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FRONTIER TERRITORIES: COUNTERING THE GREEN REVOLUTION LEGACY IN THE BRAZILIAN CERRADO

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Green Grabbing in the Matopiba Agricultural Frontier*†

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Abstract This article discusses *grilagem* (land grabbing) in the Cerrado, particularly in Matopiba territory, which is seen as the newest and largest global agricultural frontier. It examines how the Rural Environmental Cadastre (CAR), created in 2012, has become an instrument for land and green grabbing. The analysis draws on empirical evidence on overlapping land cadastres and conflict in Piauí. The CAR has favoured green grabbing due to weak land governance, allowing the appropriation of land and nature through claims of environmental protection. The article highlights resource appropriations on the frontier that reflect the 'unequal ecological exchange', and the 'metabolic rift', that characterises the global capitalist system. It contributes to a highly topical debate on green grabbing, in the context of climate change and environmental sustainability. Crucially, it offers a perspective of the global South, on how the green agenda is being used through legal tools as a mechanism of resource appropriation.

Keywords green grabbing, land grabbing, agricultural frontier, Rural Environmental Cadastre, Matopiba, Brazil.

1 Introduction

The Cerrado occupies 25 per cent of Brazil's territory. It is the second-largest biome in South America (IBGE 2019), and is a habitat for 5 per cent of all species on the planet and 30 per cent of Brazil's total biodiversity (ICMBio 2018). Despite this, it is relatively unknown to the international public; for example, in comparison to the Amazon rainforest. Driven by the intensive production of soybeans and extensive cattle ranching for export, and largely embedded in the Cerrado biome, Matopiba is the 'newest and last agricultural frontier' (Mathias 2017). Despite constant territorial redefinitions and geographical expansion of monocropping, the region has been known by the acronym

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Matopiba since 2015, referring to the Cerrado as an 'open frontier' and a business opportunity in the states of Maranhão, Tocantins, Piauí, and Bahia (Gomes 2020; Silva *et al.* 2021).

Matopiba is a frontier where global exploitation practices (Potapov, Turubanova and Hansen 2021), such as land and green grabbing, reproduce the centre–periphery relationship and are closely interwoven with 'unequal ecological exchange', deepening its 'ecological debt' and the 'metabolic rift' (Foster and Holleman 2014: 206). The metabolic rift is a disruption of the interaction between humankind and nature due to capitalist exploitation and consumption of natural resources (Roberts and Parks 2009). Besides producing the systemic ecological crisis (Foster and Holleman 2014), the capitalist exploitation of nature produces inequality in the ecological exchanges (Haraway 2015; Sassen 2013).

These unequal exchanges are forms of extraction of natural resources or assets and the exploitation of labour of the global South (Sassen 2013), deepening the 'ecological debt' of the global North (Foster and Holleman 2014: 199; Haraway 2015; Wolford 2020)⁵ and producing environmental injustice (Veltmeyer and Petras 2014). These exchanges are frequently justified with 'green' narratives of sustainability, such as the urgent and necessary reduction of greenhouse gas emissions and other goals and commitments to preserve the environment (Franco and Borras Jr 2019), or the need to produce food (Potapov *et al.* 2021).

The phenomenon of green grabbing is closely related to land grabbing and refers to processes of appropriation and control of natural resources that go beyond the purchase of land for agriculture and the acquisition of large agricultural areas by foreign investors (Borras *et al.* 2012). Green grabbing also includes deals in the carbon market and the dismantling of environmental regulations (Sauer and Borras Jr 2016). The concept is controversial (Franco and Borras Jr 2019), but the definition of green grabbing means the appropriation of nature, land, forests, minerals, and other natural assets (Fairhead, Leach and Scoones 2012), based on sustainability arguments and narratives (e.g. privatisation to conserve, pay to protect). The appropriation of nature based on conservation arguments also involves the appropriation of land or land grabbing (Grain 2008; Borras Jr and Franco 2010), not necessarily for productive purposes.

