

Showcasing a High-Modernist Landscape: Spatial Imaginaries and Rural Development in Minas Gerais, Brazil, 1970s

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ABSTRACTS

In 1974, the state government of Minas Gerais, Brazil, assisted by a number of public and private organizations, carried out a rural development intervention in the central-western Cerrado region. The Programa de Assentamento Dirigido do Alto Paranaíba (PADAP) consisted in resettling farmers of Japanese descent from southern to central Brazil, providing them with land, loans, infrastructure, and technical supervision in order to create a model region for the agrarian development of Brazil's vast interior biome known as "Cerrado". The aim of this article is to contextualize the PADAP and to explore the spatial imaginaries and implicit assumptions about Cerrado ecologies and landscapes which underpinned it. Moreover, it asks how the PADAP was embedded in processes of knowledge production that eventually facilitated the transfer of the project's methods to larger geographical scales. The high-modernist landscape ideal was associated with capital-endowed colonists producing under the technical supervision of the state, whereas former Cerrado inhabitants were relegated to the status of "remnants" and had to reclaim agrarian citizenship by aligning their production techniques to the parameters of a new rural order.

Im Jahr 1974 führte die Regierung des brasilianischen Bundesstaates Minas Gerais mit Unterstützung einer Reihe öffentlicher und privater Organisationen eine Maßnahme zur ländlichen Entwicklung in der zentral-westlichen Cerrado-Region durch. Das Programa de Assentamento Dirigido do Alto Paranaíba (PADAP) bestand darin, japanischstämmige Landwirte aus Süd- nach Zentralbrasilien umzusiedeln und sie mit Land, Krediten, Infrastruktur und technischer Beratung auszustatten, um eine Modellregion für die landwirtschaftliche Entwicklung in Brasiliens riesigem Biom im Landesinneren, dem „Cerrado“, zu schaffen. Ziel dieses Artikels ist es, das PAD-

AP zu kontextualisieren und die räumlichen Vorstellungen und impliziten Annahmen über die Ökologie und Landschaft des Cerrado zu untersuchen, die ihm zugrundelagen. Darüber hinaus wird die Frage gestellt, wie das PADAP in Prozesse der Wissensproduktion eingebettet war, die schließlich die Übertragung der Methoden des Projekts auf größere geografische Maßstäbe ermöglichten. Das hochmoderne Landschaftsideal wurde mit kapitalkräftigen Kolonisten assoziiert, die unter der technischen Aufsicht des Staates produzierten, während die ehemaligen Cerrado-Bewohner auf den Status von „Relikten“ zurückgestuft wurden und ihre *agrarian citizenship* zurückgewinnen mussten, indem sie ihre Produktionstechniken an die Parameter einer neuen ländlichen Ordnung anpassten.

1. Introduction

In the small interior town of São Gotardo, located about 300 kilometres northwest of the state capital of Minas Gerais, Belo Horizonte, a new era began on a late September day in 1974. A week of commemorations of the municipality's 59th anniversary, which featured religious services, cultural debates, book and crafts fairs, and dance events, culminated on 30 September, when the governor of Minas Gerais, Rondon Pacheco, and the Federal Minister of Agriculture, Alysso Paulinelli, solemnly inaugurated several works of infrastructure: a refurbished town square, a newly paved entrance road, and an airfield outside of town. Paulinelli also inaugurated local offices of the Associação de Crédito e Assistência Rural (ACAR), a public rural extension agency, and of the Programa de Assentamento Dirigido do Alto Paranaíba (PADAP), a state-directed resettlement programme which aimed at modernizing the region's agriculture. The day continued with a barbecue to which the local authorities invited all the local people, or *sangotardenses*, and it ended with a presentation of a popular children's theatre play.¹

The broader significance of these events, which at first seems to be limited to this specific provincial setting, only becomes clear in historical retrospect. Today, inhabitants of São Gotardo and the surrounding area hold the PADAP and the arrival of the colonists, mostly *nissei* and *sansei* (second- and third-generation descendants of Japanese immigrants) farmers from the southern and southeastern states of São Paulo and Paraná, in dear memory. There are references to the PADAP in the names of local shops, a monument remembers the achievements of Japanese immigrants and their descendants, and locals are fond of sharing their positive views of how the region has changed since the development intervention of the 1970s. One former colonist, Seiji Sekita, owner of Sekita Agronegócios, a major producer of carrots, beetroot, onion, garlic, potatoes, and milk, has served as mayor of São Gotardo for multiple terms. Clearly, the PADAP has left its mark on land-use practices in the region. The boundaries of the original area in which the programme was implemented are still clearly discernible on satellite images. By extension, both locally and elsewhere the PADAP is frequently presented as a water-

1 Correio Braziliense, 24 September 1974, p. 8.

shed moment marking the launch of the “conquest” of Brazil’s interior and the dawn of a new rural order. It symbolizes the transformation of the Cerrado, that biogeographical region in the Brazilian interior often sweepingly referred to as “savanna”, which since the 1970s has largely been turned into a cultivation area for crops sold on domestic and international markets.

This watershed consisted of the confluence of agricultural policies – directed credit, research, rural extension, directed colonization – which had been tested before in isolation, but which were now assembled in one programme under the guidance of expert politicians such as Alysso Paulinelli, a renowned agronomist who began his career as a professor for hydraulics, irrigation, and drainage at the Escola Superior de Agricultura in Lavras in 1959 at the young age of 23.² His vast international experience included advanced training with the Tennessee Valley Authority (TVA). During the 1960s, he became a leading representative for several associations at the intersection of agricultural research, education, and policy. A native of the town of Bambuí in western Minas Gerais, he took an interest in the Cerrado already as a student in the 1950s. In 1971, Governor Pacheco asked him to become the state’s Secretary of Agriculture, and in 1974 he moved on to becoming the Federal Minister of Agriculture under President Ernesto Geisel (1974–1979). His move into politics at the height of the military dictatorship would turn Paulinelli into one of the key figures in developing Brazil’s Cerrado agriculture. To paraphrase a senior official at the Minas Gerais superintendency of the Instituto Nacional de Colonização e Reforma Agrária (INCRA), there have been two phases in the history of Cerrado agriculture: one before and one after Alysso Paulinelli.

In this article, I will use the PADAP as an empirical lens to understand the symbolic and practical re-construction of the Cerrado as the attempt to create a high-modernist landscape. The concept of landscape allows us to analyse the historical layers of material environments, which are shaped by changing uses, technologies, territorialities, and imaginaries as well as their respective entanglements with non-human ecosystems.³ From a social constructivist point of view, landscapes are the result of negotiations over meanings and symbols that are expressions of self-images of, for instance, ethnic communities or professional groups.⁴ Less anthropocentric accounts stress the agency of non-human elements and regard landscapes as “products of *unintentional design*, that is, the overlapping world-making activities of many agents, human and not human”.⁵ Following the work of James Scott, high-modernist landscape designs aim to simplify rural environments, make them legible and measurable, and boost their market-oriented produc-

2 On Paulinelli’s biography, see “Paulinelli, Alysso”, in *Dicionário Histórico-Biográfico Brasileiro*, <http://www.fgv.br/cpdac/acervo/dicionarios/verbete-biografico/paulinelli-alysson> (last access 25 August 2022).

