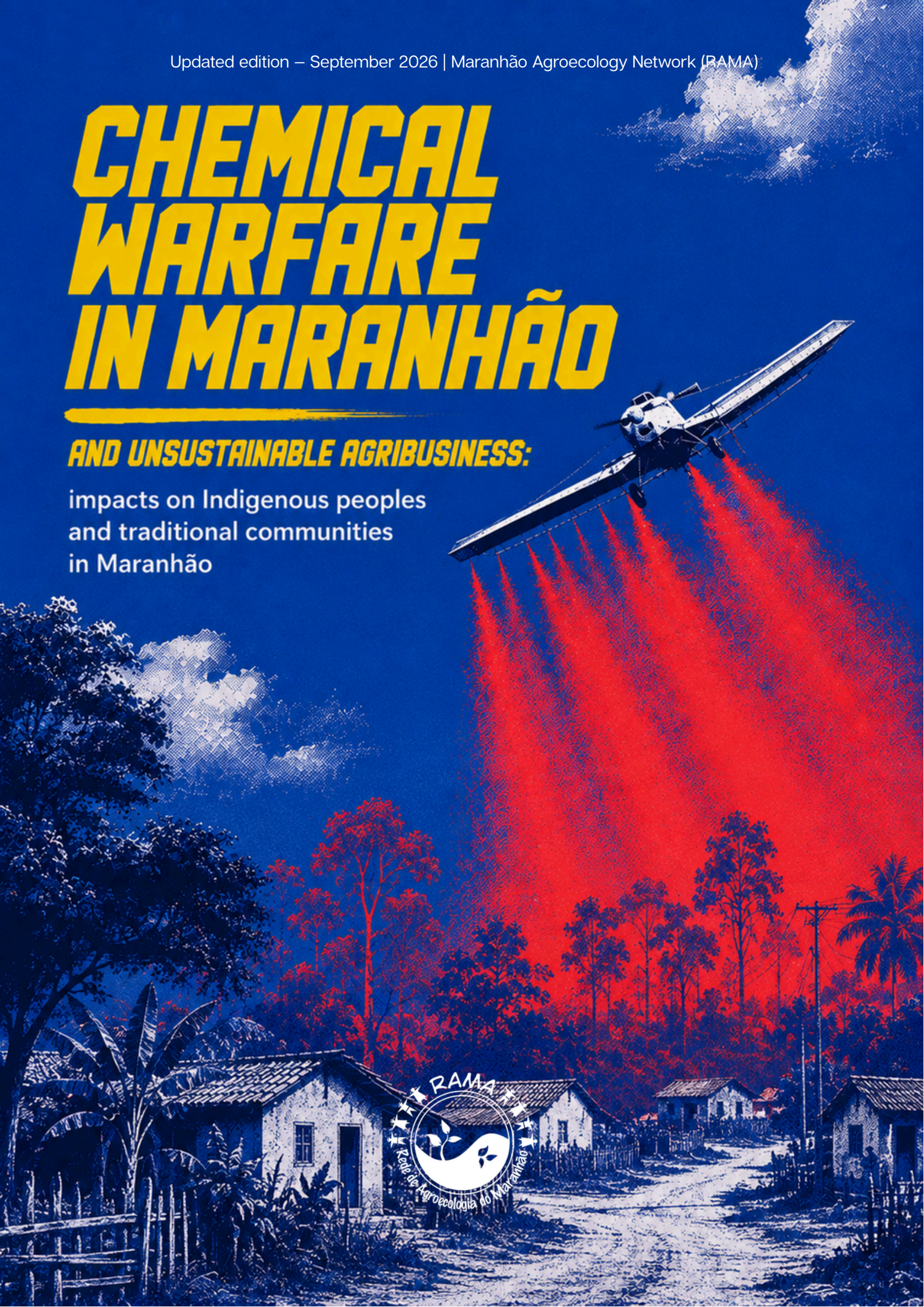
Updated edition – September 2026 | Maranhão Agroecology Network (RAMA)

CHEMICAL WARFARE IN MARANHÃO

AND UNSUSTAINABLE AGRIBUSINESS:

impacts on Indigenous peoples and traditional communities in Maranhão



Chemical Warfare in Maranhão and Unsustainable Agribusiness:
impacts on Indigenous peoples and traditional communities
in Maranhão

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RAMA
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Figure 1 – Cerrado deforestation for soybean planting in Buriti, Maranhão.
Photo: Diogo Diniz Ribeiro Cabral (2023).

