

TECHNICAL NOTE – DECREE No. 14.273 of 8 October 2015

RESTRICTIVE USE AREA OF PANTANAL IN MATO GROSSO DO SUL

REVIEW

With the enactment of the Federal Law 12.651 in May 2012, which refers to the protection of native vegetation, became known as the New Forest Code and established a different type of protection system of the Pantanal according to Chapter III – Restrictive Use Area.

Article 10: Ecologically sustainable exploitation is allowed in the marshes and marshy plains considering the technical recommendations of the official research bodies, with new suppressions of native vegetation for alternative land use conditional on the authorization of the state environment body. “

Aiming to adapt to Article No. 10 of Federal Law 12.651/2012, the government of Mato Grosso do Sul requested Embrapa Pantanal technical recommendations that attend Article No.17 of State Decree No. 13.977, of June 2014, which disposes about the Rural Environmental Registry (CAR) of Mato Grosso do Sul and other measures, accordingly with Federal Law 12.651, of 25 May 2012.

On October 2013, the Embrapa Pantanal presented to the Environmental Institute from Mato Grosso do Sul - IMASUL, through a Technical Note, a study with the principles that defined analyses considering specific approaches for Permanent Preservation Areas(PPA); Restrictive Use Area (RUA); according to ecological sustainable human activities in relation do hydrology, pasture cleaning, use of fire for vegetation management, among other topics.

The Technical Note adopts landscape diversity as management parameter to help define criteria for native vegetation suppression through technical knowledge to justify its proposal.

The Technical Note recommends the use of Landscape Diversity Index as a parameter to indicate a percentage of possible native vegetation suppression area. The landscape units are defined by maps of the rural vegetation properties that indicate the formation of cultivated pasture areas. The percentage is calculated based in relation to the original landscape diversity of each property. This indicates the suppression can be 15% of the natural landscape diversity.

The Technical Note was presented to Embrapa Pantanal in reunions with scientific researchers, experts of IMASUL and rural land owners. Due to the difficulty of understanding and relative complexity to implement and operationalize the Landscape

Diversity Index, the search for a new parameter was necessary to enable and license a sustainable ecological exploitation of the Pantanal.

In August of 2014, Embrapa Pantanal presents a new Technical Note that considers Ecological Relevance as an alternative parameter in landscape units. This made it easier for general understanding and, therefore, enabling license implementation and operationalization.

The native vegetation suppression percentage index for cultivated pasture establishment, considering Ecological Relevance parameters, recommended by Embrapa Pantanal are the following:

- 35% Cerrado;*
- 36% Forests;*
- 45% Highlands; and*
- 45% Wetlands*

In case of floodable fields (wetlands), the Technical Note has some remarks to establish necessary strategies to determine in which conditions the substitutions are allowed. It recommends a five year term for reassessment of the legislation parameters considering biodiversity studies developed during that period.

According to the Technical Note of Embrapa Pantanal recommendations, the Federation of Mato Grosso do Sul Cattle Raising and Agriculture - FAMASUL financed the center for Advanced Studies on Applied Economics - CEPEA of Luiz de Queiroz College of Agriculture - ESALQ, of University of São Paulo - USP in developing research to evaluate economic sustainability of cattle-raising in the Pantanal.

The main goal of the research developed by CEPEA/ESALQ/USP was to support the Technical Note presented in August 2014 by Embrapa Pantanal. The report brought a social and economic analysis with emphases on micro economics through the percentage study of cultured pastures in relationship to the total representative property areas. According to the report, the analysis allows the establishment of economic viability of cattle-raising in the Pantanal and the impacts on job generation and income.

One hypothesis brought in the report was the social and economic impacts of substituting native pastures for cultured ones, considering the size of property areas identified in evaluation panels.

The panel methodology consists of group reunions between 8 to 12 regional technicians, researchers and producers appointed by regional rural labor unions. In this

stage, the modal, typical or representative property of production was established, not based on production average of the Pantanal.

