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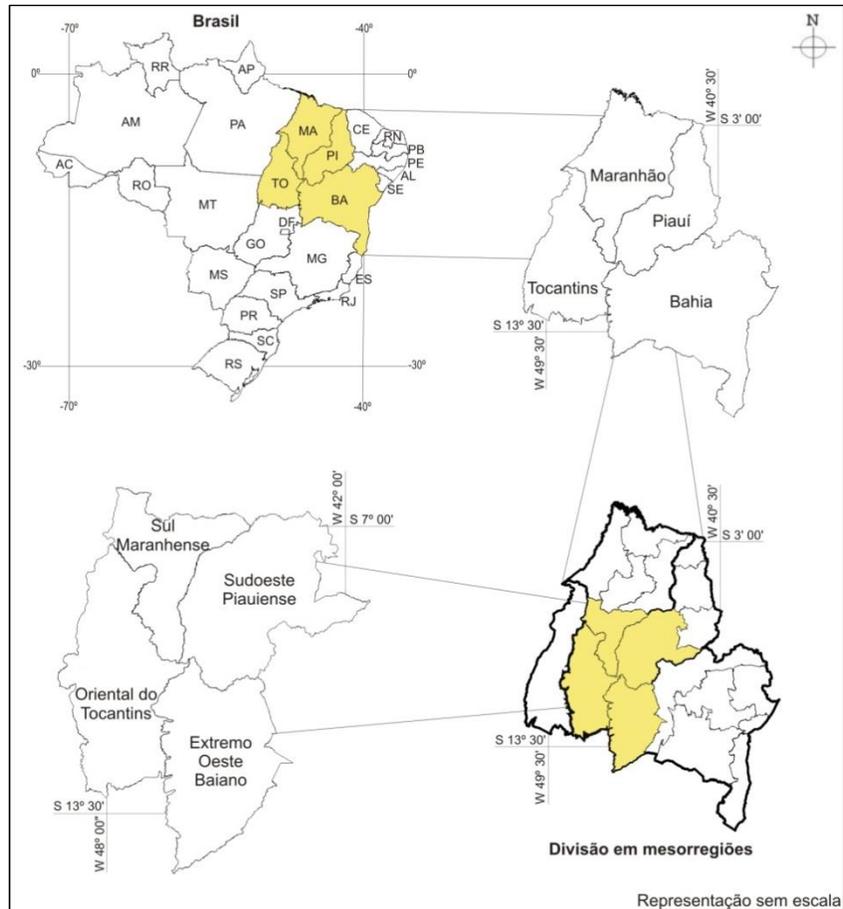
BRAZIL

HUMAN AND ENVIRONMENTAL COSTS OF LAND INVESTMENTS

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MAP OF THE MATOPIBA AREA OF BRAZIL



AUTHOR: David Kane, Researcher, Maryknoll Office for Global Concerns

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DISCLAIMER: The author believes the information in this report comes from reliable sources, but cannot guarantee the accuracy or completeness of this information.

MARYKNOLL OFFICE FOR GLOBAL CONCERNS
200 New York Ave., NW Tel: 202-832-1780
Washington, D.C. 20009USA Email: ogc@maryknoll.org
www.maryknollogc.org

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LIST OF ACRONYMS AND TERMS

Berço das Águas	“Crib of the Waters;” a Portuguese phrase for describing the Cerrado region as an important source for three large watersheds and three aquifers that sustain much of Brazil and neighboring countries.
Cerrado	“Closed,” “thick,” or “dense;” the name for the vast tropical savanna eco-region of Brazil, in reference to the flora of the region, particularly in the states of Goiás, Mato Grosso do Sul, Mato Grosso, Tocantins and Minas Gerais.
Favelization	In reference to “favela,” the Portuguese term for slum; the making of a low-income historically informal urban area in Brazil.
Financialization of land	The growing influence of financial actors and markets on land use decisions. Land becomes a commodity that financial institutions include in financial portfolios such as index and mutual funds. These policies take land use decisions out of the hands of local residents and governments with decisions based instead on market trends.
Gaúchos	Refers to cowhands and other people of Rio Grande do Sul state in Brazil; a local term for people from southern Brazil.
Grilagem verde	“Green land grabbing;” a local term for the situation where lowland families are prohibited from planting crops or raising animals on their rightful land after their land is purchased to serve as a reserve by a farm on the highland.
Grileiros	“Cricketers;” a local term for land grabbers after they became known to place documents in drawers filled with crickets that would age their false land ownership documents to appear more authentic.
MATOIPIBA	An acronym formed with the initials of four states (Maranhão, Tocantins, Piauí, and Bahia) to represent an area that falls across the Cerrado region in Brazil.
MOGC	Maryknoll Office for Global Concerns, a research and advocacy office based in Washington, D.C. that represents the Maryknoll Sisters, Maryknoll Fathers and Brothers, and Maryknoll Lay Missioners in dozens of countries around the world.
TIAA	Teachers Insurance and Annuity Association of America, formerly TIAA—CREF; a Fortune 100 financial services organization that is the leading retirement provider of financial services for the academic, research, medical, cultural and governmental industries.

