


JUST A QUICK FLIGHT: AIRBORNE DISPERSION OF PESTICIDES, TRADITIONAL COMMUNITIES IN MARANHÃO, AND ECOLOGICAL TRANSFORMATION

 <https://doi.org/10.56238/arev7n3-102>

Submitted on: 02/12/2025

Publication date: 03/12/2025

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ABSTRACT

The study attentive to the global urgency on the protection of human rights and the environment aims to analyze the decision-making of institutions and agencies on the aerial dispersion of pesticides in agricultural areas close to traditional communities in the municipalities of Buriti and Timbiras, in Maranhão, as an affront to the protection of human rights, socio-environmental plurality, economic and cultural aspects of these communities that interact in different biomes and ecosystems in rural areas. The research is based on Convention No. 169 of the International Labor Organization – ILO, the Sustainable Development Goals (SDGs) of the United Nations (UN) 2030 Agenda, the Ecological Transformation Plan (PTE), and the Maranhão 2050 Plan. The theoretical framework sees the widespread use of pesticides in Brazil as molecular violence that reaches human cells and other animals and causes damage to health and the environment that is not yet fully known. The violence comes from a geography of the abyss encouraged by European countries that allow the export of pesticides banned in their territories to producers of agricultural commodities, promoting a risky society (Bombardier, 2023; Beck, 2010). The methodology adopted is exploratory, descriptive, inductive, and documentary, with an examination of the connections between pesticides, traditional communities, and environmental protection. With an inductive and qualitative approach, the research strategy used is the case study of the aerial dispersion of pesticides over traditional communities, between 2021 and 2024, in the municipality of Buriti and Timbiras in Maranhão. As a result, there is a continuous vulnerability of those traditional communities, and the isolated and seasonal action of the various agents involved will not solve the problem. The enjoyment of human rights without obstacles must be full, uninterrupted, and unrestricted, provided that actions effectively coordinated, implemented, and evaluated by bodies and institutions with and between the various levels are urgently carried out.

Keywords: Human rights. Environment. Pesticides. Air dispersion. Traditional Communities. Maranhao.

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INTRODUCTION

Maranhão leads violence in the countryside, illiteracy, and food insecurity (CPT, 2022), in addition to being in the news that the state where possible environmental and people's health crimes related to pesticide spraying would be mainly affecting the communities of Carranca, Capão, Belém, Angelim, Cacimbas, Mato Seco, Brejinho, Baixão, and Araçá. In the latter community located in Buriti, Maranhão, the case of a child hit by poison received national repercussions. (Brasil de fato, 2023).

The pesticide is used by farms in the interior of the state as a technique that provides the regular growth of monocultures, such as soybeans, for large-scale production purposes. The proposal is to place Maranhão as a major producer of agricultural commodities whose soybean production reached the value of more than ten million reais, with monoculture being the leader in production value and quantity produced (Brazilian Institute of Geography and Statistics, 2022).

Alongside this intense productivity of agricultural commodities, there are investigations into the spraying of pesticides in the region of the Carranca and Araçá communities, in the rural area of the municipality of Buriti and also in the municipality of Timbiras, both in Maranhão, where it would have affected and caused problems to the health and integrity of the residents of the localities. The investigations describe serious violations of the rights to health and physical integrity, due to the dispersion, with the use of airplanes, of pesticides on some traditional peoples and communities in that locality (State Public Prosecutor's Office, 2021; Federal Public Prosecutor's Office, 2021; 2024).

Given this economic and social obstacle, the study aims to analyze the decision-making of institutions and bodies, such as the Judiciary in Maranhão, the Federal and State Public Prosecutor's Office, the State Public Defender's Office, Secretariats, the Maranhão State Agency, the Commission on Human Rights and Minorities of the Chamber of Deputies and on the aerial dispersion of pesticides in agricultural areas close to traditional communities in the municipalities of Buriti and Timbiras, in Maranhão, as an affront to the protection of human rights, socio-environmental, economic and cultural plurality of these traditional communities that interact in different biomes and ecosystems in rural areas.

The decision-making examined will be based on the understanding of traditional peoples and communities under the eyes of Convention No. 169 of the International Labor Organization - ILO and Federal Decrees No. 10,088/2009 and No. 6,040/2007.

Other international standards on human rights are also handled, taking this place in the Sustainable Development Goals (SDGs) established by the United Nations (UN) 2030 Agenda, the Ecological Transformation Plan (PTE) of the federal government, and the Maranhão 2050 Plan. (Brazil, 2007; 2009)

The theoretical framework is based on the idea that the massification of the use of pesticides in Brazil has caused a new type of violence, the so-called molecular violence that reaches human cells and other animals and causes damage to health and the environment that is not yet fully known. Such violence comes from a geography of the abyss encouraged by European countries that allow the export of pesticides banned in their territories to producers of agricultural commodities such as Brazil (Bombardier, 2023). Risks can no longer be limited geographically or according to specific groups, but now as a new type of social and political dynamic that gives rise to supranational and class-independent global threats. (Beck, 2010, p. 15-16).

