

Elena Suarez
Academy of the Holy Names
Albany, NY
Brazil, Malnutrition

Brazil: An Unexpected Epidemic

A typical approach to finding solutions to food security involves finding ways to increase the amount of food. However, sometimes this is not the problem. In Brazil, a new issue has surfaced. People are eating enough food but not the right foods. Easy access to cheap junk food advertised as healthy is causing a new health epidemic. Nestle and other junk food companies are selling their products and causing issues to the current food system. Nestle created a food delivery service of about 6,000 people that sell foods to each house. This displaces the former system of trade in small farming villages. The citizens are purchasing food that is cheap and available. The new junk food brought in by companies is useful, it provides jobs and access to food that poor people in Brazil do not have. However, it is also causing an increase in empty calories consumed. People are increasing consumption of unhealthy food which is food that is high in fat, sugar, sodium, and calories while it is low in necessary micronutrients. This causes the idea of malnourished obese people. This is an issue because people are suffering from the issues of malnourishment which involves growth issues, weakened immune system, blindness, and other long lasting impacts (Nordqvist). The impacts of obesity are type two diabetes, heart disease, risk of cancers, and other issues. (Djalalinia). A solution needs to be found because many people are dying from illnesses related to obesity instead of undernourishment and something needs to be done to help Brazil find a middleground.

Brazil is a developing country. There is a population of 210.7 million and it is expected to increase to 238.3 million by 2050 (Population Pyramids). Approximately 35% of the population lives on less than two dollars a day with that number increasing to 51% in rural areas. Around 4.8 million people live on no income at all (de Sainte Croix). About 40.3 million people live in rural areas which is around 19% of the total population (Brazil | Food Security Portal). It is also important to note that the estimated 40.3 million people living in rural areas do not have access to markets to purchase food. This is one of the reasons that Brazil was susceptible to Nestle and its easy food delivery system.

The government of Brazil is a federal representative democratic republic. The government hierarchy of organization includes the federal government, state government, federal districts, and municipalities. It is broken up into three branches executive legislative and judicial (Pariona). The roles of these branches are very similar to the United States government. The current president of Brazil is Michel Temer. According to polls, the people of Brazil do not like the president. The current political climate is an issue due to the broken governmental system, and a failing economic system (Durando). Overall, there are still governmental issues within Brazil.

Brazil uses around 32.9% of its land for agriculture (The World Factbook). The overall land area of Brazil is 852 million hectares (Towards Efficient Land Use in Brazil). Therefore, approximately 280 million hectares are used for agriculture in Brazil. The major crops are coffee, soybeans, wheat, rice, corn, sugarcane, cocoa, citrus and beef in order of importance (Schneider). The products that are exported the most in order starting with the highest export are iron ore, crude oil, soybeans, sugar, and poultry (Brokaw). This is important because this shows the crops that are the easiest to grow in Brazil as well as explains more about the economy of Brazil and where there money is made. This means that while agriculture is important, mining and oil drilling are more necessary to the economy.

In Brazil, seventy percent of farms are over 500 acres which is around 202 hectares. Compared to

the United States, which is a country that is well known for factory farming, the United States has eighty five percent of its farms under 500 acres (U.S.-Brazil Farm Size Comparison). Brazil's farms started as large plantations and then continued to expand without getting split into smaller portions of the land. Due to the increased deforestation, farm sizes in Brazil have continued to expand. The average farm size in Brazil is 64 hectares (Farm Structures). This is due to the small subsistence farms that do not actually produce enough food for the people to live on.

Brazil has a varied climate that is dependent on the region. The climate is typically humid and warm and stays at around sixty eight degrees Fahrenheit. However, in the mountains and Southern regions, the climate is cooler. In the northern regions, the climate is warmer. There is also an area in Brazil called the drought quadrilateral and that area has a difficult time growing crops in this area due to complications from droughts (Climate-Brazil). A potential solution for the limited crops cultivated in the area of drought would be to grow alfalfa. Alfalfa is a good plant because it is drought resistant. It has a deep root system and is able to use water with a high salt level meaning that it can make use of waste water. Another advantage is that alfalfa has many vitamins and minerals that would be important in a diet without proper nutrition due to increased consumption of junk food (Putnam). Alfalfa can be used in human consumption. Humans can also eat alfalfa sprouts.

