" *The Conversation*,
The
Conversation US, Inc., 17 Sept. 2018.

"Water and Food Security." *United Nations*, United Nations.