



Scorching the earth

Pulp and paper expansion in Três Lagoas, Brazil

Summary report

December 2022

This briefing is a summary of a more detailed research report produced by EPN, called [Scorching the earth](#). Research for the longer report combined desk research and field research, conducted between October 2020 and May 2021. More details about the research methodology are included in the full report.



Introduction

In April 2013, public administrators of Brazil's Três Lagoas municipality declared it the "Capital Mundial da Celulose" (world capital of pulp).

Within a decade production of eucalyptus pulp, used among other things for making paper, had exploded from zero to more than 7 million tons per year. Três Lagoas and the surrounding municipalities are now the epicentre of pulp expansion in Brazil, hosting nearly a million hectares of eucalyptus plantations and two processing plants. There are plans to build four additional plants and expand the capacity of the existing two, effectively doubling the production capacity in the area.

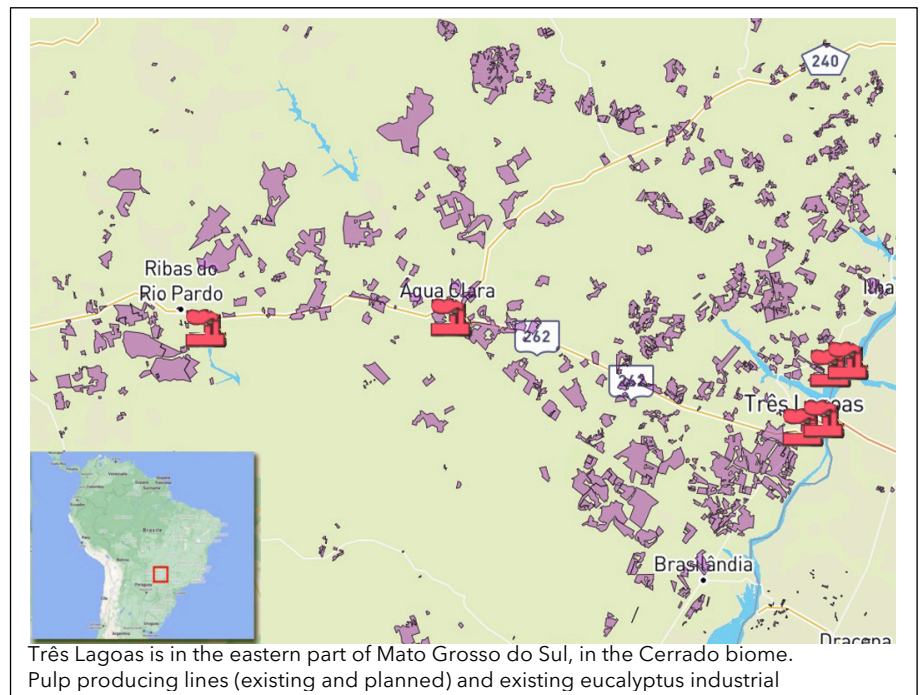
Três Lagoas is an administrative region of Brazil which lies in the eastern part of the state of Mato Grosso do Sul and forms part of the ecologically vibrant Cerrado biome. The explosion of eucalyptus plantations and pulping mills in the region is already having severe consequences for local people, for workers, for wildlife, water and the future of the Cerrado.

The pulp and paper industry in Brazil is intrinsically linked to the business of cattle ranching at forest frontiers. Establishing pulp mills on forested land with limited infrastructure just isn't economically feasible, so these tend to be built on land previously used for cattle ranching where some minimal infrastructure has already been installed.

Eucalyptus plantations are established to be close to the mills. The money ranchers receive for selling their land to pulp

companies makes it possible for them to buy or claim new land, and to clear it for further cattle ranching. So the rate of new ranching expansion is tied up to the profits made from selling land to the pulp industry.

The FAO definition of a forest doesn't distinguish between natural forests and monocrop tree plantations. Some have tried



to describe the explosion of eucalyptus plantations in Três Lagoas as afforestation, and as an important step towards counteracting carbon emissions.

In reality, the plantations make it harder for already degraded land to recover.

Land used for cattle ranching will often begin to recover naturally quite rapidly once the cattle are removed. But when that land is converted to a eucalyptus plantation, damage is caused at an even more profound level. Thirsty eucalyptus trees destabilise the region's water table, and deep ploughing destroys the remains of deep-rooted native plants which could otherwise re-emerge.

Plantations turn what was a patchwork of fragmented areas of cleared land into a vast ecological monoculture.

Communities are also impacted by plantations, and the pulping mills built to process the output.

Since the eucalyptus explosion, the population in Três Lagoas and the surrounding municipalities has plummeted at a faster rate than elsewhere in rural Brazil. The industry doesn't provide enough jobs to support more people, and many of the jobs that are available are dirty, degrading and dangerous. Workers report repeated violations of labour rights, including injuries linked to defunct machinery, inadequate training and long

hours. There are currently more than 170 labour rights violation cases levelled against pulp and paper companies in Mato Grosso do Sul.