Based on these panels, the properties were categorized by the following size: 0 to 5,000 hectares; ,5001 to 10,000 hectares; 10,001 to 20,00 hectares and over 20,000 hectares. The property classifications were elaborated from information templates acquired regarding descriptions; inventories; herds; pastures; agriculture; labor; supplementation; food supply, welfare and medications; and general costs related to administration, energy, insurance, deferred interests, fundings, among other items.

The report presents percentages of cultured pastures for economic viability of Pantanal properties: (1) up to 5,000 hectares 77%; (2) properties between 5,001 to 10,000 hectares 61%; between 10,001 and 20,000 hectares 52%; and above 20,000 hectares 49%. Reminder that this research is not available for public consultation. Only associates of FAMASUL and the government of Mato Grosso do Sul have access.

In October 2015, the state of Mato Grosso do Sul enacted the Decree No. 14.273, that disposes about the Restricted Use Area of Pantanal's floodable plains. It considers the disposal of article 222, paragraph 2 of the State Constitution that foresees compatibility of economic and social development of the State, with preservation, improvement and environmental stability.

According to Decree 14.273/2015, technical recommendations from EMBRAPA PANTANAL were considered– Technical Note "State Decree No. 13.977, of 5 June 2014 disposes about the Rural Environmental Registry of Mato Grosso do Sul and other arrangements, in accordance with the Federal Law 12.651, of 25 May 2012." available at: ([Texto na íntegra: Nota Técnica CAR MS - Pantanal 2014 - Portal Embrapa](#)); The research conducted by Center for Advanced Studies on Applied Economics (CEPEA) at Luiz de Queiroz College of Agriculture (ESALQ), University of São Paulo (USP), "Ecologically sustainable exploitation of the Pantanal biome: an economic and social analysis, in accordance with Federal Law No. 12.651, Chapter III and article 10"; and of environmental state authority, Environmental Institute from Mato Grosso do Sul - IMASUL.

Chapter I still considers: Setting that the Restrictive Use Area limits of the floodable plains of the Pantanal are to be established observing the Ecologic-Economic Zoning of Mato Grosso do Sul (EEZMS), instituted by State Law No. 3.839/2009 , including the Pantaneira Plateau Zone (ZPP), fragments of Miranda Depression Zone (ZDM) and Chaco Zone (ZCH), adapted to the scientific project of the author João dos Santos Vila da Silva and Myrian de Moura Abdon, published in Brazilian Agricultural Research Journal, vol. 33, special number, pg. 17031711, October 1998, under the title, "Delimitation of the Brazilian Pantanal and its subregions", with scale adaptation of 1:50 thousand".

Chapter II of Decree No. 14.273/2015 regarding Native Vegetation Suppression in Restrictive Use Area in Floodable Plains in the Pantanal states that:

Article 13. In the Restrictive Use Area of floodable plains in the Pantanal the suppression of native vegetation in rural properties can only be authorized after previous licensing by IMASUL.

Article. 14. For native vegetation suppression, ecological relevance must be considered with the intent to protect representative samples of biodiversity (Phyto physiognomies) found in rural properties of Restrictive Use Areas in floodable plains of the Pantanal.

Paragraph 1: Representative samples of vegetation diversity (Phyto physiognomies) are considered protected when:

I native vegetation coverage of Phyto physiognomies (landscape units), represented by areas of cerrado formation with elevated tree density and forest formations, are equal to, or above 50% (fifty percent) of the total existing area of the property;

II native vegetation coverage of Phyto physiognomies (landscape units), represented by grassland formations are equal to or above 40% (forty percent) of the total existing area of the property.

Paragraph 2: For positive effects disposed in this article, the area of the property and remaining native vegetation to be considered must be based on the existing situation of May 28 of 2012.

This Technical Note aims to present a deforestation analysis and other impacts with the enactment of the Decree 14.273/2015 that disposes about Restrictive Use Area of floodable plains in Pantanal.

