

IMPACTS

OF AGRICULTURAL
COMMODITY
PRODUCTION
ON THE AVÁ-GUARANI
COMMUNITIES

OF THE TEKOKHA GUASU
GUAVIRÁ INDIGENOUS
LAND/WEST PARANÁ

COMISSÃO GUARANI YVYRUPA (CGY) 2023





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ABOVE Fragment of forested area that constitutes the Tekoha Tatury, surrounded by soybean/corn monoculture (CGY, 2022).

The Avá-Guarani indigenous communities that inhabit the western region of the State of Paraná are currently distributed in 14 villages - or *tekoha*, places where they can live according to their way of being in the world - that make up the Tekoha Guasu Guavirá Indigenous Land, and 10 villages that make up the Tekoha Guasu Okoy Jakutinga Indigenous Land, located on the banks of the Paraná River and its tributaries. The Indigenous Lands are a part of the territory traditionally occupied by the Avá-Guarani in the region that was not submerged by the Itaipu Hydroelectric Power Plant reservoir. However, the area was converted, to a large extent, into crops for the production of agricultural commodities. The State has not recognized any of these lands, perpetuating a situation of extreme vulnerability and violation of human and territorial rights. In this context, the region is characterized by severe social conflicts linked to territorial litigation involving the Avá-Guarani communities and sectors with political and economic interests contrary to the original rights of indigenous peoples over their lands, especially the rural sector [topic: *Tekoha Guasu Guavirá: territorial dispossession and the formation of agricultural commodity-producing farms*].

The Tekoha Guasu Guavirá Indigenous Land, the focus of this study, has about 24,000 hectares distributed between the municipalities of Guaíra and Terra Roxa, and a small part in the municipality of Altônia¹, according to the Circumstantiated Report of Identification and Delimitation (RCID) completed by Funai in 2018, and subsequently annulled by the Bolsonaro government.

A large part of its area was deforested and is currently occupied by agribusiness monocultures, notably soybean, usually intercropped with transgenic corn. A smaller area is used for cattle raising or eucalyptus production. Some are used for cultivating other crops [topic: *Guaíra, Terra Roxa, and the advance of soy in Western Paraná*].

The *tekoha* of Guasu Guavirá currently inhabited are confined between agribusiness monocultures and always adjacent to the few remaining forested areas. Among the 14 villages, only *tekoha* Karumbey, *tekoha*

Porã, and *tekoha* Marangatu do not border soybean fields. However, they are in the urban area, confined among houses and businesses of non-indigenous; a polluted stream that floods the village in times of heavy rains; the Guaíra public jail, which between 2019 and 2020 - during the Covid-19 pandemic - was built within the boundaries of the Indigenous Land; and a military area. In the tiny areas of the villages, there is no adequate space for the full exercise of their productive activities and physical-cultural reproduction according to their uses, customs, and traditions. They feel the impact, in several aspects, of the agribusiness appropriation of their traditional lands.

From this context of territorial confinement, the impacts on the communities of the Tekoha Guasu Guavirá resulting from the production of agricultural commodities in their traditional areas were diagnosed through documental and statistical research, and especially field research. The studies were grouped under the topics *Environmental devastation; Threats to agrobiodiversity; Contamination by agrotoxins and Hunger* [topic: *Dispossession, agribusiness, and the severe impacts to the Avá-Guarani communities of Tekoha Guasu Guavirá*]. The Avá-Guarani reports forming this diagnosis were collected between May and August 2022, and testimonies records prior to this date were also consulted to compose this research.

UNDER Location o the Tekoha Guasu Guavirá Indigenous Land.



¹ The indigenous territory's area in the municipality of Altônia corresponds to part of the Ilha Grande National Park.

The consolidation of the land circumstances that characterize the Tekoha Guasu Guavirá Indigenous Lands results from the Avá-Guarani people's historic territorial dispossession. Forced removals, deaths, partial flooding of their territory by the Itaipu Hydroelectric Power Plant reservoir, and environmental devastation of the entire region mark the community. Currently, more than 60% of the delimited area is appropriated by agribusiness, and indigenous farms and dwellings occupy just over 1%.

Various documents have records of the violations against the Avá-Guarani and the dispossession of their territory, especially during the 20th century. The records include the Circumstantiated Report of Identification and Delimitation of the Tekoha Guasu Guavirá Indigenous Land, concluded by Funai in 2018; the *Violations of the Human and Territorial Rights of the Guarani in Western Paraná (1946-1988): Subsidies for the National Truth Commission* report, published by the Indigenist Work Center (CTI), in 2014; the final report of the National Truth Commission, from 2014; and the Paraná State Truth Commission, from 2017, which present specific chapters about the violations suffered by indigenous peoples during the period of military dictatorship. Also, the report *Avá-Guarani: the construction of Itaipu and territorial rights*², the result of the work developed by a group of prosecutors and employees of the Federal Prosecutor's Office (MPF) to provide support for the actions of the Attorney General's Office (PGR) regarding the complaint of rights violation of the Avá-Guarani people resulting from the construction of Hydroelectric Power Plant.

The agricultural commodity-producing farms that currently affect the Tekoha Guasu Guavirá originate in the improper concession of traditionally occupied lands, fostered by the State and articulated with private agents in favor of companies and individual owners. After 1981's Constitution, which transferred the competence of land titling to the States, several concessions were made by the State of Paraná - governed, at that moment, by the oligarchies associated with the exploitation of yerba mate and wood. Paraná, like the other states, "considered vacant all lands that were not legitimately owned and,

therefore, available to them, titling indigenous lands the easier, the farther they were from the centers of power" (SOUZA FILHO, 1998, p. 134). In this context, titles were granted in the current municipality of Guaíra by the Paraná government to Companhia Mate Laranjeira and other companies *obrageras*³.

This process intensifies in the 1940s with the massive incorporation of the indigenous territory into the national land market during the internalization policy known as the "March Westward", in Getúlio Vargas' government (1930-1945), and by the land titling policy of Moyses Lupion's (1947-1951/1956-1961) state government.

In this context, the concession of lands traditionally occupied by indigenous peoples, improperly considered "vacant", was managed by private colonizing companies selling land and lumber. Promoted by the State, articulated with private agents, and based on a colonial/racist logic of "national development," indigenous peoples' territories were dispossessed. At the same time, settlers, initially from Rio Grande do Sul and Santa Catarina, descendants of European immigrants, were privileged with easy access to lands in western Paraná, marking the racial characteristic of the regional land ownership structure that continues to the present day.

The land titles that begin the properties' chain of succession in the Tekoha Guasu Guavirá Indigenous Territory, whether in favor of the companies *obrageras* or the settling companies, were issued even though the lands belong to the Federal Government. It makes them not subject to titling by the State of Paraná, as occurred. The lands should have been protected according to the legal treatment of the indigenous rights over their traditionally occupied lands, established at least since the 17th century. For Souza Filho (1998, p. 134), since the 17th century, indigenous lands have been unavailable to the Colony, the Empire, or the State Member. These lands were never vacant because they did not cease to belong to the indigenous peoples. So, they "could not be granted until 1822, when this institute ended; they were not subject to the possession regime, once the law did not

2 ALCÂNTARA, Gustavo Kenner *et al.* (org.) *Avá-Guarani: the construction of Itaipu and territorial rights*. Brasília: ESMPU, 2019.