Most indigenous communities around Três Lagoas were forced out of the area by cattle ranchers decades ago, but the pulp and paper industry is compounding that exclusion. The plantations raise yet another barrier to communities struggling to enact their constitutionally-recognised land rights, and throw a veil of legitimacy over the ongoing theft of their lands.

If existing plans to double pulp production around Três Lagoas are allowed to go ahead, it could spell disaster not just for Três Lagoas but for huge swathes of Brazil.

BOX 1 Pulp and paper in context

Global paper consumption has been growing at a steady rate for decades. It has quadrupled since 1960. Around the world we use about one million tonnes of paper every day.

Although paper recovery and recycled pulp manufacturing has increased, virgin pulp production for paper and board products is still one of the main drivers pushing the expansion of intensively managed tree plantations, including Eucalyptus monoculture plantations.

Pulp and paper production and consumption is still concentrated in Asia, North America and North and Western Europe, but pulp production is considerably shifting from North America to South America, notably Brazil. In the last two decades Brazil's pulp and paper industry has tripled its pulp production capacity, from 6.7 to 21.5 million tons per year. By 2018 the area under either Eucalyptus or pine plantation in the country had expanded to 7.2 million hectares, more than twice the area of Belgium.

Eucalyptus plantations have been encouraged in Brazil for several decades, with regulatory incentives in place since the 1960s. Plantations were initially concentrated at the coastal regions of the Atlantic Forest biome, and subsequently the Pampa biome (Rio Grande do Sul). Although the first eucalyptus plantations in the Cerrado were established in the 1970s, serious development of the industry only really began in 2007. Since then, plantations in the Cerrado have boomed.

The mechanics of monoculture expansion in Três Lagoas

Some of the physical characteristics of Mato Grosso do Sul are particularly attractive to the pulp and paper industry. The flat terrain, fertile soil, high rainfall and abundant water make the region perfect for eucalyptus plantations. But for decades, the area was too remote from the pulping mills located around the coast to make a profitable prospect.

A number of factors changed that.

Cattle ranching literally cleared the way

Most of the land around Três Lagoas was converted by the cattle ranching business decades ago. Cattle farms, often created by violently clearing land of both people and woodland vegetation, were able to thrive in areas with limited transport or energy infrastructure. Over time the cattle ranchers attracted new investment in infrastructure, better roads and electricity grids. These developments made the region more attractive for the pulp and paper industry, which relies on such infrastructure to be economically viable.

While the conflicts between cattle ranchers and indigenous communities are still violently ravaging in the western part of Mato Grosso do Sul, in the eastern areas of the state, where eucalyptus plantations have been expanding during the last decade, most indigenous communities were cast off their lands long ago. This too, has made it easier for the pulp and paper industry to establish a stronghold in the region.

Concentrated land ownership facilitated large scale plantations

Land ownership around Mato Grosso do Sul is highly concentrated, with the vast majority

(83%) of the land occupied by large estates of 1,000 hectares or more.

Concentrated land ownership has been a feature in the region since the colonial period, but cattle ranching intensified it even further. This was partly because the ranchers have been very effective in their efforts to oppose local indigenous peoples trying to claim and exercise their constitutionally-protected land rights.

Such concentrated land ownership meant that pulp and paper businesses only had to negotiate with a few figures to acquire the land they needed to produce and process eucalyptus on a grand scale. Most of the previous landowners in the area (81%) lived outside the municipality, in big cities, and had little relationship with the life in the land they were selling.

I'm going to plant eucalyptus
To see if I get rich
And you'll fall in love with me
(...)
When I'll harvest the eucalyptus
and I'll get rich
Everything will change
My ambition will rise
I'll only want hot women
- and I'll dump you.

(Song lyrics by Jads e Jadson - Eucaliptos)



Regulatory and fiscal incentives

Politics also played an important role. In 2009 the Mato Grosso do Sul state government changed its environmental law, exempting companies developing eucalyptus plantations from the need to submit an Environmental Impact Assessment (EIA), among other legal and fiscal flexibilities.

The national development bank BNDES offered loans, and finally the government provided fiscal incentives, all to stimulate eucalyptus plantations and the pulp and paper industry.

Full circle - eucalyptus plantations clear the way for more cattle ranching

Once eucalyptus plantations were established, the change of land use caused a peak of land prices and an intense activity of real estate speculation in urban areas.

An academic study analyzed the land prices

in Três Lagoas and found that in 10 years they increased about 400%.

Ranchers are able to cash in by selling their land to other actors, like to the paper industry, for a sizeable profit. They are then able to buy up much larger tracts of cheaper 'marginal' woodland, not yet of interest to plantation developers, and another cycle of deforestation begins.

High land prices are also a direct obstacle to land reform and make it harder for small farmers to access land. This paves the way for further land concentration.