Green grabbing in Matopiba is based on the appropriation or control of agricultural land but involves various forms of appropriation, such as grabbing areas with native vegetation to comply with requirements for Legal Reserves and trading carbon credits, among others (Silva *et al.* 2021). Appropriation usually takes place through the transfer of property, mainly through acquisition, land grabbing (*grilagem* in Portuguese), and forgery of rights of use and control over lands and territories that

were 'formerly public or private property' (Fairhead *et al.* 2012: 238). This article explores another form of appropriation that takes place through environmental management mechanisms, looking specifically at the National System of Rural Environmental Cadastre (Sistema Nacional de Cadastro Ambiental Rural, SICAR), known simply as CAR.

This article explores when and how land grabbing turns into green grabbing. It considers processes of appropriation of land and nature using CAR and how they relate to narratives and instruments about 'green' development and sustainability. It looks at an example within Matopiba where environmental registration has been misused to grab common and public land. Specifically, this article examines the Ecological Reserve Uruçuí-Una, created in 1981, in Baixa Grande do Ribeiro municipality (state of Piauí), where its territory of 135,000 hectares has been illegally appropriated using CAR (Silva 2021).

The article highlights the relevance of capitalist appropriation, based on land and green grabbing taking place in Matopiba. The text is organised into three main parts. Section 2 looks at the definition or characterisation of the territory known as Matopiba. Section 3 documents how land grabbing turns into green grabbing, showing land appropriation in the Ecological Reserve in Piauí (Silva 2021). Section 4 discusses how appropriation on the agro-export frontier of Matopiba is intertwined with narratives and instruments about 'green' development and sustainability.

2 Characterisation of Matopiba and weak land governance in the region

The original territorial configuration of Matopiba is based on the delimitation proposal prepared in 2014 by the Strategic Intelligence Group (Grupo de Inteligência Territorial Estratégica, GITE) of the Brazilian Agricultural Research Corporation (Embrapa). It includes 337 municipalities and a total area of 73,173,485 hectares, of which 33 per cent is in Maranhão, 38 per cent in Tocantins, 11 per cent in Piauí, and 18 per cent in Bahia. It includes 324,326 farms, 46 conservation units, 35 indigenous lands, 781 agrarian reform settlements, and 36 *quilombola* lands (Afro-Brazilian rural communities)⁶ (GITE 2014a; Silva *et al.* 2021).

Land and natural resource investments and appropriations, such as those currently ongoing in Matopiba, lead to changes in land use (Borras Jr and Franco 2010). It characterises an agricultural frontier, bringing about a transformation of agricultural labour regimes, and 'changes in the relationships of how labor is spent, extracted and distributed' (Li 2011: 282).

Matopiba is a territory defined by state-sanctioned private capital and corporate businesses (Mathias 2017), aimed at making the exporting agribusiness more competitive in response to the global demand for commodities. Investors targeted the Matopiba

and the Brazilian state, legally recognising it as an agricultural frontier (*ibid.*). This official recognition has enabled the expansion of agribusiness through public investments in infrastructure (roads, railways, ports, hydroelectric plants), in agricultural research and technical support (Gomes 2020; Azerêdo and Mitidiero Jr 2020), and through the support of state governments (Silva *et al.* 2021).

The relaxation of environmental legislation during the Bolsonaro government (2019–22) accelerated deforestation in the Cerrado biome and, as a result, accentuated processes of expropriation of Cerrado peoples from their lands. Thus, the creation of Matopiba has ensured that the exploitation of local communities and workers, and the expropriation of nature are legal (Veltmeyer and Petras 2014), including the creation of an environmental administration without or beyond state control (Corson and MacDonald 2012).

The expansion of Matopiba's agricultural frontier is based mainly on monocropping (soybeans, corn, and cotton) and cattle ranching, oriented towards large-scale exports. It is organised on the basis of a highly concentrated land structure and cheaper labour. Land distribution is highly concentrated, with less than 1 per cent of farms owning almost half of all land in Matopiba (IBGE 2017). Moreover, the expansion of monocrops and agroindustries benefits from the vulnerability of the labour force, which consists mainly of members of local communities and migrants from other regions looking for jobs and better economic conditions (Théry *et al.* 2009).