The methodology adopted is exploratory, descriptive, inductive, and documentary, aiming to describe and explore what encompasses the symbols, including pesticides, traditional communities, and ecological transformation. The approach will be inductive and qualitative, as it allows that from the analysis of the reality of traditional communities in the Municipalities of Buriti and Timbiras, with the observation of these particular community phenomena, a more general proposition is established to be applied to other phenomena. Being a generalizing procedure. (Mezzaroba; Monteiro, 2019). It is qualitative in that it sees the triad of pesticides, traditional communities, and ecological transformation in greater depth of processes and information, in its multiple characteristics and relationships. (Church, 2017).

The research strategy used is the case study with relationships and connections on the aerial dispersion of pesticides over traditional peoples and communities, in the municipalities of Buriti and Timbiras in Maranhão. The time frame was chosen with the initial term of the news of the dispersion by air of pesticides in the municipality of Buriti Maranhão, in April 2021. As a final point, the publication of a study carried out from January to April 2024 by the "Territories Directly Victimized by Pesticides in Maranhão" produced by the Agroecology Network of Maranhão (Rama), the Federation of Rural Workers, Family Farmers of Maranhão (Fetaema) and the Laboratory of Extension, Research and Teaching of Geography (Lepeng) of the Federal University of Maranhão.

The study is divided into two sections. In the first one, there is a literature review when discussing and thinking about the use of pesticides in Maranhão, Traditional Peoples, and Communities and their protection, as well as notes on the United Nations 2030 Agenda, Ecological Transformation and Maranhão 2050. Secondly, the discussions and results of the research will be obtained, indicating that isolated and seasonal actions will not solve the problem. The enjoyment of human rights and fundamental freedoms, without obstacles, must be full, uninterrupted, and unrestricted, provided that actions effectively coordinated, implemented, and evaluated by bodies and institutions with and between the various levels are urgently carried out.

LITERATURE REVIEW

THE USE OF PESTICIDES IN MARANHÃO

The use of term "pesticide" was created by Adilson Paschoal, in 1979, in his book *Pragas, praguicidas e a crise ambiental: problemas e soluções* (Pests, pesticides and the environmental crisis: problems and Solutions) and became popular with the publication of Law No. 7,802/89. Brazil is the only country to use the term and the study discussed, without prediction, when conventional agriculture would stop using pesticides. On the other hand, it made it clear that the use is a suicidal model that could not last as long and that the justification for the intense volume used should not be based on the losses caused by pests (insects, fungi, larvae, ticks). (Paschoal, 1979).

In addition, Law No. 7,802/89 treated pesticides as products, substances, components, and agents of physical, chemical, or biological processes, with the purpose of use in the production, storage, and processing of agricultural products. Also applied in pastures, in the protection of forests and other ecosystems, as well as in urban, water, and industrial environments. In this legislation, the purpose was to use it without altering the composition of the flora or fauna, preserving them from the harmful actions of living beings considered harmful. (Brazil, 1989; 2023)

After its repeal by Law No. 14,785, of December 27, 2023, the term pesticide gained greater descriptions by legislation. In the 1989 norm, the term was presented by the law in thirty-six points, while in the 2023 norm, the term is described almost one hundred and thirty times. However, what both have in common is the same description of what pesticides are. Article 2 lists important classifications that detail what the norm

means, which can help the interpretation of various regulations, as well as inhibit the framing of new situations. (Brazil, 1989; 2023)

With this legislative protection, Brazil has led the largest consumption of these products since 2008. According to the World Health Organization (WHO), 20 thousand deaths are recorded per year due to the consumption of pesticides. Notes from the International Labor Organization (ILO) state that pesticides cause 70 thousand acute and chronic poisonings per year and that they evolve to death in developing countries. The forms of exposure occur in the work environment, with inhalation, handling, and transport, as well as in the environment through aerial spraying through the dispersion of these substances throughout the environment, consumption of contaminated food and water, and even contact with workers' clothing with the pesticide (Brasil, 2022).

About Maranhão, the evolution of the harvested area showed an average growth rate of 2.41% between 1998 and 2018. The total harvested area in the state represented only 80% of the municipality of Balsas. In 2018, the total area already covered the area equivalent to the municipalities of Balsas, Tarso Fragoso, and Nova Colinas, representing almost two million cultivated hectares. Meanwhile, rice, which led as the main cultivated agricultural product, lost its place to soybeans from 2008 onwards, which places Maranhão together with Goiás, Pará, Mato Grosso, Rio Grande do Sul, and Minas Gerais in the 2023/2024 harvest with an estimated production of 295.45 million tons of grains (Maranhão Institute of Cartographic Socioeconomic Studies, 2019; 2021; 2024)