Ofayé people, living in the Cerrado, in Brasilândia. Photo: Nataly Guimarães Foscaches. UFMS, "O Território Ofaié - Pelos Caminhos da História

Understanding the impacts on people

Apocalypsus: the emptied land

The transition from cattle ranching to the paper industry has been swift. The first result of this change of land use has been the dramatic reduction of the rural population, leading to the disappearance of entire villages.

Cattle farming still needed workers, and there rural villages inside the larger farms, including rural schools and churches.

Pulpwood plantations, on the contrary, need mostly seasonal workers for planting and harvesting.

As entire cattle farms have been sold *en bloc* to the paper industry, the villages within their borders were razed to the ground. People had to leave. Their homes and gardens were destroyed.

National population data in these municipalities reveal that less than a twentieth of the population living in Três Lagoas (4.64%) remains.

BOX 2 Arapuá village

"The eucalyptus, I'll let it be clear to you, is the black villain of our region."
(Joaquim, Arapuá villager)

The Arapuá district is an emblematic case in Três Lagoas. Arapuá is a rural village established in the early twentieth century, passing through periods of diverse crops cultivation (corn, rice, beans, coffee, cotton), and a period of silk farming. Cattle ranching settled in the early 1990s, and finally the eucalyptus plantations arrived starting from 2008. Hundreds of families that used to live in these farms, and ended up with no jobs, so they can no longer remain on their territories.

"There were farms as big as Arapuá itself, with jobs, school, church, it was all destroyed. Most of these farms, in the beginning of eucalyptus, used to make a really big hole in the ground with heavy machinery, and bury the entire houses. Back then, many houses were buried."
(Cipriano, Arapuá villager)

The people still living in Arapuá say that the arrival of eucalyptus ended the intense and lively community life, which used to bring together hundreds of people in sports tournaments, and several traditional festivities, causing cultural erosion, in addition to impacts on rivers and wildlife. In the meantime, the reduction of the village caused the collapse of basic social services, such as health care and public transportation. The rural school in Arapuá is still open, but with half of the students.

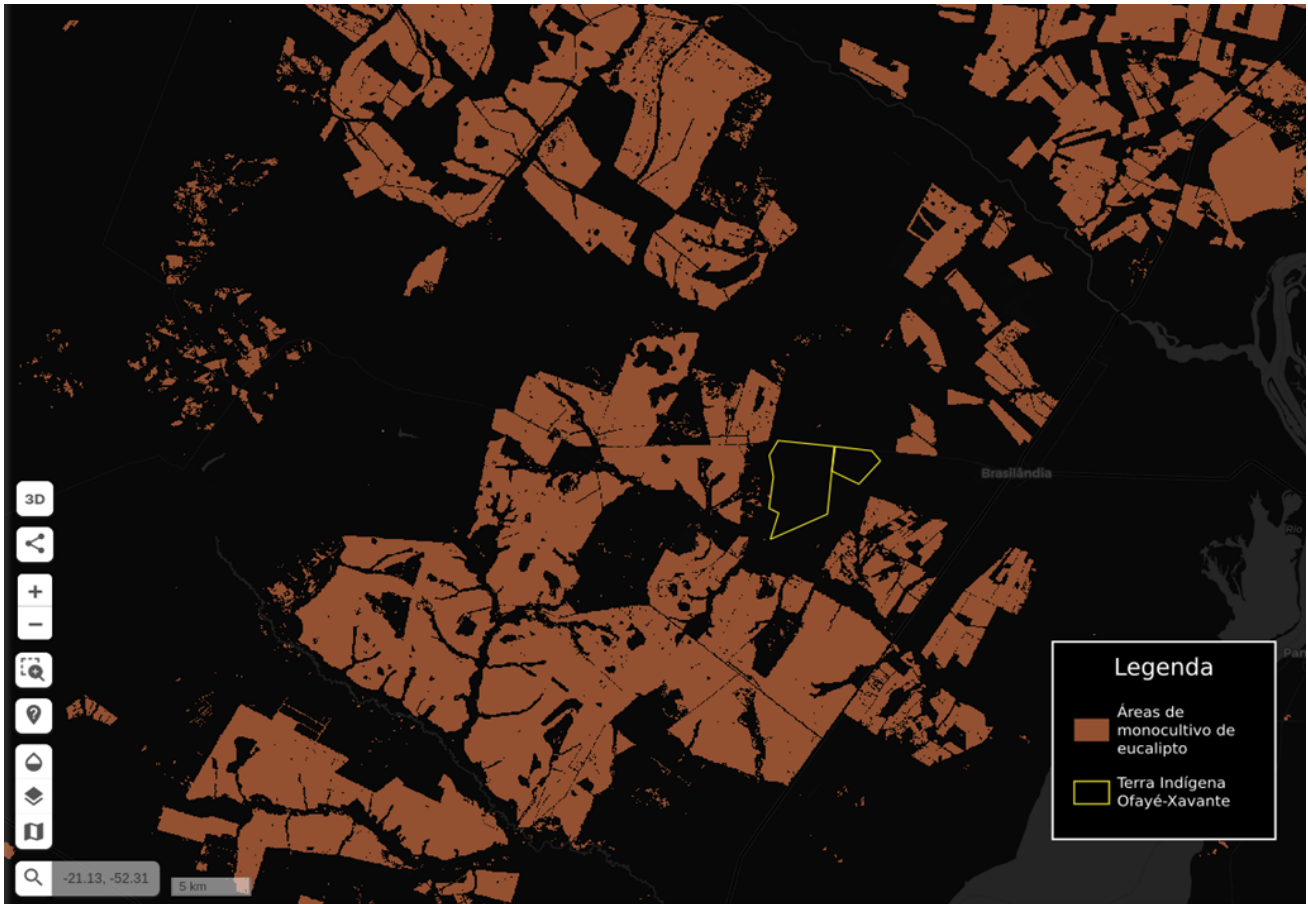
Indigenous Peoples land rights & violence