A typical family size is 3.8 people. It has decreased from the 1970s when the average household size was 5.3 people. A typical family has two parents and 1.8 children. However, in farm family houses there typically have more children to help work on the farm, however this increases the amount of people that need to be fed (Givisiez). It is a daily struggle for many families to feed their children and it is important to remember the fact that many people do not have access to markets and Nestle was able to create a cheap way for people to feed their families. They also believed that Nestle products were healthy which is what might be another reason why Brazil became susceptible to the sales of Nestle.

A typical family diet used to involve rice, beans, and beef. However, due to the introduction of companies such as Nestle which makes over processed high sodium, sugar, and fat foods easily available, highly processed foods are now becoming a common problem in the Brazilian diet (Jacobs). This is causing many health issues due to the new diet such as obesity, diabetes, and hypertension. While before, families had to worry about undernourishment and worried that children would not have enough to eat, now people are eating too much food but not the right kind of food.

Families used to get their foods from supermarkets. However, some people did not have supermarkets in their area and would rely on the food that was grown in the village. People typically cook their food either through a pot with fire underneath or a stove if they can afford one (Mazur). Due to Nestle food service, people that could not access supermarkets now can purchase foods that they were not able to before. This is useful, however while Nestle claims to be serving healthy foods, the foods are clearly not. Another problem is the emergence of fast food restaurants. Convenience is becoming a factor into food purchases. When families start to make more money such as by selling Nestle products, they start to change their diet. They are able to purchase more food and then increase the amount that they eat. Families are also able to purchase meals at fast food restaurants. This is another issue where people stop preparing healthy homemade meals and instead chose the easier option with pre prepared over processed foods. Typically middle class families will have a cook that will make food for them so they do not have to worry about convenience of foods. However, McDonald's used the strategy that the food could be enjoyed on the cook's day off. This made McDonald's a popular restaurant due to the convenience of families never being forced to cook (Kottak). This became an issue because it caused middle class families to join in the new issue of obesity.

Brazil has a large income gap. It takes three years for the bottom ten percent of the population to

earn what the top ten percent earns in a month. The overall average monthly salary is \$678.90. The richest ten percent of the population earn thirty nine times the amount of money that the poorest ten percent of the population earns (Paolo). The most common areas of work are agriculture, oil and gas, banking, and hospitality (Vasilev). Another common job is domestic work such as cooking or cleaning.

It was stated in the Brazil constitution in 1988 that all citizens have the right to free health care (Fonseca). While on the surface this seems like a positive addition to the health care system, in fact it is not. The idea of free healthcare is unfairly distributed. More doctors are living in the Southern area of Brazil. There is about 3.44 doctors to every thousand people in the rich Southern area of Brazil and only 0.58 doctors to every thousand people in the poorer northern area of Brazil (Khazan). This is partially due to the doctors' pride. Doctors get paid better and get more respect if they work in the southern areas of Brazil which are typically richer than the northern areas.

While people are granted free health care, the health care system is weak and inefficient. Hospital beds line the corridors, there are not enough supplies for the doctors to perform proper procedures. When the Brazil economy collapsed, people had to be treated outside of the hospital with few medical supplies (Bowater). Another issue is that people have to wait for a long time until they will be seen by the doctors. This is an issue for people with life threatening conditions that need to go to the hospital immediately. People with diabetes and other conditions linked to obesity or a poor diet, line up around the hospital and hope they can get in (Muzaka). This is an issue because many people can lose a day of work or their job in an attempt to be treated at the hospital.

An interesting part of the Brazil healthcare system is that they have community health care workers that are meant to help decrease the amount of work the doctors have to do (Wadge). They are unable to do much do to their lack of medical training. However, they do offer advice to people and check how they are doing on people's medication. They are able to offer nutrition advice as well as exercise advice. They are able to offer some assistance and can decrease some unnecessary doctors appointments and they do help however, they have not managed to help people as effectively as they should (Giugliani). The idea is to make the healthcare system better however, they should get better training, and the nutrition classes that they go to should not be sponsored by Coca Cola or another fast food company.

Families in northern Brazil do not have easy access to water. Five million people do not have access to safe water. A total of twenty five million people do not have access to proper sanitation (Brazil Water Crisis). About 25% of people living in rural communities are extremely impoverished. They do not always have access to proper sanitation and many people go without electricity. Due to poor access to water, some families choose to rely on other drinks to quench their thirst. Families that do not have the ability to access clean water but do have the ability to purchase bottled water have now started to purchase soda as a cheaper option than bottled water (Firger). This increases risk of diabetes and obesity due to the sugar and calories found in soda.