STATE DECREE 14.273 OF OCTOBER 2015 AND REPERCUSSIONS

*The Decree 14.267 enacted in October 2015 mentions taking in consideration the recommendations of three technical studies: Delimitation of the Brazilian Pantanal and its sub-regions (1998) Silva, J. S. V., & Abdon, M. M. -1998; State Decree No. 13.977, of 5 June 2014 disposes about the Rural Environmental Registry of Mato Grosso do Sul and other arrangements, in accordance with the Federal Law 12.651, of 25 May 2012; *Embrapa Pantanal*; "Ecologically sustainable exploitation of the Pantanal biome: an economic and social analysis, in accordance with Federal Law No. 12.651, Chapter III and article 10". Zen, Sergio at al (2014).*

The study Delimitation of the Brazilian Pantanal and its sub-regions considers aspects of floods, highlands, soil and vegetation as criteria for Restrictive Use Area of Pantanal

delimitation. Floods and highlands are the most relevant points for defining these limits due to the importance of these criteria, the Brazilian Institute of Geography and Statistics - IBGE, formalized the boundaries of Pantanal, and through this, supported the considerations made also by the state of Mato Grosso do Sul on the Decree 14.273/2012 scope.

The Decree also considers Ecologic-Economic Zoning of Mato Grosso do Sul (EEZMS) in the Restrictive Use Area delimitation, instituted by the State Law No. 3.839/2009. Besides the Pantaneira Plateau Zone (ZPP), fragments of Miranda Depression Zone (ZDM) and the Chaco Zone (ZCH) also increase the areas of protection.

The Technical Note presented by Embrapa Pantanal, institute which developed research for more than 40 years in the Biome, in response to the State of Mato Grosso do Sul request to attend article 10 of the Federal Law No. 12.651/2012, was presented criteria to define native vegetation substitution management using "Landscape Diversity Index" parameters.

This index does not require previous knowledge on biodiversity in each property, nor about the ecological processes involved, even though it is an important tool for understanding soil management in Restricted Use Area- Pantanal. This allows any part of Pantanal to be vulnerable.

The Landscape Diversity Index considers certain criteria that help establish ecological sustainable use of Restricted Use Area- Pantanal, meeting requirements of Article 10 of Federal Law No. 12.651/2012. The index considers the diversity of landscape units and establishes a maximum of 15% alteration in each property.

The technical note also defined criteria on the amount and localization of native vegetation areas that could be substituted. It also determined which types of vegetations were more suitable in each case. In this sense, the study demonstrates that biodiversity is directly related with habitat diversity in a landscape.

The management parameters of landscape units defined in the technical note establish criteria for native vegetation substitution. It was based on solid knowledge to justify its appropriate use and meets effectively the ecologic sustainable exploitation determined by article 10 of Federal Law No. 12.651/2012.

The technical note was presented in reunions with researchers, technicians from IMASUL and rural producers. There were certain difficulties in comprehension about the Landscape Diversity Index, specially by those who lacked technical understanding of the proposal. IMASUL technicians claimed a relative complexity in the implementation and operationalization of the presented proposal. Nonetheless, the major obstacle was the acceptance of the 15% suppression per landscape unit.

Faced with this fact, researchers from Embrapa Pantanal reevaluated the proposal and presented a new technical note in August 2014. It used Ecologic Relevance parameters

of the types of vegetation (landscape units) and established criteria of native vegetation substitution.

According to Embrapa Pantanal (2014), "The motivation to estimate the ecologic relevance comes from the traditional occurrence of cultured pasture formations on highlands (not floodable) and cerrados. This is due to low costs and convenient allocations, and, in addition, constitute native pastures with relatively low support capacity for cattle".

Embrapa Pantanal (2014) also states that most of Pantanal's endemic land species are found in these areas, which are also habitats for various endangered and migrating species of this specific environment. Therefore, it is considered unsuitable to substantially eliminate or reduce these environments for cultivated pasture formations.