Legislation and/or deregulation are instrumental for creating 'legal certainty' for investments. Bills such as Law Project 279/2016⁷ are being enacted to establish the Matopiba Development Agency. Article 11 of this bill, currently undergoing review in the Brazilian Parliament, ties the agency's activities to the Matopiba Agriculture and Livestock Development Plan (PDA–Matopiba).⁸ Created by Decree No. 8.447 of 6 May 2015, the PDA authorises governmental support and incentives that promote the expansion of monocrops and mineral extraction in Matopiba.

Soybean production in Matopiba increased from 5.7 million (m) tonnes in 2008 to 17.3m tonnes in 2022 (MAPA 2021). The area under cultivation, which is essentially spread over ten municipalities, reached 7.8m hectares in 2021 and is expected to reach 8.9m hectares by 2029–30.⁹ Thus, the area under cultivation is expected to grow by almost 15 per cent, leading to further deforestation. Data from the National Institute for Space Research (INPE 2021) shows that Matopiba accounted for 61.3 per cent (5,300sq. km) of the total vegetation suppressed in the Cerrado biome between August 2020 and July 2021.

Governmental financial incentives, technical and legal support – including the proposal to establish a development agency –

and productive and speculative private investment will lead to a continuous expansion of agricultural frontiers (Flexor and Leite 2017).

In Matopiba, the frontier is extending to the plateaus, known as *chapadas*. In the process, the natural vegetation is being cleared, uses of land are changing, and the traditional pastoral systems are being enclosed. The traditional population is being displaced and enclosed in the slopes and valleys, the so-called lowlands (*baixões* in Portuguese). These peasant communities and traditional peoples are experiencing a second displacement, as the *baixões* are protected areas and have been registered as Legal Reserves of the large farms that cultivate the *chapadas* (Almeida, Sodré and Mattos Jr 2019). The expansion of the frontier is therefore causing new conflicts with local peoples and traditional communities of the Cerrado (CPT 2021). The conflicts in Matopiba, similar to all over the Brazilian countryside, have been caused by the historical high concentration of land ownership and tenure, rural displacements, changes in land use, and land grabbing (Borras *et al.* 2012). Most recently, the land grabbing (*grilagem*) is associated with the appropriation of nature (Sauer and Borras Jr 2016), possibly due to weak governance. Four main factors have weakened land and environment governance, encouraging land grabbing and allowing for green grabbing in Matopiba.

The first factor is related to the large amount of public land that has not yet been registered as belonging to the state. These lands have remained unregistered, illegally privatised (*grilagem*), and/or illegally occupied by large farmers and corporations (Mathias 2017).

The second factor, related to the first, is the fact that a considerable number of traditional peoples and communities inhabit and use public lands without recognition of their territorial rights. Traditionally, the plateaus of the Cerrado (*chapadas*) were used as communal land for grazing by small livestock. This communal use of the natural pastures gave them tenure rights that are now being ignored as the border expands (Almeida *et al.* 2019).

A third factor is that, unlike other agricultural frontiers, the expansion of monocrops and cattle ranching in Matopiba is dominated by corporate farms (Azerêdo and Mitidieiro Jr 2020). These farms have large financial and legal apparatuses, as well as private militias, that they use to contest claims of land rights by local communities. This has contributed to the escalation of violence and disputes over land, water, and minerals in the region (CPT 2021).

A fourth factor, crucial to show the occurrence of green grabbing, is the misuse of a self-declaration tool to cadastre

forests (as Legal Reserves) in the SICAR. Self-registration, in line with environmental regulation, has been done to validate and formalise irregular land tenures. These self-registrations in the national platform of CAR, or SICAR, have been neither validated nor inspected by the environmental authorities (OCF 2019), making these cadastres automatically 'valid' and without any control (Gomes 2020; Silva 2021).

3 When and how land grabbing turns into green grabbing

Land and green grabbing are interrelated and sometimes operate as two sides of the same coin. According to White *et al.* (2012: 620), the concept of grabbing refers to different ownership dynamics, including 'the expropriation of land, water, forests and other commons, their corporate concentration, privatisation, and transaction (as freehold or leasehold), and thus the transformation of agricultural labour regimes'.

