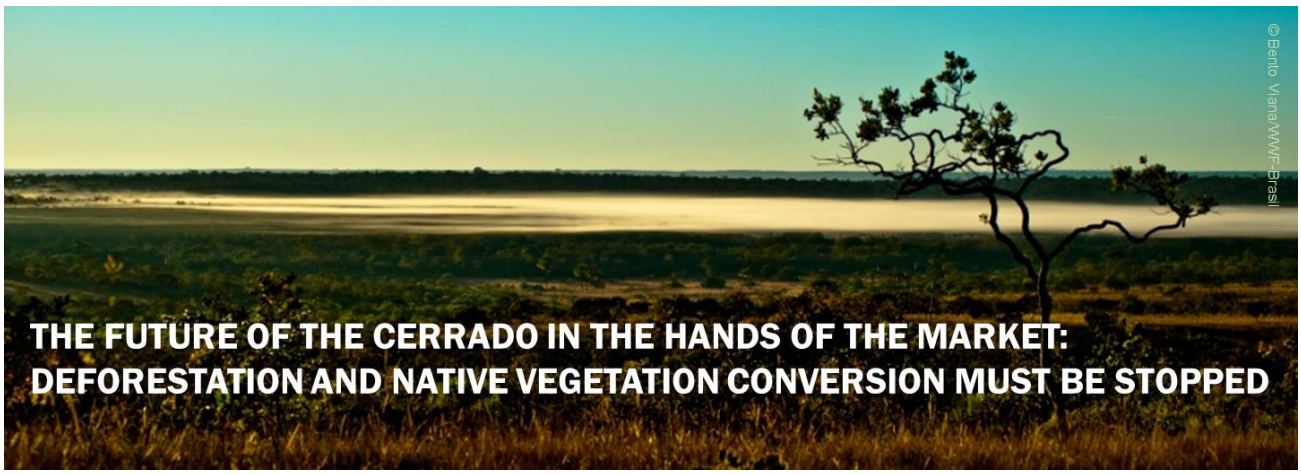

September 11th, 2017

Brazil destroyed 18,962 km² of the Cerrado between 2013 and 2015[1]. In other words, every two months during that time, an area of the Cerrado the size of São Paulo city disappeared. Deforestation rates of the Cerrado have exceeded those of the Amazon for over 10 years. This pace of this destruction makes the Cerrado one of the most threatened ecosystems on the planet.

Considered the birthplace of many of Brazil's great water systems, the Cerrado – the world's most biodiverse savannah – has already lost 50% of its original area. According to a recent article published in *Nature Ecology & Evolution*[2], the rate of destruction in the Cerrado will result in a catastrophic extinction of species.

Moreover, continued destruction of the Cerrado will cause changes in the region's rainfall patterns, impacting agricultural productivity[3], as already occurs in the Amazon[4]. The Cerrado stores the equivalent of 13.7 billion tons of carbon dioxide (CO_2)[5], and the greenhouse gas emissions resulting from native vegetation conversion will impede Brazil's international commitments under the climate and biodiversity conventions.

The main cause of conversion in the Cerrado is the expansion of agribusiness. Between 2007 and 2014, 26% of agricultural expansion in the Cerrado occurred directly on areas of native vegetation[6]. In Matopiba alone – located in the states of Maranhão, Tocantins, Piauí and Bahia, and is the main frontier of vegetation conversion – 62% of agricultural expansion replaced native vegetation[7]. Recent analyses suggest that, between 2000 and 2016, 49% of pastureland expansion in Matopiba occurred on the Cerrado[8]. It should be noted that an area that is converted for grazing is often later used for crops such as soy[9].

It is unnecessary for the livestock and plantation sectors to continue expanding into natural habitats in the Cerrado, especially considering there are around 40 million hectares already cleared in Brazil suitable for cultivating soy – the main crop associated with the destruction of native vegetation[10]. Modest gains in cattle-raising efficiency would free millions of hectares for other types of land use[11].