In this context, the municipalities of Balsas (1st); Tasso Fragoso (2nd); Açailândia (3rd); São Raimundo das Mangabeiras (4th); Riachão (5th); Alto Parnaíba (6th); Sambaíba (7th); Loreto (8th); Carolina (9th); and Itinga do Maranhão (10th) had the largest share in the primary sector with the cultivation of monocultures of soybeans, corn, and cotton, which are supported by the use of pesticides. (Maranhão Institute of Cartographic Socioeconomic Studies, 2024). There are almost seven hundred establishments registered with the State Agency for Agricultural Defense (2022; 2024) that supply pesticides in Maranhão. In this vein, the State Agency formulated an agreement with a civil society organization to combat the use of fraudulent pesticides. Now it is enough to analyze whether this measure will achieve its objective.

TRADITIONAL PEOPLES AND COMMUNITIES AND THEIR PROTECTION

Since the promulgation of the Convention on the Protection of the World Cultural and Natural Heritage of 1972, Brazil has prioritized the identification, protection, conservation, and enhancement of cultural and natural heritage to transmit it to future generations. It must also take appropriate legal, scientific, technical, administrative, and financial measures for the identification, protection, conservation, revaluation, and rehabilitation of this heritage. (Brazil, 1977).

However, it was in the context of the text of Convention No. 169 of the International Labor Organization (ILO) on Indigenous and Tribal Peoples, adopted in Geneva on June 27, 1989, which recognized the rights of ownership and possession of the lands they traditionally occupy to the peoples concerned. The convention ratified in Brazil aims to stimulate, among other actions, the socio-environmental, economic, and cultural plurality of communities and traditional peoples, in urban or rural areas, who interact in different biomes and ecosystems. (Brazil, 2004)

Among the measures, it is up to governments to adopt the measures that are necessary to determine the lands that the interested peoples traditionally occupy and to ensure the effective protection of their rights, including property and possession. The rights of the people concerned with the natural resources on their lands should be specially protected and should participate in the use, administration, and conservation of resources. (Brazil, 2004)

Protection extends to the duty of governments to establish or maintain procedures for consulting the peoples concerned before undertaking or authorizing any program of prospecting or exploitation of the resources existing on their lands to determine whether the interests of these peoples would be harmed, and to what extent. Just as these peoples should participate whenever possible in the benefits that these activities produce on their lands. (Brazil, 2004)

It should be noted that the people concerned should receive equitable compensation for any damage they may suffer as a result of prospecting or exploitation of the resources existing on their lands. Unauthorized intrusions and unauthorized use of the lands of the people concerned must be inhibited by sanctioning laws and inhibiting administrative measures. (Brazil, 2004)

From the perspective of Federal Decree No. 6,040/2007, Traditional Peoples and Communities are treated as culturally differentiated groups that recognize themselves in

this way, with their forms of social organization. They relate, occupy, and use territories and natural resources as a condition for their cultural, social, religious, ancestral, and economic reproduction. In this organization, they handle knowledge, innovations, and practices generated and transmitted through tradition. (Brazil, 2007)

Food and nutritional security is a fundamental right of these traditional peoples and communities through access to regular, permanent, and quality food. Based on cultural diversity, environmental and economic, and socially sustainable practices, the quantity of food must be sufficient, also meaning access to other essential needs, through good food practices that lead to health. (Brazil, 2007) **United Nations 2030 Agenda, Ecological Transformation and Maranhão 2050: Contexts for Awareness, Resilience and Restoration**

Created by the United Nations General Assembly, held in New York in September 2015, the UN 2030 Agenda is a broad global project that aims to address development challenges for all nations and peoples with outlined goals of fulfillment by 2030. To achieve it, it has the participation of 193 member states with the establishment of 17 sustainable development goals and 169 universal targets after global public consultation. (United Nations, [-])

The proposal is to create a great global commitment encompassed by countries to implement measures and instruments that aim at the Democratic Rule of Law, the effectiveness of human rights, and the accuracy of institutions and public policies. (United Nations, [-]) Regarding Brazil, institutions such as the Supreme Court have adopted institutional procedures with a focus on protecting the most vulnerable. (Supreme Federal Court, [-]).

About the protection of traditional peoples and communities, Goal 2 is a necessary instrument for this agenda, as it aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. Among its goals (2.3), doubling agricultural productivity and the income of smallholder food producers, particularly women, indigenous peoples, family farmers, pastoralists, and fishers, through safe and equal access to land, other productive resources, and inputs, knowledge, financial services, markets and opportunities for value addition and non-agricultural employment is another protective instrument.

It also cannot be ignored that the government adopts, in defense of these peoples and communities, the appropriate use of the markets for food commodities and their

derivatives, and facilitates timely access to market information, including on the use of pesticides and similar products and food reserves. (United Nations, [-]). At this point, Goal 3 aims to ensure healthy lives and promote well-being for all. This means that it should (target 3.9) substantially reduce the number of deaths and illnesses from hazardous chemicals, contamination, and pollution of air and soil water, and (target 3.d) strengthen the capacity of all countries, with immediate alert, particularly developing countries, on risk reduction and management of national and global health risks.