3 See, for instance, A. M. França, *Leyendo la historia a través del paisaje*, in: *Fronteiras: Revista Catarinense de História* 39 (2022), pp. 157–178.

4 T. Greider and L. Garkovich, *Landscapes: The Social Construction of Nature and the Environment*, in: *Rural Sociology* 59 (1994) 1, pp. 1–24.

5 A. L. Tsing, *The Mushroom at the End of the World*, Princeton 2015, p. 152.

tivity.⁶ Their most representative expression is large-scale mechanized, motorized, pesticide-assisted plantation-style farming in which plants, soils, and labourers increasingly become abstractions.⁷ Indeed, a concept of landscape that includes non-human agency seems at odds with the anthropocentrism of high modernism. And yet this conceptual tension can be applied particularly well to the agricultural expansion in the Cerrado: The aluminium-rich, acidic soils here had long made “modern” agriculture seem impossible. But large-scale restructuring of the pedosphere, consistent liming of the soils, and nitrogen fixation by adapted soy varieties created a second nature in which the soil virtually took on the characteristics of a man-made substrate that formed the basis for the great acceleration in agriculture – the great agro-acceleration.⁸

The PADAP has been the subject of several scholarly analyses. Researchers of migration have examined the process of resettlement and social integration of farmers from southern Brazil. In a meticulous ethnographic study, Maria Vicenta Haro Mata has shown how colonists of Japanese descent were able to accrue significant amounts of social capital and successfully entered the ranks of the economic and political elite.⁹ These findings are underscored by research on the economic motives for, and results of, resettling to the PADAP area.¹⁰ Historians have furthermore recognized, even if *en passant*, the PADAP’s importance for the establishment and consolidation of agricultural research and technical outreach agencies as well as for the intensification of Japanese-Brazilian technical cooperation in the field of tropical agriculture.¹¹

Interpretations of the PADAP often reflect the “scaling effect” which one can sense on the ground until today. This means that the Alto Paranaíba is often depicted as the place where a big story started, the “cradle” of a new model of industrial agriculture, which was subsequently applied to other regions of Brazil and later to countries in other world regions. The telos of this global scaling narrative has led to Japanese-Brazilian cooperation projects in Mozambique since the 2000s, namely the ProSavana project and the

6 J. C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed*, New Haven 1998.

7 This conceptualization has commonalities with what anthropologists have been debating under the term “plantationocene”; see D. Haraway et al., *Anthropologists Are Talking – about the Anthropocene*, in: *Ethnos* 81 (2016) 3, pp. 535–564; W. Wolford, *The Plantationocene: A Lusotropical Contribution to the Theory*, *Annals of the American Association of Geographers* 111 (2021) 6, pp. 1622–1639.

8 R. Biasillo and C. M. da Silva, *The Very Grounds Underlying Twentieth-Century Authoritarian Regimes: Building Soil Fertility in Italian Libya and the Brazilian Cerrado*, in: *Comparative Studies in Society and History* 63 (2021) 2, pp. 366–399; C. M. da Silva, J. Klanovetz and D.D.C. Braga, *Introduction. The Great Agro-Acceleration in the Making: Transnational and Global Histories of Agricultural Modernization in Brazil (since 1940)*, in: *Diálogos Latinoamericanos* 30 (2021), pp. 1–6.

9 M. V. Haro Matas, *Le “capital social” nikkei et le cas des brésiliens d’origine japonaise de São Gotardo (Minas Gerais-Brésil)*, Ph.D. thesis, EHESS Paris 2019.

10 M. A. dos Santos et al., *Os efeitos do ciclo de vida domiciliar e as mudanças nas expectativas de retorno aos capitais entre a primeira e a segunda geração de agricultores do Cerrado Brasileiro: o caso do PADAP*, in: *Caderno Eletrônico de Ciências Sociais* 2 (2014) 1, pp. 62–87.

11 A. C. Dantas, *Cooperação técnico-científica brasileira com o Japão e com a China nos âmbitos agrícola e espacial (1970–2015)*, Ph.D. thesis, Universidade de Brasília 2019; R. Nehring, *Yield of Dreams: Marching West and the Politics of Scientific Knowledge in the Brazilian Agricultural Research Corporation (EMBRAPA)*, in: *Geoforum* 77 (2016), pp. 206–217, at p. 213.

Nacala corridor, both of which consciously use the Brazilian experience of the 1970s as an important point of reference.¹² In the positive version of this narrative, the protagonists – politicians, agronomists, colonists – attain a truly heroic status since they have made a decisive contribution to solving the problem of how to feed a rapidly growing world population.¹³ The negative version stresses the flaws of the “Brazilian model” and argues that its export is not desirable at all because the colonization of the Cerrado was based on property concentration, monoculture, and the exploitation of nature and rural labourers.¹⁴

In this article, I will explore how, at the height of Brazil’s military dictatorship (1964–1985), techno-scientific elites projected high-modernist visions of rural order onto the unruly landscapes of the Cerrado. What spatial imaginaries materialized in the PADAP? With which Brazilian and international discourse strands did these imaginaries tie in? In what spatial configurations did they result on the ground? What inclusions and exclusions did they engender among the local population? To answer these questions, I will first situate the PADAP in relevant historical contexts by briefly reviewing Brazilian and international discourses on, and practices of, agrarian colonization. I will then roughly trace the emergence of the idea of the agricultural transformability of the Cerrado. I will address the implementation of the project with a particular focus on landscape transformation and the depiction of PADAP colonists as vehicles of a high-modernist development intervention. I will then highlight how the PADAP became a site where new techno-scientific knowledge was produced and new sensing techniques were tested. I will finally discuss the spatial and social exclusion that emerged as the high-modernist landscape called for both new ways of inhabiting the landscape as well as for new agrarian citizens in general.

2. Historical Context: Colonization and Agricultural Modernization in Twentieth-Century Brazil

Although the PADAP’s name stressed “resettlement” as its main objective, semantically and institutionally the programme stood in a tradition of agricultural colonization. The idea and practice of agricultural colonization as a means of economic and demographic

12 L. V. Cabral, *Priests, technicians and traders: actors, interests and discursive politics in Brazil’s agricultural development programmes with Mozambique*, Ph.D. thesis, University of Sussex 2016; A. Shankland and E. Gonçalves, *Imagining Agricultural Development in South-South Cooperation: The Contestation and Transformation of ProSAVANA*, in: *World Development* 81 (2016), pp. 35–46; L. Cabral and I. Leite, *ProSAVANA and the Expanding Scope of Accountability in Brazil’s Development Cooperation*, in: *Global Policy* 6 (2015) 4, pp. 435–445.