'Grabbing' refers to various types of land appropriation, usurping land not exclusively through ownership or property, but also through leasing, tenuring, concessions, licences to operate, that allow access and use, but especially control of land and territories (Borras Jr *et al.* 2012; Borras Jr *et al.* 2022; Sauer and Borras Jr 2016). The notion is used to refer to (legal and illegal) appropriation, but also to land concentration (Wilkinson, Reydon and Di Sabbato 2012), privatisation, and alienation, including through commercial transactions (Sassen 2013).

Land grabbing is also 'green' when the appropriation of nature involves governance systems shaped by capital (Franco and Borras Jr 2019). These systems and mechanisms, created to legally control natural resources, are based on narratives of preservation and market-driven sustainability. Green grabbing is therefore directly related to the creation of national mechanisms, such as the CAR, and international mechanisms sold as more environmentally sustainable, including self-governance systems, self-control instruments, and market-driven mechanisms (*ibid.*).

The Forest Code (Law No. 12.651/2012)¹⁰ is part of a microsystem of environmental legislation, which regulates the exploitation and protection of native vegetation in Brazil. This law regulates the economic exploitation of native forests and disciplines the conservation norms, including the definition and control of Legal Reserves.¹¹ It was amended and made more flexible in 2012. Guided by political and economic motivations, these amendments have promoted opportunities for 'green grabbing'. Thus, the creation of the SICAR (or just CAR) as a national cadastre is one of several controversial changes to the legal framework in 2012 – some of which are still being debated in the judiciary but are not discussed in this article (see Silva 2021).

The National System of CAR, or SICAR, is an electronic, self-declaratory cadastre that can be filled in online, with the

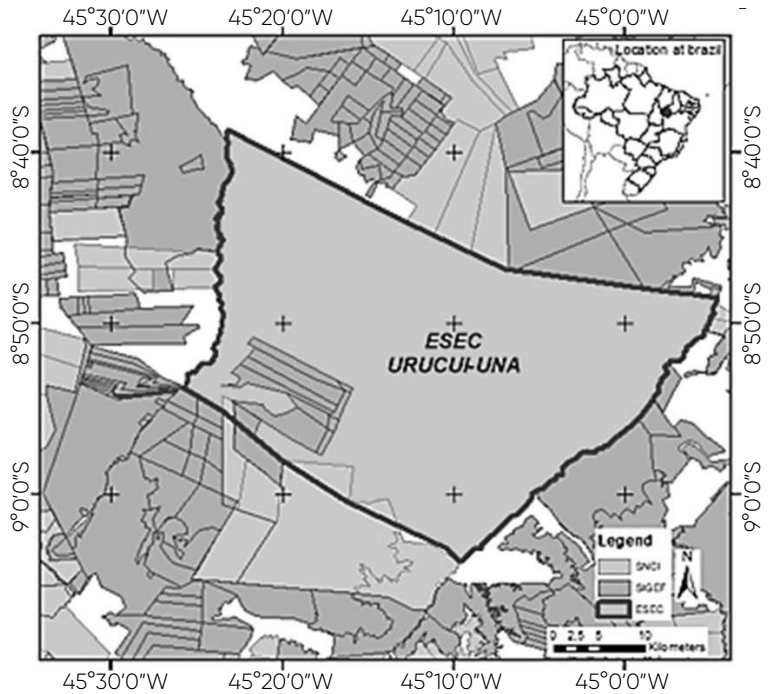
aim of environmental regulation, especially the registration of legally protected areas and areas of permanent conservation within private lands (Sauer and Oliveira 2021). Originally, the never-materialised expectation was that the SICAR would help implement a national programme of environmental conservation. This cadastre would allow the Federal Government and state agencies to monitor and inspect rural properties and the fulfilment of environmental regulations. However, this original purpose was diverted and the tool for environmental regularisation became an instrument for green grabbing (Gomes 2020; Silva 2021).

Land grabbing is being enabled by a legal framework and accompanying information systems that are not integrated, such as the Cadastre of Rural Properties (Cadastro de Imóveis Rurais, CAFIR), managed by the National Treasury, the former National System of Property Certification (Sistema Nacional de Certificação de Propriedade, SNCI) replaced by the Land Management System (Sistema de Gestão Fundiária, SIGEF), both administered by the National Institute for Colonization and Agrarian Reform (Instituto Nacional de Colonização e Reforma Agrária, INCRA). The SNCI and the SIGEF are systems based on notary registration, required for legal ownership, land use, and tax collection (Silva 2021; Freitas *et al.* 2018).