Another point to be achieved is Goals 6 and 11 as they aim at the availability and sustainable management of water and sanitation for all with the achievement of inclusive, safe, resilient, and sustainable human settlements. To this end, water quality must be improved, reducing pollution, eliminating dumping, and minimizing the release of chemicals and hazardous materials (target 6.3), with government support for economic, social, and environmental relations between urban, peri-urban and rural areas, reinforcing national and regional development planning (target 11.a).

Another sensitive point for the protection of traditional peoples and communities is the implementation of Goal 15 as a way to protect, recover, and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss. In this bias, there must be the mobilization and increase of all financial resources for the conservation and sustainable use of biodiversity and ecosystems. The restoration and sustainable use of inland terrestrial and freshwater ecosystems should be a priority and in line with international standards (target 15.1), including increasing the capacity of local communities to pursue sustainable livelihood opportunities (target 15.c).

In this way, in Brazil, the Federal Government launched in 2023 the Ecological Transformation Plan (PTE) that aims to set aside the current development model based on the degradation of the environment, the loss of biodiversity, the immoderate use of pesticides, the immoderate use of natural resources and significant emission of greenhouse gases. To this end, it aims to outline a new proposal for economic, technological, and cultural development with parameters for generating wealth with fair and shared distribution, improving current and future generations, based on sustainable reactions to nature and its biomes. (Brazil, 2023)

As a way of implementing the PTE, the Pact for Ecological Transformation between the Three Powers aims to constitute a joint action in three main axes: (i) territorial and

land planning; (ii) energy transition; and (iii) sustainable development with social, environmental and climate justice. To this end, the measures will be focused on ecological sustainability (reduction of the environmental impact of productive activities), sustainable economic development (in the sustainable use of natural resources from the environmental and social perspectives), social, environmental, and climate justice, integration in all stages of the formulation and implementation of public policies by the three Powers and comprehensive implementation of prevention, adaptation, mitigation, preparedness and recovery from disasters and extreme weather events. (Brazil, 2024).

Created in 2022, at the state level, Maranhão launched the Maranhão 2050 Plan, whose talent will be to promote "Transformative Education, Vibrant Identity and Culture" in the state; a "Prosperous and Inclusive Economy"; "Valued and Resilient Environment"; "Healthy, Safe and Fair Society"; and "Efficient and Connected Governance". The Plan is being made possible due to the conditional credit line of the Inter-American Development Bank (IDB) to finance projects to improve the administration of revenues and fiscal, financial, and asset management of Brazilian states linked to the Support Program for the Management of Tax Authorities in Brazil – PROFISCO (Maranhão, 2023).

According to State Law No. 12,358/2024, the Plan will have a minimum duration of 20 years, aiming to build an integrated socio-economic development project that reduces social and regional inequalities, establishing the time horizon until the year 2050. Based on a diagnosis of Maranhão and guided by a Vision of the Future for the State, agreed in an articulated way with government agencies, Academia, productive sectors, and representatives of civil society entities. The areas chosen to promote the socioeconomic development of the State are: a valued and resilient environment; a healthy, safe, and fair society; transforming and structuring education, identity, and culture; a prosperous and inclusive economy; and, effective, connected, and innovative governance. (Maranhão, 2024)

The Plan has four blocks: Block 1, the situational analysis; Block 2, the Long-Term Cloth; Block 3, implementation; Block 4, communication throughout the project and interaction with the Long-Term Plan Commission. The website shows product delivery with situational reporting, guidelines, diagnostics, and long-term trends. Through State Decree No. 39,131/24, the creation of Technical Development Chambers was authorized, whose meetings analyze environmental, social, economic, and institutional areas with organizations from the state administration, the productive sector, academia, and civil

society. The Plan for its implementation has depended on the effectiveness of the meetings of the Technical Boards. Regarding the cycle of public policies, the Plan is yet to be implemented, monitored, and evaluated. (Maranhão, 2023; 2024)

RESULTS AND DISCUSSIONS

MAPPING THE CASE: COMMUNITIES AFFECTED BY AERIAL DISPERSION OF PESTICIDES

The study analyzed two major episodes of aerial dispersion of pesticides that reached traditional peoples and communities in Maranhão, one (a) in 2021 about serious violations of the rights to health, food safety, physical integrity, and the environment , due to the dispersion, with the use of airplanes, of pesticides over some villages, in the municipality of Buriti/MA; two (b) a survey from January to April 2024 carried out by the "Territories Directly Victimized by Pesticides in Maranhão" produced by the Agroecology Network of Maranhão (Rama) and the Federation of Rural Workers, Farmers and Family Farmers of Maranhão (Fetaema), in collaboration with the Laboratory of Extension, Research and Teaching of Geography (Lepeng) of the Federal University of Maranhão.