1. Maranhão: territories in dispute

Maranhão, a state in Brazil's Northeast located between the Amazon and Cerrado biomes, covers 331,900 km² (3.9% of the national territory), with 217 municipalities and more than 7 million inhabitants. It is a multi-ethnic state: 57,214 Indigenous people from 12 peoples, the largest number of quilombola communities in Brazil (2,025, or 24% of the total) and more than 400,000 babassu coconut breakers (quebradeiras de coco babaçu).[1] It is also a negative benchmark for agrarian and socio-environmental conflicts: in 2025, the Pastoral Land Commission (CPT) recorded 209 rural conflicts in the state, involving 59,511 people; Maranhão tops the national ranking of land conflicts (190 occurrences).[2]

RAMA has documented 157 killings in agrarian and socio-environmental conflicts in the state between 1964 and 2026 – 41 of them since 2015, including 24 Guajajara, Ka'apor, Gavião and Akroá-Gamella Indigenous people and 9 quilombolas – with a single partial conviction in six decades.[3]

The expansion of the agricultural frontier for commodity production – soybeans, corn, eucalyptus and beef for China, the United States and the European Union – is the driving force behind these conflicts. According to the National Institute for Space Research (INPE), Maranhão was the state that cleared the most Cerrado in 2021, 2022 and 2023, and it led again in 2025, with 2,006 km² destroyed, around 28% of all devastation in the biome; the MATOPIBA region accounts for 78% of Cerrado deforestation.[4]

[1] IBGE. Censo Demográfico 2022: indígenas e quilombolas [2022 Population Census: Indigenous and quilombola peoples]. Rio de Janeiro: IBGE, 2023; MIQCB. Interstate Movement of Babassu Coconut Breakers, 2024.
[2] PASTORAL LAND COMMISSION (CPT). Conflitos no Campo Brasil 2025 [Rural Conflicts in Brazil 2025]. Goiânia: CPT Nacional, 2026. Available at: https://cptnacional.org.br.
[3] RAMA; SMDH; CPT; CIMI. Assassinatos no campo no Estado do Maranhão (1964–2026) [Rural killings in the State of Maranhão (1964–2026): rural workers, quilombolas, babassu coconut breakers and Indigenous people killed as a result of agrarian, land and socio-environmental conflicts]. Survey by Diogo Diniz Ribeiro Cabral, Luís Antônio Câmara Pedrosa and Ariana Gomes da Silva Muniz. São Luís: RAMA, May 2026.
[4] INPE. PRODES Cerrado: 2025 deforestation rate (Aug. 2024–Jul. 2025). São José dos Campos: INPE/BiomasBR, Oct. 2025.

2. Chemical warfare: the Poison Map 2024–2026

Since 2024, RAMA, the Federation of Rural Workers and Family Farmers of Maranhão (FETAEMA) and the Laboratory of Extension, Research and Teaching in Geography of the Federal University of Maranhão (LEPENG/UFMA) have been monitoring the communities affected by pesticide spraying from aircraft and drones in the cartographic series Mapa do Veneno (Poison Map). The figures reveal an escalating chemical emergency: 231 reports in 2024, 122 in 2025 and 255 in the first half of 2026 alone – 209 communities in 33 municipalities, with 46 repeated attacks on 38 communities. In total, 608 chemical attacks were monitored in two and a half years; the month of January 2026 alone (142 occurrences) exceeded the entire previous year.[5]