People that are unable to purchase alternatives to unsafe water and they drink water that has been polluted with different chemicals along with bacteria and other pathogens. This can lead to many diseases including chronic diarrhea, parasites in the digestive system, as well as premature death. Around 88% of children's deaths in Brazil are caused by lack of clean water and poor hygiene. A solution has been to create a pipe system where the resident are responsible for the maintenance of the pipes (Leal). However, while this is a good idea many people do not have the money to be able to fix the pipe upon it breaking. This is an issue because it means that people in poorer areas would be unable to access water if the pipes broke. I believe that the cooperative sanitation would be a good idea for upper and middle class areas where people will have the money to fix the pipes and the money saved from not fixing the pipes in those areas could then be used for adjusting the sanitation in poor communities that would be unable to fix the

pipes using their own funds.

The most common job of impoverished people is through subsistence farming which does not actually work to feed the families. There are few supermarkets and many people do not have access to proper supermarkets. People in poor Brazil communities' trade with other close members of the community for an increase in variety in their diet (Wanderley). Many people eat the cheap Nestle foods and believe that they are a healthy way to eat more food for less money. They also choose to eat Nestle food due to easy access from food carts that are pushed around by other people. This has increased access to unhealthy food. People have also changed their overall farming from produce or plants that could be eaten to sugarcane that will be used in the production of unhealthy food (Arias).

There are many barriers that exacerbate the current issues in the food crisis. One is improper education about health and nutrition. Nutrition classes have been hosted by Coca Cola and promote an increase of exercise and moderation without any information on nutrition and healthy foods. Another issue is easier access to unhealthy fast food. It is much easier for people to purchase fast food due to the 6,000 Nestle carts that are used to sell food to rural communities (Bridget). Simply outlawing Nestle products would not be enough of a solution as it would take away 6,000 jobs. Another issue is the limited access to healthcare in Brazil so people are unable to receive necessary healthcare for issue caused by an improper diet.

The introduction of processed food in Brazil caused many issues to occur. There are a few things that need to be fixed to help find a way to decrease malnutrition. The first thing that needs to be fixed is the healthcare system. While this will not solve actual issues involving malnutrition, the hospitals need to be fixed so they can treat people with illnesses such as diabetes or hypertension better as well as increase nutrition education. The next thing that needs to occur is adjusting marketing strategies of unhealthy foods. And finally, a new system should be put in place to deter people from eating foods that are unhealthy.

The free healthcare system is causing issues in Brazil. While I do not believe that the healthcare should no longer be made free, I do believe that some changes need to be made. The Brazil constitution grants the right to free healthcare for all citizens. However, the way that the healthcare system is currently run, Brazil does not have free healthcare for everyone. A case can be made that the free healthcare should not grant unnecessary, expensive, and experimental drugs to the richer citizens. It has been estimated that twenty percent of the current healthcare budget in Brazil goes to this medication (Corpart). Just because people have the right to free healthcare does not mean that they can just use it as a way to get free medication.

To fix this, a judicial case needs to occur to help to find a way to end this issue. It should no longer be allowed for people to sue for specific medication while other people are dying due to their inability to go into a hospital bed. The people that sued the government for the expensive medication should get an additional tax. They should have to pay an additional part of their tax that would help to fund a free public bus that would run once every other day and would be a free way for people to make it to hospitals because some poor people cannot even go to hospitals due to the cost of transportation. Doctors should also be fined a small fee if they cancel an appointment with less than twenty four hours' notice. This would make hospitals more accessible to the poor.

The healthcare system needs to be fixed. The money that would have been used for expensive medication could then be used for other things. An example would be giving more training to the community healthcare workers so they will be able to do things like simple diagnostics and also administer some medication. Another example would be to get more doctors and nurses to work in

Northern Brazil. Another thing that needs to happen is renovations on hospitals as well as a better way to set up doctors appointments. A panel of representatives for different villages should be set up to help find a way to make doctor's appointments. This can occur at each hospital to ensure that each area has a system that will work for them.