Responsibility for this problem – and the search for solutions that can quickly stop the destruction of the Cerrado – is shared by all parts of the production and supply chains, from the producers to

[1] INPE & Funcate, 2017. Data from the National Institute for Space Research (INPE) for the period between August 2013 and July 2015. Available at http://combateaodesmatamento.mma.gov.br/analises-no-cerrado
[2] Strassburg *et al.*, 2017.
[3] Silvério et al., 2015; Spera et al., 2016; Costa e Pires, 2009.
[4] Meyfroidt *et al.*, 2014.
[5] CEPF, 2016.
[6] Carneiro Filho & Costa, 2016.
[7] *Ibidem*.
[8] IPAM, unpublished. 49% of the existing pasture area in Matopiba in 2016 was a result of native vegetation conversion vegetation since 2000. Data for this analysis is available on the Mapbiomas platform at http://mapbiomas.org/map#transitions.
[9] Carneiro Filho & Costa, 2016.
[10] Carneiro Filho & Costa, 2016.
[11] Strassburg *et al.*, 2014.

consumers, including traders, meat-packing companies, retailers, investors, agricultural producers, and land developers.

It should be noted that, although enforcement of environmental legislation, including the Forest Code, is important, it is not enough to ensure conservation of the biome, since it allows legal conversion of up to 80% of rural properties.

The private sector has learned that it is possible to produce commodities while avoiding supply chains being directly associated with further conversion of natural ecosystems, as the success of the Amazon Soy Moratorium shows. Collaboration between different links of the production chain, together with government support and civil society monitoring, was the path taken by the Soy Moratorium, and it should now inspire similar solutions in the Cerrado.

The undersigned civil society organizations call for immediate action in defense of the Cerrado by companies that purchase soy and meat from within the biome, as well as by investors active in these sectors. This includes the adoption of effective policies and commitments to eliminate deforestation and conversion of native vegetation and disassociate their supply chains from recently converted areas.

The Brazilian government also needs to ensure that the law and international commitments are met by putting instruments and policies in place that can improve governance of agricultural production in the Cerrado. It is essential that protected areas be created, and that the right of access to the land is guaranteed for indigenous people, traditional communities, and small farmers in the region. It is also crucial that official data on deforestation and native vegetation conversion in the Cerrado be published annually, as is already the case for the Amazon.

Incentives and economic instruments need to be developed by both the government and the private sector to reward farmers' efforts to conserve areas of native vegetation, even when they are eligible for legal clearance.

This collective and multisectoral effort will enable production to continue while a diversified economy is developed in the region, guaranteeing rights and income for local communities and adequate protection for the Cerrado's valuable natural ecosystems.

THE FUTURE OF THE CERRADO IN THE HANDS OF THE MARKET: DEFORESTATION AND NATIVE VEGETATION CONVERSION MUST BE STOPPED

MANIFESTO COSIGNERS

- WWF-Brazil
- Greenpeace Brazil
- Amazon Environmental Research Institute (IPAM)
- Institute of Agricultural and Forest Management and Certification (Imaflora)
- The Nature Conservancy (TNC)
- Earth Innovation Institute (EII)
- Institute for Society, Population and Nature (ISPN)
- Conservation International – Brazil (CI-Brasil)

- Association for the Preservation of the Upper Itajaí Valley (APREMAV)
- Green Initiative
- APREC Coastline Ecosystems
- Avina Foundation
- Engajamundo
- GeoLab/USP
- Lagesa/UFMG
- Lapig/UFG
- PHS
- Life Center Institute (ICV)
- Amazon Institute of People and Environment (IMAZON)
- Socio-Environmental Institute (ISA)
- Pro-Nature Foundation (Funatura)
- Conservation Strategy Fund (CSF)
- Minas Gerais Association for Environmental Defense (AMDA)
- LABAQUAC/Hippocampus Project
- Ecological Research Institute (IPÊ)
- Boticário Group Foundation for Nature Protection
- BVRio Institute
- Law for a Green Planet Institute
- Amigos da Terra - Amazônia Brasileira
- Wildlife Conservation Society – Brazil (WCS-Brazil)
- Institute for the Conservation and Sustainable Development of the Amazon (IDESAM)
- Çarakura Institute
- Biodiversitas Foundation
- American Man Museum Foundation (FUMDHAM)
- National Wildlife Federation (NWF)
- Ecoa – Ecology and Action
- GTA Network
- Zero Deforestation Group
- Forest Code Observatory
- Climate Observatory

APPENDIX
Additional data and references underpinning this manifesto

1. Rates of deforestation and conversion are extremely high

A serious and consistent conversion process is taking place in the Cerrado. Even during successive droughts and crop shortfalls, the rates of conversion in the Matopiba region remained high, as demonstrated for the period between 2013 and 2015 (INPE & FUNCATE, 2017). Also, the 10 municipalities with the highest deforestation rates in the Cerrado are located in Matopiba.