The violence is concentrated: ten municipalities account for 77.3% of the reports for the half-year – led by São Benedito do Rio Preto (46), Chapadinha (34), Anapurus (24), Brejo (23) and Milagres do Maranhão (19) – and the Lower Parnaíba region, epicenter of soybean expansion, accounts for more than half of the cases. More than 75% of the affected communities are traditional, quilombola or Indigenous, which constitutes environmental racism.[6] Drones have become the main vector: in 2024 they accounted for 94% of the contaminations reported, while the number of spraying devices registered with ANAC (Brazil's civil aviation agency) jumped from 674 (Jan. 2023) to 7,312 (Jan. 2025), in addition to unregistered "ghost drones" and night-time spraying, which make it difficult to identify those responsible.[7] Reports of poisoning rose from 19 (2023) to 231 (2024).[8]

[5] RAMA; FETAEMA; LEPENG/UFMA. Mapa do Veneno – Balanço do 1º Semestre de 2026 [Poison Map – Review of the 1st Half of 2026 on communities affected by pesticides in the State of Maranhão]. São Luís: RAMA, Jul. 2026. Available at: https://www.rederama.org.
[6] Ibid.
[7] HEINRICH BÖLL FOUNDATION; PERMANENT CAMPAIGN AGAINST PESTICIDES AND FOR LIFE. Survey on agricultural drones in Maranhão, 2025; PROJETO #COLABORA. Emergência química: pulverização de agrotóxicos bate recorde e ameaça comunidades rurais no Maranhão [Chemical emergency: pesticide spraying hits record and threatens rural communities in Maranhão]. 11 May 2026.
[8] NATIONAL AGROECOLOGY ARTICULATION (ANA). Municípios maranhenses são pioneiros na aprovação de leis que proíbem o uso de drones para a pulverização de agrotóxicos [Maranhão municipalities pioneer laws banning the use of drones for pesticide spraying]. Brasil de Fato, 2 Apr. 2026.

Victims report headaches, vomiting, burning eyes and skin, dizziness, fever and fainting; loss of crop fields and productive backyard gardens, death of livestock and bees, contamination of wells, streams and babassu groves, food insecurity and mental illness (anxiety, insomnia, depression). These figures are a bare minimum: there is underreporting due to fear of reprisals, and RAMA itself has had to defend against intimidating lawsuits brought by the agricultural aviation sector.[9]

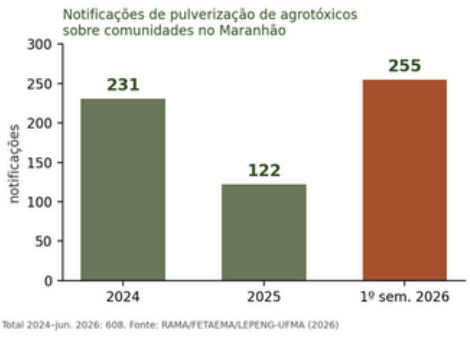


Figure 2 – Escalation of reports (2024–1st half of 2026).

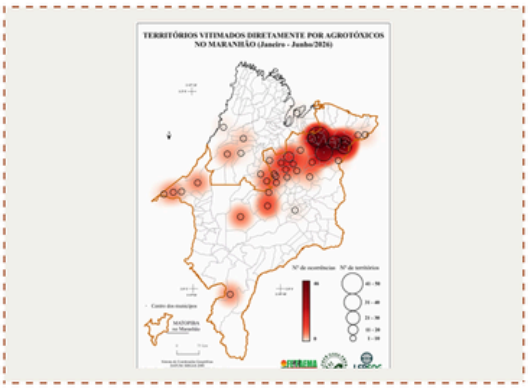


Figure 3 – Poison Map: territories victimized by pesticide spraying in Maranhão, 1st half of 2026. Source: RAMA/FETAEMA/LEPENG-UFMA (2026).

