Long-term Solution of Individual's Action in Reducing Deforestation in Brazil: Reduction of Meat Consumption

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ABSTRACT

This review article weighs the notion of reducing beef consumption as the long-term solution of individuals' action to combat deforestation in Brazil. Brazil is known as the largest beef exporter in the world. Its exports have fascinated the Islamic world and it greatly benefits the county's economy. However, reports and studies against the country's beef production were heightened by the massive fires in the Amazonian lands, blaming its beef industry for the forest depletion. Thus, scholars and environmentalists created a long-term individual solution to deforestation i.e., reducing meat consumption that consequently affects the economy of Brazil's meat industry.

Keywords : Deforestation; Reduction of meat consumption; Grassification; Brazil

1 INTRODUCTION

THE acclaimed beef industry in Brazil has remained the largest global beef exporter and is projected to have an increase of rate of export growth for the next decade (Dohlman et al., 2022). Government programs such as subsidies for pasture enhancement and crossbreeding programs using reproductive technologies support Cattle Production (Flake et al., 2020). Brazil's bovine ending stocks amounted to 214.7 million heads in 2019 and 213.5 in the previous year. In 11 years - from 2008 to 2019, bovine ending stocks peaked in 2016, amounting to 218 million heads (Statista, 2022). The increase in beef production in the country was driven by high domestic demands and solid exports from China and Hong Kong (Flake et al., 2020). What's more, Brazil is one of the largest exporters of halal meat in the Islamic world (Husseini de Araújo, 2019).

In 2020, Statista (2022) recorded an amount of 9.3 million metric tons of carcass weight equivalent (CWE) of beef and veal meat production. Similarly, the largest tropical rain forest is located in Brazil. The majority of the Amazon Rain Forest – around 60% – is in Brazil. The rest of the rainforest are found in 9 different countries namely, Bolivia, Columbia, Ecuador, French Guiana, Guyana, Peru, Suriname, and Venezuela (Lewis, n.d.). However, while there was an increase in beef production in Brazil, appalling deforestation can also be observed in the country's Amazon forest in the previous years. BBC News (2019) has released a report about an increase of fires in Brazil's Amazon rainforest for one (1) year – 2018 – 2019. According to Herton Escobar (2019) – a science journalist in São Paulo, Brazil– a similar trend of a huge jump of 22,000 fires spots from January to August 2018 up to more than 40,000 fires spots in the same period in 2019 was observed in Brazil's National Institute for Space research (INPE), the Global Fire Emission Database, and two universities. With the increase in meat production in Brazil and dramatic fires swarming all across the Amazonian rainforest, research showed that these incidents were linked to the massive deforestation in the country (Zu Ermgassen et al., 2020).

In addition, the Brazilian President's developmental campaign to develop the Amazonian Land i.e., to increase cattle pasture area and expand soybean production, was also associated with severe deforestation (Weir, n.d.). Correspondingly, a controversy emerged as to the reduction of meat consumption affects the rapid deforestation of the Amazonian land. As considered and concluded in the study of Prado & Ribeiro (2011), reduction of beef consumption – a social and ecological responsible position of consumers, appeals to reduce cattle raisers for beef production, which in return, decreases the pressure for deforestation. Consequently, with the current studies showing an association between meat production and deforestation, the world's largest beef exporter might be at risk. And Brazil's beef production and exports might dwindle for the next decade.

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2 GRASSIFICATION AND DEFORESTATION

More often than not, grasification in the Amazonian region is associated with rapid deforestation. The increasing growth rate of the pasture area is weighed as the culprit. Expansion of Livestock means big farms for beef cattle. Big farms for beef cattle require big pasture areas. The grasification process of Acre – one of the states of the Amazon region – was due to big agricultural and livestock investments. It started with the geopolitical strategies of government frontier in the 1970s and agricultural and livestock investment in the 1980s (Prado & Ribeiro, 2011). Deforested areas on public lands in the Amazon were occupied for Pasture. It was meant for Amazon, however, 75% of it was occupied for Pasture (Salomão et al., 2021). In addition, wildfires in Amazonian lands are attributed to cattle pasture expansion. A record of 16.7% of fire hotspots was observed from January to August this year – the highest rate of fires hot spots since 2019. 45% of these fires are located in some municipalities wherein agribusiness is expanding (Greenpeace International, n.d.).