3 See Technical Report on the Dominial Chains of Properties in Dispute with the Tekoha Guasu Guavirá Indigenous Lands. MPF, 2020; and Faria C. and Hollanda, T (2019).

discipline the original acquisition of the lands; and could not be considered vacant after the Land Law of 1850 [...]. They are legally protected in the 20th century and constitutionally protected since 1934.”

Furthermore, even though this aspect does not overlap with the indigenous peoples' original right, these lands are located in a border strip whose domain belongs to the Union. Once again, the state of Paraná did not have jurisdiction to title them away⁴.

The massive incorporation of the traditionally occupied territory into the land market is related to the broad expansion of agribusiness in the region, which dates back to the early 1970s. Since then, soybeans have consolidated their position as the main agricultural crop until the present day, causing deep socio-environmental transformations in the region and worsening the living conditions of the Avá-Guarani. At that time, soybean expansion in area size, production, and productivity increased dramatically in western Paraná, catalyzed by the state's economic policies aimed at the agricultural and cattle-raising sector. There were in highlight incentive projects for soybean production based on the rural credit system, tax exemptions, the intensive process of agricultural mechanization, heavy investments in research for the sector, transformations in the regional logistics network, and governmental incentives for exports [topic: *Guaíra, Terra Roxa, and the advance of soy in western Paraná*].

The advance of soybean plantations in the region occurred at the same time as the Itaipu Treaty, signed in 1973 between Brazil and Paraguay to build the Itaipu Hydroelectric Plant, came into effect. The formation of its water reservoir affected the population of the entire Paraná River margin. It partially flooded the territory of the traditional Avá-Guarani occupation in the early 1980s, consolidating the process of dispossession and devastation of their territory. The report mentioned above, *Avá-Guarani: the construction of Itaipu and territorial rights*, prepared by the Attorney General's Office (PGR), notes that the construction of the Itaipu Hydroelectric Plant is another chapter in the history of violence against the Avá-Guarani people, but not just any episode: the plant caused a definitive transformation in the landscape, spaces, and resources of the region, affecting the physical and cultural survival of the Avá-Guarani people, who lost a significant part of the traditionally occupied areas, leaving entire villages under water.

4 The Land Law of 1850, its regulation in 1854, and the Constitution of 1891 are the basis for understanding that the lands located in the borderland strip, expanded from 66 km to 150 km as of the 1937 Constitution, belong to the Union.

The construction also affected “historical and sacred places, such as the famous Salto de Sete Quedas, located in Guaíra, in addition to cemeteries and archaeological sites that serve as references to the indigenous peoples occupying the region” (Kenner et al., 2019, p.9). The Avá-Guarani were never effectively repaired by the impacts of the hydroelectric dam's construction, and their damage is felt to this day, as the report describes. In this sense, the construction of the Binational Hydroelectric Plant of Itaipu produced severe violations of rights to the Avá-Guarani indigenous communities in western Paraná that persist to this day. This uncovering led to the Originari Civil Action (ACO) 3300 later 3555⁵ in the Federal Supreme Court in 2019, claiming the accountability of Itaipu and the Union and reparation for the damage caused to the Avá-Guarani due to the construction.

According to the report *Violations of the human and territorial rights of the Guarani in western Paraná*, “the process of territorial expropriation of western Paraná's Guarani people was conducted with the support of systematic infringement of the indigenous legislation and a silent genocide that took place through expulsions, slave labor, assassinations, arbitrary imprisonment and concealment of corpses, covered up by the regime of exception in the country and by the militarization of the indigenous agencies and other organs in touch with the indigenous peoples.” This report was published in 2014 by the Centre for Indigenist Work (CTI) to provide input to the National Truth Commission.

Amid the history of dispossession and violence perpetrated by the State and private individuals against the Avá-Guarani, part of them dispersed into the territories of Mato Grosso do Sul, central Paraná, and Paraguay. Meanwhile, other families have sought strategies to remain in their territory, for example, the families who have never left the Porã *tekoha* and Karumbey *tekoha*, today surrounded by the urban expansion of Guaíra⁶.

5 ATTORNEY GENERAL OF THE REPUBLIC. Federal Supreme Court. Original Civil Action No. 3555. Federal Public Ministry against Federal Union, National Institute of Colonization and Agrarian Reform, National Indian Foundation and Binational Itaipu. Reporting Justice Dias Toffoli. 17/12/2021.

6 See more in *Circumstantiated Report of Identification and Delimitation of the Tekoha Guasu Guavirá*, in the *Violations of the Human and Territorial Rights of the Guarani in Western Paraná* and *Avá-Guarani: the construction of Itaipu and territorial rights* reports.

The return of families who were forcibly removed and the evident limitation of the group's physical survival in the spaces of resistance in Guáira and Terra Roxa led to the territorial reaffirmation of Tekoha Guasu Guavirá. Since the late 1990s, they have reoccupied some former *tekoha* that were not submerged by the Itaipu reservoir. From there, they claim for the Brazilian State to recognize their territorial rights permanently.

The sluggishness of the State in recognizing Avá-Guarani's right to traditionally occupied lands worsens the situation of vulnerability in which they live, marked by the constant denial of guarantees and fundamental rights. The administrative process of identification and delimitation of the Indigenous Land Tekoha Guasu Guavirá was initiated by Funai in 2009, driven by a court decision. The Avá-Guarani in the region never had their territorial rights recognized over numerous portions of areas traditionally occupied.

The recognition was made official only in October 2018 with the summary of the Circumstantiated Report of Identification and Delimitation (RCID) of the Tekoha Guasu Guavirá Indigenous Lands, prepared by Funai, in the Official Gazette of the Federal Government. However, the administrative process was then suspended by a Federal Regional Court 4 (TRF4) decision favorable to the Federation of Farmers of the State of Paraná. Later, the process was annulled in a Federal Court of Paraná decision favorable to the municipality of Guáira, leading to an unresolved legal dispute. Under the government of President Jair Bolsonaro, Funai, which should act by its constitutional obligation in defense of indigenous territorial rights, reported a lack of interest in appealing the sentence that annulled the demarcation of Tekoha Guasu Guavirá. With the edition of Ordinance No. 418 of March 24, 2020, the autonomous entity agrees with President Jair Bolsonaro. Even before being elected in 2018, he promised not to demarcate a single square centimeter of indigenous land⁷, even though the demarcation and protection of the territories traditionally occupied by indigenous peoples is a constitutional imperative and not a political decision to be made by any official.

While the Executive continues to be negligent about its obligation to demarcate and protect Indigenous Land and committed to promoting national agribusiness, possession suits are being filed against almost all communities, threatened with eviction by landowners and companies, including Binational

Itaipu⁸. Many of the repossession suits filed against the communities resort to the thesis of the Temporal Landmark of occupation, claiming, astoundingly, that the indigenous were not in that area on October 5, 1988⁹!

The conflicts in the region, however, go beyond administrative and judicial disputes. There are recurrent attempts to remove the indigenous people from their lands by explicit forms of violence, or at least to make it difficult for them to remain in the villages.¹⁰

In the face of a truculent racist hate campaign against the Avá-Guarani people launched by the local ruralist sector, organized around the National Organization for Assurance of Property Rights (Ongdip), whose headquarters are in Guáira, the Federal Public Prosecution Office of Guáira reported the organization and ordered it to retract for disseminating "abusive, racist and discriminatory content."¹¹

⁸ Monitoring carried out by CGY's legal counsel.

