Laela Ragsdale Hampton-Dumont High School Hampton, Iowa Brazil, Spoilage and Waste

## Feeding A Country On Waste

You are a young child walking down the streets. The houses on both sides of you are dilapidated, and made of random pieces of metal, plastic, and wood. You walk further, soon you are in a wealthy area with restaurants and cinemas. You see people eating only half of what is on their plate, and your stomach rumbles.

In Brazil, there is a population of roughly 210 million ("Brazil Population"), with 66 million facing hunger or malnutrition every day (Burke). The population of Brazil is 85% urban ("Brazil Population"), and 22% of that population live in the slums (Hurrell). The slums of Brazil are often filled with violence, which is customarily created by the drug cartels (Faiola). The government in Brazil is a federal republic ("Brazil Population"), but it still faces a considerable amount of corruption. One example includes, the former President of Brazil, who was charged with corruption and money laundering. This was due to a scandal involving a state-owned oil company called Petrobas (Boadle).

Education in Brazil is of a high priority to the government. There is almost 57 million students enrolled in schools ("Brazil - Education & Professional Training"). Schooling is required from ages seven to fourteen (Meyer). There are not many public schools in Brazil, but the ones that do exist do not have the resources to continue the higher education of students ("Brazil - Education & Professional Training"). In result of this most students in higher education go to private school facilities ("Brazil - Education & Professional Training").

Wealth in Brazil is very unbalanced, with the wealthiest 10% earning 44% of the overall income ("Brazil Income Gap"). The minimum wage is only \$288 per month ("Brazil Income"). The middle class is the largest and fastest growing, with almost 55% of the population belonging to this class (Zizola). The regions of the South and Southeast regions are usually wealthier, due to tourism in these areas. While the regions of the North, Northeast and Central-West usually have less wealth. This is due to the small tribes

of people in the Amazon and the small farmers in the rural areas. These areas usually consist of small farmers and minimal schooling and healthcare ("Brazil"). Healthcare in Brazil has made many advancements over the past decade. Over 70% of the population uses free healthcare, and clean water is available to most of the population ("Flawed but Fair"). Nutrition related diseases have become more prevalent in the past years, because of food becoming easier to access. A 2011 study found that almost 50% of the population of Brazil was overweight or obese (Arbex). Large farms have started to become more prevalent, with the average farm size being about 1,000 acres ("Farm Size Comparison"). The major crops of Brazil are coffee, soybeans, and sugarcane ( Meyer), and the main exports are iron ore, petroleum, soybeans, raw sugar, and poultry (Simoes).

Brazil wastes 15 million tons of food every year. Food waste is not only the moldy, gross food that nobody is going to eat. It can also be the orange that is thrown out, because it is not the conventional color or size. It is the flawless food that is thrown away, because of a sell-by date. It is the leftovers in the refrigerator that everybody knows nobody is going to eat. It is the food that can not be sold, because it is the wrong size and shape to be processed in a processing plant. It can also be the food left in the fields, because that farmer does not have the resources to harvest it. This is the problem. Brazil has 66 million people facing hunger every single day, but 30% of all fruit and vegetable products in Brazil are never consumed (Burke). Brazil is also the fourth largest producer in the world, but the country is in the top ten for most food wasted in the world (Soares). The country of Brazil is producing enough to feed their population, but it is not being distributed equally to everyone.

The city of Sao Paulo, Brazil, has recently developed a new product that will help reduce food waste, and feed those in need. Food pellets or farinata are made from almost expired food that would usually be thrown out. This product can be made from dehydrated fruit, vegetables and even some meats. The city has been distributing them to poor school children. Food pellets can be eaten in the pellet form, which resembles popcorn, or they can be crushed and used as the ingredient flour in many different foods (Domingues). This product has sparked substantial amounts of controversy, with the public comparing it to dog food. Many citizens have argued that by giving the food pellets to the poor, it is denying the poor population the right to adequate meals. The company that developed food pellets has also refused to allow the public and media into the processing plants, along with refusing to release how much they cost to manufacture ("Brazil City to Give Food Pellets"). This added additional tension to the situation, which led to the public demanding more research, before this is distributed to the public. Investigators have

started studies on food pellets to determine whether they have any nutritional value and if they are fit to be consumed (Savarese).

Brazil can reduce food waste, by selling produce that does not meet cosmetic guidelines. It has been estimated that between 20% and 40% of all produce is thrown out, because of the appearance (Bhatia). The guidelines for produce that is sold is usually based widely on the way that the produce looks. This produce is usually faultless, other than it may be an odd shape, color or size. Selling imperfect produce would provide many low-income families with fresh fruits and vegetables at a lower price. This would help reduce the amount of people in Brazil that struggle with nutrition related disease, by providing families with healthy food at a cheaper price.