The Embrapa Pantanal (2014) technical note did not meet expectations of rural producers about the established percentages of native vegetation suppression. In response, the

Federation of Mato Grosso do Sul Cattle Raising and Agriculture - FAMASUL financed CEPEA/ESALQ/USP study entitled: "Ecologically sustainable exploitation of the Pantanal biome: an economic and social analysis, in accordance with Federal Law No. 12.651, Chapter III and article 10".

According to CEPEA/ESALQ/USP (2014,) the research report, presented to the contracting party and their associates, had the objective to evaluate economic viability of rural properties in Pantanal - farms. It also thrives to support the technical note of Embrapa Pantanal (2014), considering economic and social aspects. Only FAMASUL, its associates, and the State Government have access to the research study report.

The methods used consider information provided directly from rural land owners relative to the property's descriptions, such as the following: size, infrastructure, herds, pasture areas, agriculture, labor supply, supplementation, food supply, wellness and medication, and general costs related do administration, energy, insurance, deferred interest and fundings, among many other aspects.

As stated previously, Decree No. 14.273/2015, CHAPTER II, article 14, regarding native vegetation suppression for alternative use of the soil in floodable plains of the Pantanal: "for the native vegetation suppression, the ecologic relevance must be considered with the intention to protect representative samples of different types of vegetation (Phyto physiognomies) present in grassland properties located in Restricted Use Area of floodable plains in Pantanal. "

However, as defined in Paragraph 1 "regarded of the representative samples of different types of vegetations (Phyto physiognomies)", it is allowed "that native vegetation cover of Phyto physiognomies (landscape units), represented by areas of cerrado with increase tree density and forest formations, a percentage of 50% or higher

in the total area of existing properties";

It even permits that " the native vegetation cover by Phyto physiognomies (landscape units), represented by floodable grassland formations can be present in 40% or more in the total existing property."

Article 14 of Decree No. 14.273/2015 states that the suppression index of vegetation is grounded on "environmental relevance" parameters defined by Embrapa Pantanal (2014). It also recommends that the vegetation suppression boundaries consider landscape units of 35% of cerrado; 36% forests; 45% highlands and 45% floodable fields (Table 1.). However, the Decree No. 14.273/2015 grants permission of up to 50% of forest and cerrado landscapes and 60% of floodable grasslands- Highlands and Wet fields (Table 1).

Even though article 14 informs that, for the suppression of native vegetation, it contemplated ecologic relevance aiming to protect representative samples of vegetation diversity (Phyto physiognomies), the Decree No. 14.273/2015 is based on indicators designed by CEPEA/ESALQ/USP (2014) report. (Table 1).

Embrapa Pantanal	CEPEA/ESALQ/USP	Decree 14.273/2015
Cerrado 35%	Up to 5,000 ha 77%	Forest and Cerrado 50%
Forest 36%	From 5,001 to 10,000 ha 61%	
Highland 45%	From 10,001 to 20,000 ha 52%	Grassland formations 60%
Floodable Fields 45%	Above 20,000 ha 49%	

Table 1: Comparative Suppression Index

In this context, even though the research report of CEPEA/ESALQ/USP is a complementary study of the Embrapa Pantanal technical note, the state sanctioned a Decree considering native suppression percentual close to the ones mentioned by the economic viability study. (Table 1).

