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Nature and Territory in the Making of Brazil[1]

Following Brazil's beginnings as an independent country in 1822, the neighboring countries that emerged from the fragmentation of Spanish America largely accepted the official boundaries that had been negotiated in the eighteenth century by the colonial empires of Portugal and Spain. Even if most of those borders were fragile and sparsely populated, established more on maps than in reality, the new state of Brazil took on the huge territory of Portuguese America as its political inheritance. Occupying an area endowed with great diversity and ecological wealth, northern Brazil and the Atlantic coast from the Northeast to the South were distinguished by two magnificent regions of continuous rainforest: the Amazon Rainforest (originally extending to approximately four million km^2, if we exclude areas that were outside of Portuguese America) and the *Mata Atlântica* or Atlantic Forest (originally approximately 1.3 million km^2). The area between these two forest complexes was covered by large swathes of different types of savannah, most notably the *Cerrado* savannah (approximately two million km^2) and the *Caatinga* savannah (approximately 850,000 km^2).

Human occupation of these spaces under Portuguese colonization was sparse, fragmented, and uneven, being concentrated in the area running between the northeastern and the southeastern Atlantic coast. The coastal area was used for agricultural activities, especially plantations and sugar mills, and featured a number of small towns and administrative centers. Settlements based on cattle ranching emerged in the savannahs of the midwest and northeastern zones of the hinterland regions known in Luso-Brazilian culture as the *sertões* (backlands; wilderness zones). An important historical and environmental factor, therefore, was the spatial separation between agriculture (based on burning tropical forests) and cattle farming in the savannahs of the country's interior, which hindered the spread of mixed-production farming and the use of animal manure as fertilization.

In a few regions of the colony's interior, especially in the midwestern parts of the territory, gold and diamond mining gave rise to more intensive and demographically significant processes of economic settlement. The mining economy was very important up until its decline in the late eighteenth century. The mining activities took place on an extensive basis, exploiting the superficial layers of gold on the hills and margins of the rivers through the use of rudimentary and environmentally destructive techniques.

1 English translation by Rocky Hirst.

Once these superficial layers were exhausted, the sites were abandoned. In the course of the nineteenth century, the economy of these regions was mainly converted to cattle-ranching and small-scale agriculture.

Settlements in Amazonia, which had a population of approximately 150,000 at the time of Brazil's independence, were centered along the course of the Amazon River and featured low-intensity economies based on the extraction of native flora and fauna and the cultivation of some agricultural products, especially cocoa. The population of the country as a whole was also relatively small—approximately four million people in 1822, and 17 million in 1900—although it should be noted that nineteenth-century population figures for the Amazon and Brazil in general are unreliable, especially since they exclude indigenous populations living in the vast spaces unoccupied by neo-European societies. In any case, these free indigenous populations, even if they were living inside the formal boundaries of the Brazilian territory, were not part of "Brazil" as a political entity.

What did exist of socioeconomic life in the great territory considered as belonging to Brazil, therefore, was a mosaic of settlements controlled by local elite groups and supported by various practices for harnessing natural resources. These practices were generally based on technological methods that were rudimentary and paid no heed to the conservation of these resources. Within the more densely inhabited areas, new local populations were beginning to form as the result of increased interaction and physical and cultural intermixing between detribalized indigenous populations, current and former African slaves, and workers of European origin. A vibrant mixture of popular cultural practices developed, in spite of the oppression, inequality, and elitism of the social order marked by the prevalence of slavery. Around these more densely populated settlements, on the other hand, lay huge swathes of bushland or "land banks" (*fundos territoriais*, large areas of bushland which were earmarked by the local elites as having economic potential) with very little neo-European occupation. In these areas, indigenous people continued to exist with considerable freedom, often interacting with communities of runaway slaves (known as *quilombos*) and small-scale extraction workers and smallholders who had chosen the greater autonomy of life in these remote regions (Ribeiro 2000).

All told, we can say that the central political imperative of the Brazilian monarchy, which lasted between 1822 and 1889, was to maintain the political unity of this huge territory. Elites viewed the sertões as a space that was socially barren, but endowed with great potential for future economic benefit. The unity of the country was threat-

ened on several occasions, but was ultimately maintained by political agreements between regional elites and the monarchy that endeavored to engender trustworthy allies through conservative policies and the invention and promotion of symbols of national identity.

Even with the end of the monarchy in 1889, denser settlement remained restricted to discrete regions dominated by local elites. Until the mid-twentieth century, the overwhelming majority of the territory was covered by forests and native ecosystems. The exception to this was the Atlantic Forest, the settlement of which increased greatly in the first half of the twentieth century. This was made possible by the spread of the railways, which made agricultural areas newly accessible, and new colonization projects with immigrant farmers from Germany, Italy, Poland, Japan, and elsewhere.