In this survey, 34 traditional communities, quilombolas, and rural settlements, located in 12 municipalities, are affected by pesticide spraying.

a) Case of Buriti-Maranhão Municipality:

In May 2021, residents of the Traditional Community called Carrancas reported experiencing shortness of breath, vomiting, diarrhea, and fever in children. In the complaint, the symptoms were attributed to the action of the soybean grower who owns the São Bernardo Farm, 15 meters close to the community, who threw pesticides at his soybean crop, by air, almost daily. A seven-year-old child reportedly suffered severe burns on his body due to pesticide spraying. In this community, about 100 people live from family farming.

Also in Buriti, a leader of the Araçá Community, complained that, between April 20 and 22, 2021, planes would have dropped pesticides on crops near this community, causing health problems in its residents, especially the elderly and children, such as fever and intense itching on the body. A woman was reportedly hit all over the body. Reports say that at least 5 children who were playing in the community's yard would have been hit, causing burns all over their bodies.

There was also a complaint that the planes fly at low altitudes and, even though residents take refuge in their homes, the intense odor suffocates them. In addition to the Carranca and Araçá communities, other traditional communities in the municipality of Buriti, such as Capão, Belém, Angelim, Cacimbas, Mato Seco, Brejinho, and Baixão are affected by the release of poison by soybean growers in the region.

b) Case of Municipality of Timbiras-Maranhão

Reports of aerial spraying of pesticides on traditional communities located in the rural area of Timbiras, State of Maranhão, on March 21, 2024, led the inspection by the State Council for the Defense of Human Rights of Maranhão (CEDDH) to inspect, in April 2024, the traditional communities of São José, Baixa Nova, Morada Nova, Buriti, Capinal, Santa Vitória, Passa Mal and Maresia. In the Survey "Territories Directly Victimized by Pesticides in Maranhão" "[...] in less than 20 days, a spray plane at the service of the Macedo Group poured pesticides on homes, cultivation areas and people, resulting in the contamination of water sources." (Rama, 2024)

As a result of the inspection, it was found that traditional communities suffered in the field of food security "[...]estimated loss of between 50% and 70% of agricultural production for the year 2024. " In the environmental aspect, "[...] Fruit trees, babassu trees, and streams were also affected by pesticide spraying, posing a great risk to food security, access to water and causing financial losses for at least 120 families." Regarding the health of the community, episodes of "[...] wounds, itching, dizziness, headaches, vomiting, and fatigue, in addition to psychological illness, due to the anxiety and fear generated by the dumping of poison in their communities. "Regarding the fauna, there are reports that animals are also getting sick from the use of contaminated water and food (Rama, 2024).

WHAT HAS BEEN DONE

Case of Buriti-Maranhão Municipality:

(i) Performance of the Judiciary:

In 2013, the Federal Public Prosecutor's Office (MPF) filed a public civil action in the 8th Federal Environmental and Agrarian Court of the Judicial Section of Maranhão against the uncontrolled use of products based on glyphosate, the most widely used herbicide in Brazil. That year, the Federal Court recognized and prohibited the application of pesticides by air, via an injunction, the urgency and relevance of protecting the

environment in the face of the omission of inspection by the State of Maranhão, through the State Agency for Agricultural Defense of Maranhão (Aged), the State Secretariat for the Environment and Natural Resources (Sema), and the Union, through the Ministry of Agriculture and Livestock.

It so happens that the MPF received a complaint from the Human Rights Commission of the Chamber of Deputies about what happened in Buriti/MA, which generated a request for partial non-compliance with the previous injunction. With a new court decision, the agencies will have to take urgent measures to prevent the use of aircraft in the application of glyphosate, in addition to carrying out a survey of the total number of crops that use the herbicide in the state.

For non-compliance, the Court set the application of a daily fine in the amount of R\$ 30 thousand to the responsible bodies and determined that they be summoned to prove, within 120 days, the survey of the conditions of all soybean crops and other agricultural crops that use glyphosate in Maranhão, through inspections in all of them. In addition, the necessary technical studies should be carried out to define soil contamination in water bodies affected by the release of pesticides, with the pertinent corrective measures.

As for the State Common Court, the Single Court of Buriti, determined that the person responsible refrain from spraying the soybean cultivation area and other plantations, under penalty of a fine, per event, of R\$ 50,000.00. In addition, it forced the cost of medical care to the residents of the Carrancas community, for a minimum period of 30 days, with the availability of a medical professional who should attend to the affected population, under penalty of a daily fine of R\$ 2,000.00 up to the limit of R\$ 60,000.00. (Maranhão, 2021)

(i) Actions of the Federal Public Prosecutor's Office:

The Ministerial Body's work has been carried out by the 12th Office - Environment in the public civil action of 2013, still in progress (Public Civil Action No. 0020849-29.2013.4.01.3700) whose main objective was to ensure the inspection of the use of the herbicide Glyphosate in the State of Maranhão. Due to the MPF's action, in 2013 it had already obtained an injunction, among other measures, so that the Union and the State of Maranhão did not admit the use of aircraft for the application of Glyphosate herbicide, including adopting inspection and control measures pertinent by the Ministry of Agriculture and Livestock and communicating the situation to the National Civil Aviation Agency –

ANAC (after surveying the situation), for the adoption of possible control measures over aviation.

