

Science, Environment, and Society: Transformations on Brazilian Biome Cerrado (1950–1990)

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My research is on *Cerrado*, the Brazilian-Portuguese word for central Brazil's plateau of woodlands, savannas, grasslands, and dry forests. The *Cerrado* is the second largest among the Brazilian major biomes/domains, after the Amazon and hosts a great variety of fauna and flora. The *Cerrado* can be characterized by a lack of specific conservation policies, even though it holds the three most important hydrographic basins of South America: Amazônia/Tocantins, Prata, and São Francisco. It has the lowest percentage of permanent protection areas among all the biodiversity hotspots in the world. Therefore, increasing the number of studies on the *Cerrado* could help to build new politics of environmental conservation and foster different views about the traditional populations who subsist on *Cerrado's* natural resources.

Cerrado's soils were considered dry and unsuitable for large-scale agriculture before World War II, as they were acidic, dystrophic, and lacking in nutrients. In social terms, *Cerrado* is an area most known for a strong presence of indigenous and African descendant cultures, which extract natural resources and subsist on agriculture. Therefore, my research discusses the major social and environmental changes caused in the *Cerrado* biome by the Brazilian government and international agencies (such as Nelson Rockefeller's IRI Research Institute [IRI]) after World War II, considering science and technology as a reference point to transform the landscape and society. On one hand, I argue that the IRI's process of developing scientific knowledge based on large-scale agriculture has created a standard for other institutions involved with agricultural development. On the other hand, I discuss how the results of these studies became legitimating documents to intervene in the *Cerrado*. This policy, based on scientific and technological programs for development, caused dramatic changes in both landscape and society in the second half of the twentieth century. The *Cerrado* area covers states such as Goiás, São Paulo, and the Federal District, where Brasília is located, and the main reason behind these transformations is political and economic: increasing commodities exportation to support the industrialization process. The instruments used for this controversial developmental project were science and technology: considered to be "one of the world's last great frontiers," scientific research in the *Cerrado* has demonstrated that, since 1950, "fertilizer and lime are required to correct soils from losses in crop productivity caused by high aluminum levels," and that "this has been no obstacle to the conversion of vast tracts of land to agriculture (primarily soybeans, today one of Brazil's biggest exports) and cattle ranching" (Klink & Machado: 2005, 708).

My research is divided into three complementary topics, aiming to show the transformations in environment and society as part of a broad process where international elites and local governments searched for new agricultural frontiers: 1) Natural Sciences and the *Cerrado* area before the agricultural frontier: small farmers and scientific expeditions; 2) International agencies, local governments, and scientific experiences in agriculture (1950s–1960s); and 3) The rise of agribusiness and new projects of society (1970–1990). The large-scale agriculture practiced since the 1970s has created arguments both for and against the development policies applied in the *Cerrado*. Agronomists and politicians considered this process to be a successful attempt to feed the world, partly due to agricultural research projects led by the IRI. During the 1950s, these projects inaugurated a research pattern widely recognized by scientists as an important achievement to humankind. At the same time, environmental associations and social scientists view this development project as a process of environment degradation.