3 LONG-TERM SOLUTION OF INDIVIDUAL'S ACTION – REDUCTION OF MEAT CONSUMPTION

The underlying notion of reducing meat consumption mitigates the problem of indomitable growth of deforestation in Brazil was suggested by some environmentalists and scientists. The notion suggests that reducing meat consumption lessens consumer demands and consequently reduces the pressure for cattle raisers to expand pastures. Thus, decreasing the deforestation rate in the Amazonian lands. As quoted in the report of CGTN (2019) titled "in the Spotlight: 'Earth's Lungs' on fire", Mirtes Torres – a Greenpeace activist, in one of her interviews, suggested that reduction of meat consumption for just two days a week would help fight the fires in the Amazon. Also, a study by Prado & Ribeiro (2011) infers that voluntary reduction of beef consumption by consumers is an ecological and social position that reduces the rate of deforestation in Brazil, specifically in the Amazon lands. What's more, an online news article explicitly wrote about the link of the exploitation in the Amazon resources to a hypothetical global economy of overconsumption:

> *The exploitation of resources in the Amazon is driven by a global economy based on overconsumption, at a rate that threatens the future of our planet. Each of us has a role to play in reducing our consumption, and supporting fair, sustainable alternatives, which will preserve our common home for future generations (What Happens When the Lungs of the Earth Are on Fire?, n.d.)*

However, it is noteworthy that a switch to sustainable consumption or reducing meat consumption won't outpace the intensifying destructive effects of the increasing deforestation in Brazil.

4 REDUCTION OF MEAT CONSUMPTION – A PROPAGANDA?

One of the major campaigns of President Jair Bolsonaro is to develop the Amazonian lands. Furthermore, it is critical to note that his administration pushed a budget reduction of 24% of the country's environmental protection and appointed a new director of the National Institute for Space Research (Moore, n.d.). As a result, criticisms and backlash among environmental activists and scientists that were affected by the policies and programs imposed by the said President were all over the internet. Reports against his administration were flooding over the internet accusing him of emboldening loggers, ranchers, and industrial agriculture companies, miners to invade properties and intimidate indigenous people in the Amazon (What Happens When the Lungs of the Earth Are on Fire?, n.d.-b). Likewise, funds from Norway and Germany that support conservation and sustainable development were suspended (Escobar, 2019). The work of his critics has been fruitful since their efforts have reached international attention under the hashtag #PrayforAmazon (Weir, n.d.).

The remarks of President Bolsonaro attributing the fires to a traditional way of Brazilian farmers clearing the lands for farming is not whimsical. He was referring to the annual traditional way how Brazilian farmers clear their cattle pasture areas. Slash and burn is what agriculturist calls it. It is imperative to indigenous people in the developing world and it is sustainable because it doesn't depend on outside inputs like fertilizers and pesticides. It is an ecologically sustainable system for crop production (Kleinman et al., 1995). As cited above, an increasing number of fire spots observed in Amazonian lands were not clearly presented as to where the fires are exactly located. The increase in the percentage of fire spots was only highlighted in their reports and was not able to present vivid reasons and concrete causes for those fires to ignite. However, amidst the height of those fires, President Bolsonaro informed the public that the season of queimada is currently on the way – farmers use fire to clear the lands.

