

Science, Agriculture and Nation Building: IRI Research Institute (IRI) and the Conquest of the “Campos Cerrados” in Brazil (1946-1980)

By Claiton Marcio da Silva

Professor of Brazilian History, Department of History
Universidade Federal da Fronteira Sul, Brazil

claiton@uffs.edu.br

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By researching the post-1945 political projects of Nelson Aldrich Rockefeller (NAR) (1908-1979) in Brazil and Latin America it is possible to consider the work of IRI Research Institute (IRI) as the most important “forgotten” piece in the history of 20th century science. Although IRI agricultural research since the 1950’s in Brazil has been recognized by international scientists as an important achievement to mankind, an insignificant number of books or articles focus on the IRI experience as a whole or specifically in Brazil. According to the IRI research staff in the 1950's, “the upland savannas or “campos Cerrados” represented extensive areas which contributed little to the economy of Brazil. Their poor inherent fertility, well recognized by Brazilian farmers, has been clearly demonstrated by greenhouse and field experiments.”¹ A half century later, Cerrado's history was different, mainly due to the work of IRI.

The words of Norman Borlaug, father of the Green Revolution, Nobel Prize Laureate (Peace, 1970) and founder of the World Food Prize (WFP), emphasize the importance of this agency. The scientific research which resulted in the “conquest of campos Cerrados” (or “closed fields” in English—upland savannas which represent extensive areas of poor soil in Central Brazil) is “one of the great achievements of agricultural science in the 20th century,” because the research conducted by IRI (and later by Brazilian Governmental agencies) “has transformed a wasteland into one of the most productive agricultural areas in the world.”²

The 2006 WFP laureates were Andrew Colin McClung from IRI, along with the Brazilian researcher Edson Lobato and former Ministry of Agriculture member Alysso Paolinelli. The process of nation building in Brazil after 1945 was supported by a private agency (IRI) and its alliance with Brazilian researchers and leaders through the incorporation of “desert” lands for economic purposes. In 1960, early research evidence suggested

“that these areas are capable of supporting a much more intensive agriculture than they do at present, and there is an indication that economic returns may be obtained through improved fertility practices. Systematic examination of the soils of the campos cerrados are needed. Such studies should result in an important contribution to the Brazilian economy.”³

The weapon used to conquer the “Brazilian wilderness” was scientific research, and the results of this process were significantly stressed by McClung and later by Borlaug.

In 1946 IRI was only an idea of the philanthropic agency American International Association for Economic and Social Development (AIA). Since 1950 it was an interdependent research agency supported primarily by the Rockefeller Brothers Fund (RBF). Scholars have focused on NAR projects after 1945, particularly the AIA and the International Basic Economy Co. (IBEC) in Brazil and Venezuela.⁴ However, just a few words have been written about IRI and its role of scientific research in Brazilian nation- building. On one hand, agronomists, scientists and politicians have stressed in short articles or bulletins, the successful work to feed the world. Jerome Harrington (President of IRI) and Bill W. Sorenson have written a thirty-five page text about IRI, “The Development of Cerrado Areas: IRI’s experience.” This research bulletin was published by IRI in 2005. The authors demonstrated how the official politics of research led to the improvement of the poor soil in Central Brazil.

On the other hand, environmental associations and social scientists have been considering the human intervention over “campos cerrados” as a process of “degradation” of the environment. In their opinion, led by the Brazilian state since the 1950’s, the research conducted by IRI resulted in the occupation of Central Brazil. The increase of agricultural

areas has been ignored by them.

In this sense, my project aims to discuss the complex work of IRI in agricultural research in Brazil (1946-1980). It argues that IRI has influenced the politics of agricultural development over extensive areas in central Brazil for crops and migration through the alliance between the Brazilian government and various NAR projects. In other words, IRI's research experiences have paved a route to Brazilian agricultural development after 1945, which lead to a march westward of modern agricultural practices that supported the process of industrialization.