2. Territorial expansion and land conversion in Matopiba are uncontrolled

Studies point to the conversion of 6.6 million hectares of land with low productive capacity and a high risk of desertification (Carneiro Filho & Costa, 2016).

3. The rates of deforestation and conversion could increase in 2017 due to:

i. Increased rainfall after five years of drought, leading to a record soy harvest in 2017 (CONAB, 2017).
ii. Capitalization of producers following the results of their harvests, increasing their capacity to invest in the expansion of their production in areas of native vegetation.
iii. Potential approval of laws on foreign land ownership, further intensifying the strong real estate speculation market in the region (six bills included in PL 2289/2007, House of Representatives, 2017a).
iv. Potential approval of laws regarding new regulations for the licensing of agricultural production, making procedures more flexible and facilitating land conversion (19 bills included in PL 3729/2004, House of Representatives, 2017b).

4. The expansion of production should only occur in previously cleared areas

The 40 million hectares mentioned in this manifesto (Carneiro Filho & Costa, 2016) are enough for Brazil to meet the goals of soy production expansion over the next 50 years. The soy sector already knows how to expand into previously cleared areas, as this is standard practice in regions other than Matopiba, such as the Amazon biome and other areas of the Cerrado.

5. The law does not go far enough

The law still allows for the legal deforestation and conversion of 40 million hectares of the Cerrado.
Soy production expanded by over 250% in Matopiba between 2000 and 2014 (Agrossatélite, 2015), mainly through the conversion of native vegetation, which accounted for 62% of this expansion (Carneiro Filho & Costa, 2016). Much of this took place in compliance with the legal provisions of the Forest Code.

6. Cattle-raising activities need to incorporate more technology and free up more land

Modest improvements to cattle-raising production standards using existing techniques and consolidated technology can increase productivity while freeing up land for crops, without affecting national production (Strassburg *et al*., 2014).

7. Logistical infrastructure projects may further stimulate expansion

Expansion of the logistical infrastructure of Matopiba will further stimulate speculative deforestation and conversion. A range of projects for future ports, highways, railways, and waterways are being planned or being implemented in the region (PDA, 2015).

8. Carbon emissions in the Cerrado will accelerate climate change

The Cerrado stores substantial amounts of carbon, equivalent to approximately 13.7 billion tons of CO2 (CEPF, 2016). The percentage of biomass below soil can reach 70%. Considering the total biomass stored in the distinct Cerrado ecosystems, the average density of carbon is equivalent to 137.3 tons of CO2 per hectare (CEPF, 2016). This carbon density is close to that for some areas of the Amazon. Therefore, conversion in the Cerrado is a significant problem for the planet and will compromise the commitments made by Brazil as part of the UN's Climate Change Convention.

9. Agricultural expansion may aggravate the water crisis

The Cerrado is home to the sources of eight of Brazil's 12 hydrographic regions, including the Amazon/Tocantins, São Francisco and Prata river basins, as well as three large aquifers: Guarani, Bambuí and Urucuia (CEPF, 2016). Studies show that rivers decreased their flow after the conversion of native areas into plantations and grazing land (TNC, 2016). Moreover, in 2017, Brazil's National Water Agency (ANA) recorded the lowest flow rate for the São Francisco River in at least 70 years (ANA, 2017).

10. Unique ecosystems and biodiversity could be lost

The Cerrado is home to a third of Brazil's biodiversity, with 44% of plants endemic to the region (Klink & Machado, 2005). It is the world's most biodiverse savannah (MMA, 2017). The loss of biodiversity poses risks not only to the species and ecosystems that make up the biome but also to local populations that depend on these natural resources to survive.