EXECUTIVE SUMMARY

From September 2 to 15, 2017, an international delegation of 34 human rights, development and rural experts traveled in the Cerrado region, a tropical savanna biome in central Brazil to document the social, economic, and environmental and human rights impacts of large-scale land acquisitions, also referred to as “land grabbing.”

The area visited is within the Cerrado and commonly referred to as Matopiba, an acronym formed with the initials of the four states that are partially included (Maranhão, Tocantins, Piauí, and Bahia). The Matopiba has long been considered the agricultural frontier of Brazil with great potential for increasing production. In 2015 President Dilma Rousseff officially recognized Matopiba as a region and established a development agency there.

Land grabbing is a phenomenon that is becoming the norm in Brazil.

Since the 2008 financial crisis, the phenomenon of land grabbing has multiplied rapidly around the world as large investment funds, from pension funds to sovereign investment funds, began to include the purchase of agricultural lands as part of their portfolios. The large movement of capital by nations and companies into rural areas has brought with it violent expropriation of land from traditional peoples with devastating environmental and social impacts. Matopiba is a paradigmatic example of land expropriation.

The human costs of large-scale land acquisition are devastating for traditional communities.

Matopiba is inhabited by peasants, indigenous peoples, descendants of runaway slaves and other forms of traditional populations. In recent years, violent evictions have left many traditional communities without access to the natural resources needed for their survival and daily sustenance. In addition, land use practices on highland farms directly affect lowland communities’ health and wellbeing.

The environmental costs of large-scale land acquisition are equally devastating.

Meanwhile, deforestation and the over-exploitation of land and water are leading to the destruction of biodiversity in the region. Farmland investment models drive the transformation of native Cerrado vegetation into agricultural land. This conversion contributes to increased threats to biodiversity, reduced drinking water supply for traditional communities on the Cerrado as well as Brazil’s large cities and, ultimately, more greenhouse gas emissions and erratic rainfall.

I. INTRODUCTION

Representatives of human rights and environmental organizations from nine countries and numerous Brazilian states, including the Maryknoll Office for Global Concerns, undertook a fact-finding mission from September 2 to 15, 2017, to document, verify, and guarantee the visibility of the social, economic, environmental and human rights impacts caused by the “financialization” of land in the Cerrado region in central Brazil.

The Cerrado is the world's most biologically rich savanna. It is a home for hundreds of endangered species and covers more than 20 percent of Brazil's territory. The savanna's native habitat and rich biodiversity are being destroyed faster than the neighboring Amazon rainforest biome. As the headwaters of numerous rivers and waterways, the Cerrado functions as a vital source of water for the region as well as for some of Brazil's largest cities. It is also home to numerous traditional communities that have inhabited the area for many decades prior to the agricultural expansion. The region serves as an example of an extensive process of large-scale acquisition of public lands by international investment funds through farmland investment management organizations (FIMOs) based in Brazil and specifically created for this purpose with the intermediation of local land grabbing agents.

From September 2 to 15, the mission, also referred to as the Matopiba Caravan, traveled two thousand kilometers across the Alto Parnaíba savanna, in the state of Piauí and into Maranhão, visiting rural and traditional communities and debating with public and civil society representatives. Meetings were held in the communities of Melancias (Gilbués municipality), Baixão Fechado, Sete Lagoas, Brejo das Meninas and Santa Fé (Santa Filomena municipality). The delegates met and spoke with representatives of these communities and representatives of more than 20 other communities.

The caravan held public hearings with government officials at the local, state and national level:

September 11 - Bom Jesus, Piauí with the participation of communities, entities, labor law prosecutors and the judge of the Vara Agrária, which settles land tenure disputes.

September 13 - Teresina (Piauí) with representatives of the state legislature, universities, unions and more. In the afternoon, they met with the vice governor and various department ministers.

September 14 - Brasília with members of Congress, the National Human Rights Council, Attorney General's office and representatives of the office of President Temer.

On behalf of all the delegates, the Maryknoll Office for Global Concerns wishes to express its deep appreciation to all the people the delegates met and spoke to during the course of the mission. MOGC is grateful to civil society representatives for facilitating the interviews and providing documents and reports. MOGC also wishes to thank FIAN International, Rede Social de Justiça e Direitos Humanos, FIAN Brazil and Comissão Pastoral da Terra (CPT) Piauí for their valuable support before, during, and after the mission. This report includes observations gathered during the mission, and also new and follow-up information obtained by the author after the mission.

II. POLITICAL AND ECONOMIC CONTEXT

2.1 Global race for farmland

Since the 2007 food price crisis and 2008 global financial crisis, large pension funds in the United States, like those managed by financial services giant TIAA, the leading manager of retirement plans for teachers and public workers in the U.S., and Harvard University's endowment fund have been steadily buying swaths of farmland around the world. So much so that by 2016, TIAA [documents](#)¹ reported the company to be the largest global investor in agriculture and the third largest commercial real estate manager in the world.