The CAR should operate only as a self-declaration register for environmental protection and conservation of privately owned native forest within land holdings. However, parallel to the land cadastres, CAR has been used to 'prove' tenures and use of large tracks of public land, declaring ownership or possession and demanding property rights (Sauer and Oliveira 2021). Land grabbing 'becomes green' by fulfilling a legal requirement and registering a native forest in the CAR, and this Legal Reserve of a rural property becomes the 'proof' of tenure or land ownership (*ibid.*; Freitas *et al.* 2018).

Self-declarations in the CAR have allowed the cadastre of native forests on public and communal lands. Environmental legislation is distorted, as the private owner declares a 'Legal Reserve' (20 per cent of land in the Cerrado, particularly in Matopiba) on other people's land. The cadastre is a legal requirement but also a way for discharging environmental obligations and costs such as restoring or compensating the deforestation of a Legal Reserve (Gomes 2020). Silva (2021) has demonstrated this process of appropriation and green grabbing, tracking the cadastres in CAR, but also in SNCI and SIGEF. As Figure 1 shows, registrations in the SNCI and SIGEF have already allowed *grilagem*, including appropriation of land in the environmentally protected reserves. According to Silva (2021), the Ecological Reserve Uruçuí-Una has part of its protected territory invaded with large farms, or part of large farms cadastred in INCRA's systems (SNCI and SIGEF).

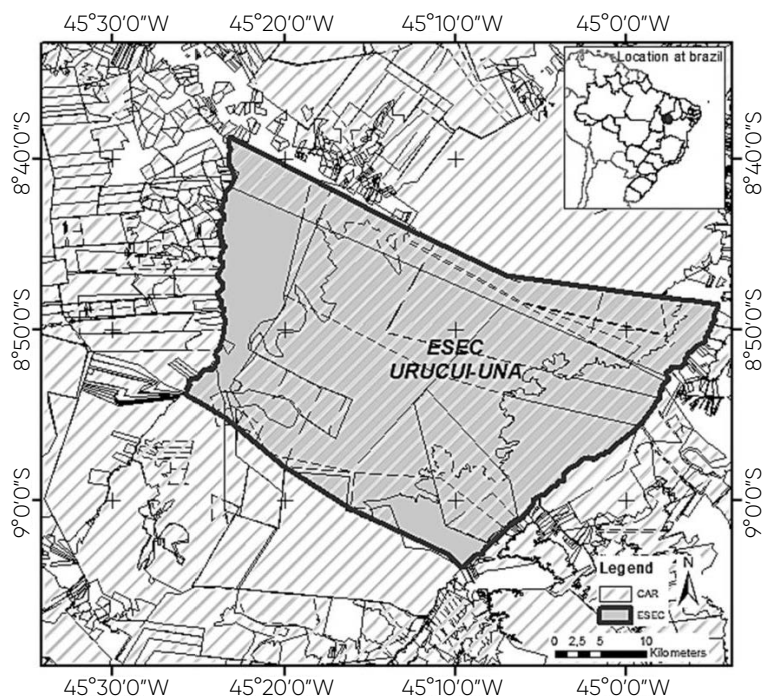
Figure 1 Cadastres of private lands over the Uruçuí-Una Ecological Reserve



Source Adapted from Silva (2021) by the authors; reproduced with kind permission.

As legal instruments of land regularisation, these systems (old SNCI and new SIGEF), and others, have been historically used to legalise, or attempt to legalise *grilagem* (land grabbing) and illegal ownerships. The notary registration – especially cases with no legal proof of ownership, or with false documents – uncontrolled by the judiciary, INCRA, or by the environmental state agencies have fuelled land grabbing and the appropriation of public and communal lands. The novelty is the use of an instrument for environmental regularisation to grab land, registering ‘private’ areas of environmental protection on public lands (Sauer and Oliveira 2021).