In a new action, based on the denunciation of the aerial dispersion in the municipality of Buriti/MA, it was again determined that the Union and the State of Maranhão should also prove, within 60 (sixty) days, the measures adopted by them to comply with item "iv" of the provision of the initial decision, consisting of not admitting "the use of aircraft for the application of Glyphosate herbicide, including adopting relevant inspection and control measures by the Ministry of Agriculture and Livestock and communicating the situation to the National Civil Aviation Agency – ANAC (after surveying the situation), for the adoption of possible control measures on aviation". (Maranhão, 2013; 2021)

(ii) Activities of the Public Defender's Office of the State of Maranhão (DPE/MA) and the Federation of Rural Workers and Family Farmers of the State of Maranhão (Fetaema):

Through a Public Civil Action authored by the Ombudsman's Office of the State of Maranhão and Fetaema that was processed in the Single Court of Buriti/MA, an injunction was obtained so that the spraying of pesticides by air immediately and that the spraying carried out by land, or any other means, is kept at a minimum distance of 1 km from the villages in the rural area of that municipality. In addition, through the action, it was requested to send a medical team to the affected villages for care, diagnosis and treatment of the residents and the cost of carrying out technical expertise that assess, specialize and quantify the exact extent of the damage suffered by the aforementioned communities due to the use of pesticides on the soybean farm. The institutions also visited the affected communities between May 18 and 20. (Maranhão, 2021)

(iii) Commission on Human Rights and Minorities of the Chamber of Deputies

The Commission sent Official Letter No. 254/2021-P, on May 4, 2021, to the Chief of the Regional Prosecutor's Office for Citizens' Rights in Maranhão with the objective of receiving, evaluating, and investigating complaints related to threats or violations of human rights and appropriate measures to investigate the complaints and put an end to the human rights violations narrated, with the consequent legal sanctions. The letter supported a new request for an injunction requested by the Federal Public Prosecutor's Office in the context of Public Civil Action No. 0020849-29.2013.4.01.3700 to prevent new

aerial dispersions in the rural area of the municipality of Buriti, Maranhão. (Maranhão, 2013; 2021)

(ii) State Secretariat for the Environment, State Secretariat for Human Rights (SEDIHPOP), Secretariat for Health (SES), Secretariat for Public Security (SSP-MA) and State Agency for Agricultural Defense of Maranhão (AGED):

The State Secretariat for Human Rights (SEDIHPOP) and the Environmental Police Battalion (BPA) mapped the farmers who did not have an environmental license for aerial spraying activity. The State Secretariat for the Environment (Sema) was responsible for applying an embargo on the activity and also a notice of notification and infraction in the amount of 273 thousand reais (Maranhão, 2021a).

Also, the Department of Health (SES), Department of Public Security (SSP-MA) and the State Agency for Agricultural Defense of Maranhão (AGED), in partnership with the Diocese of Brejo, Buriti City Hall, City Council and the Ministry of Health carried out an inspection of the company's headquarters. Also, in the same act, they collected samples of pesticides and seized documents. The SES was also responsible for promoting consultations with infectious disease specialists and carrying out exams. (Maranhão, 2021b)

Case of Municipality of Timbiras-Maranhão

(i) Joint action of the Federal Public Prosecutor's Office and the State Public Prosecutor's Office

Through the Maranhão Integrated Protection Front (FPIMA), the MPF and MPMA formulated a recommendation to the councilors of the state of Maranhão for political agents to initiate a legislative process to create a municipal law in order to prohibit the aerial spraying of pesticides. The councilors must respond within 45 days about compliance with the measure and the ban covers any type of pesticide and envisions both spraying through agricultural aircraft or remotely piloted. (Federal Public Prosecutor's Office, 2024; Maranhão State Public Prosecutor's Office, 2024)

The recommendation has as its norm the Federal Constitution of 1988, which guarantees the protection of the dignity of the human person and the safeguarding of the right to an ecologically balanced environment. In addition to Convention No. 169 of the International Labor Organization (ILO), which promotes the rights of interested peoples to the natural resources existing on their lands, and the Convention on Biological Diversity

(CBD), ratified by Federal Decree No. 2,519, of March 16, 1998. (Maranhão Integrated Protection Front, 2024)