⁹ The argument of the Temporal Landmark of occupation was used in possessory actions filed against Avá-Guarani communities of the Guasu Guavirá Tekoha Indigenous Land, such as the Araguaju Tekoha (action 2007.70.04.002850-9/000285071.2007.404.7004/50030914720134047004), the Guarani Tekoha (action 5000554-73.2012.4.04.7017) and the Tajy Poty Tekoha (action 5001889-93.2013.404.7017). The legal thesis of the Temporal Landmark of occupation, whose unconstitutionality or applicability is being judged in the Extraordinary Appeal 1.017.365/STF, arbitrarily establishes the date of the Federal Constitution of 1988 implementation as the limiting mark of the original rights of indigenous peoples to their lands. For José Afonso da Silva (2016), the 1988 Constitution is the last link of the legal-constitutional recognition of the historical continuity of the indigenous peoples' original rights to their lands, not the temporal landmark of those rights. According to the jurist, moving the milestone to the date of the Constitution's promulgation means breaking the constitutional protection of indigenous rights' continuity, opening gaps for the appropriation of the original rights of indigenous peoples on the lands they occupy. We emphasize that the violent deprivation imposed on the Avá-Guarani of full access to their territory in the past - primarily transformed into agribusiness crops or flooded by the construction of the Itaipu reservoir - cannot be an obstacle to recognizing and protecting their human and territorial rights today.

¹⁰ See more in: *Guáira & Terra Roxa - Report on Human Rights Violations against the Avá-Guarani people of Western Paraná*. Comissão Guarani Yvyrupa, 2017.

¹¹ Agreement homologated, on May 29, 2018, between the Federal Public Ministry and Ongdip, in Public Civil Action

⁷ <https://www1.folha.uol.com.br/poder/2018/11/no-que-depender-de-mim-nao-tem-mais-demarcacao-de-terra-indigena-diz-bolsonaro-a-tv.shtml>. Accessed in: June, 2022.

In the hate campaign against the Avá-Guarani, questioning their ethnic identity is a recurrent attempt to contest their territorial rights. The campaign also inverts the illegality, making the indigenous people the invaders of their territory instead of recognizing their original rights over the traditionally occupied lands and repairing them for the inappropriate titling and flooding of the area. Those cover-ups are suggested, for example, by picturing and naming them as “invaders,” “Paraguayans,” and “bugres,” as recorded in the report by Guarani Yvyrupa Commission in 2017, mentioned earlier, and arguments used in the repossession suits filed against the indigenous peoples.

The non-recognition of their territorial rights also starts a cycle of denial of other rights. A recent example - kind of a reiteration of past violations, never mitigated - was the recent Environmental Impact Studies for the Environmental Impact Report (EIA-RIMA) of the Nova Ferroeste. This railroad project plans to connect Maracaju, in Mato Grosso do Sul, and Foz do Iguaçu, in Paraná, to Paranaguá, also in Paraná, to transport agricultural commodities from Paraná, Mato Grosso do Sul, Santa Catarina, Paraguay, and Argentina all across the state until the port of Paranaguá. Contrary to the urgent need to repair historically violated fundamental rights, the project disregards the Avá-Guarani as an indigenous people directly impacted by the construction of the railroad, since their land has not been regulated¹².

The Indigenous Component of the Environmental Impact Study (CI-EIA) covers only the Rio das Cobras Indigenous Territory. However, the route directly affects other Indigenous Lands of the Avá-Guarani, Guarani Mbya, Guarani and Kaiowa, and Kaingang peoples, among them the Tekoha Guasu Guavirá Indigenous Territory. The CI-EIA points out that the Term of Reference that guides the studies does not include the other Indigenous Lands, and “once any of the studied or claimed areas are formalized, Funai may request the regularization of the CI-EIA for the environmental licensing of the initiative.”

With this example, in which the Avá-Guarani of western Paraná are once again punished due to the negligence of the State in protecting their territorial rights while promoting agribusiness - despite the constitutionally guaranteed indigenous rights -, let us move on to the characterization of agribusiness in the region.

No. 5000596-15.2018.4.04.7017, which was processed before the 1st Federal Court of Guáira.

¹² <https://www.novaferroeste.pr.gov.br/Pagina/Estudo-de-Impacto-Ambiental>. Accessed in: May 2022.

The cities of Guaíra and Terra Roxa, where the Tekoha Guasu Guavirá Indigenous Territory is almost entirely inserted, currently have 80% of their areas producing monoculture agricultural commodities. The expansion of agribusiness in the region dates back to the 1970s. Since then, soybeans, followed by corn, started to consolidate as the main agricultural crop in the region, aligned with the Brazilian context.

Looking at the transformations in agricultural land use in this region is relevant to contextualizing how the municipalities of Guaíra and Terra Roxa have become crop-specialized and how this relates to the intense socio-environmental transformations and the profound impacts on the Avá-Guarani people in western Paraná.

SOY EXPANSION IN THE STATE AND NATIONAL CONTEXT

Currently, few species have great relevance in Brazilian agricultural production. Notably, there are soybeans and corn - primarily used for feeding animals and producing ultra-processed foods - and sugarcane - used mainly for producing biofuels. In 2020, the agricultural harvested area in Brazil reached 83.1 million hectares, with these three agricultural products occupying 65.5 million hectares. Soy alone occupied 37.18 million hectares¹³. Mato Grosso was the top-producing state for both soybeans and corn, followed by Paraná in 2020.

An analysis of the Brazilian Institute of Geography and Statistics' (IBGE) Census of Agriculture data from the 1970s and when they carried out the last Census, in 2017, provides a dimension of the transformations in the planted area and the Brazilian agricultural production during this period. In general, soybean, corn, and sugarcane crops substantially increased in planted area and productivity. On the contrary, rice and beans, among other primary food products in the Brazilian population's diet, decreased in planted area and per capita availability - even with the increase in productivity.

¹³ Data from Municipal Agricultural Production Survey/IBGE, 2020.

According to data from the 2017 IBGE Census of Agriculture, soybeans began to occupy 31 million hectares in the country in 2017, while in 1970 they occupied 2.18 million hectares. Its production increased from 1.88 million tons to 103 million tons in the same period. In 1950 there was still no considerable amount of soybean planted in the country¹⁴. Data from IBGE's Municipal Agricultural Production Survey¹⁵ shows that in 2019 Brazilian soybean production surpassed U.S. production for the first time. It has since then moved into the position of the world's largest producer of this oilseed.

Corn increased from 10 million hectares in 1970 to 15 million in 2017, and its production went from 12 million tons to 88 million tons in the same period. Corn is an intermediate raw material for preparing animal feed or input for the food industry, especially for ultra-processed products. As shown in the *Food Chain Study (2020)*¹⁶, 37% of the total volume of corn available in the country in the 2018-19 harvest was for export. Of the 62.9% that remained in the domestic market and as final stock, 71.2% was for animal consumption (57.4% for poultry, 26.9% for pigs, and the rest for cattle and other animals), 12.5% for industry and only 1.5% for direct human consumption¹⁷.

A big part of the soy and corn domestically consumed is destined for the meat production industry, of which Brazil is the largest world exporter. Its export has been growing yearly, demanding more area and grains for animal feed.

Sugarcane also expanded its production considerably, reaching 9.12 million hectares in 2017, compared to 1.69 million hectares in 1970.

¹⁴ IBGE's historical data.