Grilagem has traditionally been linked to real estate and land speculation, but also for ‘productive interests’, such as cutting productive costs (not paying the land) and accessing subsidised credit and public bank financing for monoculture expansion (Flexor and Leite 2017). These goals could be used to justify grabbing the environmentally conserved lands of the Ecological Reserve, since the municipality of Baixa Grande do Ribeiro, where the Ecological Reserve is located, is among the ten largest soybean cultivators in Matopiba, and the first one in Piauí (Mathias 2017; Azerêdo and Mitidiero Jr 2020).

Figure 2 Cadastres of CAR over the Uruçuí-Una Ecological Reserve

Source Adapted from Silva (2021) by the authors; reproduced with kind permission.

In addition to being a crime under Brazilian law, the *grilagem* of land and natural assets is motivated not only for productive reasons. Speculation, as future earnings with no investment, is a crucial element of illegal appropriation of land and natural assets, enabling links with some 'green' mechanisms (Franco and Borrás Jr 2019). Green grabbing is not limited to agricultural activities and production but also the intention of other purposes, including the future exploitation of natural resources (Borrás Jr and Franco 2010) and speculative investments (Gomes 2020).

According to Gomes (2020), Flexor and Leite (2017), and Silva (2021), self-cadastres in the CAR have fuelled this process of appropriation and green grabbing. According to Figure 2, the self-cadastres in CAR 'grabbed' almost the whole territory of the Ecological Reserve (Silva 2021). The grabbing turns 'green' where the fraudulent appropriation of land, using false documents, has been under way. Large farmers claim to own the land by registering in CAR, increasing their farms. Using the narrative of environmental protection, they legalise and register the Legal Reserves in CAR, declaring ownership over public areas and communal territories (*ibid.*), excluding families from the historical 'chain of ownership', or denying tenure rights of communal land.

The CAR has enabled a connection between land appropriation and environmental protection and sustainable narratives. Although the instrumentalisation of legal mechanisms is not a new phenomenon, the combination of environmental concerns and agrarian issues has socioenvironmental, political, and economic implications. The overlapping cadastres enable the claiming of rights – for example, tenure rights – in the context of land legalisation, environmental compensation, and the establishment or restoration of Legal Reserves (Sauer and Oliveira 2021).

Public lands disputed by land grabbers and Cerrado peoples when they are formally registered in the CAR increase the legitimacy of illegal appropriation, increasing the area of the farms, or using the protected land as compensation for the deforested land; that is, to avoid the cost of replanting the Legal Reserve. Although Brazilian law allows these land disputes to be settled in the courts through civil, criminal, administrative, and environmental lawsuits, the rules require complex evidence, high costs, and time-consuming resolution in the courts, resulting in illegal tenure becoming entrenched over time.

The environmental record in the CAR has been used by grabbers to legitimise land tenure and ownership. Although possession is not the same as property in Brazilian law, it nonetheless has strong legal protection. Furthermore, as a declaratory force, CAR ultimately enables the right of property, resulting in tenure rights or expansion of ownership and land grabbing (Gomes 2020).

The overlapping cadastres in the Uruçuí-Una Ecological Reserve are illustrative of how CAR has been used to expand ownership and large-scale operations, exacerbating land grabbing. The addition of environmental issues, including the narratives of complying with environmental laws, has also become green grabbing. This grabbing needs to be better understood in its qualitative and quantitative dimensions through further research, as the profile of subjects who suffer violence in the Cerrado and Matopiba has changed (CPT 2021; Silva 2021; Gomes 2020; Almeida *et al.* 2019).

However, from a political economy perspective, there is a connection between grabbing and primitive accumulation and unequal ecological exchange (Foster 1999; Wolford 2020). The rhetoric of environmentalism, constructed especially through CAR, creates a discourse that masks or hides the processes of green grabbing (Franco and Borrás Jr 2019). As 'friends of nature', the environmental marketing and knowledge promoted by the market seek, if not to deny, at least to minimise the nexus between land appropriation and nature expropriation (Leach, Fairhead and Fraser 2012; Borrás *et al.* 2022). Processes of primitive accumulation are renewed by land and green grabbing, using environmental protection discourses as its main motivation

(Fairhead *et al.* 2012), especially in the context of climate change or climate crisis narratives (Corson and MacDonald 2012).