Marketing is essential to selling imperfect produce. Showing the population of Brazil that this produce is of the same quality as other produce, would include many different marketing strategies. The first step would include getting the public involved with their food. Educating consumers on the foods that they eat and talking about healthier food choices is essential. The next step is making this produce affordable, which brings in imperfect produce. In result of the way that this produce looks, selling it at discounted price could help attract consumers that would usually shy away from fresh produce, because of the price. Another strategy would include having samples available to the consumers to take at stores.

Another step would include using technology to show new consumers imperfect produce, through popular social media sites. Over the past few years it has become a trend to show off meals and food on social media. By using social media with imperfect produce it would help educate other consumers, while adding an entertaining aspect to imperfect produce. With 139 million Brazilians owning phones and 62% of the population being 29 years old or younger, this would help appeal to the younger generation ("Brazil").

Lastly, marketing imperfect produce would embrace creating advertisements about imperfect produce, which show that this produce is not just good for you, but it is also cheaper. Many large chain supermarkets have been launched in Brazil within the past decade. These supermarkets would be responsible of beginning to sell imperfect produce. Selling imperfect produce has multiple benefits, such

as appealing to new groups of consumers. These new groups could include low-income families that would usually buy cheaper products elsewhere. Selling this produce would also benefit the farmers, by helping them get income from crops that would usually be discarded. When farms discard of this produce it not only contributes to food waste, but also contributes to land and water waste. By selling imperfect produce, this aids in developing a more sustainable economy for Brazil.

In Europe, a French supermarket decided to begin selling imperfect produce. They sold the produce at a 30% discount along with selling soups and shakes that were made out of the imperfect produce. They also encouraged consumers to take humorous pictures of their odd appearing produce. They made ads that highlighted the "inglorious fruit and vegetables" by making comical names such as "the failed lemon" and "the unfortunate clementine." Many markets around Europe have seen the benefits of selling imperfect produce and have launched campaigns of their own. Some have even gone as far as stocking weather blemished produce. Waitrose, a supermarket in the U.K. recently stocked apples that had been blemished by hail. Another store sold pre-prepared meals and soups from imperfect produce (Godoy). In the United States many different companies have begun to sell imperfect produce. Many of these companies include a delivery service, and the ability to customize the consumers order. This allows the consumer to choose what they need and have it delivered to their door (Bhatia). Also in the United States, the supermarket, Hy-Vee has introduced "the misfits" line of produce. This line includes seasonally available fruits and vegetables that are sold at a 30% discount (Hy-Vee).

Some companies in Brazil have followed similar examples. A company called Fruta Imperfeita has begun to sell imperfect produce at a lower cost. They operate in the city of Sáo Paulo. They also aim to reduce food waste in the country of Brazil. They have multiple growers that are participating and the company is expecting to expand in the near future (Brazil Launches Campaign to Reduce Food Waste).

In order for supermarkets to start selling imperfect produce the industry would have to make changes to the food quality standards. The standards in place, have created more food waste than is necessary. Supermarkets would also have to pay for advertising and marketing for this produce. The supermarkets would need to implant different marketing strategies that would attract new consumers. Reducing food waste is essential to destroying food insecurity and nutrition diseases in the country of Brazil.

You are a young child again. As you are walking, instead of seeing people throw away an abundance of food, you now see them making compost out of that food. Now you do not get that deep rumble in your stomach, because you just got done eating a dinner with your family that was made from imperfect produce.

Arbex, Alberto K., et al. "Obesity Epidemic in Brazil and Argentina." *Advances in Pediatrics.*, U.S. National Library of Medicine, June 2014, www.ncbi.nlm.nih.gov/pmc/articles/PMC4216968/.

"Agricultural Land (% of Land Area)." *Agricultural Land*, 2015, data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=BR.

Bhatia, Juhie. "Ugly Fruits and Vegetables." *The Guardian*, Guardian News and Media, 17 Nov. 2016, www.theguardian.com/environment/2016/nov/17/ugly-fruit-vegetable-delivery-service-food-waste.

Boadle, Anthony, and Brad Brooks. "Brazil Presidential Race." *Reuters*, Thomson Reuters, 31 Jan. 2018, www.reuters.com/article/us-brazil-election-poll/brazils-presidential-race-up-for-grabs-with-lula-out-poll-shows-idUSKBN1FK1HA.