Land conflicts between indigenous people and farmers are linked to terrible violence in the Mato Grosso do Sul. 539 indigenous people were murdered in the state between 2003 and 2019. This is almost 40% of the total killings of Brazilian indigenous people over that period. Between 2001 and 2018, fourteen indigenous leaders were murdered in reprisal for attempting to peacefully retake lands already recognized by the State. Assassination of indigenous people spiked to 182 under the government of Bolsonaro, who proactively undermined the rights of indigenous peoples to reclaim their traditional land, in order to promote business expansion.

In the area around Três Lagoas, most indigenous communities were cast off their land some time ago. Those who did remain, scattered between cattle farms, were definitively expelled, together with other rural populations, when the farms were converted into eucalyptus plantations.

Only a single indigenous community survives here, just seventeen families of the Ofayé-Xavante people, living in the municipality of Brasilândia on an area of 484 hectares. Their land has been demarcated and regularly registered but, after twenty years, still awaits official recognition by presidential decree. Only about 2.5% of indigenous territories, and just 0,02% of quilombola territories in Mato Grosso do Sul have been recognised.

The giant pulp exporting company Fibria / Suzano, heavily active around Três Lagoas, announced its support for a project with the Ofayé-Xavante people still living in the area. It aimed at "training handicraft production groups through guidance on entrepreneurship" and "contributing to



The only demarcated Ofayé territory, surrounded by eucalyptus plantations. Source: biomap.org.

reinforcing their ethnic identity". It turns out that the project involved just 12 people, assuring them a *family income* of less than 13 USD a month (70.83 Reals, just over half the minimum wage in Brazil) and generating in total of 1,800 USD (10,200 Reals).

The project was suspended in 2020 "due to the change in the community's leadership".

Dirty, dangerous jobs and union busting

They rob the worker. If you are aware of everything that happens, you get very angry, you can't help but get angry. Because it really is robbery. And in a while, 4 or 5 years, by the way they are working today, everyone will be broken, and the company getting rich and stealing from workers, employees, and it will leave them broken.'

(Adailton, Suzano worker, 2021)

Although the pulp and paper industry does generate some jobs, these are fewer per hectare than those of other land uses such as cattle ranching. Those who do end up working in the pulp and paper industry look forward to difficult and dangerous work, and a general disregard for health and safety or labour rights.

Long hours, no proper place to eat, a lack of toilets, no pay for commuting time, exposure to physical ailments due to defunct machinery and a lack of training and recognition of workers' real jobs and skills, are among the challenges confronting plantation and construction workers in Três Lagoas.

Plantation workers complain of poor and unhealthy working conditions. Poorly

maintained machines can be dangerous, and using them over long periods can cause musculoskeletal injuries.

Often there are no facilities or adequate time made for eating or ablutions. Bodily needs must be met in the fields, with the constant risk of coming in contact with poisonous animals such as spiders or snakes.

In recent years a number of labour condition irregularities have been reported, including those which violate labor legislation.

According to the Public Ministry of Labor (MPT), in Mato Grosso do Sul there are 171 labor cases against the pulp and paper companies.

In 2018, Eldorado Brazil was ordered to pay R\$ 2 million in damages to the municipality, after failing to comply with labor regulations.

The industry has a sustained history of union busting activities. In 2015, Fibria (now absorbed by Suzano) fired 18 workers in retaliation for organizing an independent worker union. Workers who contracted professional diseases due to poor quality machinery were also fired.



There are many colleagues of mine who have had an operation on their shoulder. They no longer have the physical condition to carry on with this work. They have to look for another activity, because they can't work again in the same area. This is the big trouble (with health), because of the repetitive movements, and because the machine that rocks too much, it breaks the spine, it breaks the lumbar, it breaks the shoulders, it breaks everything.
(Adailton, Suzano worker, 2021)

Some of these issues constitute a violation of ILO standards, and to some core human rights as recognised in the UN Declaration of Human Rights. These include the right to a

safe work environment, the right to rest and leisure, right of freedom of association and collective bargaining, right to just and favourable remuneration.

