

Drawbacks of Globalization on Agricultural Industries in South America under Neoliberalism and Plausible Solutions

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Abstract. After globalization gradually became a worldwide trend, world trade became more frequent, leading to closer relations among the world actors. However, in the context of the increase in trade volume, many states, especially South American states, suffer from the side-effects of rapidly decreasing natural resources. This paper examines the impact of World Trade, primarily aimed at agricultural industries, on the natural resources of South American states under the Neoliberalism framework by collecting data on agricultural exports and cultivated land and forests in South America in recent years. In recent years, the world's total population has continued to grow at a positive rate, and the trade-off between the resources needed to meet the needs of such a large population and curbing further environmental degradation has become increasingly urgent. This research will help people to understand this issue better. Deforestation creates challenges for Indigenous People in this region, and the increase of arable land area noticeably brings more pesticides to stay competitive within the market. This research found that under the influence of globalization, South American states, as marginal countries, export a large number of commodities of agricultural products and continue to increase their arable land area year by year, and a positive correlation exists between the increase in arable land area and the decreased forest coverage in South America. Thus, this paper suggests that Neoliberalism negatively impacts natural resources in developing states and deserves attention from all actors internationally, and these drawbacks may further create unsustainable outcomes.

Keywords: Neoliberalism, Dependency Theory, South America, Deforestation.

1. Introduction

Deforestation will directly lead to the complete loss of forest cover, and most of the carbon stored in forest biomass will be rapidly released into the atmosphere. Deforestation-induced land use changes will also cause significant carbon emissions from forest soils. Deforestation occurs mainly in tropical Asia, Latin America, and Africa due to agricultural clearing, urban expansion, infrastructure development, and unsustainable commercial logging. Global carbon emissions from deforestation were 300 million tons in 1850, averaged 1 billion tons per year in the early 1950s, and increased to 2.3 billion tons per year at the beginning of this century, accounting for about 17 percent of total global greenhouse gas emissions by sources [1]. Deforestation is the second most important source of greenhouse gas emissions after fossil fuel combustion. Deforestation is also an important measure to reduce terrestrial carbon emissions and mitigate climate change. Many studies have been conducted on deforestation in South America and the relevance of its agricultural industry development. These researches contain mass statistic reviews of environmental issues in that region, yet they hardly affiliate the phenomenon with the existing structure of international relations. It is critical to draw a bigger image of the impact of world order on regional environmental concerns. From the perspective of international relations, this paper aims to expose the correlation between Neoliberalism and deforestation, the prevailing theory in the international community, and the urgent need for attention. Neoliberalism in contemporary refers to market-oriented reform policies. Removing price controls, deregulating capital markets, lowering trade barriers, and reducing (primarily through privatization and austerity) the influence of the state on the economy are all fundamental components of Neoliberalism [2]. This paper identifies the extent to which Neoliberalism has contributed to deforestation in specific cases in South America. Further argues that

these cases are general enough to be extended to other areas outside of agriculture to explore whether the profiteers of Neoliberalism have a moral responsibility for the environmental problems of marginal countries.

2. Environmental Actualities In South America

Forests cover about one-third of the world's land, with a total area of about 4.06 billion hectares [3]. In contrast, forest resources are unevenly distributed globally. More than half of the world's forests are located in just five countries: Russia, Brazil, Canada, the United States, and China. Moreover, the distribution of forests is also uneven between the earth's latitudes: tropical forests account for 45% of the world's forests, while boreal forests account for 27%. The temperate and subtropical regions, where more than 60% of the world's population lives, account for only 27% of the forested area. Between 2010 and 2020, South America will lose a net 2.6 million hectares of forest per year, nearly half the amount lost in the previous decade but still significantly more than Africa, which ranked second in total loss over the last three decades [3]. People usually conceive South America region with vast area of forest and natural resources born from it, though, it is a fact that South America is sliding from its seat.

According to World Bank data, South America's overall arable land area has continued to grow since 1961 and reached an all-time high of 36.3% of the total land area of South America in 2018 [4]. From Figure 1, we can see the change in forest areas in South America. Since 1990, when the statistics exist, the forest area in South America has continued to decline, from an initial 54.8% of total land area in forests to 47.4% in 2020 [4]. The forest area has shrunk by 7.4% in three decades, covering an area of approximately 1.32 million square kilometers, more than the total territorial area of the Republic of Colombia. The agricultural land area in South America continued to proliferate until 1985 and reached 34.2% of the total land area in 1985. Over the next three decades, the increase in the agricultural land area slowed down and fluctuated, yet the trend is still up going (see Figure 2) [4]. However, it still showed a general upward trend, increasing by about two percent in thirty-three years.