13 See especially the many publications on this matter by JICA senior research advisor Akio Hosono, e.g. A. Hosono and Y. Hongo, *Establishment and Early Development: PRODECER Sets Agricultural Development in the Cerrado on Track*, in: A. Hosono, Y. Hongo, and C.M.C. da Rocha (eds.), *Development for Sustainable Agriculture: The Brazilian Cerrado*, Houndmills 2016, pp. 35–60.

14 G.L.T. Oliveira, *Land Regularization in Brazil and the Global Land Grab*, in: W. Wolford et al. (eds.), *Governing Global Land Deals: The Role of the State in the Rush for Land*, Chichester 2013, pp. 71–92.

inward expansion has a much longer history in Brazil. In the most general sense, “colonization” in this context described processes of settlement and cultivation in areas whose integration with the national economy political elites regarded as lacking. The right policies to support such processes were subject of much debate and theorizing since the early days of Portuguese colonial rule. Throughout the nineteenth and early twentieth centuries, rural colonization projects were an important channel through which European and later Japanese migrants flocked to the country, particularly to its southern provinces. Such colonies took on different forms and relied on varying levels of state support. They included private colonies promoted by Brazilian and foreign companies, or were the results of concerted state-supported campaigns, such as the colonies of *Confederados* that sprang up in the aftermath of the American Civil War.¹⁵ The foreign government-sponsored colonies initiated by the Japanese government starting in 1908 were new elements.¹⁶

Reflecting changing historical constellations, the meanings of terms such as *colonos* (settlers) and *colonização* (colonization) changed over time. However, with increasing centralization of state power and the rise of developmentalism as a key state ideology after 1930, effective occupation and economic integration of the vast interior became increasingly associated with the idea of reinvigorating the Brazilian nation. The “March to the West” proclaimed by President Getúlio Vargas (1930–1945/1951–1954) and intellectuals associated with his vision of conservative modernization and state-controlled development resulted in the expansion of infrastructure, the construction of planned cities such as Goiânia and the founding of state-run rural settlements, such as the *Colônia Agrícola Nacional de Goiás*, which later became the municipality of Ceres.¹⁷

At the international level, agricultural colonization became an object of intense knowledge production that oscillated between different discursive registers: In the United States, New Dealers such as Isaiah Bowman updated the tradition of frontier studies founded by Wisconsin historian Frederick J. Turner and transformed it into a project to elaborate general, globally applicable principles of a “science of settlement”.¹⁸ Geographers like Henry Bruman and Leo Waibel considered the Brazilian interior as particularly apt to accommodate large numbers of immigrants organized in agricultural colonies.¹⁹ In the 1960s and 1970s, Brazilian discussions about agricultural colonization became enmeshed with the topos of agrarian reform, especially since the civil-military regime

15 See, for instance, C. B. Dawsey, *The “Confederados”: Old South Immigrants in Brazil*, Tuscaloosa 1995; J. L. Gregory, *Uma história social da colonização privada: empresários, imigrantes e o negócio da terra (Vale do Taquari/RS, segunda metade do século XIX)*, Porto Alegre 2021.

16 J. Lesser, *Immigration, Ethnicity, and National Identity in Brazil, 1808 to the Present*, Cambridge 2012, p. 157.

17 S. D. e Silva, *No oeste, a terra e o céu: a expansão da fronteira agrícola no Brasil central*, Rio de Janeiro 2017.

18 I. Bowman, *The Pioneer Fringe*, New York 1931; N. Smith, *American Empire: Roosevelt’s Geographer and the Prelude to Globalization*, Berkeley 2003; R.B. Vance, *A Science of Settlement*, in: *Social Forces* 11 (1933) 3, pp. 465–466.

19 S. D. e Silva and S. Bell, *Colonização agrária no Brasil Central: fontes inéditas sobre as pesquisas de campo de Henry Bruman em Goiás, na década de 1950*, in: *Topoi: Revista de História* 19 (2018) 37, pp. 198–225; L. Waibel, *Die Europäische Kolonisation Südbraasilens*, Bonn 1955.

responded to increasing demands for a more equitable distribution of land by stepping up efforts to send landless families to the agrarian frontier in the Amazon valley and to the state of Mato Grosso in particular.²⁰

Historians have pointed out that the importance of agriculture in Brazil's overall economic structure experienced a long-term relative decline between the 1930s and the 2000s. Similarly, rural-urban migration and demographic concentration in cities, often discussed under the term "rural exodus", seemed to indicate a "de-agrarianization" of both economic priorities and of representations of the Brazilian nation.²¹ However, the decline in agriculture's share of the workforce or overall production should not distract us from the massive investments in agricultural research, rural extension, and state incentives to capital-endowed producers, which significantly changed the outlook of Brazil's countryside, especially since the 1970s.²²

Indeed, as Ryan Nehring put it, "the formation of the Brazilian state in the twentieth century was intimately linked to the expansion and modernization of agriculture".²³ Even if they did not play the same pivotal role as in other countries, philanthropic organizations such as the Rockefeller Foundation had been engaged in exporting the technologies of the "green revolution" to Brazil since the 1950s.²⁴ Brazilian techno-scientific elites were both receptive to, and actively contributed to, agro-scientific innovation. This confluence of foreign and domestic interests, together with strong political support after the military takeover, spurred the establishment of an institutional landscape culminating in the founding of the state-controlled Empresa Brasileira de Pesquisa Agropecuária (Embrapa) in 1973, which quickly became the leading institution in the field of tropical agriculture.²⁵ At the same time, techno-political elites adapted the tools of integrated regional development, an approach that rose to international prominence through the Tennessee Valley Authority (TVA), but which had important institutional antecedents in Brazil, such as the Inspetoria de Obras contra as Secas, a government agency responsible for tackling the periodic drought crises in the northeast.²⁶ The issue of colonization routinely appeared on the agenda of various regional development authorities, such as the

20 J. V. T. dos Santos, *Política de colonização agrícola e o protesto camponês*, in: *Ensaios EEE* 6 (1985) 2, pp. 127–140.

21 S. Dorsch and M. Wagner, *Gezähmter Dschungel – industrialisierte Agrarwirtschaft – romantisierter Landloser: Die Mystifizierung des Ländlichen in der deagrarierten Gesellschaft Brasiliens*, in: *Geschichte und Gesellschaft* 33 (2007) 4, pp. 546–574.

22 For an overview, see H. S. Klein and F. Vidal Luna, *Feeding the World: Brazil's Transformation into a Modern Agricultural Economy*, New York 2018.

23 R. Nehring, *The Brazilian Green Revolution*, in: *Political Geography* 95 (2022) 102574, pp. 1–23, at p. 2.

24 U. Prutsch, "Awakening the Sleeping Beauty": Brazil's Vision of a Modern Agriculture and the Role of the Office of Inter-American Affairs under Nelson Rockefeller, in: *Diálogos Latinoamericanos* 30 (2021), pp. 1–15; Nehring, *Yield of Dreams*; C. M. da Silva, *De agricultor a farmer: Nelson Rockefeller e a modernização da agricultura no Brasil*, Curitiba 2015.

