



WWF

**AGRICULTURE
PROGRAM**

2017

ENG

Photo: Tiago Forest

An Inside View of

MATOPIBA

INTRODUCTION

The Cerrado biome is the largest Savannah region of South America and accounts for the richest biodiversity on Earth, with 44% of endemic plants. It is also the second largest natural formation of the continent and covers one quarter of the Brazilian territory, 2M km² (over 770 square miles) - equal in size to the combined territories of Spain, France, Germany, Italy and the UK. The Cerrado constitutes a third of Brazil's biodiversity and is considered a 'cradle of waters' since it is critical to eight of the 12 Brazilian river basins. The headwaters of all southern tributaries of the Amazon River (except for the Juruá and the Purus), as well as several rivers in the states of Maranhão and Piauí, is in the Cerrado.

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This brochure is a compilation of data about a specific area of the Brazilian Cerrado in the states of Maranhão, Tocantins, Piauí and Bahia, or MATOPIBA.
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The MATOPIBA region is Brazil's current agricultural frontier. In recent years, its native vegetation has been in large

part cleared for soybean and livestock farming. Brazil's Forest Code legally allows for clearing up to 80 percent of areas covered by rural properties in the Cerrado, so there is a legal shield for continued and dramatic conversion of native habitat for agriculture.

Several factors may accelerate the current trend of clearing MATOPIBA lands in 2017 and the coming years: an increase in rainfall after 5 years of drought (resulting in increasing profits and returns for producers); improvements in the Brazilian economic situation; new regulations that permit land purchases by foreigners; an increase in the competitiveness of Brazilian soy; and possible changes in the licensing regime for livestock farming.

MATOPIBA is currently the target of intense property speculation. Recent studies about key municipalities in this region indicate an average price increase of about 2,000 percent between Cerrado lands in 2005 and cleared lands in 2016.



Photo: Tiago Forest

OBJECTIVE

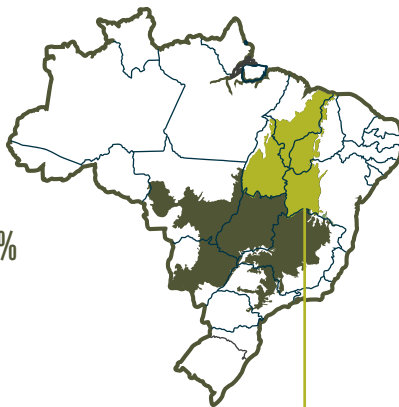
Our aim is to foster intersectoral dialogues about the future of MATOPIBA region to facilitate the consideration of not only economic but also social and environmental factors. We here present key social, economic and agricultural data painting a picture of current threats and opportunities for the region. We seek to show that soy and beef commodities may be produced in MATOPIBA without destroying the

Cerrado's uniquely biodiverse habitats and ecosystems.

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CERRADO BIOME

Mato Grosso, Mato Grosso do Sul, Goiás, Distrito Federal, São Paulo, Minas Gerais, Tocantins, Maranhão, Piauí e Bahia.



CONVERTED AREA IN THE CERRADO: 50%

The conversion of the Cerrado between 2003-2013 emitted 870 million tons of CO₂, which means 93 tons of CO₂ per hectare.

TOTAL AREA OF OVER

73 MILLION HECTARES

corresponding to 51 percent of the area of the four MATOPIBA states.



Local communities

Rural communities have settled in primarily in valleys between plateaus due to the presence of water bodies and non-timber forest products. Many settlers do not have legal land titles, while others live in Legal Reserves and permanent preservation areas of legally recognized properties.

Cities

Most cities experienced rapid and unplanned urbanization, offering poor public services and inadequate sanitary conditions.

Income

The GDP per capita in MATOPIBA is less than half of Brazil's per capita GDP, lower than the average GDP of the wider northeast region in which it is situated.

Matopiba: population of 5.9 million inhabitants across 337 municipalities including indigenous and Quilombola communities (current inhabitants of rural black communities formed by descendants of enslaved Africans, who live mostly on subsistence farming on land donated, purchased or occupied for a long time), coconut shellers, family farmers, and medium to large agricultural producers and livestock farmers.

6.1 MILLION HECTARES COVERED BY

NATIVE VEGETATION



with high or medium levels of suitability for clearance / conversion.

LOGISTICAL COSTS

Logistical costs in the MATOPIBA region are 30% to 50% lower than in Sorriso, Brazil's last agricultural frontier in Mato Grosso state, with consequently higher soybean profits for producers from MATOPIBA.



IT IS NOTED THAT THE HUMAN DEVELOPMENT INDEX (HDI) HAS GROWN IN THE REGION. HOWEVER, THE GINI COEFFICIENT SHOWS A PICTURE OF SOCIAL INEQUALITY.