Forest area (% of land area) - Latin America & Caribbean
(excluding high income)

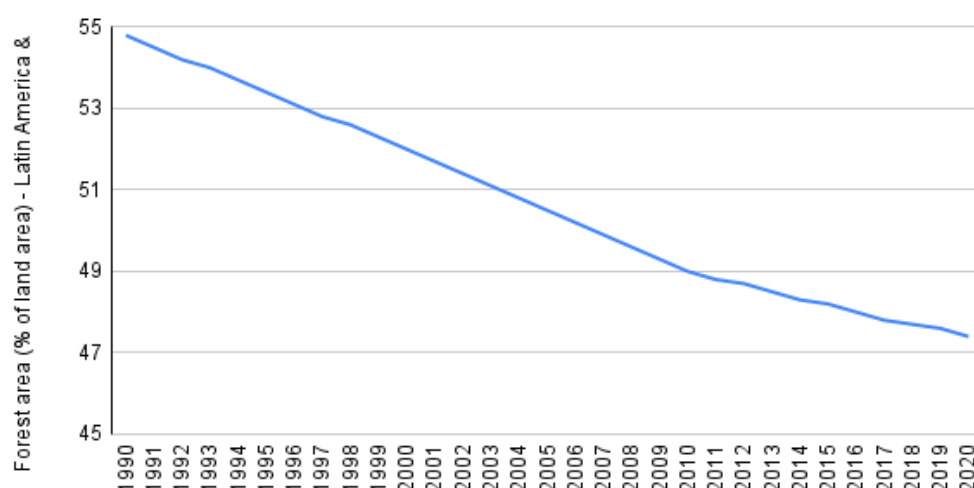


Figure 1. Latin America & Caribbean Forest land-percent of total land area from 1990-2020[4]

Agricultural land (% of land area) - Latin America & Caribbean (excluding high income)

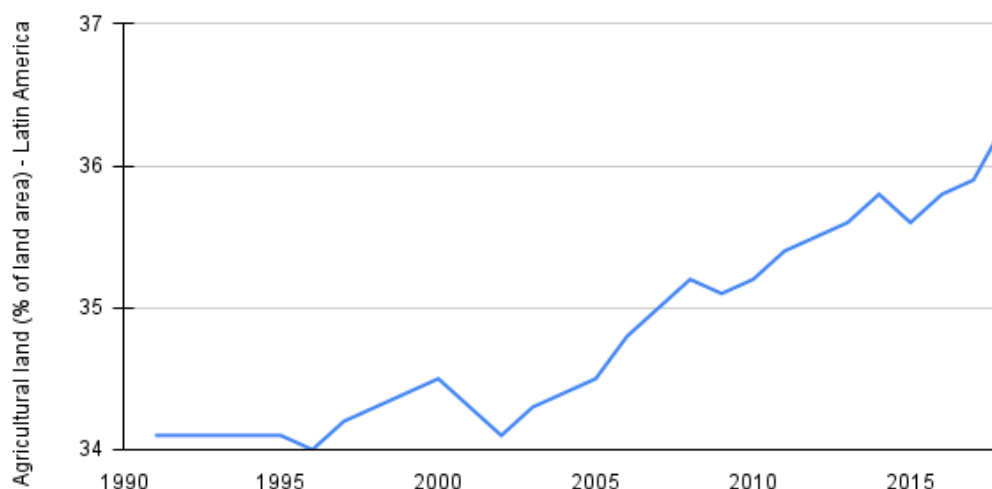


Figure 2. Latin America & Caribbean agricultural land-percent of total land area from 1990-2018 [4]

Deforestation refers to cutting down forests to make the land for farming, pasture, or urban use. Generally speaking, deforestation causes soil and water damage, climate change, reduction of species diversity, and loss of quality of life. When removing trees, there are fewer roots to stabilize the soil, and when rainfall occurs, the soil is prone to sliding, causing soil erosion and even mudslides. Nutrient salts are also lost, resulting in soil impoverishment. On the other hand, it also affects the water cycle. In addition to speeding up the loss of surface water, fewer tree roots will reduce the groundwater content, or less evapotranspiration of trees will release water into the atmosphere, reducing the environment's humidity.

3. Neoliberalism And Globalization

Neoliberalism is one of the essential International Relations theories. It plays an irreplaceable role in global society. Neoliberalism advocates the importance of free trade and intends to lower the barriers among state actors. Moreover, the means of Neoliberalism tend to create feasibility and sustainability for international trades [5]. Globalization is a conspicuous phenomenon under the effect of Neoliberalism. It significantly accelerates the currency flow among different markets and helps other actors, for instance, institutions and organizations, to mediate international affairs to reach a relatively peaceful period. Neoliberalism is making efforts; however, the economic divergences between regions are still too broad to step over. The gaps are growing even more prominent with specific issues like hunger and poverty. The goal here is not to critique Neoliberalism but to present environmental issues related to particular regions that can be easily ignored in this digital era.