Understanding the impacts on the environment

Troubling the waters

The reservoirs here have all dried up, people used to fish, it's all dry, the fishes are all dead. We see the streams, it's just that little vein now.



(Maria, Arapuá villager)

The Cerrado is called 'the cradle of waters', as its vast water table supports the region and much of Brazil. This has been made possible in part thanks to the deep root systems of native Cerrado vegetation. As that vegetation has been lost, the amount of stored water has decreased and aquifer and water table levels have reduced. This is leading to rivers drying up and disappearing.

According to Agência Brasil, land conversion of the Cerrado may result in a critical water shortage nationwide. The Cerrado capacity to provide water to the subcontinent may collapse in less than 30 years, according to a research article published by 12 Brazilian scientists in *Global Change Biology*. This would have profound consequences for the country's vast hydropower energy supply, as well as agricultural production.

This problem isn't caused exclusively by the eucalyptus plantations, but they are exacerbating it. Pulp plantations substitute long-root vegetation that absorbs and maintain water, with trees that do exactly the opposite and are specialised in draining swamps. This has been demonstrated by scientific studies investigating the impact of eucalyptus plantations on water cycles and

water tables around the world, from Brazil to Chile, Uruguay, Argentina, India, and South Africa.

This impact of eucalyptus plantations on the water table is also very evident to local villagers. At the settlement of Alecrim, surrounded by plantations, many of the local farm reservoirs have run dry, including the biggest ones.

"It was a sea of water, you wouldn't believe, it is all dry now", said a villager, who also complained about the company's lack of responsibility towards the local wild animal population.

What local communities note is a process that has been well studied in the Brazilian region of Minas Gerais. There, eucalyptus plantations developed in the 1960s to produce charcoal or pulp, caused a decrease in water recharge in the areas of reforested plateaus of the order of 164 mm/year. As a result, people, mostly women and children, had to walk for more than a kilometer to find water for everyday use.

The situation is now similar in Espirito Santo, where parts of the Atlantic forest were converted into pulp-plantations towards the

end of the 1960s. According to the local water agencies, desertification is now "very critical" especially in the basins of the Itaúnas and São Mateus rivers.

Fires

Eucalyptus plantations increase fire occurrence, by draining the soil and creating a generally drier environment.

On top of this, Eucalyptus bark has particular morphological characteristics which allows it to send burning embers over great distances in the wind. The embers can travel several kilometres, far beyond any fire-break trench.

The manner in which eucalyptus plantations are established also fuels forest fires because these large homogenous blocks are densely planted with young trees with a dry undergrowth.

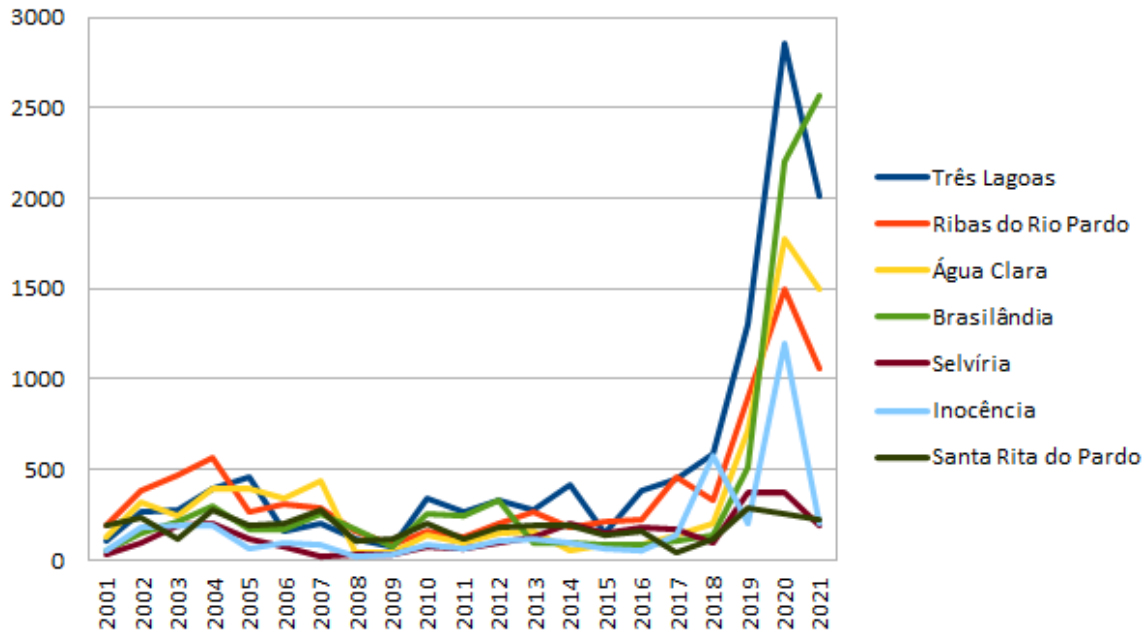
Cerrado species and ecosystems are adapted to fire. The vegetation is able to resist fire better (thanks to thick bark, deep roots, rhizomes and bulbs) and to quickly regrow after fire, also thanks to a higher amount of underground biomass. Fires naturally used to occur in cycles of around 16 years giving natural vegetation a chance to regenerate. Now however, even in the remaining stretches of intact vegetation, human induced fires happen every one or two years, much faster than the capacity of the natural vegetation to recover, changing the dynamics in plant communities, especially affecting rare species, and dramatically reducing the capacity of natural habitats to recover.