3. Emblematic cases

Municipality of Duque Bacelar. In August 2022, around 40 children from the Roça do Meio community were hit by poison sprayed from an airplane during school lessons. In 2026, in the Santo Antônio community, a drone sprayed houses, contaminated the hand-dug wells, destroyed crops and poisoned residents, especially the elderly and children; the case is the subject of a lawsuit (case no. 0801345-08.2026).[10]

Municipality of Timbiras – Campestre Territory. In April 2024, in an agrarian conflict involving eight communities, children and pregnant women were hit by spraying from airplanes and drones, resulting in chemical burns and hospitalizations; the rural workers' union estimated crop losses of 50% to 70%. The Federal Prosecution Service (MPF) filed a public civil action (case no. 1006950-18.2025).[11]

[9] ANA. Statement of solidarity with the Maranhão Agroecology Network (RAMA). 14 May 2026. Available at: https://agroecologia.org.br.

[10] RAMA. Legal archive of the monitoring of pesticide contamination cases (2024–2026): case no. 0801345-08.2026.8.10.0032, 2nd Court of Coelho Neto/TJMA (Maranhão State Court); RAMA, Mapa do Veneno – 1st Half of 2026, op. cit.

[11] AMAZÔNIA REAL. Ataques químicos estão mais intensos e agressivos no Maranhão [Chemical attacks are more intense and aggressive in Maranhão]. 23 May 2024; MPF public civil action no. 1006950-18.2025 (Federal Courts/TRF1), RAMA, Legal archive, op. cit.



Figure 4 – Rural worker shows lesions that appeared after contact with pesticides. Photo: RAMA (2024).

Municipality of Buriti – Araçás and Carrancas. After years of chronic exposure, used as a weapon to drive the families off their land, children suffer from skin diseases, anxiety, insomnia and depression.

Municipalities of Governador Eugênio Barros and Fortuna. Communities such as São Bento, Patrimônio and Cipó had their crop fields, houses and the Saco River sprayed from an airplane; the public civil action (case no. 0800073-76.2024) obtained a favorable judgment, upheld by the Maranhão State Court of Justice.[12]

Municipality of Bacabal – Pau D'Arco do Igapó. In January 2026, a family-farming household had its crop field, fruit trees and health harmed by a drone; traces of the poison were confirmed on the crops, the case is under investigation by the Federal Prosecution Service (civil inquiry 1.19.000.000967/2024-40), and a court ruling banned pesticide spraying over the community. In this municipality, Municipal Law No. 1,725/2026 was enacted, prohibiting aerial spraying of pesticides by airplanes and drones throughout its entire territory.[13]

[12] Public civil action no. 0800073-76.2024 (Agrarian Court of São Luís/TJMA), judgment upheld on appeal by the TJMA – RAMA, Legal archive, op. cit.
[13] MPF civil inquiry no. 1.19.000.000967/2024-40; case no. 0812163-15.2026 (Bacabal) – RAMA, Legal archive, op. cit.; ANA, Brasil de Fato, 2 Apr. 2026, op. cit.

4. “Sustainable” soy, double standards and regulatory rollback

In 2021, the Government of Maranhão (SAGRIMA, SAF, SEMA and SEDIHPOP) and the German development agency GIZ signed the Sustainable Chains project to produce 200,000 tonnes of “sustainable soy” in the east of the state, in cooperation with the trader ADM and the company Produzindo Certo, concentrated in the Chapadinha micro-region.[14] Five years later, this same region is the epicenter of the chemical warfare: Chapadinha, São Benedito do Rio Preto, Brejo and Anapurus top the 2026 reports.

There is no difference between conventional soy and “sustainable soy”: both require vast tracts of land, deforestation, genetically modified seeds and intensive pesticide use, fueling conflicts and the expulsion of peasant families. It is greenwashing.