After establishing IRI as an independent agency in 1950, American researchers were first interested in recovering devastated coffee lands in the state of São Paulo, and in comparing this process to the American Dust Bowl of the 1930's. According to Donald Worster's classic book about America's "Dust Bowl," it was considered "the darkest moment in the twentieth-century life on the southern plains. The name suggests a place—a region whose borders are as inexact and shifting as a sand dune, but it was an event of national, even planetary significance." So, like a "widely respected authority on world food problems, George Borgstrom" has said, "the creation of the Dust Bowl was one of the three worst ecological blunders in history."⁵ However, Sao Paulo's coffee land devastation was not exactly the Dust Bowl in scope and when Brazilian farmers explored virgin lands in the State of Parana in 1950's, IRI's work in recovering coffee farms meant using an expansive sort of technique compared to that used in the new areas.

By researching the Rockefeller Archive Center (RAC) papers, I have been trying to understand how American agronomists interpreted the Brazilian environment. The primary sources show how the disappointing experiences in coffee cultivation led them to explore the "campos Cerrados" area. When the Cornell agronomist Andrew Colin McClung arrived in Brazil in 1955, IRI initiated a series of experiments in pots of poor soil to cultivate maize,

soybean and cotton. This stage was carried out in close connection with the Brazilian agency *Instituto Agronômico de Campinas* (IAC). The results, published in 1957 and 1960, were undoubtedly, according to Brazilian businessman Fernando Penteadó Cardoso, the first evidence to scientists that Cerrado soils could be converted into high yielding farmland.⁶ In other words, it was possible to win the fight against the “Brazilian wilderness” by transforming the Western “desert” into a garden. Since then, IRI experiences have produced the institutionalization of scientific practices that resulted in new public agencies of agricultural development such as EMBRAPA (Brazilian Agency of Agricultural Research). The connection between IRI and the Brazilian government shows how agriculture and science were considered important weapons in the process of nation building after 1945.

Since 2004 I have been researching the work of NAR’s American International Association for Economic and Social Development (AIA) in Brazil. My research resulted in a Ph.D. thesis in the history of science entitled “Agriculture and International Cooperation: The Work of American International Association for Economic and Social Development and Projects of Modernization in Brazil (1946-1961),” at Casa de Oswaldo Cruz (COC/Fiocruz), in Brazil. Aiming to promote better standards of living to the Latin American rural population, AIA emerged in a historical context of increasing U.S. economic and political influence over Latin America and Brazil, diffusing and adapting American technical assistance programs to local farmers. However, the argument of my thesis is focused on an intense process of political negotiation between NAR’s AIA and Brazilian leaders, including political resistance from Brazilian staff.

Also, there were many difficulties in adapting these programs to the local context, leading to the constant reorganization of AIA work in Brazil. In other words, AIA influenced the Brazilian institutions and Brazilians influenced new projects of the AIA, negating the idea that the AIA imposed on Brazilian farmers. I demonstrated that Brazilians were very

interested in AIA ideas of agricultural development. AIA agency reports, memos, and other sources were very important in helping to interpret the power relationships between “Americans” and “Brazilians.”

In February 2008, I visited the RAC. The primary sources I researched there were very important to build my argument. While researching AIA work in Brazil I examined IRI staff reports. In March 2012 I returned to the RAC and at this time the IRI was my focus—along with Nelson and David Rockefeller’s goals in South America.

Still known as the IBEC Research Institute at the time, IRI characterized its initial period of activities in Brazil “as a period of scanning and surveys; as a time of general orientation,” when “a series of several interrelated surveys was initiated.” The staff viewed scientific research in Brazilian agriculture, “with respect to the development of fundamental physiological and biochemical information—which obviously comprises the very foundation stones of any rational series of manipulations or processes, the field is virtually a virgin one. Many matters of the most essential importance have apparently not even been surveyed.”⁷ Later, opinions changed and botanical studies by Brazilian scientists in the early 1940's became part of the IRI's argument to explore campos Cerrados.