One of the distinguishing features of globalization is the pursuit of efficiency in the international flow of goods and foreign exchange. It requires the efficiency of the production and transporting of commodities simultaneously: reducing cost and saving time. In manufacturing any commodity, it is difficult for a single country to have a complete industrial chain. Even if it does, reducing the cost of, for example, labor in the upstream part of the chain is not easy. Globalization believes that the developing states can also benefit since they are more cost-effective and attract employees. This status quo leads to the inevitable specialization of internationalization to achieve better economic efficiency. Specialization refers to the production of a commodity, usually by multiple states responsible for different parts of the process to form a complete industry chain internationally and finally complete the production of the item. Specialization is most common and widely known in electronic goods and large industrial products. It is often easy for consumers to overlook that the food industry is also a

unique one with a global production chain. Here, the author refers to the production process of food factories rather than indigenous farms.

Based on the Neoliberalism theory, globalization advocates the importance of multinational corporations (MNCs) in the international market. MNCs are corporate organizations holding goods or services produced in states other than the one in its location. In neoliberal theory, MNCs are an essential part of the free market, enabling the creation of an international trading system and its interdependent character through production, investment, and marketing.

MNCs also allow the production process of goods to be organized on a global scale, allowing for better circulation of goods and money worldwide. While MNCs have had a positive impact on global trade, the evaluation of the impact on underdeveloped countries remains complex. As a means in themselves, MNCs bring profitable opportunities for underdeveloped regions to trade low-value-added products for industrial goods. However, on the other hand, as in the case of MNCs, they do not bring technological development to underdeveloped states as the theory envisages. The productivity gap between states remains huge despite the increase in trade volumes.

3.1. Dependency Theory

The notion of dependency theory is a vital perspective of poverty in the South American region. It sees the issues of poverty come from sacrificing the resources of developing states and fulfilling developed wealthier states [6]. Dependency theory refers to the fact that non-developed states are disadvantaged in international markets, and that excessive free trade and foreign direct investment may create significant problems for local communities. The dependency theory's logic divides the state's role into central and peripheral states. The center states hold the autonomous production technology, while the peripheral states do not have access to science and technology in trade interactions. When putting on the glasses of dependency theory, the passive position of the South American region in the market is evident. Despite being backed by the world's largest developed country, the South American region does not have a very decent industrial base. At the same time, most indigenous people still depend on natural resources for their livelihood. Dependency theory not only has an economic rationale but is also applicable in the agricultural industry. Despite the yearly increase in world food production, there are still many regions around the globe where food scarcity and malnutrition are a problem. At the same time, there is a significant difference between the food needs of developed markets and those of underdeveloped regions. Based on dependency theory, underdeveloped peripheral states often rely on exporting large quantities of low-value-added products in exchange for industrial goods with developed countries due to the inequality of production technology [7]. This trade export-oriented behavior does not improve the industrial base of the underdeveloped regions while requiring the payment of large amounts of labor and natural resources. For the agricultural industry, this export-trade-oriented model will require more sacrifices from local communities, such as deforestation in exchange for more arable land and heavy use of pesticides and industrial fertilizers. Such sacrifices are undoubtedly unsustainable in the long run.

3.2. Policies Applied with Neoliberalism

Over the past few decades, Latin America has seen several changes in policies and programs around Neoliberalism. Nowadays, increasingly important issues extend from nominal theoretical frameworks to more pragmatic development strategies, such as the relationship between the state and the market and the identity of participants. At the macro level, most countries in Latin America still adopt the traditional cornerstones of Neoliberalism [8]. The instrument of trade liberalization is still the most dominant means of integrating the region into the world market. Admittedly, the study of dependency theory still reveals unsustainable features in the region's current policies, such as their continued heavy reliance on natural resource extraction and primary commodity exports [9]. Moreover, this will essentially erode the living space of local farmers and indigenous people, with consequences that will be more intuitive social problems than natural disasters.

