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Brazil,
Beef Sustainability

Brazil: The beef industry to implement practices that secure future sustainability

Brazil is a country of music, dancing, and festivals. But it is also a country of rural farmers, beef exports, and a struggling economy. Beef production is a big industry in Brazil and is one of their biggest exports. But with this much needed money flowing into the country it also comes with a price. With beef demand rising, rainforests have begun to pay the price for this expanding economy. Losing just under 20%, the Amazon Rainforest plays a vital role in the ecological balance and health of all living things. With sustainable farming and ranching practices being implemented throughout the country, Brazil will begin to see not only the forest's health, but the health of all its native ecosystems rise.

Brazil is the largest country in South America, and it is the fifth largest in the world (“Aspects of Culture - Brazil”). It is also the fifth most populous with a population of 214.3 million as of 2021 (O’Neill). Around 87% of Brazil's population is urban, while 12.4% remain rural (O’Neill). Crop production in Brazil is having trouble keeping up with feeding not only the people, but also its biggest export, beef. Brazil's major crops include coffee and soybeans, and their biggest exports are beef and crop based ethanol (“USDA ERS - Brazil”). Brazil is the world’s second largest beef exporter, exporting more than 23% of the world's beef supply (“USDA ERS - Brazil”). The average farm size is 500 acres or more, compared to America’s average farm size being 500 acres or less (“U.S.-Brazil Farm Size Comparison”). With a tropical and equatorial climate with mountain ranges and plateaus, finding adequate farm land can be difficult, especially with the amount of both crops and livestock needing to be produced (“Climate of Brazil”). Beef production in Brazil has actually increased 7% in the first half of 2023 to a total of 4.1 million tonnes (“Beef Market Update: Brazil’s Production Grows as Prices Support Trade | AHDB”). This is because there are more cattle available for slaughter with 15.7 million head slaughtered in the first half of 2023, that is a 1.4 million head increase from 2022 (“Beef Market Update: Brazil’s Production Grows as Prices Support Trade | AHDB”). With crop production increasing, this is causing a higher feed availability in small rural areas, which leads to better margins for the beef industry (“Beef Market Update: Brazil’s Production Grows as Prices Support Trade | AHDB”). China is the most important market for Brazilian beef exports, gaining 59% of Brazil's exports values (“Beef Market Update: Brazil’s Production Grows as Prices Support Trade | AHDB”). Brazilian beef prices are also better compared to those around the world. Brazil's beef prices are around \$3 lower than the United State’s beef prices, making them internationally competitive in the beef production market (“Beef Market Update: Brazil’s Production Grows as Prices Support Trade | AHDB”).

A typical family in Brazil is a family of three, which is a 14.8% decrease between 2010 and 2021 (“Average Size of Households in Brazil (2010 - 2021) - GlobalData”). Many of these families live in urban apartments (“Average Size of Households in Brazil (2010 - 2021) - GlobalData”). These can range between modern and upscale residences to tenement housing conditions (“Average Size of Households in Brazil (2010 - 2021) - GlobalData”). In rural areas, houses are built out of wood or bamboo, and then thatched to create a one room dwelling (“Average Size of Households in Brazil (2010 - 2021) - GlobalData”). The typical diet consists of things such as rice, beans, pasta, potatoes, salads, dumplings, soups, pork, and beef (“A Guide to Brazilian Cuisine”). They get these items from local markets and locally grown producers (“Brazil: Background and Food Culture - The Foreign Fork”). They typically cook over an open fire or use a technique called pit roasting (“Brazil: Background and Food Culture - The Foreign Fork”). The main jobs held are manufacturing, agriculture, banking, oil and gas, and hospitality (“Work in Brazil | Prospects.Ac.Uk”). The average wage is 8,560 Brazilian Reals (BRL) which is equivalent to \$1,738 U.S. dollars (“Average Salary in Brazil (2024): Learn Costs, Then Hire”). Children typically start nursery school at age three and four, and kindergarten at five and six. Even poor families have access to primary education (“Comparative Indicators of Education in the United States and Other G-20 Countries: 2015-The Education System in Brazil”). The Sistema Único De Saúde (SUS), provides free healthcare to all Brazilian citizens, especially those in poverty (“BRAZIL | Summary | Columbia University Mailman School of Public Health”). Although many Brazilian families live a healthy and comfortable life, 14% of Brazilians lack access to safe and reliable water, and 15% do not have access to household sanitation (“Housing and Safe Water Supply for Low-Income Families in Brazil”). The main reasons for food insecurity are: rise in unemployment, decrease in income, inflation, the weakening of social programs such as SUS, and the dismantling of public policies meant to protect and promote food and nutritional security (Domnick).