2.2 The Cerrado as the 'last agricultural frontier'

A preferred region for many investors has been the Cerrado in central Brazil. A biologically-rich tropical savanna stretching across more than 20 percent of the country, the Cerrado is environmentally crucial not only for Brazil but other countries in South America. Investors aim to profit from land appreciation by acquiring land, clearing it of its native vegetation, and transforming it into farmland or occasionally leaving the land untouched to merely speculate on the rising price of the land.

The fact-finding mission, also referred to as Caravan Matopiba visited affected communities in southern Piauí and Maranhão. According to a [study](#)² by ActionAid and Rede Social, land in Matopiba planted with soy and sugar cane increased 253 and 379 percent respectively between 2000 and 2014. In the case of soy, the planted area increased from one to 3.4 million hectares (2.5 to 8.4 million acres). In approximately the [same period](#)³, the area occupied with plantations more than doubled in Maranhão, tripled in Tocantins, and practically quintupled in Piauí.

In April, the Correio newspaper in the state of Bahia [reported](#)⁴ that 18,962 km² of land in the Cerrado was transformed into farmland between 2013 and 2015. According to the article, "This means that every two months, in this period, the equivalent of the area of the city of São Paulo was lost in the biome. This is a rate five times faster than that measured in the Amazon, which makes the Cerrado one of the most threatened ecosystems on the planet."

The following satellite images show the rapid expansion of single crop farms in the area of Santa Filomena, in southern Piauí, where the international caravan visited. Satellite photos were taken in 2001, 2008, and 2017 and [published](#)⁵ by ActionAid Brasil in "Impacts of Agribusiness Expansion in the Matopiba Region: Communities and the Environment" pages 58-59, and reproduced here with permission.

¹ https://www.tiaa.org/public/pdf/facts_stats.pdf

² <https://www.tratamentodeagua.com.br/artigo/expansao-agronegocio-matopiba/>

³ www.valor.com.br/empresas/3067284/megaprodutores-consolidam-ultima-fronteira

⁴ www.correio24horas.com.br/noticia/nid/em-carta-multinacionais-se-comprometem-com-preservacao-do-cerrado/

⁵ http://actionaid.org.br/wp-content/files_mf/1506360021ACTIONAID_MATOPIBA_ENG_WEB_25SET.pdf