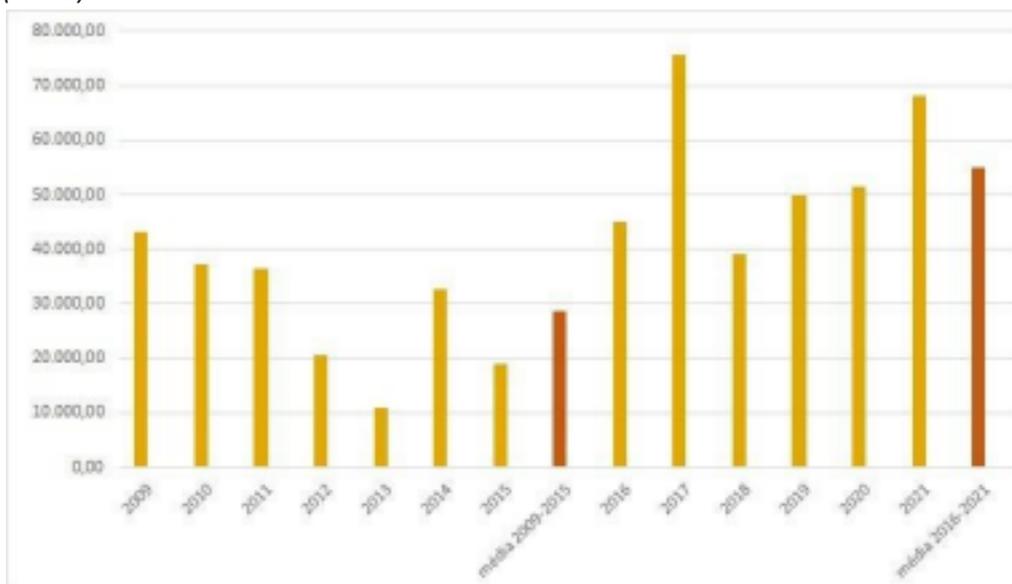
It is valid to emphasize that the concept of "ecologically sustainable" considers nature parameters to determine the forms and boundaries that should regulate economic activities. Therefore, economic sustainability depends on nature's capacity to sustain economic activities. Without environmental quality, the economy will not maintain itself on the long run.

The main fundamental principles to establish the concept of ecologically sustainable are the three following: (1) biodiversity conservation, (2) the preservation of ecologic processes, and (3) and resilience (ecosystem's capacity of recovery). Consequently, the

evaluation of economic viability should embrace all the fundamental concepts mentioned.

Considering CEPEA/ESAQ/USP study premised economic viability without contemplating parameters or criteria related to environmental impacts, Decree No. 14.273/2015 observes the harm of economic viability on ecologically sustainable use. This enhanced permissiveness related to the technical note of Embrapa Pantanal (2014), which lead to an increase in license requests for native vegetation suppression in the Pantanal.

This increase in license requests became more evident when compared to the annual average of 2009 - 2015 and 2016-2021 period. According to the Center of Geotechnology of Public Ministry of the State of Mato Grosso do Sul – NUGEO, of the Public Ministry of the State of Mato Grosso do Sul – MPE/MS (2023), in 2009 to 2015, the annual suppression average was 29 thousand hectares/ year. Whereas, in the period of 2016 to 2021 was 54 thousand hectares/ year (Figure 1). The increase in vegetation suppression licenses reflects directly on the speed of daily deforestation and devastated areas throughout the years. This was alerted by MapBiomass of Brazil (2023).



Graph 1: Suppression license granted by IMASUL-NUGEO 2023- direct communication

MapBiomass Alert is a system that validates and refines deforestation alerts with high resolution images created in 2019. It is a free and open access platform, that gathers all deforestation alerts in the country's territory and cross them with relevant information such as authorizations, embargoes, property's registry numbers, protected areas, indigenous lands, and Forest Management Plans.

It is important to remember that deforestation alerts identified in the Pantanal by MapBiomass does not make cross references with granted licenses released by the State of Mato grosso do Sul. This occurs because the licenses granted by the Sate government are not accessible in IMASUL website. However, it is certain that more than 400

thousand

licensed hectares in the Pantanal of Mato Grosso do Sul since 2016, based on the Decree No. 14.273/2015, have no legal or scientific support or foundation.

Federal Law No. 12.527, passed on November 2011, guarantees transparency in information management. It reinforces that people have the right to an ecologically balanced environment granted by the Federal Constitution of 1988, therefore, every license should be available for public access.