"Brazil City to Give Food Pellets Dubbed 'dog Food' to Poor School Kids." *SunStar.* N.p., 20 Oct. 2017. Web. 26 Mar. 2018.

"Brazil." Countries and Their Cultures, Advameg, Inc., www.everyculture.com/Bo-Co/Brazil.html.

"Brazil - Education & Professional Training" *Liberia - Telecommunications*, 3 Apr. 2018, www.export.gov/article?id=Brazil-Education.

"Brazil Income Gap." *Worldcrunch*, 20 Nov. 2011, www.worldcrunch.com/business-finance/in-booming-brazil-census-shows-income-gap-persists.

"Brazil Launches Campaign to Reduce Food Waste." Translated by Mayra Borges, *Agência Brasil*, 18 Oct. 2016, agenciabrasil.ebc.com.br/en/geral/noticia/2016-10/brazil-launches-campaign-reduce-food-waste.

"Brazil Population 2018." *Brazil Population 2018 (Demographics, Maps, Graphs)*, worldpopulationreview.com/countries/brazil-population/.

"Brazil: New Start-up Follows Global Trend to Promote 'Ugly' Food." *FreshFruitPortal.com*, 16 Mar. 2016, www.freshfruitportal.com/news/2016/03/11/brazil-new-start-up-follows-global-trend-to-promote-ugly-food/.

Burke, Jeanette. "Three Strategies to Reduce Food Waste and Hunger in Brazil." *The Borgen Project*, 22 Sept. 2016, borgenproject.org/reduce-food-waste-hunger-in-brazil/.

Domingues, Filipe. "Brazilian Cardinal Supports Controversial Food Policy in São Paulo." *Crux*, 21 Oct. 2017, cruxnow.com/global-church/2017/10/21/brazilian-cardinal-supports-controversial-food-policy-sao-paulo/.

Faiola, Anthony, and Anna Kaiser. "Rio Violence in Slums." *The Washington Post*, WP Company, 5 Jan. 2018, www.washingtonpost.com/sf/world/2018/01/05/this-trendy-rio-favela-appeared-in-a-hollywood-kids-movie-now-the-bullets-are-back/?utm\_term=.57ec6332a91f.

"Farm Size Comparison." *Stratfor*, Worldview, 12 July 2011, worldview.stratfor.com/article/us-brazil-farm-size-comparison.

"Flawed but Fair: Brazil's Health System Reaches out to the Poor." *WHO*, World Health Organization, Apr. 2008, www.who.int/bulletin/volumes/86/4/08-030408/en/.

Godoy, Maria. "Ugly Produce Sells in the Produce Isle." *NPR*, NPR, 9 Dec. 2014, www.npr.org/sections/thesalt/2014/12/09/369613561/in-europe-ugly-sells-in-the-produce-aisle.

"Healthcare in Brazil - International Living Countries." *International Living*, 2013, internationalliving.com/countries/brazil/healthcare/.

"How 'Ugly' Fruits and Vegetables Can Help Solve World Hunger." *National Geographic*, 1 Mar. 2016, www.nationalgeographic.com/magazine/2016/03/global-food-waste-statistics/.

Hurrell, Fiona. "Rio Favela Population." *The Rio Times*, 23 Dec. 2011, riotimesonline.com/brazil-news/rio-politics/rios-favela-population-largest-in-brazil/.

Hy-Vee. "Misfits®." *Https://Www.hy-Vee.com*, Hy-Vee Inc., 18 Jan. 2017, www.hy-vee.com/corporate/news-events/news-press-releases/hy-vee-introduces-ugly-produce/.

Meyer, Amelia. "Brazil Agriculture." Brazil, 2010, www.brazil.org.za/agriculture.html.

Meyer, Amelia. "Brazil Education." Brazil Education, 2010, www.brazil.org.za/brazil-education.html.

Savarese, Mauricio. "Brazil Investigators Look at Meals Made of Processed Pellets." *Chicagotribune.com*, 20 Oct. 2017, www.chicagotribune.com/lifestyles/health/sns-bc-lt--brazil-food-pellets-in-schools-20171019-story.html.

Simoes, Alexander. "Observatory of Economic Complexity." *Brazil Economy*, atlas.media.mit.edu/en/profile/country/bra/.

Soares, Thiago. "Reducing Food Waste in Brazil." *Global Public Policy Network (GPPN)*, 7 June 2017, www.gppnetwork.org/single-post/2017/06/07/Reducing-Food-Waste-in-Brazil-A-Brazilian-Italian-Legislative-Cooperation-Initiative.

Zizola, Francesco. "Brazil's New Middle Class." *NOOR*, noorimages.com/feature/brazils-new-middle-class/.