Image 1: CHAPADA ATÉ QUE ENFIM / SANTA FILOMENA (PI), 2001

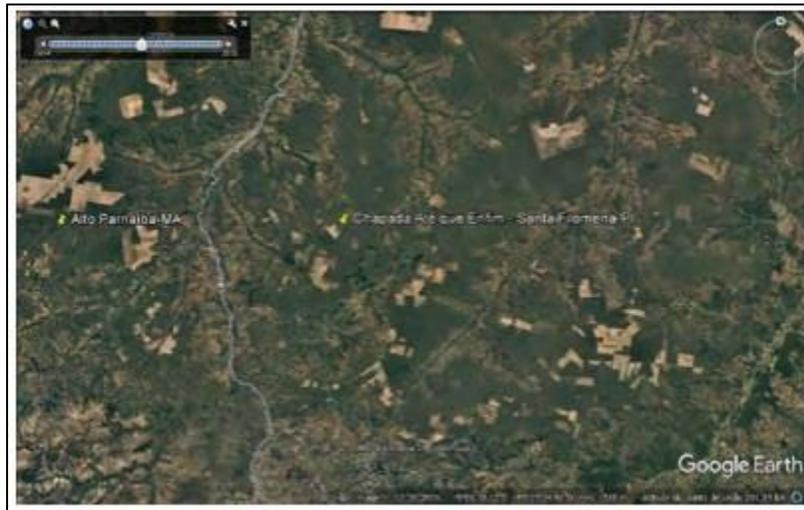


Image 2: CHAPADA ATÉ QUE ENFIM / SANTA FILOMENA (PI), 2008

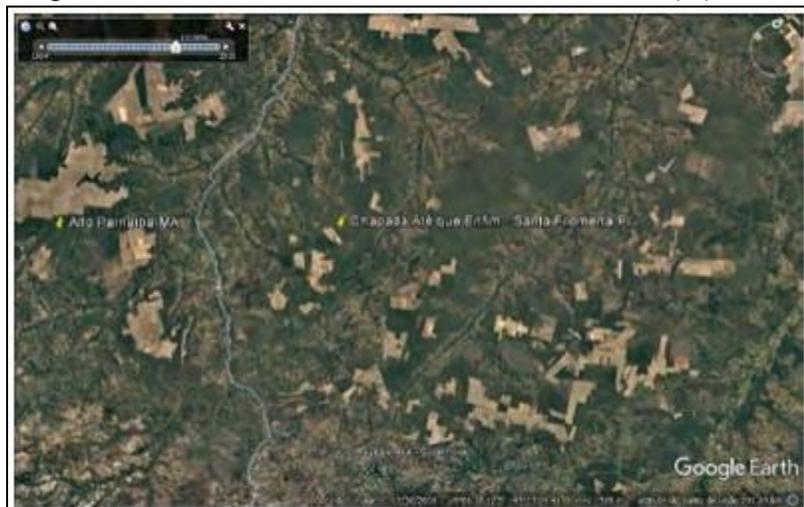


Image 3: CHAPADA ATÉ QUE ENFIM / SANTA FILOMENA (PI), 2017

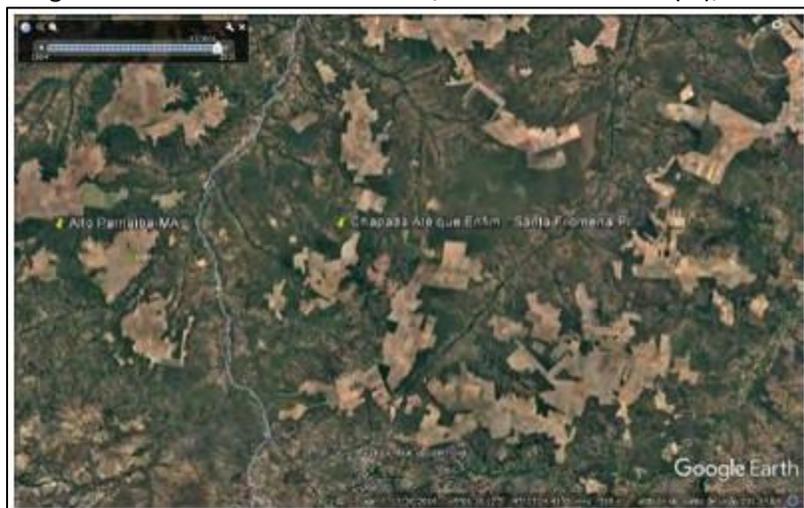


Image source: GOOGLE EARTH, May 2017 and published by ActionAid Brasil.

III. TRADITIONAL LOWLAND COMMUNITIES SUFFER

One can imagine the attraction investors and the government of Brazil have toward agricultural development in the Cerrado. The area is vast and sparsely populated. Those who do live there have traditionally lived in the lowlands, not high above on the bluffs where investors have established their plantations. It seems like the perfect plan. Yet all of the traditional lowland communities visited by the caravan reported similar problems for the people, the water, and the biodiversity; and all pointed to the recent investments as a central cause of their problems.

3.1 People lose their land

Although Piauí Senator Regina Sousa infamously said that there are no traditional communities in southern Piauí, there are thousands of families in the region who identify as such, many having lived there for four or five generations. Yet very few families have legal documentation for the land their families have cared for and lived on for decades. Community members interviewed by the caravan reported that land grabbers use this lack of documentation to force traditional families off their lands by means of trickery, threats, violence, and falsified documents to claim ownership of the land. In Brazil, land grabbers are called *grileiros* (“cricketers”) because they are known to place their false documents in drawers filled with crickets that soil the papers and make them appear aged, and thus authentic.

“Before the territory was free, there were limits that were the springs. The cattle were the ones who determined territory.”

– Jamilton Magalhães of the Melancias community, reminiscing about life before the coming of the highland plantations

Land grabbing emerged as a problem in the Cerrado region in the 1970s due to rising commodity prices and government supports and subsidies that continue to this day. In order to pay for the rapidly expanding external debt produced by the generals, the military dictatorship created the first incentive program aimed at increasing agricultural exports, the Program of Agricultural Development of the Cerrado (POLOCENTRO) that functioned from 1975 to 1979, providing credit, technical assistance, and infrastructure in order to increase agricultural production and lower transportation costs. The Nipo-Brazilian Program for Agricultural Development of the Region of the Cerrado (PROCEDER) continued with similar supports from 1979 to 2001. More recently, in 2015, then-president Dilma Rousseff signed a decree officially creating the Matopiba region and establishing a development agency to help increase agricultural exports from the region.

Many crops cannot grow in the naturally acidic Cerrado soil. In the early 1980s, farmers began adding lime to the soil to make it more suitable for agriculture. Residents interviewed by the caravan refer to the *gaúchos* (their term for people from southern Brazil) arriving during the 1980s, buying up large tracts of land made suitable for farming thanks to this addition of lime to the soil.

Over the last ten years, residents have experienced land theft and displacement from another land grabbing trend. This time, large overseas investment firms in search of new portfolio investments are the culprits. The influx of billions of dollars of new money in the market for agricultural land has

provided land grabbers with new customers. Land conflicts and their intensity have increased due to these new investments.

The ways investors use the land also directly affects the lives of traditional families in the lowlands. The lands that investors are buying are on top of the bluffs – the highlands – had been used for generations as areas for communal hunting, gathering of fruits, medicinal plants and wood, and for raising some animals without fences. The land was a commons for the use of all. The loss of access to the highlands has dramatically affected communities’ ability to feed themselves.