5 BEEF CONSUMPTION AND FOREST DEPLETION

Several studies were conducted by several scholars and experts showing a connection between the increase in beef consumption to environmental degradation, specifically in Brazil (e.g., Hoelle, 2017; Zu Ermgassen et al., 2020; Alvim & Sanguinet, 2021; and Prado & Ribeiro, 2011). However, most of these studies ended with a recommendation of suitable integrated policies in line with sustainable principles to mitigate the problem of deforestation in the Amazon – a more concrete solution compared to the reduction of meat consumption. According to the study by Bonti-ankomah & Fox (1998) titled, "Hamburgers and the Rainforest – a review of issues and evidence," consumption of beef in

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Canada and the United States has no direct relationship with the depletion of forests in South and Central America. They argued that the increasing demands for beef consumption in Northern America should not be considered as important cause of deforestation Brazilian Amazon. As attested by the author, domestic policies and market forces are the factors that contribute to the depletion of forests in South and Central America. In addition, a study conducted by Cardoso et al. (2016) titled, "Impact of intensification of beef production in Brazil on greenhouse gas emission and land use," shows that expansion or intensification of Brazil's cattle production systems reduces emissions of GHGs per unit product. That means, an increase in consumers' demand for beef specifically in Brazil doesn't contribute to global warming, in return, doesn't pave the way for deforestation in the Amazonian lands.

6 SUSTAINABLE EXPANSION OF AGRICULTURE IN BRAZIL

Integrated crop-livestock-forestry (ICLF) is a system developed by Brazilians to create a sustainable expansion of pasture wherein the livestock are raised in harmony with forests and pastures are alternated with crop-growing. It is a system to create more efficient land use. In addition to promoting low-carbon agricultural techniques that reduce climate change, the ICLF provides a significant environmental benefit over traditional monoculture systems (Gil et al., 2015). As concluded by the study of Zolin et al. (2021), ICLF systems can assist sustainable agriculture in the Cerrado-Amazon ecotone by reducing soil, water, and nutrient depletion.

7 CONCLUSION

Based on the above discussions, reducing beef consumption as a long-term individual action to fight deforestation in Brazil might not be the best solution. While sustainable consumption is important, attributing it to mitigating the problem of deforestation in Brazil is not feasible. Also, conditioning the mind of the people to switch to veganism is likewise futile with respect to the problems of forest depletion in Brazil. In addition, working a long-term systematic change in policies and programs that promotes sustainable farming can lead to a sustainable system that creates a more efficient land use for livestock agriculture. Lastly, based on the discussion above, comments and news about reducing meat consumption is certainly an indirect assault on Brazil's economy under the guise of sustainable consumption. Policies on beef exports like sanctions and limitations on trade might be emboldened by recipient countries because of the notion that reduction of beef consumption can mitigate deforestation in Brazil. Thus, affecting the county's economy.

It is necessary to embed a diverse range of environmental interventions in the creation of environmental policies. It helps penetrates the problem of deforestation and the negative impacts on production and economic growth. A good example is the proposal of Feltran-Barbieri & Féres (2021) to expand the ABC program that emphasizes the recovery of degraded pastures in Brazil. According to the author, it will lay down the stigma that Brazil is the world's largest driver of deforestation. Furthermore, a set of integrated public policies that pursue sustainable principles are necessary. Without these interventions, environmental conservation and economic development might not be possible to achieve. Specifically, combating deforestation.

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Bonti-ankomah, S. A. M., & Fox, G. (1998). *HAMBURGERS AND THE RAINFOREST – A REVIEW OF ISSUES This is a paper about the ethics and the practice of environmental educa- tion . We begin with a story . An elementary school student in a rural Canadian community came home from school and told her parents that she no longer wished to eat hamburgers . She indicated a particular resolve to avoid eating hamburgers at those restaurants that serve children ' s meals in brightly coloured boxes accompanied by small plastic toys or beverage glasses decorated with the images of cartoon characters . Her parents were eager to understand the reasons behind their daughter ' s decision . And this was no causal curiosity . They owned a cattle farm . But rather than react defensively to the expressed preference of their offspring , they decided to trace the origins of the information that their daughter had brought home from school . Their quest led them to a geography textbook used in their daughter ' s school . 1 In that textbook they read In either case , the inference that consumption of hamburgers , 2 particularly hamburgers consumed in fast food chain restaurants in North America , is an important factor contributing to the accelerated rate of destruction of the tropical forests of South and Central America is clear . Consumers that wish to think globally and act locally might want to abstain from the protect a valuable and vulnerable ecosystem* . 153–182

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