4. Correlations Between Neoliberalism And Environmental Calamities In South America

As introduced above, Neoliberalism encourages actors to seek efficiency. To achieve the goal, owners of the industrial farms adopt means known as confinement, concentration, and separation. The confinement of animals is the most common and conspicuous. In various sources of relevant information, we often see industrially farmed animals confined in tiny cages, in contrast to traditional farms that usually allow animals to roam freely within the boundaries of the farm on a vast grassland. Laying hens, for example, are confined in so-called Barren Battery Cages, and about 6-8 hens live in one cage, as Berry addressed [10]. Concentration is another typical issue inside animal factories. Berry explains it as "keeping as many animals as possible in as small a space as possible, like a prison or a concentration camp." [10] This measure allows the factory farm to reduce its space and makes it easier to manage. However, the fact is that concentration does mean not only the concentration of animals but also the concentration of animal feed and animal excrement. At the same time, antibiotics are also concentrated to avoid spreading diseases among animals in a small space. It is worth mentioning that only the area they spend on individual animals allows factory farms to reduce. They need this way to accommodate more animals rather than reduce the use of land resources. In the relevant part of this study, separation refers to three main aspects. First, this industrial model of the animal factory caused the original farmers to leave their former occupations. The factories took over the land of the original farms, but they preferred workers familiar with the industrial production lines to skilled farmers. Separation also means the animal's feeds are separated from the ecological cycle, leading to a shift in the ecological niche of the original farm.

Besides the concentration of animals, these methods also require the concentration of food products. On this basis, countries with vast meat consumption demand must import animal feed-related crops. In South America, many ecological losses are converted into soy crops and exported to core countries in the dependency theory, such as North America and Europe. As part of the global industrial chain, the impact of factory farms is not only located in and around these factories. Behind them lies the presence of many more third-world countries that provide the necessary resources for these factory farms, which are provided in the same way that local communities in these countries pay great prices. Animal plants need monocultures of cheap and high-protein plants to feed, so soy is usually the optimal choice. In South America, deforesting to grow soy crops has become the primary local process for providing feed ingredients for factory farms. Deforestation causes loss of natural habitat; 20% of the Amazon Forest is reduced and changed into soy agriculture [11]. 95% of the soybeans are sold to Europe and Asia to feed factory animals.

According to a study published by WWF, in the European Union and the United Kingdom, the per capita consumption of soybeans is 60 kg a year, 55 kg of which are animal feed [12]. The soybean production in South America has almost tripled in the last decades. According to the report, global soybean production reached 340 million tons over 2019-2020, with about 1.23 hectares planted, with South America accounting for the highest share [13]. Brazil is the largest producer of soybeans, with about 38% of global production; the United States accounts for 28.4%, while Argentina accounts for 14.4%. South American agriculture, which is dominated by soybean cultivation, impacts local natural resources. Since 2000, soybean acreage in South America has doubled in 20 years due to the rising demand for commodity-oriented soybean products in international markets. The most rapid growth in soybean acreage has occurred in the Amazon basin, which has expanded more than tenfold. This rapid increase in soybean acreage has come at the cost of deforestation. (Massive soybean expansion in South America since 2000 and implications for conservation) However, as an ironic fact, according to a report by the United Nations in 2018, about 18% of the region's population lives in rural areas, including 29% of Latin America's poor. Moreover, 27 million people, representing roughly 41 % of the total poverty population in this region, were experiencing extreme poverty.

5. Conclusion

Neoliberalism has facilitated international trade. After the debt crisis in the 1980s, primarily since the 1990s, Latin American countries have vigorously implemented a series of neo-liberal economic reform measures such as economic privatization, trade liberalization, opening up capital markets, and reducing government intervention, which has achieved remarkable results: macroeconomic improvement, persistently high inflation has been curbed, government fiscal balance has been balanced, foreign trade has expanded rapidly, the economy has grown steadily, efficiency has increased, and poverty has declined. The government's social spending has increased, and progress has been made in education, health, poverty alleviation, and other social undertakings. However, the South American states' position in the world market has been established, making it difficult for their natural resource specificity to receive the attention it deserves. This study found a positive correlation between the trend of deforestation and the increase in the amount of arable land in South America. The arable land in South America is mainly used for export-oriented cash crops; therefore, deforestation in South America is related to the demand for crops in the core countries. In the modern agricultural industry, numerous crops are used as feed for animal factories rather than as a direct food supply. Thus, the demand for meat in developed countries is one of the underlying causes of deforestation in South America. This paper aims to point out the adverse effects of the Neoliberal structure on the environment, a subject of concern to all of humanity, while advancing the development of the international financial and trade sphere. Such effects should be taken into account by the marginal states in the dependency theory, in addition to being consistent with the development orientation of the core states. This study first assesses the relevance of the data and then finds a theoretical perspective on the contribution of deforestation. As discussed, the impact of neoliberal structures on deforestation is likely to be indirect, which has contributed to the long-standing lack of attention to this logic. While Neoliberalism has brought benefits to the economy, research should also critique the adverse effects it has had in other areas in particular cases. An overview of the above correlations could be quantified in the future to facilitate a more in-depth study of the topic and thus better address the catastrophes brought about by natural resources.

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