

**Review / Reseña**

Rogers, Thomas D. *Agriculture's Energy: The Trouble with Ethanol in Brazil's Green Revolution*. University of North Carolina Press, 2022. 306 pp.

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In contemporary Brazil, where public transportation lacks sufficient support from government policies and fuel prices are subject to frequent tax-related fluctuations, the choice between gasoline and biofuel can be related to factors affecting individual consumers. Moreover, as the financial burden continues to mount on Brazilian citizens, the strain on their wallets becomes even more evident. In March 2023, for instance, the cost of filling up a compact car's fuel tank amounted to more than 20 percent of the Brazilian minimum wage of R\$ 1,302 (equivalent to approximately 267 USD). This situation prompts consumers to regularly reassess their fuel preferences. Adding to this complex scenario, a May 18, 2023, article published by a prominent Brazilian newspaper highlighted biofuel producers' concerns regarding heightened competitive pressures resulting from Petrobras' recent shift in business strategy. This Brazilian company, a blend of private and public ownership in the petroleum industry, has departed from the import parity price (IPP) approach and instead adopted a strategy that factors in local market conditions when determining fuel

prices.<sup>1</sup> Notably, there is a direct relationship between the cost of gasoline and the future of Brazilian biofuel production. Amidst these complex dynamics of alternative energy sources, public-private collaborations, economic pressures, and societal responses, numerous questions come to the forefront. One of these inquiries is: What has been at stake in Brazil's pursuit of economic development, and what are the implications of the chosen development strategies for the country's future?

Centering its attention on the intricacies of ethanol production within Brazil's National Alcohol Program (also known as *Proálcool*), *Agriculture's Energy: The Trouble with Ethanol in Brazil's Green Revolution* follows the trajectory of modernizing efforts that forged a renewed perspective on agriculture-fueled economic development in mid-twentieth century Brazil. By doing so, Thomas Rogers's book deepens the historical understanding of the Green Revolution in Latin America and brings valuable insights to broader transnational narratives of economic development.

This study is divided into two major parts. The first one follows a chronological arrangement and delves into Brazil's history of agricultural modernization, spanning from the early twentieth century to the end of the National Alcohol Program in 1990. In the first chapter, Rogers contextualizes the trajectory of the sugarcane industry within the broader spectrum of Brazilian agriculture. Particular emphasis is placed on the period of Getúlio Vargas's dictatorship and the subsequent decade following World War II. The second chapter introduces the complex Green Revolution process, which took place amid already chaotic national and regional scenes marked by political changes and strong oscillations in the sugar industry during the 1960s and 1970s. The inception, establishment, and termination of *Proálcool* are examined in the third chapter, where Rogers reaffirms the argument that this program encapsulated visions of post-war agriculture-fueled development that underwent transformations through the Green Revolution process: "Brazilian technocrats and their foreign aid partners demonstrated agriculture's potent contributions to economic growth. Their modernized agriculture was fueled by vast inputs of chemical fertilizers...supported by a machine industry and managed by finance-and-marketing-savvy bureaucrats" (13).

In the book's second part, organized thematically, Rogers navigates through local, regional, national, and transnational environmental and social histories of

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<sup>1</sup> Pamplona, Nicola, 2023. "Nova política de preços da Petrobras afeta competitividade de biocombustíveis, diz setor". *Folha de S. Paulo*, 18 May 2023. [www1.folha.uol.com.br/mercado/2023/05/nova-politica-de-precos-da-petrobras-afeta-competitividade-de-biocombustiveis-diz-setor.shtml](http://www1.folha.uol.com.br/mercado/2023/05/nova-politica-de-precos-da-petrobras-afeta-competitividade-de-biocombustiveis-diz-setor.shtml).

sugarcane. The fourth chapter stands out as an excellent assessment of the interplay between *Proálcool* and labor exploitation within the sugarcane sector. It shows how sugarcane workers managed to challenge such exploitation through organization. The fifth chapter places the detrimental ecological repercussions linked to ethanol production at the epicenter of a global discourse concerning the environmental cost of agricultural development; it also explores an array of responses at the state level in Brazil to pollution pressures, and the national-level changes that emerged. In the sixth chapter the focus shifts to the enduring detachment of rural laborers from their land and the persistent food scarcity in the country's sugarcane regions after the advent of *Proálcool*. This stark reality corroborates Rogers's claim that aggressively modernizing agriculture had adverse effects on Brazilian food production in the late 1970s and 1980s (170, 185). The author's epilogue further discusses persistent issues of hunger, political and economic power concentration on giant producers, and abuses within the sugarcane industry in the twenty-first century. It also sends a warning directed to contemporary designers of new paradigms of development models, urging them remain vigilant to the potential consequences of their innovative endeavors (207).

The pursuit of development through "agricultural modernization" holds a longstanding history on a global scale. This is exemplified in the literature about World's Fairs that were held during the nineteenth and early twentieth centuries. Notably, this literature accentuates the persistent competition among nations to showcase their perceived "advancements" in various sectors, including agriculture. Within this competitive sphere, the aspirations of engineers, scientists, politicians, entrepreneurs, to mention a few, found their place, often with the goal of propelling the agriculture sector's growth and benefiting from its economic opportunities. In the latter half of the nineteenth century and the early years of the twentieth century, several Brazilian leaders and policy makers shared the belief that Brazil lagged in development and that the country's agriculture had not made substantial progress. This conviction further reinforced the understanding that driving advancements in agriculture could catalyze comprehensive national economic transformation. One of the unique contributions of *Agriculture's Energy* to these histories is its successful tracing of how various approaches to agriculture-fueled development underwent reformulation throughout the twentieth century. Rogers further demonstrates how these transformations became intertwined with the conditions for the arrival of Brazil's National Alcohol Program.

While the novel perspectives and insights presented in *Agriculture's Energy* are evident, the book could have delved more comprehensively into the interplay between

the “drought industry” within the Brazilian Northeast region and the diverse themes addressed throughout its pages. The significance of these droughts in Brazil’s socio-environmental history reverberates across various dimensions discussed in Rogers’s work, underscoring the need for a more in-depth exploration.

*Agriculture’s Energy* is well-suited for upper division undergraduate or graduate seminars in fields such as environmental science, history of development, energy economics, agricultural studies, and Latin American studies. Thomas Rogers demonstrates his prowess as a researcher through his analysis of development strategies in Brazil. His extensive archival research, complemented by interviews with influential policymakers and local business leaders, along with his long-term commitment to agro-environmental histories, have yielded innovative and well-substantiated outcomes.