Worse than losing access to these highlands, some families are losing the land they live on in the lowlands as well, to serve as the legal reserve for highland farms. Brazilian law requires that farmers in the Cerrado maintain 35 percent of their land untouched as a legal reserve. But some farms have deforested and planted every inch of the highland and are now buying up surrounding lowlands to act as their natural reserve. Now lowland families are prohibited from planting crops or raising animals on their rightful land, a problem that lowland residents refer to as “grilagem verde” (green land grabbing). Three of the communities visited by the caravan (Baixão Fechado, Melancias and Brejo das Meninas) have families that are losing or have lost land in this fashion.

“We are small and there are these big farmers out there who never lived here. They come and trample on us saying that where we live and work is the reserve for their plantation.”

– Anonymous elderly woman in the Melancias community

The large-scale farms also replace the diverse flora of the Cerrado with single crops over thousands of acres which attract insects in large numbers. In response, the highland farms used industrial quantities of pesticides to protect their crops. According to [Greenpeace](http://www.greenpeace.org)⁶, Brazil is the largest consumer of agrottoxins in the world. “In 2013, 16 kilograms (35.2 pounds) of agrottoxins were consumed per planted hectare, or the equivalent of six kilograms (13.2 pounds) per person.”

While the pesticides stop insects from attacking highland plantations, the pests descend to the lowlands and eat the subsistence farms of the traditional families below. This year, according to reports collected by the caravan in various communities, whiteflies descended and destroyed the subsistence crops of lowland farms. In past years, it has been different insects.

As life has become more difficult in the lowlands, many farmers have decided to try their luck finding work in nearby cities, contributing to the rapid “favelization” of nearby towns like Bom Jesus, which lacks the infrastructure to take in so many new families.



A whitefly, the pest that farmers interviewed by the caravan say has descended from the highland plantations and destroyed subsistence farms in the lowlands during 2017.

⁶ <http://www.greenpeace.org/brasil/pt/Noticias/Segura-este-abacaxi/>

3.2 Water is polluted and lost

The Portuguese word used to name the region, *cerrado*, meaning “closed”, “thick” or “dense” describes the flora there. It may not look like much – mostly small, crooked trees and bushes - but these plants have very long, complicated root systems that allow rainwater to penetrate the buttes and flow to the aquifers and water tables below. The region is called *Berço das Águas* (the “Crib of the Waters”) being an important source for three large watersheds (Amazon, Sao Francisco, and Platina), and three aquifers (Guarani, Bambuí, Urucaia) that sustain not only much of Brazil but also neighboring countries.



Seu Juez from the Melancia community demonstrates to members of the fact-finding mission his memory of the height of water that was year-round until only a few years ago. Photo by Rosilene Miliotti / FASE on September 7, 2017.

Sweeping across central Brazil, the Cerrado region also acts as a link between neighboring biomes.

By removing the natural flora and planting crops like soy and corn with smaller root systems, the new plantations quickly drain local water sources. Instead of seeping into the Earth, water runs off the bluffs, causing erosion that buries some springs while not replenishing water tables.

The rate that water levels appear to be decreasing is worrisome. In every community visited by the caravan, people commented on numerous springs and creeks that had dried up in recent years.

“Among so many ponds in the region, Ugly Lake is the only perennial one these days. With so much deforestation it is at risk of no longer being perennial and is becoming more like its name—ugly”

—Catarina, resident of the Sete Lagoas community in the state of Piauí

Archeologist and anthropologist Altair Sales Barbosa, who for almost 50 years has studied the role of the Cerrado in regulating rivers in South America, reports that the beginning of the Grande River, one of the principal tributaries of the San Francisco River that brings water to the semiarid northeast of Brazil, has [migrated downstream](#)⁷ almost 100 kilometers since 1970. If this continues, in a short time various regions could face significant migration waves. Indeed, two weeks after the caravan visited the region, Santa Filomena mayor Carlos Augusto Braga [declared](#)⁸ a state emergency due to city wells running dry. It is important to remember that in Brazil, where 75 percent of energy is generated from hydropower, a water crisis is also an energy crisis.

The water that remains is becoming highly polluted due to the runoff of pesticides. All the lowland communities visited and consulted by the caravan reported refraining from drinking or using river water

⁷ www.bbc.com/portuguese/brasil-39391161

⁸ www.portalr10.com/noticia/817/prefeito-de-santa-filomena-decreta-situao-de-emergncia-no-municpio

for any purpose during the rainy season, when waters contaminated with pesticides and changing in color and odor, flow down from the highlands. Farmers in the lowlands must depend on well water during the rainy months.

One lowland resident who has worked on a number of highland plantations and asked to remain anonymous reported seeing 100,000 liters of pesticides stocked in a warehouse in preparation for spraying. Each year, he said, farms use new cocktails of pesticides in increasing doses to kill the insects. He reports that controversial pesticides banned in other countries are being used in large doses on many farms. He named fipronil, a toxic insecticide at the center of a scandal in Europe that resulted in the destruction of millions of chicken eggs in August 2017⁹, as a favorite of local farmers, who he said use it freely with no oversight.