With only 12.4% of the population being rural, beef farmers can't afford to feed their animals grain without hurting the nation's food supply. That's why ranchers are nourishing their cattle on grass and pasture land. But grass-finished cattle need plenty of space to not only graze, but to implement a rotational grazing system if the rancher decided to do so. With cattle using so many natural resources, this is causing deforestation, biodiversity loss, land degradation, and increased emissions of trace and greenhouse gasses (Casagrande et al.). The amount of cattle deforestation and land conversion increased from 1457921.75 acres in 2016, to 2344288.75 acres in 2020, a 60% increase (“Trase: Brazilian Beef Exports and Deforestation”). Meanwhile both the pastureland and amount of beef produced has decreased. The total area of pastureland decreased from 407.724 acres in 2016 to 401.54624 acres in 2020, and the amount of total beef produced went from 10.2 million tonnes in 2016, to 9.8 million tones in 2020 (“Trase: Brazilian Beef Exports and Deforestation”). The main contributor to these trends is the use of unproductive cattle ranching for land speculation (“Trase: Brazilian Beef Exports and Deforestation”). The beef industry is the leading cause of deforestation in the Amazon. When the carbon-rich forest is burned down to create more land for livestock, large amounts of carbon dioxide (CO₂) are released in the atmosphere (Casagrande et al.).

Solutions are already being implemented in Brazil, to make efforts to improve beef production, sustainability, and help both the environment and the natural habitat for millions of native

animals in the area. For example, farmers and ranchers are starting to graze more cattle, on smaller plots of land (*Brazil Beef Lobby Says Deforestation Risks for Supply Chain Remain ...*). This practice increases the amount of beef produced per animal, without having to destroy the Amazon Rainforest (*Brazil Beef Lobby Says Deforestation Risks for Supply Chain Remain ...*). Not only this, but the use of intercropping to reduce the amount of crop land needed to produce the same amount of products. This would make more room for both the beef industry and the rainforest. But while this solution does have good intentions, not all problems can be solved quite easily including this one. People are starting to burn the rainforest illegally to make room for not only their farms, but also for housing and cities (*Brazil Beef Lobby Says Deforestation Risks for Supply Chain Remain ...*). Another way Brazil is focusing on deforestation and how to prevent it is the Low Carbon Agriculture (ABC) plan (“Brazil: New Plan for Climate Change Adaptation and Low Carbon Emission in Agriculture | USDA Foreign Agricultural Service”). The strengths of this plan is that it encourages low carbon emission technology and practices (“Brazil: New Plan for Climate Change Adaptation and Low Carbon Emission in Agriculture | USDA Foreign Agricultural Service”). The obstacles of this solution is the cost of the sustainability practices the government wants to implement, and getting farmers and ranchers to agree to give up their generational practices, and try new techniques (“Brazil: New Plan for Climate Change Adaptation and Low Carbon Emission in Agriculture | USDA Foreign Agricultural Service”). Many beef producers are multigenerational farms or ranches that have been set in their ways for many years, so convincing them to adopt new, untested practices would be difficult. Ranchers care about money, but for them it's more about tradition.(Moran, B. (n.d.). *Farmers & Forests: Cattle ranching, agribusiness and deforestation in Brazil*. Boston University. <https://www.bu.edu/articles/2018/deforestation-in-brazil/>). They don't want to give up their normal way of life. By showing them the benefits of sustainable practices while not taking away from the traditions or culture they have known for so many years is the best way to help ranchers make positive changes. Finding a solution that would decrease deforestation and still take into account the goal and aspirations of cattle ranchers. The last proposed solution is better genetics and improved soil and animal welfare (<https://www.bain.com/our-team/carlos-libera/>). This proposes the idea of producing more beef while still remaining ecologically minded (<https://www.bain.com/our-team/carlos-libera/>). Although this may seem like a simple solution, farmers and ranchers, who are part of the poor population, cannot afford to introduce new genetics and take extra precautions for soil and animal welfare (<https://www.bain.com/our-team/carlos-libera/>).