¹⁵ The data presented here and the following data, from 1970 and 2017, are from the IBGE Agricultural Census. More recent data are from IBGE's Municipal Agricultural Production Survey, collected after the last Agricultural Census conducted in 2017.

¹⁶ *Food Chain Study*. Walter Belik. Ibirapitanga, ICS and Imaflores, 2020.

¹⁷ Data from Brazilian Association of Corn Industries (Abimilho).

As for rice, it went from 4.3 million hectares in 1970 to 1.7 million in 2017. Its production increased from 5.2 million tons to 11 million tons. Beans went from 4 million hectares in 1970 to 1.9 million hectares in 2017, and the production went from 1.5 million tons to 2.1 million tons over the period. The increase in production of rice and beans was much lower than that of soybeans, corn, and sugarcane.

SOYBEAN PLANTED AREA (HA)
PARANÁ AND BRAZIL 1976/77 TO 2021/22 CROPS

safra	PR	BRASIL
1976/77	2.200.000	6.949.000
1980/81	2.350.000	8.693.400
1990/91	1.966.000	9.742.500
2000/01	2.818.000	13.969.800
2010/11	4.590.500	24.181.000
2020/21	5.623.800	39.195.600
2021/22 (previsão)	5.680.000	40.921.900

Source: Conab¹⁷

In Paraná, similar to what happens in the national context, soybean is the main agricultural product. The area planted with it has reached more than a quarter of the entire state's area, reaching 5.6 million hectares in 2021, according to National Supply Company (Conab) data.

Soy and its derivatives in the export agenda

With the price of agricultural commodities rising in the international market, grain exports grew significantly in 2020, which led to stock reduction and price increases in the domestic market. In 2020/2021, the Brazilian soybean harvest broke records with 137.3 million tons of soybeans. According to the Ministry of Agriculture, Livestock and Food Supply, the soybean complex was the leading exporting sector

¹⁸ <https://www.conab.gov.br/info-agro/safras?view=default>. Acesso em abril/2022. Os dados da Conab apresentam algumas diferenças em relação àqueles do IBGE devido a diferenças de metodologia para coleta de dados, mas a tendência na variação dos dados é semelhante em ambos.

of Brazilian agribusiness, with 104.96 million tons traded in 2021¹⁹. Brazil is currently the world's largest exporter of soybeans; in 2021, 70% of the soybean exported by the country had China as destiny, followed by Spain, Thailand, the Netherlands, and Turkey²⁰.

As for Paraná, in 2020/2021, the state also broke production records with approximately 21 million tons of soybeans harvested. Of this total, 17.3 million tons of the soybean complex (grain, meal, and oil) went to export. The main products exported by the state are from the agriculture and cattle production sector, such as soybeans, poultry meat, soybean meal, and other animal food. Soybeans represent 36.8% of all that is exported by the state. Paraná also provides 17% of all soybeans sold abroad by Brazil, according to the Paraná Institute of Economic and Social Development (Iparades), based on information from the Secretariat of Foreign Trade (Secex)²¹. According to the survey, most of the production was exported to China, which bought 12.2 million tons (70.6%) of the soybean complex produced in the state in 2021.

In western Paraná, the agricultural and cattle farming cooperatives C.Vale, Copagril, Integrada, and I.Riedi are some of the companies directly responsible for the exportation of fresh or processed products²². Besides soy, what stands out in the agribusiness export agenda of both Paraná and Brazil is chicken meat, whose production demands part of the cultivated soy and corn. Brazil, the world's leading exporter of chicken meat, produced 101 million tons in 2021, with Paraná being the primary producing state²³ and China being the primary destination

¹⁹ <https://www.gov.br/agricultura/pt-br/assuntos/noticias/exportacoes-do-agronegocio-batem-recorde-em-dezembro-e-no-ano-de-2021>. Accessed in: May 13th, 2022.

²⁰ <http://comexstat.mdic.gov.br/pt/comex-vis>. Accessed in: May 13th, 2022.

²¹ Data from Paraná Institute of Economic and Social Development (Iparades), based on information from the Secretariat of Foreign Trade (Secex), Brazilian Ministry of Economy.

<https://www.agricultura.pr.gov.br/Noticia/Soja-ocupa-um-quarto-do-territorio-estadual-e-e-exportada-para-mais-de-20-paises>. Accessed on May, 2022.

²² <https://www.gov.br/produtividade-e-comercio-exterior/pt-br/assuntos/comercio-exterior>. Accessed in: May 13th, 2022.

²³ In 2020, Paraná was responsible for one third of the national poultry production. <https://www.parana-cooperativo.coop.br/ppc/index.php/sistema-ocepar/>

(18%), followed by Japan, the United Arab Emirates, Saudi Arabia, and South Africa²⁴. In western Paraná, a large producer of poultry meat, the production is centralized by these same agro-industrial cooperatives that dominate the production and marketing of grains. They invest in the verticalization of the production chain, with the expansion of slaughterhouses throughout the region, as we shall see.

GUAÍRA, TERRA ROXA, AND THE ADVANCE OF SOY IN WESTERN PARANÁ

The exponential expansion of soy in the national and regional contexts is also evident in Guaíra and Terra Roxa. These municipalities have a considerable part of their areas dedicated to soy and corn production, whose harvests are interspersed.

Although soybean planting in western Paraná has been around for some time, its consolidation dates back to the 1970s, in the wake of the expansion of policies for planting oilseeds in Brazil. The policies were rural credit systems, tax exemptions, heavy investment in mechanization, research for the sector²⁵, transformations in the logistics network, and governmental incentives for exports.

One of the consequences in the region at that time was the process of property concentration associated with soybean expansion, as indicated in the *Comparative analysis of the technical progress of soybean in an old coffee region (North) and a food crop region (Far West) in Paraná*, conducted by the Paraná Institute of Economic and Social Development (Ipardes) in 1981²⁶. A fact that echoes this concentration is that in 1970 there were no plantations with more than 200 hectares of extension in Guaíra. In 1975, the Census recorded nine cases of plantations with more than 200 hectares of extension. At the same time, the transformations in the land structure

comunicacao/2011-12-07-11-06-29/ultimas-noticias/133555-avicultura-parana-produz-um-terco-da-carne-de-frango-do-brasil. Accessed in: August 1st, 2022.

²⁴ <http://comexstat.mdic.gov.br/pt/comex-vis>. Accessed in: May 13th, 2022.

²⁵ The creation of Embrapa Soja, a project which developed technologies for soy production in tropical regions, for example, dates back to 1975.

²⁶ Ipardes. *Comparative analysis of the technical progress of soybean in an old coffee region (North) and a food crop region (Far West) in Paraná*. Curitiba, 1981.



ABOVE Sticker extolling soybeans on a car window in Guaíra (CTI, 2017).

impacted the rural flight. According to IBGE data, 62.7% of the population lived in rural areas in Guaíra in 1970, dropping to 32.7% in 1980. Currently, only 8% of the population of Guaíra lives in rural areas.

Furthermore, following the productive specialization pattern seen on a national and state scale as the substitution of food crops for the production of agricultural commodities advances, primary foods in the population's diet, such as rice, cassava, and beans, lose space in Guaíra and Terra Roxa.

The mentioned analysis, carried out by Ipardes in 1981²⁷, focused on evaluating the economic and social repercussions of soybean plantations, given its significant expansion in the State of Paraná. According to the document, the micro-region of Far West Paraná was not entirely occupied in 1960 when farming establishments covered only 27% of the micro-region's land area. In this period, the region received a massive demographic influx. In 1970, the occupation proportions of the geographical area were over 60%.