Frequent fires encourage the diffusion of exotic grasses, which in turn causes hotter fires, killing young trees and preventing recovery.

Fire Alert data from Global Forest Watch reveals that fire outbreaks often coincide



Fire in Tres Lagoas, Oct 1st 2020, RCN67



Number of fire accidents in the studied municipalities. Source: INPE

with plantation areas. The Environmental Military Police has reported an increase of casualties related to fires and eucalyptus plantation expansion, especially alongside the road connecting the municipalities of Brasilândia, Três Lagoas and Selvíria.

These are the same municipalities with the largest areas of eucalyptus monocultures. The Police warned that the growth of fires expels large mammals from their habitats, forcing them to cross the dangerous highways and risk death.

The National Institute for Space Research, INPE, found that in Três Lagoas and surrounding municipalities there were eight times number of fires in 2020 than in 2010.

Fire incidents spiked suddenly in 2018, also the period when many eucalyptus plantations in the area were reaching maturity. Forest fires are now representing a serious financial threat to the paper industry, and companies such as Eldorado and Suzano have organized campaigns against fire. It isn't clear what effect these campaigns can have.

Poisoned land

Over the years the notoriously polluting pulp and paper industry has developed technological improvements that render more recent pulp mills less toxic than their predecessors. These advances however are offset in Três Lagoas by the sheer concentration of the industry, which results in concentrated pollution within a specific region.

In 2016 to 2017, at the school, we had a huge number of kids with diarrhea and headaches. And it was in the time when they were spraying a lot of poison with the plane.. But it was very frequent, it was a rare day without having to run to the hospital with two or three kids.

(Eliane, november 2020)

Agrochemicals, pesticides and herbicides re deployed in eucalyptus plantations to promote fast tree growth, eliminate ants and termites, and to kill weeds. According to *Sisagua*, an observatory on drinking water quality, a "cocktail" of 27 pesticides is

present in tap water in a quarter of all Brazilian municipalities. Municipalities with the highest concentration of water contamination are Água Clara, Três Lagoas, Brasilândia and Santa Rita do Pardo, as well as others where the pulp & paper industry is currently expanding, such as Ortigueira, in Paraná, Peixes and Araguaína, in Tocantins, Eunápolis in Bahia, Aracruz in Espírito Santo, Lençóis Paulista, in São Paulo, Triângulo Mineiro, in Minas Gerais.

Among the pesticides found in more than 80% of the tests, five are classified as "probable carcinogens" by the United States Environmental Protection Agency. Six are identified by the European Union as causing endocrine dysfunction, which generates several health problems such as early puberty. Of a total of 27 pesticides found in Brazilian water, 21 are banned in the European Union due to the risks they pose to health and the environment.

There is a lack of specific studies assessing pesticides used in pulpwood plantations, and paper companies are not keen to share detailed data.

In large pulpwood plantations, pesticides are often applied via air spraying with a plane, a practice that is essentially banned in the European Union and officially only permitted in Brazil when the area is more than 500m from settlements or water courses. It is very difficult to prevent air-sprayed pesticides from contaminating areas outside the plantations.

Intoxication from pesticides has become part of everyday life for some local communities living near eucalyptus plantations.

Decimating wildlife, scrubbing out biodiversity

The animals that live inside the plantations, what do they eat? In the past our region was rich in fruits: wild guava, marolo, all the wild fruits, right, today there's none; unless in the preservation area. Even there, we have to fight a lot because in many cases it is getting degraded.

(Lurdes, Garcias villager)

Within a few decades, half of the Cerrado has been totally cleared and most of the rest has been degraded to various degrees.

As a result, an alarming number of Cerrado species are threatened with extinction: 903 species were included in the National Red Lists of Brazil (266 species of fauna and 637 species of flora).

The most well known of the endangered species around Três Lagoas are the jaguar, the armadillo, the tapir, the giant anteater, and the maned wolf. They are all threatened with extinction and for all of them specific threats come from the pulp & paper industry.

