



Local history and landscape dynamics: A comparative study in rural Brazil and rural France



Florent Kohler^{a,*}, Guillaume Marchand^b, Marcelo Negrão^a

^a CREDA UMR 7227, Paris 3 – CNRS, 28 rue Saint-Guillaume, 75007 Paris, France

^b Universidade Federal do Amazonas, Amazonas, Brazil

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ABSTRACT

In rural France as well as in rural Brazil, the years 1960–1970 were marked by profound socio-economic and environmental changes. In France, these changes were due to the agricultural modernization policy, in Brazil, they were caused mainly by the political integration of the Amazon to the rest of the country by infrastructure and agricultural colonization. The apparent irreversibility of the parallel phenomena of settlement, in France, and deforestation, in Brazil, gives us a comparative ground that this paper wishes to explore. We focused on four Brazilian protected areas and two French rural communes and studied the local attachment of the people and their collective attitude toward the environment. To do so, we assessed the main proximate factors identified in the literature, those determining the attitude of a human group toward its environment, an attitude influenced by structural drivers like legal issues and law enforcement. Our results suggest that these multiple factors are often randomly interconnected and can hardly be modeled. Land use and cover change may be an interesting way to understand social and environmental change, if accompanied by qualitative research about environmental and social perceptions. Our main conclusion is that collective and individual choices are eventually framed by local history: we use the notion of hysteresis to suggest that ancient causes may have enduring effects.

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Introduction

On both sides of the Atlantic, parallel and apparently irreversible dynamics unfolded over the last fifty years: the conversion of forests to croplands and pastures, in Brazil, and the conversion of croplands to settlements,¹ in France. In both cases, governments acknowledge the problem without these drifts being altered. The apparent irreversibility of these trends has drawn our attention to the possibility of a comparative approach, to check what similar logics are at work in these seemingly distinct phenomena. To do so, we used an approach based on the land use/cover change science (LUCC)² which combines geography and sociology, among others,

to understand and predict land use and landscape evolution (Caldas et al., 2007; Lambin, 2002). The advantage of this approach is that it is founded on observable phenomena, in an attempt to identify structural and/or proximate causes of land use and cover changes.

In a seminal paper published in 1992, however, Meyer and Turner were pessimistic about the possibility of developing models to anticipate future changes, in a social engineering perspective. In fact, all things being equal, the trajectories recorded from one region to another can vary significantly. However, in present Land Change Science literature, the modeling approach prevails (Wainwright and Mulligan, 2002; Turner et al., 2007; see for the present state of our knowledge, Verburg et al., 2013). Our approach to landscape changes, in a social science perspective, is inspired in geographical and anthropological works (Bertrand and Bertrand, 2002; Alphandéry, 2001) in the sense that we are interested in the modifications of physical places (land cover change) and how these are carried through by local populations, on a fifty years period of time. Our comparison will be conducted in the light of the results of two multidisciplinary research programs, CLEVERT³ on the French

* Corresponding author. Tel.: +33 6 30532133.

E-mail address: florent.kohler@gmail.com (F. Kohler).

¹ According to Meyer and Turner (1992, p. 47) “the term settlement can denote a form of land cover or a form of land use (...). The category of settlement as a land use includes areas devoted to human habitation, transportation, and industry. As land cover, it incorporates highly altered surface such as buildings and pavements, but such cover represents only a portion of the total area that a land-use classification might accord to settlement.”

² According to Meyer and Turner (1992, p. 39), “land use denotes human employment of the land and land cover denotes the physical and biotic character of the land surface.”

³ « Conditions socio-environnementales pour la réhabilitation de la biodiversité ordinaire » (2010–2013) program funded by French Ministère de l'Ecologie

side and USART⁴ on the Brazilian side. We will see that despite seemingly very different contexts (agricultural abandonment in an old industrialized country, expansion of pioneer fronts in an area under development since the 1970s), common features may appear in the underlying causes of irreversible changes.

After referring to the colonization vs. conservation dilemma in Brazil, and to the ecological turn which followed the Green Revolution in France, we will compare, on one side, four Brazilian inhabited protected areas, subjected to internal and external pressures on the environment (three in the Amazon and one in Bahia State, in the remains of the Atlantic rainforest); on the other, two French communes torn between augmenting the urban sprawling and maintaining the farmlands crisscrossed by hedges and groves (“*bocage*”). For the purpose of our analysis, we explore the concept of hysteresis, which describes the persistence of a phenomenon even after its causes ceased to exist (Bourdieu, 2002), a generally underestimated factor.