The same Ipardes document, based on data analysis, establishes a close correlation between the total deforested area and the increase in soybean area in the Microregion. It shows that soybean expanded fundamentally in areas deforested specifically for its cultivation until 1975. Until then, there was no significant decrease in the traditional temporary crop cultivation area, given the large [thus considered] "availability" of forested areas. However, the analysis shows that the expansion of oilseeds at least obstructed the growth of other food crops.

By assuming (in theory) that until 1975 soybean expanded preferentially in forested areas in the far west of Paraná, the analysis builds some scenarios

²⁷ op.cit.



LEFT Corn harvest in Guaíra, in 2022; and soybean fields surrounding a village in Tekoha Guasu Guavirá, in 2017 (CGY and CTI Collection))

for future expansion of the oilseed. It foresees that beyond this maximum limit of expansion over forested areas already devastated in 1975, any increase in an area would have to happen by substituting other food crops. The analysis of subsequent data seems to confirm this scenario. The expansion in soy and corn areas in the municipalities of Guaíra and Terra Roxa, in a context of widespread environmental devastation, is combined with the retraction in planted areas of food crops such as rice and beans between the 1974 and 2020 harvests.

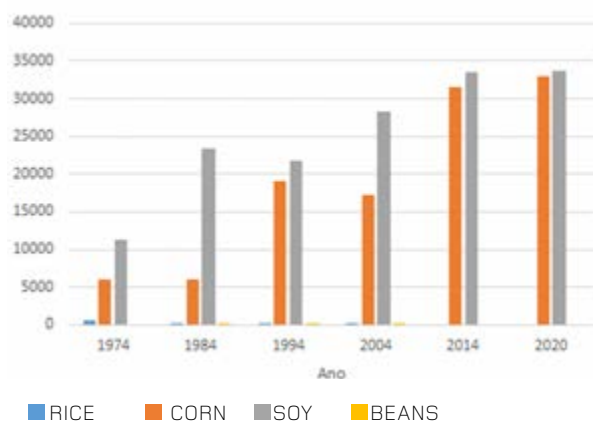
Studies of the economic and social effects of the Itaipu hydroelectric plant on the Western Paraná, a document produced by Ipardes in 1981²⁸, shows that

²⁸ Ipardes. Studies of the economic and social effects of the Itaipu hydroelectric plant on the Western Paraná. 1981.

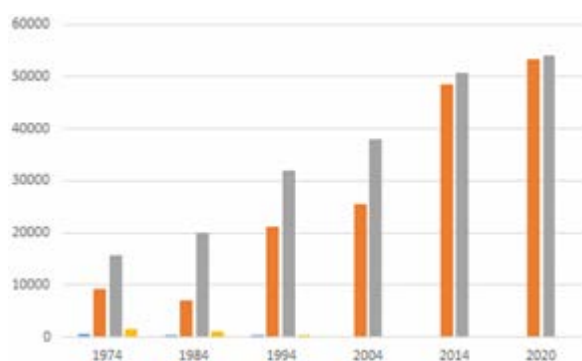
the total area cultivated with the main crops - soy, wheat, corn, beans, rice, and cassava -, went from 237,006 hectares to 1,546,064 hectares between 1967 and 1975. The area planted with soy in the western region of Paraná was 20,785 hectares in 1967 and increased to 610,512 hectares in 1975. In other words, soy represented 8.76% of the area planted with the main crops in 1967 in the region, increasing to 39.49% in 1975. As for production, it went from 28,523 tons in 1967 to 1,375,832 tons in 1975. In Guaíra, the area planted with soy went from 3,488 hectares in 1970 to 15,562 hectares in 1975.

Then, soy expansion in western Paraná was due to the dynamics of deforestation, especially in the 1970s, and to the replacement of food crops. The consequences are observable in the current soy area harvested in Guaíra, which in 2020 was 33,890 hectares, corresponding to 60% of the total area of the

GUAÍRA HARVESTED AREA (HA) BY AGRICULTURAL SPECIES 1974 - 2020



TERRA ROXA HARVESTED AREA (HA) BY AGRICULTURAL SPECIES 1974 - 2020



Source: Municipal Agricultural Production Survey PAM IBGE

municipality. In Terra Roxa, it was 54,500 hectares, almost 70% of the total area of the municipality, according to data from IBGE's Municipal Agricultural Production Survey.

The *Land Use and Occupation map in the cities of Guairá and Terra Roxa in 2021* shows the extensive occupation of the land by agriculture and cattle-raising. It corresponds to approximately 80% of the two municipalities' total area. The forest remnants ("native vegetation") correspond to approximately 9.6%, and the areas of farmland and indigenous residences currently correspond to about 0.2% of the municipalities' areas combined.

These transformations have profoundly impacted the physical and cultural reproduction of the indigenous peoples living in the region. They have witnessed the intense devastation of their traditionally occupied territory as soybeans have advanced [topic *Environmental devastation of the Tekoha Guasu Guavirá region*], driving the ongoing process of territorial dispossession. This context of human and territorial rights violations was consolidated in

the early 1980s with the partial submersion of their territory for the Itaipu reservoir construction. Those were precisely the areas where it was still possible for the Avá-Guarani to form their *tekoha* near forest remnants.

AGROINDUSTRIAL COOPERATIVES AND AGRICULTURE AND CATTLE RAISING COMPANIES: AGRIBUSINESS OPERATORS IN WESTERN PARANÁ

Soy and corn produced in Guairá and Terra Roxa have their production and commercialization chain dominated mainly by the agro-industrial cooperatives C.Vale, Copagril, Integrada, and company I.Riedi Grãos e Insumos.

Like in the entire mesoregion of western Paraná²⁹, the agricultural cooperatives are very prominent, acting in the verticalization of agricultural commodities production chains. They have, in general, grain receiving and storage units and processing industries; they produce animal feed and protein, especially poultry and pig farming (C.Vale and Copagril); they sell seeds, inputs, and agricultural machinery; and they have retail markets, among other businesses. In 2021, C.Vale alone received 2,848,665 tons of soybeans, corresponding to 2.07% of all Brazilian soybean production in the 2020/2021 harvest.