Direct activities of the industry are responsible for some of the decline. The sharp increase of road traffic, caused by heavy trucks transporting eucalyptus logs to the pulp mills, caused an increase in wildlife deaths in the municipalities where plantations are concentrated.

Considering the intense road traffic of paper companies logging trucks, these industrial groups should be responsible for funding damage mitigation measures such as fencing of highways, walkways or building cross-tunnels for people and wildlife.

This wildlife tragedy also has serious consequences for the local communities, as animals expelled from their natural habitats



end up invading villagers' gardens and eating people's crops. This makes some subsistence cultivations unfeasible.



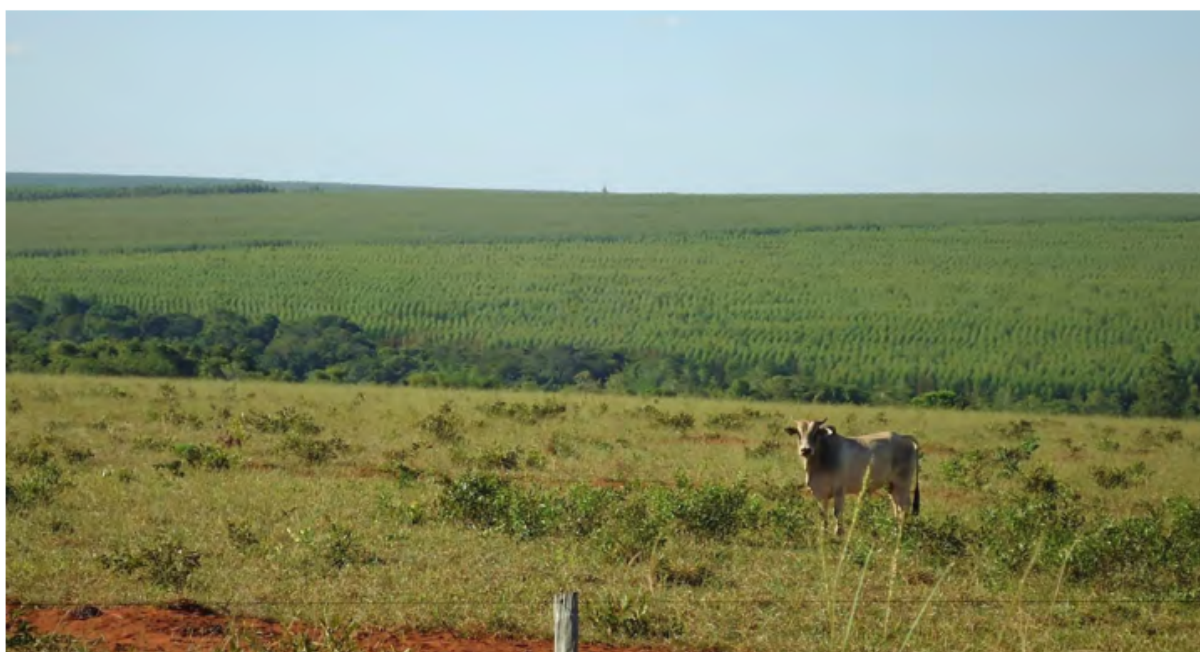
The animals are coming to the city. If you have some plantation here, and it's full of fruits, the animals come right in the morning and eat everything, because they don't have to eat, there's no forest for them anymore, it's a sea of eucalyptus.

(João, Arapuá Villager).

Most of the land clearing around Três Lagoas was linked to expanding cattle farms decades ago, but the elimination of biodiversity is being completed by the pulp & paper industry. In some cases, this involves converting remaining Cerrado vegetation; a 2013 study suggests that 61% of the eucalyptus plantations developed between 2002 and 2013 in the area analyzed by this study (municipalities of de Água Clara, Três Lagoas, Brasilândia and Santa Rita do Pardo) have converted remaining Cerrado vegetation while just a 25% has been converted pasture.

As for the land already converted by cattle ranching, on this land deforestation has been dramatic, but also relatively fragmented. Farmers normally clear the land with the fire. In some cases this is not the end of the natural vegetation, since Cerrado plants, because of their deep roots, have a remarkable capacity to resprout. Many pastures considered by farmers as degraded are, in fact, dominated by natural vegetation under natural regeneration.

This fragmentation came at an end with the shifting from cattle ranching plantations: the rapidly expanding soybean plantations industry along the median belt leading from south-west to north-east of the state, and the eucalyptus plantations booming in the eastern corner. Under these two industries, the different farms were unified under a single and uniformed management unit that cleared these blocks of natural shrubs, ploughing the land deeply, and leaving behind no deep roots, nor chances of regeneration.



Land use change in Mato Grosso do Sul - from cattle farming to eucalyptus monoculture (Fazendas em Água Clara)

An explosion of pulp, with more to come

Pulp production capacity, alongside eucalyptus plantations, have exploded around Três Lagoas in the last decade. Three companies are behind the growth.