GROWTH OF
253%

From 2000 to 2014: soybean areas experienced a 253 percent increase from 1M to 3.4M hectares. The largest part of MATOPIBA's agricultural expansion took place in areas previously covered by native vegetation

FROM 1 MILLION TO

3,4 MILLIONS HECTARES OF SOYBEANS



(source: Agroicone/INPUT)

Expansion into native Cerrado vegetation.

(source: Agroicone/INPUT)

2000 - 2007



19%
out of Matopiba

68%
within Matopiba

2007 - 2014



6%
out of Matopiba

63%
within Matopiba

Studies indicate **conversion of 6.6 M ha with low productive capacity** - with risks of desertification and collapse of ecosystem services. Evidence of the lack of spatial planning of expansion.

Recent studies about key municipalities in this region indicate **an average price increase of about 2,000 percent** between Cerrado lands in 2005 and cleared lands in 2016.

Harvest

Harvest In the 2015 to 2016 harvest, the MATOPIBA region accounted for 9.28% of grain production in Brazil (Source: CONAB).

Photo: Tiago Forest

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There is a significant social risk and vulnerability of local communities, due to the absence of land title, rural exodus, conflicts of different orders with the soybean chain, crisis in public services due to the swelling of cities, among others.

A SNAPSHOT OF MATOPIBA

Obtained from the travel report of EXPEDIÇÃO MATOPIBA [“MATOPIBA Expedition”], carried out by the civil society organizations participating in the Working Group on Soybean (GTS) from September 19 to 30, 2016. Their report was based on a series of interviews and field perceptions.

PRODUCTION OF AGRICULTURAL COMMODITIES:

MATOPIBA's terrain is appropriate for industrial agricultural production. Access to technology is increasing in the region, and some agricultural research centers, funded by agribusiness, are contributing to local capacity. These centers are working on genetic crop improvements and developing techniques suited to the climate and vegetation of this region, quite distinct from the conditions in Brazil's other agricultural production zones, such as Mato Grosso. Technological developments have been achieved through partnerships with leading genetic engineering and transgenics companies, like Embrapa and Monsanto, respectively. Despite recent value chain expansion, soybean production has not generated a lot of employment in MATOPIBA. It nonetheless remains relevant for the local economy, offering unskilled work opportunities for rural inhabitants.

PRODUCERS' PROFILE:

Farmers in MATOPIBA rely on relatively industrialized production: their properties usually exceed 2,000 hectares, with 10 percent of all rural properties occupying approximately 70 percent of the land area. However, less than 10 percent of the region's soy farmers have adopted soil conservation practices, such as no-till farming.

LAND CLEARING:

Clearing land is frequently used in MATOPIBA as a mechanism to assert land possession, even in cities. Large areas are being cleared and left barren, in some cases, with crops covering less than 30% of cleared areas. This generates unnecessary soil exposure, habitat loss, and threats to endangered species—risking the collapse of ecosystem services. In one dramatic case, 60,000 hectares were legally clear-cut on a single



property in Piauí. Public banks, including the regional Bank of Northeastern Brazil, continue to fund such clearance practices in the Cerrado.

LAND GRABBING AND SPECULATION:

Land titles are problematic throughout the region. Municipalities in Bahia, Piauí and Maranhão have at least three times more area legally registered via notarized purchase or sale contracts than their states' actual area. Many fraudulent titles have been linked with illegal land-grabbing.

Land speculation has also become a driver of land use change. The price of land that is cleared, registered and titled can jump from US \$60/ha to anywhere between US \$5,000 and \$15,000 per hectare. Appreciation of up to 2000 percent between 2005 and 2016 has attracted speculative interest from international investors and pension funds, intensely accelerating irregular land possessions and land clearance in the region. Recently approved national regulations that authorize the land purchases by

private foreign entities may aggravate this troubling trend.

Despite the absence of official figures, public information available about the property holdings of key companies in MATOPIBA suggest that at least 1M hectares are now controlled by 10 leading companies, including: Radar (of the Cosan Group); Brookfield BR (a Canadian investment fund); SLC Agrícola (a company from Rio Grande do Sul that is publicly held at BM&F Bovespa); Brasilagro (controlled by an Argentine group Cresud and is publicly held at BM&F Bovespa); Insolo (controlled by the Ioschpe family); Agrinvest (financially supported by a US fund); Ceagro (controlled by Argentine group Los Grobo); Tiba Agro (controlled by Vision Brazil Investments); Agrifirma (an investment fund); XinguAgri (a subsidiary from the multigrain trading company, controlled by the Japanese group Mitsui); Calyx Agro Brasil (an investment company active in areas controlled by Louis Dreyfus Commodities and AIG Investments); and Sollus Capital (an investment company active in areas controlled by Vinci Partners, Touradji Capital Management and Grupo Los Grobo).