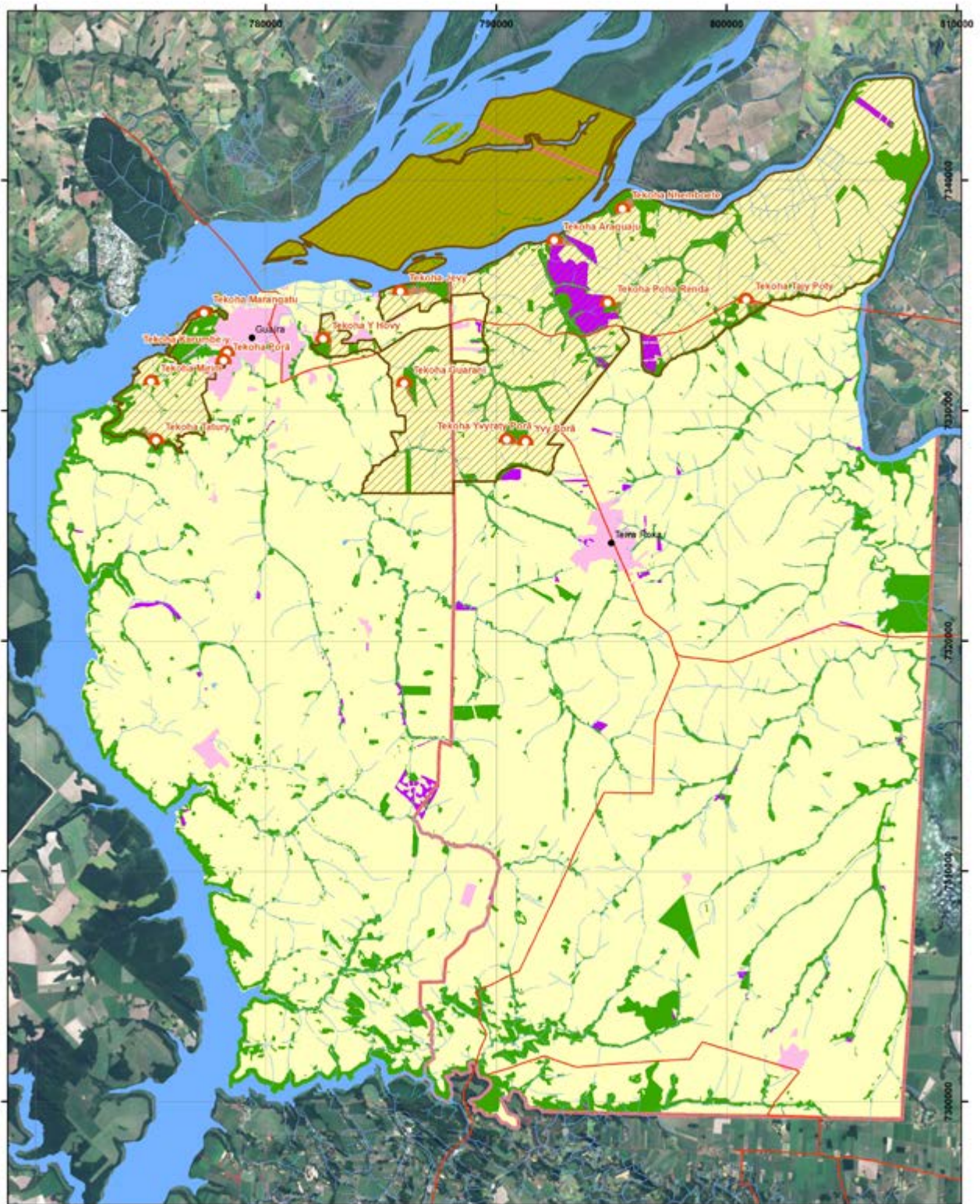
In the second year of the pandemic, the high value of the American dollar, the food inflation, and the crop failures due to extreme weather variations in 2020 and 2021 did not prevent agribusiness cooperatives from increasing their revenues. C. Vale, Copagril, and Integrada were included in the lists of the largest publicly traded companies (holdings and cooperatives) in Brazilian agribusiness for 2020/2021, as shown in the lists published by Forbes, Exame, and Valor Econômico, which annually rank "the largest in agribusiness."

C.Vale, which operates in Paraná, Santa Catarina, Mato Grosso, Mato Grosso do Sul, Rio Grande do Sul, and some Paraguay regions, expanded its income by 42.21%, reaching R\$ 17.44 billion in revenues by the end of 2021³⁰. Integrada Cooperativa Agropecuária,

²⁹ Three microregions form the so-called Western Paraná mesoregion: Cascavel, Foz do Iguaçu, and Toledo, which together sum fifty municipalities. Guairá and Terra Roxa are located in the microregion of Toledo.

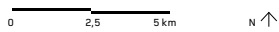
³⁰ Annual report C.Vale 2021: <https://www.cvale.com.br/site/>. Accessed on May 14, 2022.

LAND USE AND OCCUPATION MAP IN 2021 GUAÍRA E TERRA ROXA 2010



- Guarani Villages
- City headquarters
- Indigenous Territory Guasu Guavirá
- Roads
- Hydrography
- Body of water
- Guairá and Terra Roxa municipalities

- LAND USE AND OCCUPATION**
- Indigenous residence and farming
 - Silviculture (Eucalyptos plantation)
 - Deforestation (exposed land and cattle-raising)
 - Native vegetation (forests, bushes and meadows)
 - Aquatic vegetation (influenced by rivers)
 - Urban Area



which operates in Paraná and São Paulo, received R\$ 5.85 billion in revenues in 2021³¹. Copagril, which operates in Paraná and Mato Grosso do Sul, had revenues of R\$ 2.42 billion.³²

Another agricultural cooperative that has been expanding is Lar Agroindustrial Cooperative, which acquired, in Guaíra, a poultry breeding unit. In December 2020, Lar allied with Copagril, from whom it acquired an industrial poultry unit and an industrial feeding unit in the region. So, the poultry supply was still with Copagril, while the industrialization of production became a Lar operation. Lar had R\$ 17 billion in revenues in 2021, with operations in Paraná, Mato Grosso do Sul, Santa Catarina, and five departments in Paraguay³³.

C.Vale, Copagril, Lar, Copacol, and Primato cooperatives are affiliated with Central Frimesa, which operates in the meat and dairy industry. It is also one of the largest Brazilian agribusiness companies, reaching revenues of R\$ 5.039 billion in 2021.

I.Riedi Grãos e Insumos also operates in the grains and supplies production and marketing chains in several municipalities of Paraná and Mato Grosso do Sul, among other businesses. In 2021, I.Riedi became a publicly traded company³⁴, and made it to the Forbes magazine's list of 100 largest Brazilian agribusiness companies, with revenues of R\$ 1.51 billion in 2020³⁵. The family who controls and names the company owns land in the region and filed a repossession suit against one of the indigenous communities.

The substantial numbers of regional agribusiness are in line with the national context. Agribusiness has beat records of soybean harvests and exports of agricultural commodities in 2021, relying on the high international prices of commodities amidst the inflationary process that has advanced in the country since mid-2020. Meanwhile, in 2020 and 2021,

31 Annual report Integrada 2021: <https://www.integrada.coop.br/index.xhtml>. Accessed on May 14, 2022.

32 Annual report Copagril 2021: <https://www.copagril.com.br/revista/94>. Accessed on May 14, 2022.

33 <https://www.lar.ind.br/institucional/relatorios-de-balanco/>. Accessed on May 23, 2022.

34 <https://iriedi.com.br/noticias/?p=307>. Accessed in: May 13, 2022.

35 <https://forbes.com.br/forbesagro/2021/03/as-100-maiores-empresas-do-agronegocio-brasileiro-em-2020>. Accessed in: May 13, 2022.



ABOVE Agricultural cooperative silo in Guaíra (CGY, 2022).

further impacted by the Covid-19 pandemic crisis, we saw hunger worsening across the country. The rise in food prices was far above the variation in the Minimum Wage. The increased cost of living reached the poorest population in much more significant proportion, crossed by race and gender cutouts. For the Avá-Guarani people of the Tekoha Guasu Guavirá, hunger is one of the most perverse consequences of territorial confinement and the widespread transformation of their traditional lands into agribusiness monocultures. At the same time, the narrative of the rural sector representatives and government actors supports the thesis that Brazilian agribusiness feeds the world, as we will see [topic: *“Do they need to kill us to feed the world?”: the profound socio-environmental implications of agricultural commodity production on the Avá-Guarani people of Tekoha Guasu Guavirá*].