A new law should be created that would stop marketing of unhealthy food to children. This would be started through the creation of a bill that would need to be voted on and approved by either the Chamber of Deputies or the Federal Senate. It would then be approved by the president (Soares). It has been proved that young children are susceptible to advertising and are more likely to choose foods that they have seen an advertisement for (Kassahara). This law would have a fine for advertising unhealthy foods to young kids. The advertising should be reported to the local authorities. The money from the fine should be used in a program described in the following paragraph.

A sumptuary tax should be placed on specific foods. A sumptuary tax is a tax placed on items perceived as bad for society to discourage people from purchasing that item. A panel with local representatives should find the unhealthy foods that people do not rely on and eat in an excessive amount. The panel would decide which foods will get taxed. This will help to insure that foods would be taxed that are unhealthy, but not absolutely necessary to the diet. The tax could be placed on more unhealthy food, or different types of unhealthy food as dietary trends change when people try to avoid the tax.

The problem with the tax is that a lot of people have become dependant on the unhealthy food that was cheap and easily available. This is why the money from the fine from child advertising as well as the money earned from the sumptuary tax and donations will be used for a new program. This would be a government run meal delivery service. People that fall below the poverty line could be allowed to pay for less expensive meals that would be fortified with necessary micronutrients. The most popular dishes are rice and beans as well as a stew inspired by a mix of different cultures. Rice and beans and cheap and could easily be fortified with necessary vitamins and minerals. Stew is also a simple dish and is able to store relatively well and could also be fortified with necessary vitamins and minerals. The food could be stored in a way that the only thing that people would have to do was heat it over the fire so it would be accessible to everyone. This could also include some of the alfalfa because it is high in protein for a plant and has many necessary micronutrients.

People could get this food through a meal delivery service every week. People formally employed in the delivery of unhealthy foods could be able to instead have carts of healthy foods that could be pushed around and purchased by people in need. This would avoid putting people out of work from the previous system. Workers would also be needed to package the food and these workers could be failing subsistence farmers. Their old farms could be sold to their neighbors to increase their farm size and the workers could avoid the constant cycle of poverty caused by subsistence farming.

Another program that should occur is an education program that would help to teach people more about nutrition. Community healthcare workers could be trained more about education and could help to teach people more about proper nutrition and how to have a better diet. They could teach people the reasons why fruits and vegetables are very important. It would also be useful if they promoted the new meal delivery system and tried to convince people to eat those meals instead of meals that would be considered to be unhealthy. They could also teach people about reading nutrition labels and what certain things meant as well as what foods are characterized as unhealthy and should be eaten in moderation.

Due to Brazil's high violence and crime rates, exercising by running outside is not an option for most people. This is why people should be taught an interesting exercise routine that would allow them to work out inside. Other nutrition related courses could be taught monthly and would be free to people that fee below the poverty line but would cost a small sum of money for people that had enough money because

this would allow the courses to continue to be held.

While this would all work well another issue is political corruption. Brazil has face many cases of political corruption including the Operation Car Wash scandal. However, when political corruption has been found people are quick to respond and end the issue.(Brazil Corruption Scandals). While this does work it does not completely stop political corruption, it only punishes and ends issues. A new system to help to combat political corruption must occur to help to prevent political corruption before it starts.

There are ways that have been proven to prevent political corruption. One way is through getting citizens of Brazil involved. This can be done by causing people to become aware of their government. A map of political occurrences was created to help avoid corruption in the Slovenia elections (Clare). A system similar to this where citizens paid attention to the government would be important and necessary to help to combat political corruption. However, to make this work the government needs to increase transparency of legislation and other issues. These programs would help to decrease occurrences of political corruption as well as increase the response time and the amount of punishments for political corruption. This would be important because it would help people to know what is happening in their government as well as help to make it possible for people to insure that they are able to get the assistance with the previously mentioned programs that they deserve without issues with political corruption.

This can be sustainable because it would be funded by taxes and donations which would work well to help to make sure that people would be helped. The funding would not end because the tax would still continue, and the middle class and poor people could still purchase the food, but the tax should help to encourage moderation. This would help to decrease consumption of unhealthy food. The changes made to the hospitals are almost permanent investments and will be able to stay the same as they were previously.

In conclusion, the formation of new governmental programs would help to fix the issues caused by the introduction of unhealthy food into Brazil. While I do not want Brazil to go back to its original issues with people dying from undernourishment, I would like it to be possible for people to eat a healthy diet and I believe that with the programs that I have proposed, this would be a possibility for Brazil in the future.

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