25 Nehring, *Yield of Dreams*.

26 T. Neufert, *Die Macht der Dürre: Wasser und Politik in Brasilien in der Zeit von Epitácio Pessoa (1877–1930)*, Köln 2015. On the TVA model, see R. P. Andrade, *A TVA to the Amazon Forest? Shaping Experts for Development*, in: *Diálogos Latinoamericanos* 30 (2021), pp. 1–16.

Superintendência do Plano de Valorização Econômica da Amazônia, which was created by Vargas in 1953.²⁷

3. Deciphering and Imagining the Cerrado

In an interview conducted in 2019, former minister of agriculture Paulinelli explained that to him, the Cerrado was essentially a damaged landscape that needed recovery.²⁸ The land, he argued, had been degraded first by indigenous hunting practices involving fire. Later, European colonists adopted these techniques and let their cattle trample down the vegetation and compact the soil. This pre-modern way of handling soil is what Paulinelli calls “extractive”, damaging agriculture. The often cited ragged and worn-out aesthetics of the Cerrado – *torta* (twisted), *estragada* (damaged) in Paulinelli’s words – was the result of these anthropic influences. Recovery (*recuperação*) hence became one key trope in the schemes designed by him and his collaborators, which were amplified by the notion of “incorporation”, or claiming the land for effective economic use.

Viewing Cerrado vegetation as an anthropogenic landscape goes back to nineteenth-century European naturalists. In 1837, the Danish palaeontologist Peter Wilhelm Lund pointed out that specific plant populations and forms could not be explained without the regularly occurring fires. Assuming that the forest vegetation called *catanduva* (now called *cerradão*), which was already rare in the nineteenth century, represented the climax community of the region, he sketched an evolutionary history according to which the more open Cerrado landscapes featuring isolated, thick-barked, and slow-growing trees were the result of the hunting techniques of indigenous peoples. This assumption challenged not only European views of “virgin” nature of the Americas, but also the notion of “pristine” nature as a whole.²⁹ Lund’s assistants Johannes Reinhardt and Eugen Warming further expanded his thesis of the Cerrado’s anthropogenic origins.³⁰ However, over the course of the twentieth century, the thesis of the man-made Cerrado was joined by voices that emphasized the heterogeneity of vegetation, therefore departing from the assumption that the vegetation of the Cerrado has its natural origin in the Pleistocene long predating human impact.³¹ Irrespective of this multiplicity of origin stories, current research points out that without the fires, the biodiversity of the Brazilian savanna would

27 T. Mougey, Tracing the Origins of Brazil’s Great Acceleration: The SPVEA’s Primeiro Plano Quinquenal and the Technoscientific Recovery of Amazonia, 1945–1959, in: *Varia Historica* 34 (2018) 65, pp. 375–408.

28 Interview with Alysson Paulinelli, Lagoa Santa, 5 July 2019.

29 P. W. Lund, Bemærkninger over vegetationen paa de indre høisletter af Brasilien: især i plantehistorisk henseende, in: *Det Kongelige Danske Videnskabernes Selskabs skrifter, Naturvidenskabelig og matematisk Afdeling* 6 (1837), pp. 145–188, at pp. 187–188.

30 J. T. Reinhardt, Nogle bemærkninger om den indflydelse de idelige markbrande have udövet paa vegetationen i de brasilianske Campos, in: *Videnskabelige meddelelser fra den Naturhistoriske Forening i Kjøbenhavn*, 1856, pp. 63–87; E. Warming, Lagoa Santa: et bidrag til den biologiske plantegeografi, Copenhagen 1892.

31 S. D. e Silva, Challenging the Environmental History of the Cerrado: Science, Biodiversity and Politics on the Brazilian Agricultural Frontier, in: *Historia Ambiental Latinoamericana y Caribeña* 10 (2020) 1, pp. 82–116, at p. 93.

be endangered; this research has also been developing concepts to integrate indigenous knowledge into an adapted fire management plan.³²

At any rate, the history of the expansion of modern agriculture in Brazil reveals that classifications of biomes, or biogeographic systems, have profound political implications. For instance, in current environmental legislation, the Cerrado enjoys significantly less protection than the Amazon and Atlantic rainforests. Scholars have characterized it as the “sacrifice zone” of Brazil’s agricultural development model.³³ If nineteenth-century scientists attested the Cerrado anthropogenic origins, dominant perceptions of the Cerrado during the agricultural expansion of the second half of the twentieth century equated these origins with ecological deterioration, thus revealing a strong dualistic thinking. Since the Cerrado was read as the result of environmental degradation, high-modernist technocrats and politicians understood large-scale land use conversion and landscape simplification as environmental “improvement” or, indeed, as a measure to prevent the further expansion of the agricultural frontier into the “pristine” Amazon rainforest.

The idea of the Cerrado as a target area for high-modernist landscape transformation began to emerge in the 1940s, when US government agencies and philanthropic organizations began to predict substantial growth for the region’s agriculture.³⁴ Such prophecies became concrete when the Rockefeller Foundation-funded Research Institute of the International Basic Economy Corporation (IRI) established agricultural experiment stations in Brazil and conducted targeted research on improved fertility practices for the acidic and aluminium-rich soils of the Cerrado, leading to concrete results in the late 1950s.³⁵ But it was not only foreign agronomists who were interested in the subject. For instance, the Serviço Nacional de Pesquisa Agrícola, founded by Vargas in 1943, ran an experiment station in Patos, Minas Gerais, from where soil scientists reported positive results of applying lime and phosphate fertilizer to Cerrado soils as early as 1950.³⁶

4. The PADAP: Implementing a New Rural Order *en miniature*

As state secretary, Paulinelli launched the Programa de Crédito Integrado, in 1972, which was a rural credit programme that provided farmers with loans on the basis of projects, not products. This gave the state and its rural extension workers enormous leverage to influence the farmers’ techniques and practices. If a farmer previously would have

32 G. Durigan and J. A. Ratter, The Need for a Consistent Fire Policy for Cerrado Conservation, in: *Journal of Applied Ecology* 53 (2016) 1, pp. 11–15.

33 G. L. T. Oliveira and S. Hecht, Sacred Groves, Sacrifice Zones and Soy Production: Globalization, Intensification and Neo-Nature in South America, in: *The Journal of Peasant Studies* 43 (2016) 2, pp. 251–285; J. A. Pádua, Nature and Territory in the Making of Brazil, in: C. Leal, J. A. Pádua and J. Soluri (eds.), *New Environmental Histories of Latin America and the Caribbean*, Munich 2013, pp. 33–39.

34 Nehring, *Yield of Dreams*, p. 208.

35 C. M. da Silva, Entre Fênix e Ceres: a grande aceleração e a fronteira agrícola no Cerrado, *Varia Historia* 34 (2018) 65, pp. 409–444.