Devastation, meat-packing facilities and pandemics

Considering the large concentration of meat-packing facilities in the western region of Paraná, especially those focused on poultry and pig farming, it is relevant to comment on the relationship between meat-packing facilities and the production of pandemics that came to light in the context of the Covid-19 pandemic.

In the article “Risks of meat-packing facilities to public health in the Covid-19 pandemic in Brazil,” researcher Allan Silva (2020) shows that exhausting workdays, low pay, and poor physical and mental health conditions depict the conditions of workers in industrial poultry farming in Brazil; the Covid-19 pandemic has highlighted new occupational risks to workers' health. In this context, there were high rates of Covid-19 contagion within meat-packing facilities since the industry was perceived as an essential

activity. Several small cities that held these establishments' offices in Brazil began to act as breeding grounds for infection. The Covid-19 disease spread in mid-2020 among the Avá-Guarani villages located in São Miguel do Iguacu and Diamante D'Oeste, in western Paraná, and Guarani and Kaiowa villages in several municipalities in Mato Grosso do Sul. Employees of the Lar Agroindustrial Cooperative and JBS meat-packing facilities were vectors.³⁶

Silva (2020) resorts to the research of biologist Rob Wallace.³⁷ For over two decades, he has investigated the origins of pathogens with pandemic potential in how society organizes its productive activities. For the biologist, the expanding frontiers of agribusiness over forested areas and wetlands around the planet would be the causes for the emergence of new pathogens. These wetlands, used as fallow and wintering sites by migratory bird flocks, would behave as natural reservoirs for various virus strains. However, these wild bird flocks host only low-pathogenicity (ability to infect a host) viruses; high-pathogenicity viruses usually only infect a few individuals without establishing a chain of contagion due to the birds' high genetic variability (Silva, p.75-76).

With the advance of agriculture and cattle-raising over such wetlands, these flocks lose their fallow areas and start to search for food amidst the remains of the farms' grain productions, causing an increase in the wild migratory birds and farmed birds interaction.

As human interaction also increases due to agricultural activities, intensive livestock raising, or even increasing urbanization, the possibilities for evolution and so-called spillover (the spread of a pathogen

to a new host species) of new pathogens into human populations increase proportionally.

For the Sars-Cov-2 virus, responsible for the Covid-19 pandemic - characterized as such by the World Health Organization (WHO) in March 2020 until today -, Wallace would place its trajectory in a chain that connects deforestation in Southeast Asia, the advance of agriculture and cattle-raising over forested areas (habitat of wild animals carrying coronaviruses) and the industry of unconventional meat animal protein's production, circulation, and consumption, as shown by Pitta and Silva (2022). In other words, the removal of bats' fallow areas by forest destruction and the advancement of animal agriculture in Southeast Asia led these animals, carriers of coronavirus strains, to coexist constantly with other animals, such as pangolins. These animals are intensively raised on farms where the viruses would have undergone mutations that facilitated the connection with human cells (Pitta and Silva, 2022).

A protopandemic ecology consolidates itself as the causes that first produce the epidemics and pandemics intensify with the advance of agribusiness and environmental destruction in the country (Silva, p.75).

Back to the meat-packing facilities, Allan Silva (2020), based on the research of Mike Davis (Davis, 2005) and the previously mentioned biologist Rob Wallace (Wallace, 2020), presents some "considerations regarding the epidemiology of the poultry industry, which produces ideal conditions for the formation of a protopandemic ecology in Brazil, as part of the capitalist circuit of production and dissemination of contagious diseases." He shows that about five genetic improvement companies currently control approximately 80% of the poultry cultivated worldwide, producing in laboratories a few strains of broilers, laying hens, turkeys, and other birds from a unified gene bank.

The genetic monoculture system presents itself as one of the most problematic factors. The low genetic variability among the animals produced under confinement restricts the immune resistance to viruses and bacteria. Thus, industrial animal breeding, as practiced by the poultry and pig industries around the world, besides acting on the genetic improvement of animal species to fill the demand for increased productivity, also cultivates its own strains of viruses and bacteria, perhaps contributing to the selection of increasingly deadly viruses. According to the researcher, these microorganisms would find the best conditions for improving their pathogenicity and increasing their virulence (ability to cause damage to the host) in poultry and pig breeding barns (Silva, 2020, p. 68).

³⁶ See:

<https://apublica.org/2020/06/contaminacao-de-indigenas-em-dourados-partiu-de-frigorifico-da-jbs/>;

<https://reporterbrasil.org.br/2020/06/dos-frigorificos-as-plantacoes-de-cana-como-o-agronegocio-expos-indigenas-a-covid-19/>; <https://cimi.org.br/2020/06/covid-19-chega-aos-ava-guarani-da-ti-ocoy-tendo-frigorifico-como-vetor-barreira-sanitaria-e-atacada/>;

<https://deolhonosruralistas.com.br/2020/06/18/guarani-que-trabalha-em-frigorifico-contrai-covid-19-e-e-10-caso-na-regiao-de-foz-do-iguacu/>. Acesso em 01/09/2022.

³⁷ Wallace, Rob. Pandemic and agribusiness. Infectious diseases, capitalism and science. Editora Elefante & Igrá Kniga. São Paulo, 2020.

However, viruses do not only infect industrial livestock. In their constant mutations, the spillover can occur; i.e., “a microorganism that until a certain moment circulated only among birds or pigs, can find a path of infection in humans.” Silva (2020, p.70) states that “this is the hidden risk of industrial animal agriculture: farmers and slaughterhouse workers are exposed daily to chances of infection by new pathogens. They are the first potential victims of the new viruses manufactured on the floors of the poultry industry itself.”

The Indigenous Land Tekoha Guasu Guavirá had its official recognition published in the Official Gazette of the Federal Government in 2018, with around 24,000 hectares located between the municipalities of Guaíra, Terra Roxa, and Altônia, in western Paraná, according to the Identification and Delimitation study conducted by Funai. This area constitutes a portion of the lands traditionally occupied by the Avá-Guarani that was not submerged by the Itaipu Hydroelectric Power Plant reservoir. However, it was extensively converted into crops for the production of agricultural commodities, as seen in the previous topics of this diagnosis.

From the 1970s on, monocultures expanded in western Paraná with the technological modernization of the Brazilian countryside and the incentives for soybean planting in Brazil. On the one hand, the oilseed started to occupy areas previously destined for traditional food crops. On the other hand, it boosted the massive devastation of lands traditionally occupied by the Avá-Guarani people, *preparing the ground* for the specialized insertion of Guaíra and Terra Roxa

in the agricultural commodities' world trade [topic: *Guaíra and Terra Roxa, and the advance of soy in western Paraná*].

The region, depicted by the rural sector as the “granary of the world,” is not built without violently erasing the original presence of the Avá-Guarani people in the region. Their traditionally occupied lands have been converted into monocultures through historical dispossession, marked by forced removals, deaths, inappropriate titling of lands, partial flooding of their territory by the Itaipu HPP, and the environmental devastation of the entire region. This representation still masks the numerous socio-environmental implications of the agricultural commodities production that systematically fall upon - but not only - the indigenous communities of western Paraná.

Even today, the Avá-Guarani people have not been compensated for the severe damage they have suffered, and the slowness of the State to recognize their territorial rights intensifies the extreme vulnerability situation in which they live.