11. There is a lack of state presence in the Matopiba region

Institutions are weak across almost all sectors, and often do not have the ability to prevent rights violations associated with land grabbing, the eviction of local communities, water contamination, and other crimes (*field data*[12]).

[12] Data collected in the field during a scientific expedition in September 2016 to the states of Matopiba. The following organisations took part in the expedition: the Amazon Environmental Research Institute (IPAM), the Brazilian Institute of Agricultural and Forest Management and Certification (IMAFLORA), the World Wildlife Foundation (WWF-Brasil), the Earth Innovation Institute (EII), and The Nature Conservancy (TNC).

12. The social risks and vulnerability of local communities in Matopiba are significant (*field data*[12]):

i. The possession of land titles is not common, and local communities often settled in Legal Reserves and Areas of Permanent Protection long before the beginning of agribusiness activities.
ii. One of the results of agribusiness expansion is an exodus from rural areas, with many families and small farmers being displaced from their properties by land grabbers.
iii. Conflicts have arisen between local communities and soybean farmers and companies as a result of agrochemical drift over communal areas, contamination and reduction of river flow, reduction of natural resources and fish stocks.
iv. Some cities are experiencing a crisis in public health services, education, and sanitation due to the expansion of urban areas. There is a large influx of people from other regions who are attracted by the promise of work and improved living standards.

13. Fighting poverty

The agricultural expansion should occur exclusively in previously cleared areas, allowing local communities and people living in areas of native vegetation to keep their livelihoods and guaranteeing the maintenance of environmental services. In areas that have already been deforested and that are becoming degraded, poverty should be addressed by adopting best production practices, restoring native vegetation, and potentially substituting pastures for crops or other activities with a higher financial return.

14. The figures reflect the seriousness of the situation (Strassburg *et al*., 2017)

If the destruction of the Cerrado continues at the rate observed for the period 2003-2013, by 2050 we can expect the following:

i. Unprecedented extinction of around 480 species of plants – over three times the documented extinctions since 1500.
ii. The release of 8.5 petagrams CO2 equivalent – corresponding to 22 years of emissions from Argentina (the world's 17th largest emitter).
iii. Clearance of 31-34% of the remaining Cerrado.
iv. Changes to the functioning of the biome as a whole, undermining its ability to offer essential environmental services to local populations and to the agribusiness itself.

15. Official data on Cerrado conversion will available annually

One of the private sector's arguments for failing to monitor the supply chains is the lack of geospatial data on Cerrado conversion. The Ministry of Science, Technology, Innovation and Communication (MCTIC) has already published the official data up to 2015 (INPE & Funcarte, 2017) and has stated that monitoring of this area will now take place annually, as is already the case for the Amazon. Also, according to the MCTIC, data on deforestation and conversion that took place between 2015 and 2017 will also be published in 2017. The lack official information is no longer a problem.

Complete References

Agrosatélite. (2015). Análise geoespacial da dinâmica das culturas anuais no bioma Cerrado, 2000-2014 ("Geospatial analysis of annual crop dynamics in the Cerrado biome"). Available at biomas.agrosatelite.com.br.

ANA (2017). Bacia Hidrográfica do Rio São Francisco. Brasília: Agência Nacional de Águas. Available at http://www2.ana.gov.br/Paginas/servicos/saladesituacao/v2/saofrancisco.aspx.

Câmara dos Deputados. (2017a). Projetos de Lei e Outras Proposições. Available at http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=373948.

Câmara dos Deputados. (2017b). Projetos de Lei e Outras Proposições. Available at http://www.camara.gov.br/proposicoesWeb/fichadetramitacao?idProposicao=257161.

Carneiro Filho A. and Costa, K. (2016). A expansão da soja no Cerrado: Caminhos para a ocupação territorial, uso do solo e produção sustentável ("Soy expansion in the Cerrado: Forms of territorial occupation, land use and sustainable production").

INPUT, Agroicone. Available at http://www.inputbrasil.org/wp-content/uploads/2016/11/A-Expans%C3%A3o-da-Soja-no-Cerrado_Agroicone_INPUT.pdf.