Recommendations from the National Human Rights Council (Recommendation No. 14, of May 13, 2022) on the gradual elimination of pesticide spraying throughout the national territory and from the National Health Council through Recommendation No. 009, of July 20, 2023, are also listed. As well as the ANVISA report; seen, in 2019, as Special Rapporteur on the Implications for Human Rights due to the virtue of Toxic Waste of the United Nations, participation of organized civil society (Agroecology Network of Maranhão (RAMA) and the Federation of Rural Workers, Farmers and Family Farmers of Maranhão (FETAEMA) and Academia (Laboratory of Extension, Research and Teaching of Geography of the Federal University of Maranhão (LEPENG). (Maranhão Integrated Protection Front, 2024)

In addition, the recommendation considers that the initiative to ban aerial spraying of pesticides is not unprecedented at the level of the legislative process. It considers Law No. 16,820/2019 of the state of Ceará, which prohibited the spraying of pesticides by aircraft, as well as the experience developed by the state of Acre (Law No. 2,843/2014), which prohibited spraying within a radius of ten kilometers from inhabited areas and conservation units. At the municipal level of Maranhão, the recommendation considered the legislative prohibitions in the municipalities of Brejo (Municipal Law No. 809/2022), São Francisco do Maranhão (Municipal Law No. 379/2022), Santana do Maranhão (Municipal Law No. 346/2022), Barreirinhas (Municipal Law No. 838/2023), Lago dos Rodrigues (Municipal Law No. 16/2023), Caxias (Municipal Law No. 2,704/2024). (Maranhão Integrated Protection Front, 2024)

WHAT CAN BE EXPECTED

The case cited in Maranhão is not isolated. This situation has been occurring and worsening in other states and can be called "a true chemical war" in which there are several complaints about the indiscriminate use of pesticides by large monoculture farms and companies in Maranhão.

Movements to change municipal legislation to prohibit the aerial dispersion of pesticides began in 2022 (Municipalities of Brejo, São Francisco do Maranhão, Santana do Maranhão). However, the proposal for the recommendation of the MPF and MPMA through the Integrated Protection Front of Maranhão is still recent and isolated.

Meanwhile, preparations for soybean planting should already be approaching and the intensive use of the pesticide is possibly being designed in a flight plan with the potential to exist in two hundred and eleven municipalities in Maranhão.

What can be observed is that the investigations and complaints show some type of contamination. The dispersion of pesticides occurs without preventive measures at the minimum of dialoguing with local residents about the potential damage to health and the environment by direct exposure to these toxic substances.

The profile of exposure to pesticides as drawn in the cases studied may indicate the existence of underreporting of cases. It can also be the result of reprisals and threats that communities experience in their territories. Furthermore, it should be considered a state policy and not a government policy to establish protocols in order to produce real data on the situation of pesticides in Maranhão and, with these, to produce efficient public policies.

With the relevance of soybeans as a more prominent agricultural economy tool, its extensive cultivated area belongs to a small number of owners, demonstrating an agricultural activity with an employer's bias. Meanwhile, family farming produced by a larger number of people developed on small-sized properties, with production aimed at local and regional consumption and family subsistence, continues. (Feitosa, *et.al*, 2023). This socioeconomic context is relevant because it demonstrates a dichotomy that generates tension and requires state intervention, otherwise there will be no prosperous and inclusive economy, promotion of cultural identity and a resilient and respected environment.

Subsequently, the cultivation of soybeans in Maranhão, in the cerrado biome, has been encouraged by the technologies developed by the Brazilian Agricultural Research Corporation - Embrapa, in addition to the boost of government programs and the entry of resources from official or non-official financing entities. (Feitosa, *et.al*, 2023). Such a profile at first contact can be seen as a healthy doctrine for the economy of Maranhão, but at the same time and with the same potentiality, structuring measures must be adopted by the Government for the restoration of environmental assets, preservation and defense in order to keep it ecologically balanced according to article 225 of the Federal Constitution of 1988.

Regarding the analysis of the performance of the Judiciary in this agenda, while the Judiciary section of Maranhão has a court specialized in agrarian and environmental, in

the aspect of federal common justice, single courts in the municipalities of Timbiras and Buriti absorb, in addition to environmental conflicts, the examination of other rights, such as family law. This absence of a specialized court is another structuring policy that must be investigated by the Court of Justice of Maranhão.

The reality of Maranhão of the excessive use of pesticides demonstrates what Bombardi (2023) pointed out to a kind of new colonialism, in which central countries or metropolises destine products that they have not used for peripheral countries, not caring about people, animals, and the environment of those locations. In this colonial game, chemical companies in Europe obtain billionaire revenues from the sale of products to peripheral countries.

Traditional communities show themselves as a true risk society in the Cerrado of Maranhão. While in industrial society the logic of wealth production dominates the logic of risk production, in the risk society, in which we live, the production of risks dominates the production of wealth. In the reflex of the processes of modernization, the productive forces have lost their innocence. The accumulation of power of technological-economic 'progress' is increasingly overshadowed by the production of risks. " (Beck, 2010, p. 15-16).