AGRICULTURAL SUITABILITY:

Immediate plantation of soybeans the first year after land-clearing is the norm in MATOPIBA. The following step-by-step sequence has been reported for the overall process: clearance of Cerrado areas with tractors and heavy chains; bundling of branches; burning of bundles; manual collection of branches and roots; second burning; plowing; fertilization and limestone correction (repeatedly with up to 12 tons of limestone per hectare in some regions); plough use; mineral fertilization and soybean planting.

CLIMATE CHANGE:

Agricultural production in MATOPIBA is naturally limited by an average



yearly precipitation rate of 800mm to 1,200mm and a concentration of rain during specific periods of the year. Rarely, it is possible to cultivate a second little harvest, or “safrinha”, during years with good rainfall. Locals report that the region tends to experiences 3 to 4 years of consecutive drought, followed by 6 to 8 years of rain. This 2016 was the fourth year of drought, so producers expect several good harvests beginning in 2017. A negative consequence of such expectations is the increased threat of new land clearing. A TNC study, which analyzed the precipitation trends in the western part of Bahia state during a 30-year period, found increasingly frequent and varied extreme rain events and a generalized decrease in river flows. These are worrisome trends for a region that depends on one aquifer, which, in turn, needs to be replenished by rains and contributes to the river flows. The high plateaus that constitute these replenishment areas are precisely the areas most targeted by agribusiness. To ensure water security, the adoption of good agricultural practices in these critical areas of MATOPIBA must not be the exception, but the rule.

IRRIGATION:

The most frequent irrigation method is the use of central pivots on 140,000 hectares of MATOPIBA. Due to an acute reduction in the river flows in 2016, producers from the Barreiras region in Bahia agreed to rationing, including the suspended use of pivots during the driest season. Despite regional capacity recommendations, currently projects seek to expand the use of pivots to up to 500,000 hectares.

WATER SECURITY AND QUALITY:

A decrease in water availability has been observed as a result of land clearing, soil compression, irrigation and drought. Local communities also report decreasing fish catches and increasing droughts affecting subsistence crops due to the construction of dams around farms and the use of agrochemicals, which not only poison and kill fish and other animals but have also been linked to human health concerns, including diarrhea, nausea, and itchiness. The frequent practice of spraying agrochemicals by crop dusters jeopardizes the production of organic and agroecological products by local communities in MATOPIBA.

CERTIFIED PRODUCTION:

Certified products are still rare in MATOPIBA, but a great potential for expansion exists. The new Round Table on Responsible Soy (RTRS) standard establishes that farms cleared before June 2016 are eligible for certification, if they do not promote further clearing on their property. Certification is a promising process for promoting best practice adoption and publicizing a producer's commitment to responsible production and the elimination of land clearing in the Cerrado to the most discerning markets. The Foundation to Support Research in the Northern Exports Corridor (FAPCEM) in Balsas Municipality, Maranhão state is working to expand the number of certified farms with the RTRS seal in MATOPIBA.

IMPROVED INFRASTRUCTURE:

Logistical costs in MATOPIBA are 30 to 50 percent lower than those in Sorriso, Mato Grosso, a key point of reference for agribusiness in Brazil. Most of the important roads in the MATOPIBA region are in good condition, and rural roads maintained in good conditions—often by local producers. The Transcerrado highway, which

cuts through 340 km along of most productive region in the Piauí state, is currently being paved. Moreover, a railway in the final stage of construction will connect the farming region to the country's northeastern ports. All large ports of the region are slated for expansion projects; the Itaqui port in Maranhão is expected to double its capacity. Finally, feasibility tests are underway for the Tocantins-Araguaia waterway, including transshipment terminals.

REGIONAL MARKET

The northeast region of Brazil boasts a large-scale poultry industry. According to producers' estimates, in the states of Piauí and Maranhão, poultry farms buy 20 to 30 percent of the soybean production, and over 50 percent of the region's corn and millet harvests (up to 100 percent in some areas). Studies highlight that the existence of different markets increases producers' ability to negotiate and income security. On the other hand, such demand may stimulate even more land speculation or clearing.

FUNDING:

Although the interest rates of trading companies are higher than those of public banks, the participation of trading companies and other private actors in financing production was significant in 2016. This is because producers lacked finance due to a both several years of drought and difficulty accessing public

finance through the Brazil's national "Plan Safra." Available evidence shows a strong correlation between trading company finance activities and expanded conversion of the cerrado through the clearing of new land. Public banks, such as Banco do Nordeste, have provided funds for land clearing with few restrictions.



Photo: Tiago Forest

100%
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Why we are here

To stop the degradation of the planet's natural environment and
to build a future in which humans live in harmony with nature.

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