CEPF. (2016). Profile of the Cerrado Ecosystem Biodiversity Hotspot. Critical Ecosystem Partnership Fund: Conservation International & the Institute for Society, Population and Nature. Available at http://www.cepf.net/SiteCollectionDocuments/cerrado/CerradoEcosystemProfile-PR.pdf.

CONAB. (2017). Monitoring of Brazilian grain harvests: Agricultural monitoring for the 2016/17 harvest. Available at http://www.conab.gov.br/OlalaCMS/uploads/arquivos/17_06_08_09_02_48_boletim_graos_junho_2017.pdf.

Costa, M. and Pires, G. (2009). Effects of Amazon and Central Brazil deforestation scenarios on the duration of the dry season in the arc of deforestation. *International Journal on Climatology*, v. 30, pp. 1970-1979. doi: 10.1002/joc2048.

Gil, J. Siebold, M. Berger, T. (2015). Adoption and development of integrated crop-livestock-forestry systems in Mato Grosso, Brazil. *Agriculture, Ecosystems and Environment*. Elsevier, v. 199, pp. 394–406. DOI: 10.1016/j.agee.2014.10.008.

Meyfroidt, P. *et al* (2014). Multiple pathways of commodity crop expansion in tropical forest landscapes. *Environmental Research Letters*. IOP Publishing, v. 9, n. 7, p. 1-13. DOI: 10.1088/1748-9326/9/7/074012.

INPE & Funcate. (2017). Anthropization data: The Cerrado between 2013 and 2015. Available at http://combateaodesmatamento.mma.gov.br/analises-no-cerrado.

Klink, C. and Machado, R. (2005). Conservation of the Brazilian Cerrado. *Conservation Biology*, v. 19, n. 3, p. 707–713. DOI: 10.1111/j.1523-1739.2005.00702.x.

MMA (2017). O Bioma Cerrado. Brasília: Ministério do Meio-Ambiente. Available at http://www.mma.gov.br/biomas/cerrado.

Noojipady, P. *et al*. (2017). Forest carbon emissions from cropland expansion in the Brazilian Cerrado biome. *Environmental Research Letters*, v. 12, n. 2, p. 25004. DOI: 10.1088/1748-9326/aa5986.

PDA (2015). Matopiba Agricultural Development Plan. Brasília: Presidency of the Republic. Available at http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2015/decreto/d8447.htm.

Silvério, D. V *et al* (2015). Agricultural expansion dominates climate changes in southeastern Amazonia: the overlooked non-GHG forcing. *Environmental Research Letters*. IOP Publishing, v. 10, n. 10, p. 104-015. DOI: 10.1088/1748-9326/10/10/104015.

Spera, S. A. *et al* (2016). Land-use change affects water recycling in Brazil's last agricultural frontier. *Global Change Biology*. v. 22, n.10, pp. 3405-13. DOI: 10.1111/gcb.13298.

Strassburg, B. *et al* (2012). Aumentando a produção agrícola e evitando o desmatamento - um estudo de caso para o Mato Grosso, Brasil ("Increasing agricultural production and avoiding deforestation – a case study of Mato Grosso, Brazil"). Rio de Janeiro: International Sustainability Institute & the Centro de Vida Institute, p. 1-45. Available at http://www.pcfisu.org/wp-content/uploads/2012/07/Relatorio-Mato-Grosso-IIS-ICV-PRP.pdf.

Strassburg, B. *et al* (2014). When enough should be enough: Improving the use of current agricultural lands could meet production demands and spare natural habitats in Brazil. *Global Environmental Change*. Elsevier, v. 28, pp. 84–97. DOI: 10.1016/j.gloenvcha.2014.06.001.

Strassburg, B. *et al* (2017). Moment of truth for the Cerrado hotspot. *Nature Ecology & Evolution*. Macmillan Publishers Ltd, v. 1, article 0099. DOI: 10.1038/s41559-017-0099.

TNC. (2016). Boas Práticas Agrícolas e Água: Guia para a conservação dos recursos hídricos nas propriedades rurais do Oeste da Bahia. The Nature Conservancy. Available at https://www.nature.org/media/brasil/oeste-bahia.pdf.