Contextualization of French and Brazilian situations

In rural France as well as in rural Brazil, especially the Brazilian Amazon, the years 1960–1970 were marked by profound socio-economic and environmental changes. In France, these changes are due to the policy of agricultural modernization (Green Revolution, land consolidation), whereas in Brazil they are caused mainly, but not only, by the Amazon integration policy led by the Military regime (1964–1985), interweaved with an agrarian reform based on colonization, and the recognition of Indian Rights by the Statute of the Indian (1973). This Statute was the first step toward the recognition of cultural diversity, ratified by the Brazilian Constitution of 1988, followed by the legal acknowledgment of a new category of citizens in 2007, the so-called “Traditional People”, including Indians, Maroons, and riverine populations.⁵

In Brazil, inhabited protected areas as a counterbalance to development plans

In contrast to the Atlantic Rainforest, which destruction began with Portuguese colonization (see Map 1), the threats looming on the Amazon Forest became reality in the 1960s. Plans for the development and colonization of the Amazon are ideologically inseparable from the military regime and its “Operation Amazon” planned in the 1950s (Simmons, 2002). The Superintendence of the Amazon (SUDAM) created during this decade was the first development agency specifically dedicated to this vast territory. The National Development Plan (1966–1970) promoted the establishment of agribusiness companies by building infrastructure and applying significantly low taxation. According to Margulis (2003), 16% of total deforestation recorded until in the 2000s is the result of tax concessions granted between 1970 and 1987. This plan was followed by the National Integration Plan (1970–1974), redirecting the policy of occupation by fostering agricultural settlements, so as to provide plots of this “land without people” to “men without land” (one of the slogans of the operation). The opening of pioneer fronts in the state of Rondônia and in southeastern Pará provoked a vast migration of landless peasants from the Northeast and South of Brazil, as an alternative to a genuine agrarian reform.

The years 1970–1980 saw an annual average of 21,050 km² of primary forest burnt to ashes, whether in the context of agrarian

reform (small producers), or through incentives to install large landowners, outlining the current “arc of deforestation” visible in Map 2. The different phases of migration led to a number of land conflicts, between settlers or small farmers against big landowners (Hecht, 1985) as well as between these large landowners and traditional populations (Araujo et al., 2009).

After the assassination, in 1989, of Chico Mendes (unionist fighting for the rights of rubber tappers in acre), a new policy was set up to protect these traditional populations and their territories. Among the mechanisms involved was the creation of inhabited protected areas such as sustainable development reserves (RDS) or extractive reserves (RESEX), as part of the national policy for environmental protection (Sistema Nacional de Unidades de Conservação, 2000, PP-G7 and ARPA programs⁶). Other groups gained a perspective of social and land protection as a compensatory measure for historic debt (Indigenous and Quilombola⁷ Territories).

We explored the Indigenous aspect during a 5 years field research lead in Bahia State, in the remains of the Atlantic Rainforest. This case study provides a useful perspective on the Amazonian context, where we focused on Quilombola communities. By assigning a special status to traditionally occupied territories and giving their inhabitants access to public services (education, health, energy), the Brazilian government hoped to curb environmental degradation, and avoid the errors that led to the destruction of the Atlantic Rainforest, with only 8.5% remaining, mostly under (rather inefficient) protection (Map 1). As for the Amazon, over 36% of its surface is currently covered by inhabited protected areas (Map 2).

Map 2 shows that protected areas are able to contain the expansion of the pioneer areas of the Amazon, sometimes constituting residual forest enclaves within territories largely converted to agropastoralism. However, when it comes to consider national scale, these apparent good results should not hide a series of problems identified in the scientific literature. Most of the inhabited protected areas are the result of multiple trade-offs, especially in regions of ancient colonization, such as Bahia State (Map 2). In these regions (Nordeste and Sudeste), the difficulties to indemnify large landowners led the authorities to cut back on non-habited protected areas, creating overlapping territories with differing environmental regulations. Due to the inextricable problem of land tenure in Brazil and different conflicts with a great array of population (traditional or not) the conservation units have been largely defined in accordance of social criteria: in the Atlantic forest, Cullen et al. (2013) emphasized that conservation units created to protect primates were delimited in function of the previous human occupation and are, in fact, too small to maintain a healthy population. We will see that the concerned populations, despite their status of “environmental stewards”, are subject to conflicting issues, making it difficult to predict their environmental impact or future orientations.

In France, a rural world torn between agricultural activities, environmental protection and the progression of suburbanization

It was only after the Second World War (1939–1945) that successive French governments undertook to transform the traditional structures of the peasant world, based primarily on self-sufficiency. This process culminated with the Agricultural Orientation Act of August 5, 1960, completed in 1962, which established the principle

(Commissariat Général au Développement Durable) and by French Caisse des Dépôts et Consignations.

⁴ « Usages et transmission des savoirs et représentations du territoire en Amazonie » (2009–2013) program funded by French Agence Nationale de la Recherche, coordinated by F.-M. Le Tourneau.

⁵ Decreto n° 6.040, de 7 de fevereiro de 2007.

⁶ Respectively Pilot Program for the Protection of Tropical Forests of the G-7 and Protected Areas of the Amazon, funded in the first instance by the G-7 with additional support from the World Bank and WWF.

⁷ Territory concession to Maroons, descended from fugitive slaves. The term “Quilombo” refers to the territory, “quilombola” refers to the population that lives in it.

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