Brazilian company **Suzano** is the world's largest exporter of market pulp, and the largest producer of Eucalyptus pulp in particular. It has tripled its pulp production capacity in the last five years, relying on almost a million hectares of plantations. In 2019 it merged with Fibria, previously the largest pulp & paper producer active in Três Lagoas. The company is also making inroads into cellulosic liquid fuels and chemicals. Suzano has been embroiled in numerous conflicts linked to the plantations it relies on, including in Mato Grosso do Sul where members of a Pataxó indigenous community have attempted to reclaim lands taken from them but faced threatening resistance.

Suzano's current pulp production capacity around the Três Lagoas area is around 3,25 million tons/year (mty), with plans to increase this by an additional 2.5 mty.

BOX 3: Pulp Mills in and around Três Lagoas

Capacity in million tons per year (mty)

Existing mills

Fibria, Horizonte 1, (now Suzano) 1.3 mty
Eldorado, Vanguarda 1, 1.5 mty

Capacity expansion:

Fibria (now Suzano), Horizonte 2, 1.9 mty
Eldorado, Vanguarda 2.0, 2.3 mty
Suzano, Cerrado, Ribas do Rio Pardo - 2.5 mty
Arauco, Sucuriú, Agua Clara - 2.5 mty

Total micro-region pulping capacity: 11 mty

Eldorado was created by the owners of Brazil's notorious meat giant JBS in 2010 and by 2012 its first pulp mill, in Três Lagoas, was producing around 1.5 mty. The company has been embroiled in various labor disputes. In 2021 Eldorado was taken over by a sister company of Asia Pulp & Paper (APP). APP is notorious for having cleared more than two million hectares of Indonesian rainforest, and ongoing land conflicts with more than 100 communities contesting their pulpwood plantations.

Arauco, the third big pulp player in Três Lagoas, is a forestry company based in Chile with production facilities across south and north America. Arauco dominates the paper industry in Chile, and is a subsidiary of Chile's largest privately owned industrial group, Empresas Copec. Arauco is embroiled in a longstanding dispute with Mapuche indigenous communities, as the company directly profited the forcible eviction of Mapuche from their lands in the 1970s, at the hands of Chile's military junta. Arauco obtained over a million hectares of land in the process. Many Mapuche continue to agitate for the return of their lands. A relative newcomer to Três Lagoas, Arauco announced plans to build a new pulp factory in 2022, the 'Projeto Sucuriú', with a production capacity of 2.5 mty. The company already controls more than 200,000 ha of plantation land in Brazil.

Combined, these companies plan to increase eucalyptus pulp production around Três Lagoas to twice its current level. The area under eucalyptus plantation has also ballooned, with 1.2 million ha of eucalyptus plantation recorded in Mato Grosso do Sul in 2020. This exceeds previous projections for eucalyptus cover in 2030. If the industry continues to grow at this pace, it could spell disaster not just for Três Lagoas but for huge swathes of Brazil.

Recommendations

Implement a full and immediate moratorium on expanding or intensifying pulpwood industrial plantations until future impacts have been assessed, and past social and environmental harm has been remedied.

The massive expansion of pulping capacity, and of the related pulpwood plantations, are leading to extensive environmental and social impacts. No further expansion can be carried out while potential consequences to the environment and local communities remain unclear.

In addition to this key recommendation, the industry should immediately:

1. Respect communities' rights and commit to remedy past harms.
 - Fully respect local and indigenous communities' Free, Prior and Informed Consent (FPIC) and land rights, and publicly commit to remedy past harm where FPIC has not been respected.
 - Publicly condemn violent gatherings by third parties aimed at intimidating or repressing Indigenous land reclamation activities
2. Embrace transparency.
 - Publish, as a matter of course, environmental impact assessments, land acquisition agreements, consultation meeting minutes and other relevant materials.
3. Bring working conditions in line with ILO and national standards.
 - Guarantee workers' right to join a union of their choice (regardless the state of the union's formal recognition)
 - Guarantee adequate working conditions, including lodging, toilets and decent places to have lunch or other breaks.
 - Ensure workers are not exposed to working conditions that can lead to illnesses, including from operating machines or dealing with toxic substances.
4. Abandon attempts to challenge local legislation that seeks to limit further expansion of plantations.

Buyers, investors and financiers profiting from the depletion of an entire region, should use their leverage to demand these companies address the ongoing impacts of the industry and fully comply with the recommendations in this report. In the case of noncompliance, relationships with the industry actors concerned should be suspended.

In the medium term, companies and buyers need to adopt policies, public commitments and behaviours that can pave the way for more comprehensive remedy for past harms, and more just business practice in future. All such policies and plans must be openly discussed, developed and agreed alongside impacted communities.

Some of these measures are spelled out in more detail in the full report, [Scorching the earth](#).