Brazil is the world’s largest consumer of pesticides – 908,000 tonnes of active ingredients in 2024, an all-time record – and six of the ten best-selling active ingredients are banned in the European Union.[15] In Maranhão, the most widely used are glyphosate, 2,4-D, mancozeb, atrazine and acephate.[16] In 2024, EU companies notified the export of almost 122,000 tonnes of pesticides banned in their own territory (a 50% increase since 2018), of which around 15,000 tonnes went to Brazil; Germany is the largest exporting country and BASF the largest exporting company.[17] This is the double standard – chemical colonialism: the profits stay in the Global North, the poison in the communities of Maranhão.

[14] GOVERNMENT OF MARANHÃO; GIZ. Sustainable Production Chains Project in Maranhão (AgriChains). Cooperation agreement, 2021.
[15] IBAMA. Pesticide sales reports: 2024 bulletin. Brasília: Ibama, 2025; PERMANENT CAMPAIGN AGAINST PESTICIDES AND FOR LIFE. Ibama revela novo recorde de consumo de agrotóxicos no Brasil [Ibama reveals new record in pesticide consumption in Brazil]. 26 Dec. 2025.
[16] IBAMA. Pesticide sales reports by state, 2009–2023; RETTET DEN REGENWALD / SALVE A FLORESTA. Agrotóxicos viram arma química contra camponeses no Maranhão [Pesticides become chemical weapons against peasants in Maranhão]. 23 Apr. 2026.
[17] PUBLIC EYE; UNEARTHED. EU banned pesticide trade expands despite promises to end it. 23 Sept. 2025; HUMAN RIGHTS WATCH. The EU’s double standard on toxic pesticides. 10 Oct. 2025; BOMBARDI, Larissa Mies. Colonialismo químico [Chemical colonialism]. 78th Annual Meeting of the SBPC (Brazilian Society for the Advancement of Science), Jul. 2026.

Active ingredient	Main manufacturers (origin)	Regulatory status and risks
Glyphosate	Bayer/Monsanto (Germany/USA); Chinese generics	Probable carcinogen (IARC 2A)
2,4-D	Corteva (USA); Nufarm (Australia)	Possible carcinogen (IARC 2B)
Mancozeb	UPL; Indofil (India)	Banned in the EU (2021); endocrine disruptor
Atrazine	Syngenta/Sinochem (Switzerland/China)	Banned in the EU (2004); contaminates groundwater
Acephate	UPL (India)	Banned in the EU (2003); neurotoxic organophosphate
Glufosinate	BASF (Germany)	Banned in the EU (2018); toxic to reproduction

Table 1 – Most widely used pesticides in Maranhão. Source: compiled by the authors from Ibama (2025), Human Rights Watch (2025) and Bombardi (2026).

Domestically, Federal Law No. 14,785/2023 (the "Poison Package"), passed under pressure from the agribusiness caucus, weakened the regulatory framework by centralizing pesticide registration in the Ministry of Agriculture and hollowing out the powers of ANVISA (the national health regulator) and Ibama (the federal environmental agency); its constitutionality is being challenged before the Federal Supreme Court (ADI 7701).[18]

5. Resistance: municipal laws, the State Forum and international denunciation

Despite the brutal inequality of the conflict, Indigenous peoples and traditional communities resist in alliance with rural workers' unions, RAMA, FETAEMA, MIQCB (Interstate Movement of Babassu Coconut Breakers), SMDH (Maranhão Human Rights Society) and church-based social pastoral organizations. Twelve municipalities in Maranhão already have laws in force banning aerial spraying of pesticides – among them Barreirinhas, Buriti, Brejo, Caxias, Lago dos Rodrigues, Santana do Maranhão, Timbiras, Aldeias Altas, Bacabal (2026) and Carutapera (2026) – with bills under consideration in Esperantinópolis, Lago do Junco and elsewhere.[19]

In November 2024, the State Forum to Combat the Impacts of Pesticides was created, and many affected communities are drawing up free, prior and informed consultation protocols, along the lines of ILO Convention 169, as well as safety protocols, in response to the health risks and to the threats they face because of their denunciations.