The lack of transparency of INAMSUL in regards to the amount of license granted on native vegetation suppression in Pantanal of Mato Grosso do Sul makes it difficult to compare and analyze the relationship between deforestation, identified by MapBiomass, and license release. This fact jeopardizes the understanding of when deforestation is legal or illegal in the Pantanal.

Since MapBiomass Alert was only created in 2019, the deforestation analyses of the Pantanal were perceived from the period of 2019 to 2022. The analysis considers Pantanal's total territory (Mato Grosso and Mato Grosso do Sul). However, the deforestation proportion is separated per state, with special interest in Mato Grosso do Sul.

In 2019, MapBiomass Alert registered 212 alerts in the Pantanal. This is an average of 39.7 hectare/day. In Mato Grosso do Sul the daily average was 33.2 hectare/day. The total deforestation area was 14,522.9 hectares, from this, 12,134.4 hectares were in Mato Grosso do Sul and 2,388.5 ha in Mato Grosso. (Figure 1)

Among the municipalities that most deforested in 2019, the following ones stand out: Corumbá; Murtinho Port; Aquidauana; Rio Verde of Mato Grosso, all in Mato Grosso do Sul. Only Cáceres, the fifth place, is located in Mato Grosso. (Figure 1)

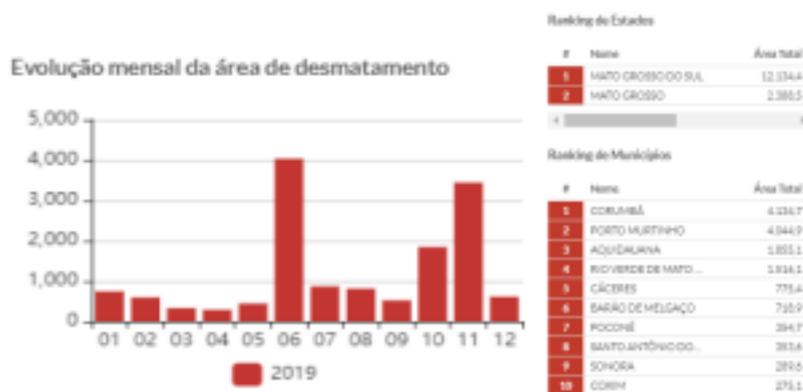


Figure 1:

Deforestation evolution in 2019 – Font: MapBiomass: 2023

In 2020, MapBiomass Alert identified among 213 alerts, the daily speed of deforestation was 70.3 hectares per day and a total of 25,679.5 hectares of deforested area. Once again, in Mato Grosso do Sul, the damage was higher: 24,723.5 hectares; while in Mato Grosso, only 956 hectares. The deforestation rate in Mato Grosso do Sul reached 67.7

hectares per day, meanwhile, in Mato Grosso the rate was 2.61 hectares per day. (Figure 2)

In 2020, the 5 municipalities that most deforested the Pantanal are located in Mato Grosso do Sul. Corumbá presented the largest area of deforestation, then Aquidauana; Rio Verde of Mato Grosso; Murtinho Port; and Coxim.



Figure 2:

Deforestation Evolution in 2020 – Font: MapBiomas: 2023

Following a pattern, in 2021, the daily average of deforestation reached 76.8 hectares per day. This was identified from 300 alerts, making a total of 29,911.5 hectares of deforestation. Once more, the rate of deforestation was higher in Mato Grosso do Sul than in the Pantanal of Mato Grosso. The deforestation rate in Mato Grosso do Sul was 76.9 hectares per day, while Mato Grosso presented 5.1 hectares per day. (Figure 3).