The rationality that is created is that for Maranhão to grow economically it is necessary to share the "hidden" risks with society. Today the logic of the production and distribution of risks is developed in comparison with the logic of wealth distribution. At the heart of the big questions are the risks and effects of modernization that shows itself in the form of threats to the life of plants, animals and human beings. The manufacturing and professional risks present in the nineteenth century and in the first half of the twentieth century can no longer be limited geographically or according to specific groups. (Beck, 2010).

The discussion around the content of pollutants and toxins in the air, water and food, as well as around the destruction of nature and the environment in general, is still exclusively or predominantly conducted according to natural categories and formulas. Thus, the fact remains unaware that a social, political, and cultural relevance is inherent in the formulas of impoverishment of the natural sciences. (Beck, 2010).

The environmental impact of agribusiness and the destruction of nature has several effects on people's health and coexistence. This situation emerges in developed societies, but marked by a deficit of social critical thinking. This deficit is seen by Beck

(2010) as grotesque, because it is not seen by society or by society scholars.

Furthermore, the discussion about toxic substances, conducted with categories from the natural sciences, moves between the fallacy of biological and social concerns or a consideration of nature and the environment that leaves aside people's selective concern, as well as the social and cultural meanings they attribute to it. (Beck, 2010).

In this modern-coloniality project, in which there is an inversion of the forms of agricultural production, previously by local peoples based on empirical knowledge and with an enormous diversity of plants, combined with fishing, extractivism, fishing and gathering, it is now an agrarian reality of monoculture for export, with great use of direct and indirect inputs, such as fuel and machinery. (Porto-Gonçalves (2017).

The problem pointed out by the current model, such as the one seen in Maranhão, is the extinction of crop diversity, mistreatment of local populations and scarcity of native animals to the detriment of the commodification of commodities. Crops that aim to enrich some large corporation, mostly based in Central European countries, causing the destruction of ecosystems with the use of poisons and tailings seen as the only formula for eliminating pests. (Porto-Gonçalves, 2017).

Even with the creation of environmental policies headed by institutions headed by the Public Prosecutor's Office, Universities, unions and Federations, in general, the presence of the State, as an agent to supervise and save the interests of its nationals, should not be little or almost invisible. Meanwhile, the participation of the private sector is present and current, but aims to protect only its interests and needs: neoliberal policies. (Porto-Gonçalves, 2017).

The continuity of aerial dispersion of pesticides without structuring projects by the Government expresses an indirect form of territorial expropriation of the communities that surround farms that manage these chemical agents. In addition, the indiscriminate use of clandestine pesticides also intensifies the vulnerability of these human groups and ecosystems. The reduction of inequality in terms of access to fundamental rights, poverty reduction and the scarcity of opportunities in Maranhão must involve the observance of the environment as a true public asset.

The reduction of violence and crime in the countryside depends on the structuring of the management of natural resources. The crossing of environmental education, the commitment to the rational and social use of property, more assertive territorial

management, valuing the exchange of knowledge of traditional communities should be what is expected of a state with effective governance.

FINAL CONSIDERATIONS

Is there a duality between the coexistence of the growing agribusiness circle and the traditional communities that are close to large farms? This question requires intense social critical thinking. We need to think about choices to be made. Just as we must resume the critical discussions about the thesis of large-scale food production with massive use of pesticides and food and ecological preservation defended by peoples, traditional communities in general and their traditionally occupied territories.

Isolated and seasonal actions will not solve the problem. The founding norm outlined by the Federal Constitution of 1988 and Convention No. 169 of the International Labor Organization (ILO) states that it is a duty to adopt special measures that are necessary to safeguard the people, institutions, goods, cultures and environment of the peoples concerned. The unhindered enjoyment of human rights and fundamental freedoms shall be fully, uninterrupted and unrestricted.

The isolation that the study reflected on is about the work that is sometimes intensified, sometimes cold, but without effective application of the social, economic and cultural rights of these peoples, in line with their social and cultural identity, customs and traditions. We see the implementation of some institutions through the UN Sustainable Development Goals (SDGs), at other times intensified by the Pact for Ecological Transformation between the Three Powers of the Brazilian state (PTE) and even with projects subsidized by organizations such as Maranhão 2050.

The delay in trying to overcome these dilemmas advances to events of violence, murders and threats that are momentarily controlled by the action of the Judiciary, the Public Defender's Office, the Federal Public Prosecutor's Office, the State Public Prosecutor's Office incited by civil society organizations, the university and the human rights commission of the Chamber of Deputies.

The time frame (2021 to 2024) examined on the aerial dispersion of pesticides in Maranhão in traditional communities opens to an evident result: the formal existence of norms that, if not implemented, are only mere printed or virtual models. The existence of safeguards was manifest, but there were violations of rights so costly to humanity. What is launched in the current research is that actions effectively coordinated, implemented and

evaluated by agencies and institutions with and between the various levels need to be urgently carried out.

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