4 Conclusion

This article has explored when and how land grabbing turns into green grabbing, particularly in an agricultural frontier. It has analysed processes of appropriation of land and nature enabled by the CAR. It has discussed how grabbing in the agri-export frontier of Matopiba is entangled with narratives and instruments about 'green' development and sustainability.

Concepts such as primitive accumulation and land grabbing have been used for interpreting capitalist exploitation, explaining and unveiling the causes of expansion of agricultural frontiers. These concepts, linked to universal or global models of capitalist development, focus on market relations or economic (and political) dimensions that determine the relationship between people and land (soil, water, nature).

However, the environmental protection discourse contained in CAR conveys the false idea that it is possible to 'appropriate land' with environmental responsibility and without deepening the unequal ecological exchange or the metabolism rift (Foster 1999). The CAR has been playing a crucial role in these processes of greening, ensuring compliance with environmental legislation and making green grabbing possible. The later deregulation of environmental policies easing control systems and tools, alongside the creation of SICAR, or CAR, and facilitating self-declaration registers have opened room for *grilagem*, fraud, and grabbing of nature assets and land.

Not only has CAR failed to curb deforestation in the Cerrado but it also reinforces the notion of the Cerrado as a 'sacrifice zone' (Oliveira and Hecht 2016: 269). These sacrifice zones would be places where practically everything is allowed, from appropriation of land and water to the destruction of nature.

In short, green grabbing has been driven by the expansion of the frontier. In search of lower production costs, grabbing conducted with the incorporation of new lands when using environmental or sustainable narratives creates a rhetoric capable of transforming them from enemies to the friends of nature. Thus, the CAR-induced narrative of environmental protection is a smokescreen to hide the fact that a new 'land rush' is underway in Brazil. And the green grabbing has intensified land disputes and conflicts in Matopiba. It has increased inequality and injustice in the countryside, contradicting the narratives of prosperity, progress, and development in the frontiers.

Notes

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 - 5 For Haraway (2015) and Wolford (2020), the colonial exploitation, perpetuated in a capitalist centre-periphery domination is a central characteristic of the **Plantationocene**: a system of political domination and economic exploitation based on the social and cultural logic of colonisation, and initiated with a highly racialised division of labour that shaped contemporary cultural norms (norms, values, and social attitudes) and social practices (discrimination, racism, etc.).
 - 6 Originally organised by African slaves who fled the plantations, *quilombola* communities are formed by Afro-descendants with cultural identity, which symbolises resistance to different forms of domination.
 - 7 See **Law Project 279/2016** (in Portuguese).
 - 8 **Official** data indicated that public investment of between US\$6bn and US\$13bn would be needed in infrastructure, particularly to reduce the cost of production and transport in Matopiba (GITE 2014b). **Decree 8.447** was published in 2015; however, the PDA-Matopiba's implementation remained mostly ineffective, mainly due to political changes in 2016, including the departure of Minister Kátia Abreu – a senator from Tocantins, representative of agribusiness with special interests

- in Matopiba – from the Ministry of Agriculture, Livestock and Food Supply (MAPA), who was replaced by another agribusiness representative, who is the world's largest single soy producer but with farms and agribusinesses in another state outside Matopiba.
- 9 The date (2029–30) refers to the period of one agricultural year (the period between planting and harvesting). In Brazil, there are two crops: the summer crop, planted in September–November and harvested December–January, and the off-season crop, which is planted in February and April–June. However, this calendar changes according to the state or region and the type of crop that is being planted. Annually, the federal government, via MAPA, publishes an 'Ordinance in the Official Gazette' establishing sowing calendars for soybeans and corn.
 - 10 See **Law No. 12.651/2012** (in Portuguese).
 - 11 The Legal Reserve is the area of the rural properties – 20 per cent of the property in the Cerrado and 80 per cent in the Amazon – that must be preserved with natural vegetation. It can be used with sustainable forest management, approved by the state. The permanent preservation areas (e.g. riverbanks and water springs) are pristine natural areas, meaning economic use is not allowed (Sauer and Oliveira 2021).

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