Juraci Jose da Silva shows water samples from the Uruçuí Preto River to the fact-finding mission. The clear water was collected during the summer; the orange water was collected during the rainy season, when pesticides from highland plantations flow into water runoff. Photo by Rosilene Miliotti / FASE on September 7, 2017.

Indeed, the Greenpeace [study](#)¹⁰ found that 60 percent of the food items tested had residues of agrotoxins and that a number of food items had residues from more than one agrotoxin, which is worrisome as such chemical cocktails could have different effects than using them in isolation.

Since the arrival of the “projects” (the term used by local residents to refer to the highland plantations), people report increasing symptoms of illness: coughing, dizziness, nausea, and high blood pressure. Some suspect increasing rates of cancer. Residents blame the symptoms on the pesticide runoff in their water supply, but no scientific studies have yet been done.

3.3 Biodiversity is dying off

Like the nearby Amazon, the Cerrado is one of Conservation International’s top 25 biodiversity hotspots. According to Bernardo Strassburg, professor at the Pontifical Catholic University in Rio de Janeiro and coordinator of a recent [study](#)¹¹ of the region, the Cerrado biome has more than [4,600 plant and animal species](#)¹² not found in any other location on Earth and a full third of all of Brazil’s biodiversity.

The study found that the Cerrado biome is dying off at an alarming rate. Forty-six percent of its native vegetation has disappeared with only 20 percent remaining completely untouched. According to Strassburg’s projections, by 2050, 34 percent of what remains may succumb to soy and sugar

⁹ <http://www.bbc.com/news/world-europe-40896899>

¹⁰ <http://www.greenpeace.org/brasil/pt/Noticias/Segura-este-abacaxi/>

¹¹ www.sciencedirect.com/science/article/pii/S0959378014001046?via=ihub

¹² www.bbc.com/portuguese/brasil-39358966

plantations. This could result in the extinction of 1,140 endemic species – an amount eight times larger than the official number of plants extinct globally since the year 1500, when these records began.

Deforestation will also have severe effects on Brazil's carbon footprint. Strassburg predicts that deforestation over the next three decades will release close to 8.5 billion tons of carbon gases into the atmosphere – two and a half times more than the reduction in greenhouse gas emissions that Brazil accomplished by reducing deforestation in the Amazon between 2003 and 2012.

Stopping all deforestation would not necessarily improve the situation for many years because of the complexity of the flora and fauna of the Cerrado. Altair Barbosa [explains](#)¹³ that there are plants that are only pollinated by native bees which are now extinct. Some seeds must be swallowed by certain mammals and exposed to substances in their stomachs to be able to sprout. The buriti, an important fruit tree used by local communities to make juices, oils, soaps and more, takes many centuries to fully develop. Barbosa estimates that of the close to 13,000 types of plants in the Cerrado, no more than 200 can be grown in nurseries.

Strassburg's study predicts that by restoring areas of the Cerrado that have been only minimally degraded, up to 83 percent of the predicted extinctions can be averted. But with current and future plans for new roads, train tracks, and ports being built throughout the Cerrado, it is more likely that the current trend in environmental degradation will continue.

"I pity children born today because there is a lack of water in the rivers and fertile lands that we can work to provide enough quality food for our children."

– Jaime, a young adult volunteer with the environmental group *Progea*

3.4 Levels of conflict and violence are rising

With all of these threats to the survival of traditional communities come an increasing number of conflicts. Numerous people expressed to the fact-finding mission their concerns about increasing numbers and severity of conflicts over land and water. According to the [Pastoral Land Commission](#)¹⁴, in 2016 there were 636 conflicts over land and 109 over water. Both of these counts are the highest in the last twenty years.

One such conflict [worsened](#)¹⁵ shortly after the fact-finding mission visited Adaildo José da Silva, a lowland resident of the Morro D'Água community who spoke with the caravan about how a lawyer has been trying to evict him from his land for years using threats, false documents, and even violence. On September 19 Valdimar Delfino dos Santos, who works for the lawyer trying to remove da Silva from his land, once again physically attacked him and threatened him with death. Da Silva has registered complaints with the police various times with no result.

¹³ www.portalraizes.com/o-cerrado-acabou-entrevista-com-altair-sales-barbosa/

¹⁴ www2.fct.unesp.br/nera/boletimdataluta/boletim_dataluta_10_2017.pdf

¹⁵ semcerrado.org.br/campanha/nota-publica-ameacas-e-violencia-em-comunidades-do-cerrado-piauiense/

Police inaction for lowland communities is commonplace. The community of Sete Lagoas has filed eight police reports complaining about intimidation by gunmen hired by the Damha company in an attempt to take their land. To file the complaints, community members had to travel 240 kilometers to the nearest police station each time, to no avail. Yet, the first time that Dhama registered a complaint against the community, the police arrived the next day to warn them. And two of the policemen that responded were the same gunmen that had threatened the community.

In a [protest](#)¹⁶ on September 30 in Balsas, Maranhão in which protestors occupied the Transamazonian highway for hours, a banner illustrated police attitudes in the region: “The police are paid and use the whole State apparatus to defend agrobusiness and the poor have no way to defend themselves.” Community members report that the State usually assists the large plantations while ignoring the lowland communities.