36 Beneficiará a produção brasileira, in: *Gazeta de Notícias*, 8 January 1950, pp. 1, 15.

received a loan for a tractor no matter how he used it, he would now only get his loan for carrying out a specific task during the planting season, such as deforesting, sowing, liming, applying fertilizer. An agronomist or rural extension worker accompanied each project. Paulinelli assembled an institutional line-up, including the state bank Banco de Desenvolvimento de Minas Gerais (BDMG), the state research company Empresa de Pesquisa Agropecuária de Minas Gerais (EPAMIG), public universities (the federal universities of Lavras and Viçosa as well as the Belo Horizonte-based Universidade Federal de Minas Gerais), and the public rural extension agency Empresa de Assistência Técnica e Extensão Rural (EMATER), which all aligned with his plan to stimulate the Cerrado's agriculture and which had plenty of specialized personnel at their disposal. Backed by public institutions and the security apparatus of an authoritarian regime, this assemblage – directed rural credit, rural extension, and the technological infrastructure to transform the biophysical composition of the Cerrado – represented a powerful combination.

The original idea of the PADAP itself stemmed from the lobbying efforts of the mayor of São Gotardo, José Luiz Borges. Borges established contacts with Gervásio Inoue, the president of the Cooperativa Agrícola de Cotia (CAC), an agrarian cooperative from São Paulo founded in 1927 by farmers of Japanese descent, in order to solicit the elaboration of a development initiative to alleviate poverty in the region.³⁷ The resulting plan raised concerns because of the expected resistance from local landowners, but ultimately received the support of influential representatives of the state government, namely Paulinelli and Governor Pacheco. To them, the PADAP represented an opportunity to geographically concentrate previous efforts in order to further increase the proximity between producer, technical adviser, and scientific researcher as well as, first and foremost, to increase the visibility of rural modernization by creating a contiguous area of 61,000 hectares dotted with modern farms, transport infrastructure, and storage facilities. As Aureo Ribeiro aptly put it, “The PADAP was a clear demonstration of the force and political prestige of Minas’ agrarian bureaucracy, sufficient to assign it a status vis-à-vis other bureaucratic sectors, which it did not have before.”³⁸ Numerous state agencies were involved in the project, the key players being the state colonization agency Ruralminas, the EPAMIG, EMATER, and the CAC.

A crucial global backdrop to the development interventions in the Cerrado starting in 1973 were the oil crisis and the world food crisis of 1972–1975, the origins of which were a complex confluence of natural, social, and political factors. Natural factors included a large-scale El Niño event that caused droughts across Southeast Asia and reduced fish populations along the South American Pacific coast.³⁹ Growing levels of grain and meat consumption at the global level and international commodity specula-

37 See Borges's testimony in L. I. Sasaki, *Portal do Cerrado: as histórias e aventuras dos pioneiros no desbravamento e a criação da maior região agrícola do Brasil*, São Gotardo 2008, pp. 61–68.

38 A. E. M. Ribeiro, *Os fazendeiros da cultura: estudo sobre a fazenda “tradicional” e a modernização agrícola na região mineira dos cerrados*, MA dissertation, Universidade Estadual de Campinas 1986, p. 31.

39 C. N. Caviedes, *El Niño 1972: Its Climatic, Ecological, Human, and Economic Implications*, in: *Geographical Review* 65 (1975) 4, pp. 493–509; C. Timmer, *Reflections on Food Crises Past*, in: *Food Policy* 35 (2010) 1, pp. 1–11.

tion coincided with policies adopted by the Nixon administration and other governments to reduce grain production as well as with massive increases in grain purchases by the Soviet Union.⁴⁰ United Nations organizations and government representatives spent great amounts of energy discussing measures on how an internationally governed system of grain reserves could provide food security in the long term, yet the only tangible outcome was the establishment of a small International Emergency Food Reserve.⁴¹ However, if international politics were slow to respond to rising food prices and to the prospect of widespread famine, the crisis certainly enhanced a sense of urgency among agronomists and rural development planners to expand production, especially in tropical regions where large tracts of land were now considered potentially arable.⁴² This was also true for Brazil, which by 1970 was still a net importer of foodstuff. Looking back, Alysson Paulinelli remembers the world food crisis as the key moment that encouraged him to press ahead with agricultural colonization in the Cerrado.⁴³

Besides the easy access to the land through expropriation, the PADAP's choice of the Alto Paranaíba region had to do with its geographical location and existing transport infrastructure. An existing Nestlé plant in nearby Ibiá promised a convenient outlet for dairy products. Federal highways connected the region with major domestic consumption centres such as Belo Horizonte, São Paulo, and Brasília, the national capital that had been inaugurated merely 14 years earlier and was in need of an agrarian hinterland to feed its growing population. The railroad connecting Belo Horizonte and the nearby iron mining region with the port of Vitória in the State of Espírito Santo via the Rio Doce Valley allowed for good access to international markets.

The basic science that hinted at the agricultural potential of the Alto Paranaíba region was not new. With its gently undulating landscape, its relatively high altitude around 1,100 m, stable weather conditions, and low risk of frost, the area was suitable for the “technological package” that scientists had been developing since the 1950s, which included, in particular, the reduction of acidity through liming and the extensive use of fertilizer, especially during the first planting season, to prepare Cerrado soil for cultivation and to compensate for the lack of nutrients. By the early 1970s, these techniques of soil correction had become common wisdom among agronomists, and hence the “PADAP basic document” includes scant references to the Cerrado symposia organized by Mario Guimarães Ferri and to a 1973 study by the national planning agency IPEA.⁴⁴ These

40 C. Gerlach, *Die Welternährungskrise 1972–1975*, in: *Geschichte und Gesellschaft* 31 (2005) 4, pp. 546–585; C. Gerlach, *Famine Responses in the World Food Crisis 1972–5 and the World Food Conference of 1974*, in: *European Review of History: Revue européenne d'histoire* 22 (2015) 6, pp. 929–939; R. Jachertz, *The World Food Crisis of 1972–1975*, in: *Contemporanea* 18 (2015) 3, pp. 425–443.

41 Jachertz, *The World Food Crisis*, pp. 435–439.

42 P. A. Sánchez and S. W. Buol, *Soils of the Tropics and the World Food Crisis*, in: *Science* 188 (1975) 4188, pp. 598–603.

43 Interview with Alysson Paulinelli, Lagoa Santa, 5 July 2019.

44 Governo do Estado de Minas Gerais, *Programa de Assentamento Dirigido do Alto Paranaíba – PADAP: documento básico* (1973), Archive of the Comissão Pastoral da Terra – Minas Gerais (CPT-MG), Belo Horizonte, folder Prog. Assentamento Dirigido Alto Paranaíba – PADAP, 1973–1974. The first three Cerrado symposia had taken

general descriptions of Cerrado soils were compared with data from an experimental station set up in Rio Paranaíba, which lies within the PADAP area, in order to specify the amount of lime per hectare (around five tonnes) as well as the amount and kind of fertilizer needed to prepare the planting.