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[18] GREENPEACE BRAZIL. Bancada ruralista derruba vetos à nova lei de agrotóxicos [Agribusiness caucus overrides vetoes to new pesticide law]. 10 May 2024; STF (Federal Supreme Court). ADI 7701, Justice André Mendonça (rapporteur), filed on 14 Aug. 2024.
[19] RAMA; FETAEMA; LEPENG/UFMA. Mapa do Veneno – 1st Half of 2026, op. cit.; ANA, Brasil de Fato, 2 Apr. 2026, op. cit.; ISPN. Maranhão instala 34º Fórum de Combate aos Impactos dos Agrotóxicos do país [Maranhão sets up the country's 34th Forum to Combat the Impacts of Pesticides]. 3 Dec. 2024.

The international denunciation has reached the UN system: a report and the Poison Map were sent to the Special Rapporteur on Toxics and Human Rights (Dec. 2024); a hearing was held in Geneva (Sept. 2025); the contamination of 141 communities was reported to the Public Prosecution Service, the National Human Rights Council (CNDH) and the UN (Feb. 2026); and a side event will be held at the 63rd Session of the Human Rights Council in Geneva on 18 September 2026.[20]

On 25 August 2026, RAMA delivered to the Federal Government the Charter of Commitments for the Defense of Women, Agroecology and Territories in Maranhão, with 12 demands, including the immediate implementation of PRONARA (the National Program for the Reduction of Pesticide Use) and a ban in Brazil on pesticides prohibited in the European Union.[21] The Brazilian State's failure to act in the face of hundreds of attacks violates UNDROP (art. 14), ILO Convention 169 and the duty of due diligence recognized by the UN Human Rights Committee in Portillo Cáceres v. Paraguay (2019).



[20] ISPN. Chuva de agrotóxicos: organizações denunciam à ONU violência contra comunidades rurais no Maranhão [Pesticide rain: organizations denounce violence against rural communities in Maranhão to the UN]. Jan. 2025; RAMA. Guerra química no Maranhão: 239 ataques com agrotóxicos atingem 200 comunidades em 4 meses [Chemical warfare in Maranhão: 239 pesticide attacks hit 200 communities in 4 months]. 26 May 2026; RAMA; IBDH. Side event, 63rd Session of the UN Human Rights Council, Geneva, 17 Sept. 2026.
[21] RAMA. RAMA entrega Carta de Compromissos ao Governo Federal e exige fim da guerra química [RAMA delivers Charter of Commitments to the Federal Government and demands an end to chemical warfare]. 27 Aug. 2026. Available at: https://www.rederama.org.

6. What we propose

- A ban on aerial spraying of pesticides by airplanes and drones throughout Brazilian territory and respect for the municipal laws already passed;
- A total ban on spraying in the vicinity of Indigenous lands, quilombola territories and traditional communities, with respect for free, prior, informed and good-faith consultation;
- A ban in Brazil on pesticides prohibited in the European Union and a declaration of unconstitutionality of Law No. 14,785/2023 (ADI 7701);
- Binding legislation in the EU, Switzerland and European member states ending the export of banned pesticides and imposing human rights due diligence on the soy, corn and other agricultural commodity supply chains;
- Suspension of the Sustainable Chains project (GIZ/Government of Maranhão) and of any “sustainable soy” certification in the region;
- Creation of a solidarity fund to compensate victims of pesticide exposure and biodiversity loss;
- Effective enforcement; civil, administrative and criminal accountability of offenders; comprehensive health care for exposed populations; and full reparation to the communities;
- Protection of traditional territories and human rights defenders, and implementation of PRONARA with support for the agroecological transition.





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Watch our video for the “Enough with Pesticides” campaign.

Mira nuestro vídeo de la campaña
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