Another [conflict](#)¹⁷ erupted on November 2 when close to 1,000 farmers and ranchers occupied two plantations in western Bahia and destroyed equipment and storage facilities. According to the police, the protestors blamed a water shortage on the large irrigation systems used by the plantations. Yet the owner of the plantations, Lavoura e Pecuaria Igarashi, had permission from the Institute of the Environment and Water Resources to use 12 pumps to withdraw 106 million liters per day from the Arrojado river in order to irrigate its more than 2500 hectares (6175 acres). As a [comparison](#)¹⁸, the entire town of Correntina in Bahia has just two pumps to supply its 7,000 residents with approximately three million liters per day. In other words, one day of water use on only two farms is more than one month’s water needs for an entire city. This is a clear example of the government favoring the demands of agribusiness over the needs of local populations – and the degree of desperation felt by the lowland communities.

“Go to where? Sell what to buy things in the city? Look at our city, you were there. Everything is expensive there and we don’t have anything. You all don’t understand how we live. We are here today but don’t know if we will be tomorrow. You don’t know how nervous my father is. Sometimes he comes home saying that we’re leaving. But after these meetings [with the caravan] he has calmed down. He sees someone on his side so he is feeling stronger, better. Us too. We have hope.”

– Maria dos reis Alves of the Barra da Lagoa community

¹⁶ <https://www.brasildefato.com.br/2017/09/30/em-denuncia-contra-agronegocio-2-mil-pessoas-ocupam-a-transamazonica-no-maranhao/>

¹⁷ <https://www.portaldenoticias.net/ffsantos/destruicao-em-correntinaba-manifestantes-invade-fazenda-e-provocam-cenas-de-terrorismo-no-oeste-da-bahia/>

¹⁸ <http://redept.org/blogosfera/index.php/2017/11/10/um-dia-de-agua-para-igarashi-abastece-correntina-por-um-mes-inteiro/>

IV. INVESTORS FACE INCREASING RISKS

Chain Reaction Research released a [study](#)¹⁹ in September of farmland investments in the Cerrado in which they describe four risks that investors face.

4.1 Discerning investors do not want to profit from conflict or deforestation

Some investors may be wary of profiting from investments that aggravate the social and environmental problems and tensions that exist in the Cerrado. Since land holdings typically make up only a small percentage of investment portfolios, dropping them would not have a large effect on overall returns.

An increasing number of investors are taking anti-deforestation pledges, promising not to buy lands that have been recently deforested. In September a number of environmental organizations released the “[Cerrado Manifesto](#)²⁰” in which they call for “immediate action in defense of the Cerrado by companies that purchase soy and meat from within the biome, as well as 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.”

A month later, 23 global corporations, including McDonald’s, Walmart and Nestlé, launched a “[Statement of support for the objectives of the Cerrado Manifesto](#)²¹” in which they “recognize the critical importance of the Cerrado” and “commit to working with local and international stakeholders to halt deforestation and native vegetation loss in the Cerrado.”

While these pledges are laudable, it is difficult to guarantee that a fund is not involved in deforestation. The giant retirement plan manager TIAA, recognized as a leader in responsible investing, [says](#)²² that it only buys land that has been deforested and in agricultural use for many years before purchase. Yet at least one farm they bought, Fazenda Ludmila, in Piauí was deforested around the time of and after TIAA’s purchase of the land:

On October 19, 2012, [Tellus S/A](#)²³, one of the subsidiaries that TIAA uses to buy land in Brazil, announced interest in buying a farm named Ludmila and another nearby farm, Laranjeiras in southern Piauí. Due to lack of disclosure from TIAA as to the actual date of purchase, it is not known when TIAA officially became the owner but is likely to be in late 2012 or 2013. [Satellite photos](#)²⁴ show that the farm

¹⁹ <https://chainreactionresearch.com/2017/09/20/farmland-investments-in-brazilian-cerrado-financial-environmental-and-social-risks/>

²⁰ https://d3nehc6y19qzo4.cloudfront.net/downloads/cerradoconversionzero_sept2017_2.pdf

²¹ www.theconsumergoodsforum.com/twenty-three-global-companies-pledge-to-helping-tackle-soy-driven-deforestation-in-brazil%E2%80%99s-cerrado

²² https://www.tiaa.org/public/pdf/C26304_2015_Farmland_Report.pdf

²³ <https://www.grain.org/article/entries/5349-a-empresa-radar-s-a-e-a-especulacao-com-terras-no-brasil.pdf>

²⁴ fgdfghttp://www.globalforestwatch.org/map/12/-8.90/-45.70/ALL/hybrid/loss?tab=analysis-tab&geostore=0229018c9a9c10d72dc8fd03e36f2ef8&begin=2012-01-01&end=2016-01-01&threshold=30&dont_analyze=true

was deforested in 2013 (121 hectares/300 acres) and 2014 (324 hectares/800 acres). TIAA's [farmland location map](#)²⁵, accessed in November 2017 shows that TIAA continues to own the Ludmila.