Politicians and planners underscored that the PADAP was not just a state development scheme controlled from the top down. Instead, they argued that the private-public partnership on which the PADAP was based generated a peculiar entrepreneurial spirit throughout the region. The private entity driving this process was the CAC.⁴⁵ The CAC had started its operations with the production of potatoes in the municipality of Cotia and their commercialization in the city of São Paulo. It soon diversified its production, offered its members a wide range of services and, during the 1930s, expanded its activities to the neighbouring States of Rio de Janeiro, Paraná and Minas Gerais. The CAC gradually became a key player on Brazil's agricultural markets, a position it consolidated during the military dictatorship, when it became a strategic partner in public agrarian development initiatives. An important asset in such endeavours were the cooperative's strong international ties which it fostered, for instance, through its participation in the Japanese Associação Pro-Colaboração Internacional de Agricultores do Brasil (Brasil Kokusai Noyukai) or through friendly relationships with Japanese government representatives.⁴⁶ Through its leading role in programmes like the PADAP, the CAC gained direct access to secretaries and planners at state and national levels, and cooperative leaders such as Gervásio Inoue became prominent public figures.⁴⁷ As sociologist Gustavo Taniguti points out, this was possible because the CAC leadership adopted "discourses that were in line with a prevalent kind of techno-scientific way of thinking".⁴⁸

Part of the CAC's responsibilities was the selection of the colonists. Most were young farmers of Japanese descent from northern Paraná and the interior of São Paulo. Northern Paraná, in particular, was a hotspot of agricultural modernization, and rural cooperatives played a key role in this process.⁴⁹ Land in these areas had become scarce and concentrated, which was partly due to the expansion of wheat and soy plantations and the mechanized farming techniques with which they were grown.⁵⁰ In search of better opportunities, the colonists selected by the CAC came to Minas with some capital and

place in 1962 (São Paulo), 1965 (Rio de Janeiro) and 1971 (São Paulo). They became central venues of knowledge exchange for researchers from different scientific disciplines conducting research on the region. Over time, the number of participants rose significantly and the themes discussed became more applied and development-oriented.

45 H. Saito, *O cooperativismo na região de Cotia: Estudo de transplantação cultural*, São Paulo 1956; G.T. Taniguti, *Imigração política e cultura: a trajetória empresarial da Cooperativa Agrícola de Cotia*, São Paulo 2019.

46 D. L. Padilha, *CAC, cooperativismo que deu certo*, São Paulo 1989, pp. 191–193.

47 Taniguti, *Imigração política e cultura*, pp. 175–177.

48 *Ibid.*, pp. 177.

49 S. Fajardo and D. Á. Moro, *O complexo agroindustrial e a atuação das cooperativas agrícolas no norte central do Estado do Paraná*, in: *Boletim de Geografia* 18 (2000) 1, pp. 85–112.

50 D. Á. Moro, *Aspectos geográficos da modernização agrícola no norte do Paraná*, in: *Boletim de Geografia* 13 (1995) 1, pp. 79–83.

farming experience – the most important criteria for eligibility.⁵¹ Still, the acidic, aluminium-rich soils of the Cerrado were a new terrain because most of them had acquired their farming experience on fertile terra roxa soils. In order to be accepted by the PADAP, candidates had to get a formal recommendation, be affiliated with the CAC, or apply for membership, document their technical experience, capital, the state of their landholdings in the region of origin and the condition of their machinery. The original planning document of the PADAP made it clear that the colonists were expected to “loyally follow the technical, administrative and commercial orientation from the cooperative or other assistential entities which may be part of the programme”.⁵² Some colonists had been to the US for agricultural training, and the group was prepared to apply farming methods in accordance with the state of the art of Cerrado science.⁵³

5. Knowledge Production and Abstraction

The PADAP was not merely a site where technical knowledge and science-based production methods were transferred from expert agronomists to local producers, but, in a significant feedback loop, the agronomists and farmers involved in the project constantly produced new knowledge about farming in the Cerrado. In fact, the PADAP was simultaneously a social experiment in directed resettlement and a scientific laboratory of substantial size. The CAC maintained experimental fields to test plant varieties and develop seeds adapted to Cerrado soils, but Brazilian and international scientists also carried out fieldwork on the lots of CAC members to gather data. For instance, experiences gained in the PADAP area provided a first impression of how Cerrado soil responded to intensive mechanization and fertilizer use over the period of a couple of years, and in 1983, agronomists suggested that the physical handling of the soil might have a much greater influence on long-term fertility than the constant use of fertilizer.⁵⁴

Another technology applied to the region was satellite imagery, a technique that would gradually revolutionize the territorial imagination of the Brazilian state, especially after becoming part of environmental monitoring systems. Such analyses made use of images provided by the Earth Resources Technology Satellite (ERTS), which NASA had launched in July 1972. In 1975, NASA renamed the first and subsequent earth-monitoring satellites Landsat. Landsat imagery has since remained crucial to inventories of soils, vegetation and minerals in Brazil.⁵⁵ On a larger scale, cooperation between the Na-

51 A. L. de Paiva et al., Discursive representations of the agricultural reform policy in Brazilian savanna: the case of Directed Settlement Program of Alto Paranaíba (PADAP), in: *Organizações Rurais & Agroindustriais* 19 (2017) 3, pp. 177–191, at pp. 187–188.

52 Governo do Estado de Minas Gerais, Programa de Assentamento Dirigido do Alto Paranaíba.

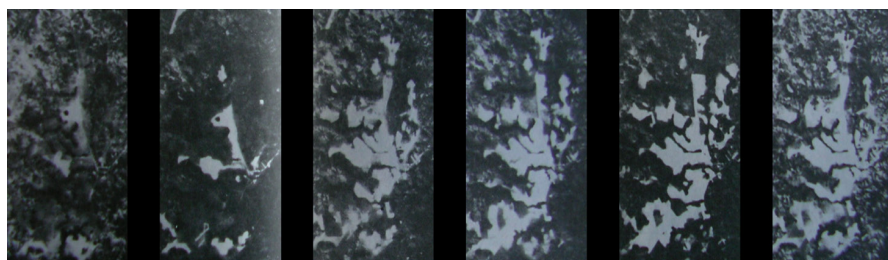
53 Hosono and Hongo, *Establishment and Early Development*, p. 39.

54 M. R. Fernandes, *Exploração dos Cerrados: análise e perspectivas*, in: *Informe Agropecuário* 9 (1983) 105, pp. 64–69.

55 Whereas the impact of satellite imaging on forest conservation, especially in Amazonia, is a relatively well-established research topic, environmental and agrarian historians have yet to explore the uses of satellite imagery

tional Institute for Space Research (Instituto Nacional de Pesquisas Espaciais), the Forest Institute (Instituto Florestal, a research agency funded by the State of São Paulo) and Embrapa's Cerrados Agricultural Research Centre (Centro de Pesquisas Agropecuárias dos Cerrados) launched the "Projeto Cerrado", which aimed at establishing the exact distribution and seasonal change of the different types of Cerrado vegetation. In the application for funding of the second project phase in 1977/78, the researchers argued for the need of satellite-based inventories and monitoring in order to keep up with the pace of transformation in the region and to make sure the development projects being rolled out there were "conducted in harmony with the [Cerrado's] environmental conditions".⁵⁶

Figure 1: Landsat images of the PADAP area, third week of June, 1973–1978.