Despite limited anthropization in the territory as a whole, a rich intellectual tradition emerged from the late eighteenth century that was critical of the destruction of soils and forests in zones of high economic production, in which there was still reliance on destructive models of resource use inherited from the colonial past. The vast dimensions of the territory played a part in the careless exploitation of natural resources, since they conjured up images of boundless nature, an endless frontier open for the advance of the economy. This perception, that haphazard rapid exploitation was justified by the sheer abundance of nature, caused conservation methods to fall by the wayside (Pádua 2010). However, some intellectuals and scientists observed the negative environmental consequences of this exploitation at the local level and predicted that in time it would destroy the natural resources that were such a major asset in the nation's future progress. They eloquently argued for the introduction of more scientific methods of land use and stewardship.

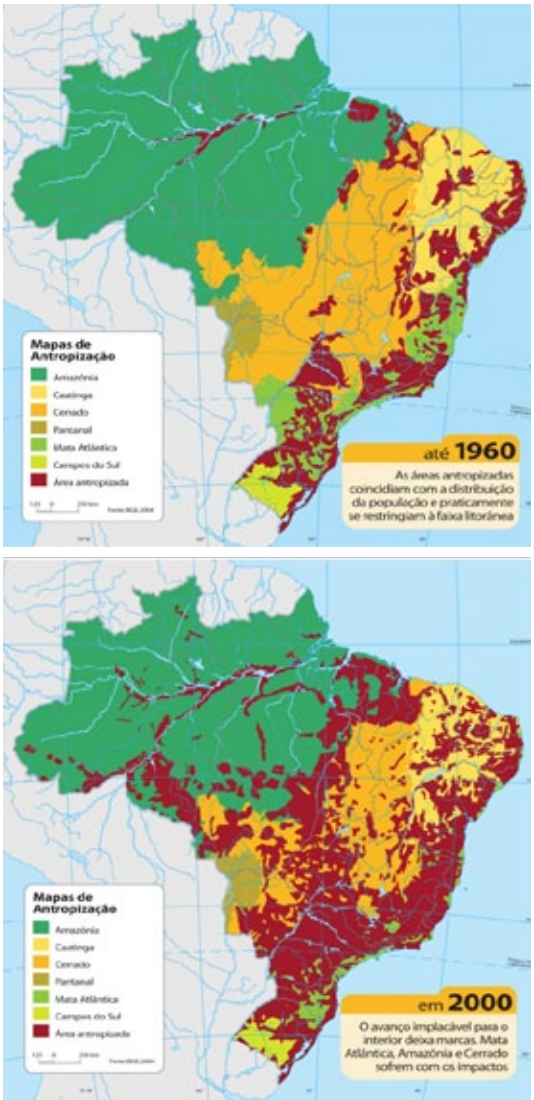
A striking example of the harmful effects of exploitative economic practices on a regional level was the ecological destruction of the central valley of the Paraíba do Sul River, an area covered by forested hills between the cities of Rio de Janeiro and São Paulo. Between 1820 and 1890, export coffee plantations in this region—characterized by their large size and by their reliance on slave labor—dominated the Brazilian economy and sustained the Rio de Janeiro-based monarchy. But the intense burning of forests, erosion of hillsides, and soil degradation prevented the continuation of coffee production in the region, fuelling an economic crisis in the early twentieth century that would influence both the declaration of the Brazilian Republic, and the establishment of new coffee zones in the western part of the state of São Paulo (Dean 1995).

Another notable process of economic territorialisation in the late nineteenth century was the so-called "rubber boom" from 1850 to 1915, when the export of rubber extracted from native rubber trees in the Amazon forest met the majority of the demand in industrializing countries, especially that of the automobile industry. However, in terms of deforestation, the rubber boom had a limited impact. This was largely due to the biophysical characteristics of the native rubber trees. The extraction of rubber did not require these trees to be cut down: rather, in order for rubber be produced during an effective time frame, the extraction process required the maintenance of not only the rubber trees but also the surrounding forested landscapes, which acted as ecological support for the continuation of rubber trees' productivity. While it is true that demand for rubber was the cause of a marked increase in migration to the Amazon and the rapid growth of cities such as Manaus and Belém, the swift decline of Brazilian rubber exports as a result of the increasing international dominance of rubber sourced from plantations in Southeast Asia meant that the environmental consequences of rubber extraction as a whole were not severe. Up until the early 1970s, the Brazilian Amazon Rainforest still covered approximately 99 percent of its original area (Pádua 1997).