As with neighboring farms, the developers removed vegetation using [correntões](#)²⁶ ("big chains") - two powerful tractors moving in parallel with a thick chain between them that pushes over even the biggest trees in its path. Antonio Alves de Carvalho president of the Rural Workers Union (STTR) described driving one of those tractors for many years for many plantations. In addition to pulling up all of the flora, animals of all sorts get trapped under fallen trees and are then cut up by the chains. He reports seeing deer, armadillos, emus, mice, rabbits, birds and more being chopped up by the chains. One time he saw a large nest of emu eggs and was able to get the other tractor to stop before the chains reached the nest. He pulled out three eggs and wrapped them in a rag to take home. "Each one weighed almost 700 grams (1.5 pounds)," he related excitedly. But the remaining 10 or 12 eggs "were scrambled up by the chains." "I made an omelet without even cooking!" he said, trying to make light of the event that clearly haunts him. It was because of stories like this that Carvalho stopped working for the plantations and became a union leader, even though it meant a reduction in his annual income by two-thirds.

4.2 Land investments could become stranded

As more investors take public anti-deforestation pledges, the risk of newly purchased land becoming "stranded" with few potential buyers grows. "The risk of overvaluation of farmland is particularly pronounced for those assets that contain native Cerrado vegetation. For some firms, the financial impacts of the stranded land risk could amount to a 20 percent loss of equity value."

4.3 The Cerrado may be a real estate bubble ready to pop

The study by Chain Reaction Research also warns that land in the Cerrado may likely be overvalued today for a variety of reasons including a disconnect between farmland and global commodity prices and the fact that "most of the Cerrado's already converted land with optimal conditions for soy cultivation can be found outside of Matopiba."

4.4 Land titles may not be legitimate

Another concern for investors is the general level of confusion around land titles in the region. Agrarian judge Heliomar Rios Ferreira told the fact-finding mission that he had seen single properties with up to 20 different people claiming ownership. An unknown amount of the land for sale in the Cerrado has been acquired illegally by land grabbers. Ferreira referenced a case where Rabobank, a Dutch bank specializing in agricultural investments, lost the title to land worth approximately \$51 million because the person from whom the bank bought the land had acquired the title illegally. The judge confirmed the story but he had not yet acquired the documentation when he met with the mission.

This ambiguity around land titles should be especially worrisome to investors because as Ferreira explains, according to Brazilian law, there is no statute of limitation for illegal land acquisition. Even if a piece of land were stolen many years ago, the risk of it being expropriated and returned to its original

²⁵ <https://www.tiaa.org/public/assetmanagement/strategies/alternatives/agriculture/farmlandmap>

²⁶ <https://www.youtube.com/watch?v=rWneOIC-NBg>

owners remains today. Some investment funds carry out “look-back” title searches of many years to verify the chain of ownership, but if the crime occurred earlier, the land could still be expropriated and returned to original owners.

4.5 Water is drying up for everyone

In addition to the four risks for investors identified by Chain Reaction Research, there are two other issues investors face. First and perhaps most shocking to the caravan participants is the rapid decline in available water. As mentioned above, throughout the fact-finding mission, guides repeatedly pointed out places where springs, ponds, creeks, and rivers once thrived and now are dry. Beyond the serious threat that this represents to local communities, it is a threat to the plantations themselves.

4.6 Disregard for social use of land

A final concern for investors is Brazil’s laws around the social use of land. According to article 184 of the 1988 Brazilian Constitution, “It is the responsibility of the Union to expropriate for social interest, for the purpose of agrarian reform, the rural property that is not fulfilling its social function.” In Brazilian jurisprudence, in order to fulfill its social function, landowners must treat workers according to labor laws, should protect the environment and the land should be productive.

Plantations in the Cerrado run the risk of not meeting these conditions. If land is left idle for pure speculation, as is often the case, it is not being productive as required. And active plantations could run afoul of labor and/or environmental laws.

While it is rare for the government on its own volition to expropriate lands based on social use, Brazilian social movements often research properties not meeting the social use laws and occupy them in order to force the government to expropriate the land which is usually distributed to social movements of landless families.

V. CONCLUSION

As investment funds buy more agricultural lands and increase their overall portfolio returns, traditional families in the Cerrado region of Brazil and other parts of the world are losing their access to land, water, and their livelihoods. In the Cerrado, the environmental destruction caused by the plantations is especially worrisome as the region is an important source for key watersheds and aquifers, and home to flora that requires special conditions to grow and many decades to rejuvenate.

More investors are becoming aware of the social and environmental consequences of these investments and are wary of profiting from such destruction. The weight of the “moral risks” is equally matched by that of the financial risks for investors.

Seu Juarez in the Melancias community summed up the feelings of many members of the lowland communities toward the highland plantations: “It’s not wrong that they produce, but they should produce the right way, respecting, I don’t know, an ecological corridor and respecting the communities more. We aren’t against them producing, but they should produce the right way.”