The rapidly transforming landscape of the PADAP region also served as a model for testing the precision of satellite images and their potential use in mapping different kinds of vegetation on a smaller scale. In 1974, Ruralminas signed an agreement with a private company covering the superimposition of satellite images on aerial photographs taken with an infrared camera, which allowed for the mapping of the region's topography and vegetation with great precision as well as the identification of water sources and soil conditions.⁵⁷ Later, Japanese and Brazilian scientists used multispectral scans to document the vegetation cover in the PADAP area. At one level, satellite imagery registered the overall progress of land use conversion as deforestation and soil preparation advanced. At another level, the different bands of multispectral scans showed how the main crops

(and remote sensing in general) in agriculture. On conservation, see K. Niebauer, *Regenwald und ökologische Krise: die Globalisierung Amazoniens im 20. Jahrhundert*, Frankfurt am Main 2021; R. Rajão, *Representations and Discourses: the Role of Local Accounts and Remote Sensing in the Formulation of Amazonia's Environmental Policy*, in: *Environmental Science & Policy* 30 (2013), pp. 60–71.

56 H. Aoki, J. R. dos Santos, and V. C. de Carvalho, *Planejamento do Projeto Cerrado*, Instituto de Pesquisas Espaciais, São Paulo, January 1978, retrieved from NASA Technical Reports Server, <https://ntrs.nasa.gov/citations/19780025564> (accessed 6 June 2022), p. 1. See also H. Aoki and J. R. Santos, *Fatores ambientais dos cerrados e imagens orbitais*, in: *Boletim Técnico do Instituto Florestal* 31 (1979); J. R. Santos, V. C. Carvalho, and H. Aoki, in: *Técnicas de sensoriamento remoto aplicadas na caracterização da vegetação de Cerrado*, Simpósio Brasileiro de Sensoriamento Remoto, São José dos Campos 1981, pp. 197–210.

57 *Correio Braziliense*, 30 May 1974, p. 2.

– soy, wheat, and coffee – were distributed over the PADAP area in the period between 1973 and 1978 (see figure 1).⁵⁸

6. *Colonos and remanescents: Forging a Modern Peasantry*

The PADAP merged agricultural expertise and planning ideology with the effectiveness of a dictatorial regime, which could, on the basis of the Estatuto da Terra (Land Statute) of 1964, expropriate vast tracts of land without much resistance. The Estatuto de Terra itself was the outcome of complex negotiations in the aftermath of the military coup of 1964. By formulating a legal basis for centralized land reform, the Castelo Branco government intended to appease the social movements which had backed President João Goulart and his reform agenda.⁵⁹ The Estatuto contained language that troubled anti-reformist hardliners: for instance, it declared land distribution a question of “social justice” and defined the “social functions” which rural properties ought to fulfil. Overall, the military government rarely made use of the legal possibility to expropriate large landowners in the “social interest” and favoured colonization in sparsely settled frontier regions instead.⁶⁰ Yet in the case of the PADAP, land ownership was drastically altered as large estates in the Alto Paranaíba were expropriated with compensation. There are a large number of judicial proceedings regarding the constitutionality of these expropriations, but from early on, they dealt primarily with the amount of indemnity paid to former landowners rather than with the legality of the act itself.⁶¹ Most of the expropriated land belonged to one landowner, Antonio Luciano Pereira Filho, nicknamed Totoca, a famous, staunchly anti-Japanese businessman from Belo Horizonte who fiercely resisted expropriation.

Landowners who owned less than 100 hectares were expropriated in the first instance, but received their land back after Ruralminas had carried out detailed surveys of the plot’s size, buildings, planted crops, heads of cattle, and any other mineral deposits or water streams.⁶² All these original dwellers received the maps and inventories “as a courtesy” from the Ruralminas and, with the restitution letter from the regional coordinator of INCRA Affonso Damásio Soares, were handed a piece of evidence that the land was legitimately theirs, even though many had never formally registered it.⁶³ From then on,

58 M. Fukuhara et al., Monitoramento do uso da terra através de imagens Landsat no Alto Paranaíba, in: Japan International Cooperation Agency (ed.), *Trabalhos técnico-científicos desenvolvidos pelo projeto de cooperação em pesquisa agrícola nos Cerrados do Brasil*, Planaltina 1983, pp. 277–285.

59 R. Bruno, O Estatuto da Terra: entre a conciliação e o confronto, in: *Estudos Sociedade e Agricultura* 5 (1995), pp. 5–31.

60 Z. Navarro, Expropriating Land in Brazil, in: H. P. Binswanger-Mkhize, C. Bourguignon, and R. van den Brink (eds.), *Agricultural Land Redistribution: Toward Greater Consensus*, Washington D.C. 2009, pp. 267–289, at pp. 273–274.

61 Copies of the documentation of the legal processes following the expropriation are stored in the library of the Universidade Federal de Viçosa, Campus Rio Paranaíba.

62 As of 2019, these surveys were stored in a deposit in the city of Contagem in the greater Belo Horizonte as part of the vast (and currently idle) Ruralminas archive.

63 See, for instance, Affonso Damásio Soares to Lázaro Gomes da Silva, Belo Horizonte, 13 January 1975, and Aluí-

they were treated as *remanescentes* (remnants) who were obliged to “reintegrate”, which meant accepting technical farming advice or becoming members of the cooperative. Soares underlined this requirement in his letters to the *remanescentes* in which he assured them of the “plenitude of their ownership rights” under the condition of their “participation in the plans of the PADAP by way of implementing an agricultural and livestock farming project on the lot”.⁶⁴ The recipient of one such letter, Francisco Fernandes Filho, signed a “term of commitment” before two witnesses in which he promised to submit a “utilization plan” for his lot within 60 days. This plan was to be elaborated by the technical advisors at ACAR, and Fernandes had to promise “to implement it, rigorously considering the set goals” and to agree “to be held responsible for the consequences of non-observance”.⁶⁵

The Estatuto da Terra of 1964 used the term *remanescente* to describe the remaining part of a property subject to partial expropriation. Yet in the context of the PADAP, it became a term with strong temporal connotations for people who represented a bygone rural order characterized by inefficiency and inertia, but who were given the new opportunity to participate in the modernization process.⁶⁶ The size of this group was quite significant: around 310 individuals vis à vis 90 PADAP colonists, and the *remanescentes* still owned nearly half the land within the PADAP’s total area.⁶⁷

Indeed, from the perspective of local peasants, the PADAP brought about far-reaching changes. Before 1973, agriculture in the region had been characterized by extensive cattle ranging and some crop production.⁶⁸ Sharecropping was a widespread practice. In many cases, *meeiros* (sharecroppers) lived on land that belonged to a local *fazendeiro* (landowner). Through the sale of their share of the production they could gradually make a profit, which they often invested in their own plots of land. On these properties, the Ruralminas surveyors found mostly a small number of cattle and limited cultivated areas in the lower lying areas. For instance, the estate of Antonio Vida de Souza in the municipality of Rio Paranaíba measured 84 hectares, 85 per cent of which he used as pasture for 13 heads of cattle. On 10 per cent he cultivated crops and five per cent was forested.⁶⁹ Landowners affected by the expropriation resisted in different ways. Luiz Isamu Sasaki, who coordinated and documented the implementation of the project for the CAC, remembers how Antonio Pereira, in a panic, began to cultivate his land with 40 tractors to prove that his lands were productive.⁷⁰ CAC tractors were sabotaged and colonists were

zio Fantini Valério to Lázaro Gomes da Silva, Belo Horizonte, 17 January 1975, Ruralminas archive (RA), Arquivo Fundiário (AF), Caixa 814.