Although these solutions would meet all the needs of the problems, they are far too expensive for many to implement. Introducing a solution that would increase the beef supply, help build up the rainforests again, and improve the ecological health of the country is the key to creating a sustainable future for not only Brazil, but the whole world's agriculture industry. Grazing cattle on less land is a good idea, but for this to work improvements would need to be made in soil health, genetics, fencing, and water supply, all at an affordable cost for poverty stricken ranchers. Leading this project would be organizations like The Nature Conservancy, and The Brazilian Beef Exporters Association (ABIEC) (“Brazil's Path to Sustainable Cattle Farming”). This can be funded through taxpayer dollars and an investment funded by banks, 20% first-loss guarantee (“Brazilian Taxpayers Subsidizing Amazon-Clearing Cattle Ranches, Study Shows”). The government and community members can help implement this plan by not only making

donations and supporting these organizations, but also be flexible in working with cattle ranchers (“Brazil’s Path to Sustainable Cattle Farming”). While all these would help Brazil's current situation, new policies need to be introduced within the country to not only begin, but continue the process to sustainable cattle farming. Policies such as soil health in all agricultural areas and sights, and putting practices in place to reduce greenhouse gas emission (“Brazil’s Path to Sustainable Cattle Farming”). A cultural normal that should be considered when developing and implementing this plan is buying habits. Many people have changed their buying habits within the last few years due to the environmental effect and the beef industry (“Brazil’s Path to Sustainable Cattle Farming”). This project increases sustainability because it stops destroying the environment and rainforests for the use of the beef industry (“Brazil’s Path to Sustainable Cattle Farming”). It also actually helps build beef production back in the country for future generations, while improving all aspects of the industry, and the communities involved. Ordinary citizens can also encourage government officials to get involved and make changes regarding the beef industry. By showing them sustainable practices that have already been implemented it can help encourage the Brazilian government to make positive changes. Being able to efficiently produce, feed, slaughter, and export beef is how Brazil is going to build back its economy and help the environment. Another idea is if slaughterhouses also implemented sustainability practices. Instead of gas, slaughter houses could use natural fuels to fuel the facility. For example, slaughter houses could use the natural methane that comes from cattle feces to fuel lights, machines, and anything else it needs.

In conclusion, the Brazilian beef industry has been struggling with sustainable farming practices and rain forest deforestation. With beef being the country's biggest export, and the Amazon rainforest being its biggest attraction and main source of oxygen, neither one of these vital industries can go away without severely damaging the country’s economy. Although Brazil is putting new practices into place to improve sustainability throughout the entire country and its agriculture industry, efforts must continue to be made to ensure sustainability and food supply for future generations to come. Introducing new practices, protocols, and policies is the key to Brazil reaching its sustainability goal. Although many families in Brazil are classified as living in poverty, improving sustainability in the beef industry would make an overall positive impact on the nation's economy which would improve the lives of millions of Brazilians. Increasing food availability and lowering prices, especially with red meat such as beef, would improve the health and happiness of the whole country. Introducing new practices would improve the rainforest and ecological balance and health of the whole nation, it would also create a more efficient and environmentally friendly beef production industry.

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