The most significant transformations in rural and urban landscapes in Brazil began in the mid-twentieth century, as part of a broader process of social and economic transformation. A political revolution which occurred in 1930, known at the time as the "New Republic," sparked a wave of urbanisation and industrialisation which continued through the following decades. Brazil's population increased from 41 to 186 million between 1940 and 2010. In the same period, the urban population increased as a proportion from 31 percent to 84 percent. These socioeconomic and geographical changes became more evident in the period following World War II, and gained particular momentum during the 1964–84 military dictatorship. The authoritarian state, dominated by a geopolitical obsession with accelerated development and the economic occupation of the remoter areas of the territory, stimulated significant developments. Firstly, it facilitated the expansion and remodelling of urban landscapes, leading to increased pollution levels and the destruction of traditional architectural complexes. Secondly, it drove the expansion of infrastructure, especially dams and motorways. Thirdly, it encouraged the spread of industrial areas and the dumping of toxic substances. Fourthly, it allowed the reclamation of new areas for cattle farming in areas previously covered by tropical forests and other native ecosystems. Many of these areas were also occupied by scattered populations of Indians, fishermen, Brazil nut harvesters or rubber tappers, and other poor communities without formal land rights. Fifthly, the state encouraged the conversion of areas formerly used by small-scale traditional agriculture—in which a significant

rural population lived in informal settlements on large private estates, with part of their income going to the landowner—into large units of agribusiness based on the use of machines and agrochemicals.

The impact of these factors on the Brazilian landscape are shown in Figure 1 and 2, which demonstrate the process of anthropization of the major biomes up until 1960, and between 1960 and 2000.



Figures 1 and 2. Illustrations by William Torre, 2009, based on maps from the Brazilian Institute of Geography and Statistics, IBGE.

It is not difficult to imagine that these changes had a strong environmental impact and sparked various conflicts involving both rural and urban communities. The Atlantic Forest has largely been destroyed, possessing today around nine percent of its original cover. The Amazon Rainforest was also heavily deforested from the mid-1970s onwards, leaving today about 80 percent of its original cover. The Cerrado, the vast savannah of central Brazil, was used for agriculture from the 1970s onwards as a result of agronomic research that succeeded in modifying the natural acidity of its soil, making it one of the major agricultural frontiers of the contemporary world, especially for the production of soy beans. With this, the Cerrado has lost about 50 percent of its native vegetation in only a few decades. In urban areas, a rapid, widespread population increase, driven by the

exodus of rural people largely displaced by agricultural mechanisation, created a number of *favelas* (shanty towns) and added to the growing number of factories, concrete buildings, and vehicles, creating cities that that are polluted and environmentally degraded. Despite advances made in recent years, about 38 percent of urban dwellings have no access to sewerage systems and overall, about 63 percent of sewage is not treated.

As a result of these issues, and especially the destruction of the Amazon Rainforest, Brazil has become one of the key players in the international ecological debate, a position that has been made visible by Brazil's convening of the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. On the other hand, the significant increase in environmental struggles in Brazil starting in the 1970s—including conflicts that have acquired global notoriety, such as the assassination of rubber tapper trade union leader Chico Mendes in the Amazonian state of Acre in 1988, one of the landmarks in the emergence of the so-called "environmentalism of the poor"—has helped to increase the political strength of the debate on the environment and sustainability in the country (Pádua 2012). The political consequences of these debates and social struggles have come to be seen as historically relevant, to the extent that environmentalism has taken on a prominent, if ambiguous role in the coalition of left-wing and centrist political forces that have been in power since 2003, under the leadership of the Workers' Party. One significant change has been the 84 percent reduction in the annual rate of deforestation in the Brazilian Amazon between 2004 and 2012. But we must also consider that the destruction of the Cerrado provoked by the expansion of agribusiness has turned that region into a "sacrificial zone" for the conservation of the Amazon Rainforest. The destruction of the Cerrado is meeting little or no national or international resistance. The public's fascination with tropical forests in contemporary culture has not extended to the savannah environment, despite these being endowed with considerable biodiversity and providing essential ecological services.

The challenge that currently presents itself, therefore, is to understand the historical background summarized in this essay on a deeper level, and to link this historical knowledge to current political debates and disputes over the future of Brazil's complex society and its immense territory. In spite of its many problems and challenges, Brazilian society is culturally and politically vibrant and is trying to find its own way towards a better life. Looking beyond the borders of Brazil itself, we are reminded that the Brazilian territory has ecological riches on a truly global scale, and the future trends of Brazilian history have a critical role to play in the fate of humanity and its environment in the twenty-first century.

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