64 Affonso Damásio Soares to Francisco Fernandes Filho, Belo Horizonte, 7 May 1975, RA-AF, Cx. 814, Lote 268A.

65 “Termo de compromisso”, n.d., RA-AF, Cx. 814, Lote 268A.

66 The 1988 constitution adopted the term *remanescentes* to refer to communities which trace their heritage back to *quilombos*, communities of runaway slaves, a status that grants them the right to own land.

67 Ribeiro, *Os fazendeiros da cultura*, p. 48.

68 The description of pre-1974 agriculture in the Alto Paranaíba is based on Ribeiro, *Os fazendeiros da cultura*.

69 Memorial descritivo da medição e demarcação, 18 November 1974, RA-AF, Cx. 814, Lote 260A.

70 Sasaki, *Portal do Cerrado*, pp. 79–80.

threatened with violence.⁷¹ Sasaki reports that the accounts of resistance by the dispossessed, reported in Japanese-language newspapers in São Paulo and Paraná, certainly made an impression on prospective colonists. Rural Minas Gerais was, after all, a violent place: In the small magazine *Paca Tatu Cutia-Não*, which was published in São Gotardo and was part of the countercultural publication landscape during the military dictatorship, Josué, a former hitman for Antonio Pereira, gave a detailed account of how he had appropriated numerous rural properties at gunpoint on Pereira's behalf until "the Japanese took [the land] from him".⁷²

But resistance in the region was not limited to dispossessed landowners. The authors of *Paca Tatu Cutia-Não* criticized the authoritarian model of development that the PADAP represented and mocked the "caravan" composed of figures such as "Valorization, Speculation, Concentration" that invaded the region.⁷³ They further denounced the "enlightenment campaigns", the "patriotic anthems", the "fever of consumerism" which were transforming local society as well as the paternalism with which the government issued "diplomas for good behaviour" to landowners who pledged to abide by the new agricultural rules. Since the PADAP was under the special supervision of the security agencies, agents of the Serviço Nacional de Informações were eager readers of *Paca Tatu Cutia-Não*, and the expropriation and surveying measures in the field took place in the presence of the military.⁷⁴

7. Conclusion and Outlook

Critical voices grew louder once the experiences of the PADAP encouraged policy-makers to formulate more ambitious rural development programmes that targeted larger geographical regions. A prime example is the Japanese-Brazilian Programme for Cerrado Development (PRODECER), which the military government launched in 1979 in cooperation with the Japanese Development Agency JICA. The scaling up of rural development interventions that mobilized significant amounts of private capital coincided with the slow process of democratization and the easing of repression of Brazilian civil society. Rural movements organized around issues such as the proletarianization of peasants, landlessness and the uncontrolled growth of cities. In a climate of rural violence, organizations like the Comissão Pastoral da Terra or the Sindicato dos Trabalhadores Rurais denounced internal migration as a consequence of mechanized agriculture and monoculture. The *boias-frias* (precarious, migrant, landless day-labourers) epitomized this critique. In particular, PRODECER I was interpreted in this framework, comple-

71 Ibid., p. 82.

72 Depoimento, *Paca Tatu Cutia-Não* 2 (1977), pp. 7–16.

73 Tarcisio Mello, Boca no trombone: a parada dos sucessos não sabe de nada, in: *Paca Tatu Cutia-Não* 2 (1977) 7, pp. 1–7, at p. 2.

74 Periódico "Paca Tatu Cutia-Não", 24 February 1978, File A1097271-1978, Arquivo Nacional (Brasília), Fondo Serviço Nacional de Informações.

mented by a critical view of Japanese capitalism and its growing importance in Brazil.⁷⁵ PRODECER became an effective rallying point because companies such as Mitsubishi, Kawasaki, Toshiba and Mitsui held a significant portion of the shares of the Agricultural Promotion Company (CAMPO), a Japanese-Brazilian coordinating agency funded by private and state companies, which played a leading role in planning research, recruiting farmers and well as providing technical guidance and rural credit.

In this article, I have argued that the spatial imaginary that underpinned projects like PADAP originally saw the Cerrado as an ecological ruin. In the 1970s, development experts were able to draw on scientific bodies of knowledge that made the regeneration of these “landscapes” seem technically feasible. At the same time, the practice of agricultural colonization was revived and took on a new shape, this time to transplant a new group of agents of agricultural modernization into the heart of the “ruined” landscape. Although Minas Gerais was not a “frontier” in the classic sense, the colonists of the CAC were depicted as classic pioneers. The construction of their farms was supported by the most modern scientific methods. But the high-modernist landscape that emerged in Minas also produced new forms of exclusion. Farmers who used traditional production methods were now “out of place”.

I suggest that land use and soil management functioned as “intellectual filters”, to use James Scott’s term, which the state applied to read rural populations and assess their usefulness for a state-directed modernization process. With this argument, I would like to qualify the interpretation put forward by Roberta Biasillo and Claiton da Silva who, in their analysis of soil politics in Libya during Italian colonial rule and in Brazil under the civil-military regime, imply a direct connection between authoritarian regimes and the colonizing thrust to manipulate, homogenize and “correct” soils.⁷⁶ Large-scale soil correction was an integral part of modernist environmental ideology and practice, cutting across political systems. As the global history of the Green Revolution suggests, the ideal of rationalized, motorized agriculture based on optimized seeds, improved soils and chemical fertilizers was shared by agronomists, politicians and farmers in diverse societal and political settings. These different places were connected through moments of global crises as well as through networks of knowledge circulation.

What the case of the PADAP shows, however, is how hierarchical administrative structures together with a strategic alignment between scientific, political and business elites could be particularly effective in putting high-modernist filters to work through which landscapes, ecologies and populations were re-categorized. To put it more broadly, the simplification of the Cerrado promoted by the PADAP represents the high-modernist phase of the Anthropocene, the age of humans as a force that shaped the planet. This disruptive alteration of vegetation patterns as well as water and nutrient cycles was not merely a state project. It was, just like the PADAP itself, a private-public partnership.

75 See, for instance, P. San Martin and B. Pelegrini, *Cerrados: uma ocupação japonesa no campo*, Rio de Janeiro 1984.

76 Biasillo and Silva, *The very Grounds*.