Once again, the Pantanal of Mato Grosso do Sul lost more native vegetation area, 28,061.9 hectares, while Mato Grosso lost 1,849.6 hectares. Municipality of Cáceres in Mato Grosso ranked 4th place in Pantanal deforestation. This year, the municipality of Aquidauana came in first place, surpassing Corumbá in deforested area and Murtinho Port, successively. All of them located in Mato Grosso do Sul. (Figure 3)



Figure 3: Deforestation Evolution in 2021 – Font: MapBiomas: 2023

According to MapBiomas Alert, well-established data of 2022, the deforested area of the Pantanal was already 30,498.4 hectares. There were 277 alerts, with a daily

average of 83.6 ha and 70.1 ha only in Mato Grosso do Sul. Mato Grosso also increased its deforestation rate to 13.4 hectares per day. Of the total deforested area, 25,574.4 hectares were in Mato Grosso do Sul and 4,924.0 hectares in Mato Grosso.

Once again, 4 municipalities out of 5 were located in Mato Grosso do Sul with the most deforested area. Corumbá came in first place, then Port Murtinho, Aquidauana, and Rio Verde of Mato Grosso from Mato Grosso do Sul. In Mato Grosso, Santo Antônio de Leverger ranked 4th place.



4: Deforestation Evolution in 2022 – Font: MapBiomas: 2023

The speed of deforestation increased drastically from 39.7 hectares per day to 83.6 hectares per day in 2019. This changed significantly Pantanal’s landscapes. The increase supports directly the impact of the publication of Decree 14.273/2015.

Proven facts were obtained by photographs taken in overflights in the Pantanal of Mato Grosso do Sul. The landscape alterations are visible (PHOTOS 1, 2, e 3). Another concerning factor observed in the overflights on February 2023 was the amount of soybean planting in the Pantanal of Mato Grosso do Sul (Photos 4 and 5).



Photo 1: Deforested Area– Detail: Lagoon



Photo 2: Deforested Area



Photo 3: Deforested Area

RESTRICTIVE USE AREA – SOYBEAN

The economy of Mato Grosso do Sul is centered in agricultural business. It has the fifth largest herds in Brazil with over 19 million cattle. The municipality of Corumbá has the second largest cattle herd in Brazil with over 1.7 million cattle raised in 18,296,396.82 hectares of state territory (SIGA, 2022).

Agriculture is an important activity in Mato Grosso do Sul. It is the fourth largest state in Brazil in soybean production. According to SIGA (2022), soybean production has increased plantation areas year after year. For example, between the harvest of 2021 and 2022, there was an expansion of 131,153.08 hectares of plantation area.

In Pantanal, extensive livestock farming is the main economic activity, which has existed in harmony with nature for centuries. However, with the increasingly different territories occupied by soybean production, the Pantanal is now directly threatened. This is an astonishing fact, since the Forest Code establishes that this biome is a Restrictive Use Area and Ecologic-Economic Zoning of Mato Grosso do Sul (ZEE/MS) characterizes the Pantanal as a Pantaneira Plateau Zone (ZPP), recommended only for extensive livestock farming and ecotourism.

It is worth mentioning that even though Federal Law 12.651/2012 considers the Pantanal a Restrictive Use Area, soybean crop cultivation is taking place. Even with the existence of usage and occupation criteria related to vegetation suppression, extensive livestock farming and ecotourism, the decree No. 14.273 is very fragile. This can be

observed with the increase of licenses, which consequently leads to a significant increase in deforested areas.

This decree is also very omissive when referring to the establishment of intensive activities in restrictive use area, especially for not being explicit on banning corn and soybean production. Furthermore, to reach crop plantations, a lot of different toxic chemical products are used in large quantities and present high toxicity, especially in environments where floods take place.

What is more concerning, is that researchers from Mato Grosso State University- UEMS; and the Federal University of Mato Grosso do Sul- UFMS, conducted experiments with the objective of establishing soybean and sorghum culture in Restrictive Use Area- Pantanal. The study developed and coordinated by researchers of UEMS under the title: "Performance of soybean genotypes in soil and climatic conditions of the Cerrado Pantanal ecotone, " main goal was to establish the performance of soybean genotypes in the municipality of Aquidauana. All this to identify the variety of soybeans that could be cultivated in the region.