If IRI personnel were trying to build a set of rational knowledge about nature in Brazil in the early 1950’s, on the other hand, the investigations of American and Brazilian staff were very important to the Brazilian government in the expansion of the agricultural frontier by the 1970’s. In other words, IRI had initiated experiments in coffee culture and later in the “poor soils” of Cerrados. Their experiences altered the position of Brazilian leaders and scientists who initially only explored pasture use in this large area. Some years after McClung’s experiments in maize, soybeans, and cotton, the Brazilian government initiated a mass migration of farmers to Central Brazil which aimed to expand the agricultural frontier. Southern Brazilian farmers and northeastern peasants helped increase commodities yields and

their work made Central Brazil the most important agricultural area since the 1970's.

The RAC reports and other primary sources that I mentioned before will allow me to continue my investigation into about the Brazilian projects of NAR. My research expanded from the AIA to the IRI and now focuses on the scientific research which transformed Brazilian land in agricultural areas. The bulk of the IRI material is located in the RBF files. These files total just over three boxes (RBF Record Group 3.1, boxes 475-478). Approximately half of these boxes of records are in the NAR files, Record Group 4, Series 3, boxes 6 and 7. I also carefully researched the AIA papers from before 1950 and also those between 1957 and 1963, when IRI was part of the AIA. The photograph collection was also very important in helping to interpret the relationship between the tropical environment and the development of new technologies that dealt with Brazilian agriculture.

I also considered it very important to expand my research of the IBEC papers because IBEC was another NAR project along with AIA and IRI. The correspondence, papers, oral reports, memos, and other sources focus on the political aspects of IRA work in Brazil, that demonstrate how this agency built its dialogue with Brazilian institutions of research and political leaders who were interested in agricultural development. These primary sources are also relevant to my research because they demonstrate how certain American ideals were in constant negotiation with Brazilian imagery. In other words, I've been exploring how images like "march to westward," "wilderness," and even "Dust Bowl," were part of this process of scientific research and how it lead researchers to new challenges.

Again, the progress report of Brazilian operations (1951) demonstrated how American researchers interpreted nature and culture in Brazil from their experiences: "the populace is migrating in caravans of trucks, much as our own people were driven from the nation's 'dust bowl' by a generation of ill-advised farmers."⁸ From their own culture's point of view, American researchers were trying to find new ways to develop Brazilian agriculture. Coffee

plantations were similar to the Dust Bowl; the Cerrado area was considered a “wilderness” and was located in the Western part of Brazilian territory i.e., “march westward.” On the other hand, Brazilian researchers and politicians were interested in nation building. It was important to develop scientific knowledge which would support the mass migration to Western areas in Brazil. The IRI experiences opened a way for local government to explore the agricultural area, diffuse capitalism, increase public education, and establish other important characteristics of a nation.

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The ideas and opinions expressed in this report are those of the author and are not intended to represent the Rockefeller Archive Center.

ENDNOTES:

¹ Freitas, L. M. M. de., A.C. McClung, and W.L. Lott. *Field Studies on Fertility Problems of Two Campos Cerrados, 1958-1959*. New York: Ibec Research Institute, 1960, (IRI Bulletin # 21) p. 5.

² See www.worldfoodprize.org/en/laureates/20002009_laureates/2006_lobato_mcclung_paolinelli/

³ Freitas, L. M. M. de., A.C. McClung, and W.L. Lott, Idem. p. 5.

⁴ AIA, a privately established non-profit agency funded by Nelson A. Rockefeller in 1946, which brought the experience of U.S. Extension Services to Brazilian farmers. See the books of Darlene Rivas. *Missionary Capitalist*; Colby & Dennett. *Thy Will Be Done*; Carry Reich. *The Life of Nelson A. Rockefeller*; and Elisabeth Cobbs. *The Rich Neighbor Policy*.

⁵ Worster, Donald. *Dust Bowl: The Southern plains in the 1930's*. New York: Oxford University Press, 2004, p. 4.

⁶ Cardoso, Fernando Penteadó. *The Agronomist Day and the Cerrado*. Available at: http://www.agrisus.org.br/diversos_us.asp?cod=1

⁷ IBEC Research Institute. *Progress report: Brazil operations*. June 1st, 1951, p. 1.

⁸ Idem. Ibidem.