In the study, the area was fertilized with 300 kg/ha of chemical composts formula 04-30- 10, where insecticides and fungicides were used for seed treatments. The active ingredients consisted of Fipronil + Pyraclostrobin + Thiophanate methyl. In the period of soybean blooming, Endossulfan was used against brown and red-banded stink bug. During the period of vegetative growth, the insecticide Diflubenzuron was used to kill the velvet bean caterpillar.

To guarantee a full healthy culture cycle, Azoxystrobin + Ciproconazol fungicides were applied to control and prevent anthracnose disease, end-of-cycle disease (DFC), Asian rust, brown spot, oidium, among others.

The effects of biocidal products in the soil are based in the following three factors: (1) chemical structure and properties of the compound, (2) physical, chemical and biological characteristics of the soil, and (3) environmental conditions. When released in the environment, the distribution of the compounds is very complex due to the partition phases of the dynamic process: (1) aqueous and biota phase, (2) aqueous and sediment phase, and (3) sediment and residing biota.

The effect and magnitude of biocides in the environment basically depends on the process of retention, transporting, transmission and transformations that occur in each part of the soil-water-plant-atmosphere system. Its intensive use, which is necessary for soybean production, puts the biome at risk due to the floodable environments.

Faced with the confirmation of existing soybean plantations in the Pantanal of Mato Grosso do Sul, it becomes evident that the Pantanal Plateau is seen as a new agricultural threshold. To plant soybeans in the Pantanal means to remove field landscapes, mountain ranges, drainage network, bays, capons, among other

environments that compose the Pantanal.



Photo 4: Overview of deforested area. In the background, soybean plantations.



Photo 5: Overview of deforested area. In the background, soybean plantations.

Large scale agriculture production uses molecules with biocidal activity (insecticides, fungicides, herbicides and nematicides) for pest, diseases and invading plant control that cause economic damage in plantations. Besides the toxic active principles, most of these products contain potential polluting elements and compounds, such as heavy metals, surfactants, emulsifying agents, among others.

According to Federal Law 12.651/2012 of Chapter III, article 10, native vegetation suppression and the alternative use of Pantanal soil is the State's jurisdiction and must follow technical recommendations of official research institutions for sustainable ecologic exploitation;

Considering that the Government of the State of Mato Grosso do Sul requested the recommendations of soil usage and native vegetation suppression and took in account "environmental relevance" present in the technical note of Embrapa Pantanal 2014;

Considering FAMASUL financed a study of economic viability of Pantanal farms for CEPEA/ESALQ/USP towards native vegetation suppression;

Considering that Decree 14.273/2015 determined the index of native vegetation substitution based on economic viability (CEPEA/ESALQ/USP,2014), harming ecological relevance (Embrapa Pantanal,2014).

Considering the increase in the number of licensed areas for native vegetation suppression of the Pantanal, due to Decree 14.273/2015 enactment;

Considering the existence of soybean culture plantations in Restrictive Use Area-Pantanal;

Considering that Decree 14.273/2015 and IMASUL are omissive to soybean culture plantations in Restrictive Use Area-Pantanal;

Considering that the technical note of Embrapa Pantanal (2014) recommends a revision of the Decree after 5 years of operation;

Considering the list of motivations and results presented in this Technical Note;

This Technical Note recommends, based on Prevention Principle, that IMASUL stops immediately environmental license release for native vegetation suppression in the Pantanal of Mato Grosso do Sul. According to MapBiomas Alert (2023), the area of deforestation reached 92,494.2 in the past 4 years.

The technical note also recommends based on Precautionary Principle, that all licenses released and not exercised should be suspended. Considering that the annual average in the period of 2016 to 2021 was 57 thousand hectares per year, the amount of licensed area for deforestation overcame 378 thousand hectares, without adding licensed emitted in 2022.

Another recommendation of this technical Note is that the State of Mato Grosso do Sul legislates a prohibition of soybean plantation and other food culture that use toxic chemical products in large scale in their production systems.

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