ABOVE Housing in Tekoha Tatury next to a soybean field (CGY, 2022).

The impacts on the Tekoha Guasu Guavirá communities caused by the production of agricultural commodities in their areas of traditional occupation were diagnosed through documentary research, statistics, and field surveys. The studies consider the context of the Avá-Guarani people's territorial confinement in 14 small villages in Guaira and Terra Roxa municipalities, surrounded by agribusiness monocultures. The results were grouped under the topics: *Environmental devastation of the Tekoha Guasu Guavirá region*; *Threats to agrobiodiversity*; *Impacts of intensive use of agrottoxins in the surroundings of the tekoha*; and *The world's granary and hunger in Tekoha Guasu Guavirá*.

ENVIRONMENTAL DEVASTATION OF THE TEKOKA GUASU GUAVIRÁ REGION

In August 2021, during the *cheramōi* and *chejaryi kuera*³⁸ meeting, in the *tekoha* village of Y'Hovy, in Guaira, the *chamōi* Ava Vera'i stated³⁹ that he would not tell anything exaggerated, much less tell lies. It happened three months before he passed away. He said that the *karai kuera*⁴⁰ want to know why the indigenous people want lots of bush and land, *karai kuera* always want to know what air, water, bush and fire are to the indigenous people. He was not sure anymore if he would tell all this because talking about all this causes sadness. But he would tell it all, not because he wanted to, but because *Nhanderu Ete*⁴¹ had demanded that he talk about it long ago.

He said that *the animals that lived in the forest no longer exist; that there is no more hunting; and that in the past, the only meat they ate was taken from the forest*. He talked about the lack of forest and that *the few trees left are asking for help so they will not be cut down any more, considering they also have life,*

³⁸ *Cheramōi* and *chejaryi* are the Avá-Guarani words to refer to the elderly man and woman, respectively. *Kuera* means their plural, thus, elderly men and elderly women. *Chamōi* and *charyi* are short forms for *cheramōi* and *chejaryi*, respectively.

³⁹ The *cheramōi* and *chejaryi kuera* statements made during the Oporaiva Kuera Aty, held in August 2021 in the village *tekoha* Y'Hovy, in Guaira, were simultaneously translated by Kunha Takua Rocay Ponhy.

⁴⁰ *Karai kuera* is how the Avá-Guarani refer to non-indigenous people.

⁴¹ Reference to the ruling deity who conceived and created the world.

feelings, and even tears. He said *the bees are like the nhandekuera*⁴²; *they have no more places to build a beehive because flowers no longer bloom in the field*. *They are afraid to build a beehive in a big tree because they know that this tree can be cut down at any moment*. And that *the fear of the animals is the same fear that nhandekuera are feeling: that karai kuera have already killed half the animals and want to do the same thing to the indigenous people*.

Ava Vera'i says,

*karai kuera blow up the mountain to make roads and sell stone, without knowing that the mountain also has its Ijary*⁴³ [*Yvyty Jary Kuera*], and its *mborai* [*its song, Yvyty mborai*]. And if it goes on like this, maybe something very serious could happen because *Yvyty Jary, the spirit owner of this mountain, is angry about all these things*. *Because everything has its ijary, the water has its ijary, the air has its ijary, the wind has its ijary, but karai kuera do not know that*. In fact, *karai kuera are bringing danger into society, and they call it evolution. Actually, it is a death danger*.

Ava Vera'i saw her grandparents murdered and saw the land she lived on being devastated and turned into soybean farms.

The vital link between the *land* and the Avá-Guarani people cannot be explained here. However, it is enough to listen to the testimony of the *chamōi* Ava Vera'i to know that the dispossession and devastation of their traditional lands generated consequences that mark the Avá-Guarani life in profound aspects - not limited to the impacts that the absence of the elements promotes on the material conditions of survival, which would already be a lot.

The territory occupied by the Guarani people largely coincides with original areas of different formations of the Atlantic Forest, one of the most threatened biomes in the world, with only 12.4% of its original area preserved.⁴⁴ The study *Effectiveness of traditionally occupied territories in maintaining natural*

⁴² Reference to "us, the Avá-Guarani people."

⁴³ *Yjary* refers to the "spirit owners" who watch over beings. Thus, the mountains (*Yvyty*) have their spirit owners (*Yvyty Jary Kuera*, the "spirit owners of the mountains"), as well as the water, the air, and the wind. Each being has its "spirit owners" who watch over them.

⁴⁴ <https://cms.sosma.org.br/wp-content/uploads/2019/06/Atlas-mata-atlanticaDIGITAL.pdf>. Accessed on: July 1st, 2022.

*vegetation cover in Brazil*⁴⁵ shows that Indigenous Lands and Quilombola Territories offer significant protection against their surroundings' deforestation, helping preserve what little remains of the biome.

It is possible to draw a parallel between biome conservation on a national scale and the contribution of traditionally occupied territories to maintaining the natural vegetation cover. The study shows that 29.1% of the total natural vegetation in Brazil is in traditionally occupied territories⁴⁶. In Indigenous Lands, only 2% of the territory has lost its vegetation cover.

The study also considered the recognition situation of the territories. It points out that the recognized ITs in the Amazon, Cerrado, Atlantic Forest, and Pampa biomes present a smaller deficit of natural vegetation cover when compared to the non-recognized ITs.

In the Tekoha Guasu Guavirá Indigenous Lands, as a result of State policies - we highlight the inappropriate titling of the lands, the forced removals, the flooding, and the incentives for large-scale conversion of the territory into monocultures -, only 12% of the nearly 24 thousand hectares are covered by natural vegetation.

Analyzing the advance of deforestation statewide between the late 19th and 20th centuries, Gubert Filho⁴⁷ shows that the forest cover of the state of Paraná

45 Doblas, Juan; Oviedo, Antonio. Effectiveness of traditionally occupied territories in maintaining natural vegetation cover in Brazil. In: Traditional peoples and biodiversity in Brazil [electronic resource] : indigenous peoples, quilombolas and traditional communities' contributions to biodiversity, policies, and threats / Manuela Carneiro da Cunha, Sônia Barbosa Magalhães and Cristina Adams, organizers. – São Paulo : SBPC, 2021.

46 The study considered the following categories of traditionally occupied territories: Indigenous Lands, Quilombola Territories, Conservation Units for Traditional Populations and Communities, Settlements with the presence of traditional populations, and the Rural Environmental Registry for Traditional Populations and Communities.

47 GUBERT FILHO, Francisco Adyr. Deforestation of Paraná in a Century. Part I: History of deforestation in the State of Paraná and its relation to agrarian reform. In: SONDA, Cláudia; TRAUZYNSKI, Silvia Cristina (organizers). Agrarian reform and environment: theory and practice in the state of Paraná. Curitiba: ITCG, 2010. p. 15 - 25. Available at: http://www.itcg.pr.gov.br/arquivos/File/LIVRO_REFORMA_AGRARIA_E_MEIO_AMBIENTE/PARTE_1_1_FRANCISCO_GUBERT.pdf. Accessed in April, 2022.

was practically intact in the last decades of the 19th century and the first decades of the 20th century (p. 15). In 1890, the State's forested area corresponded to 83.41% of its surface (16,762,400 hectares), being reduced to 64.12% in 1930 (12,902,400 hectares), 58.65% in 1937 (11,802,200 hectares), 39.67% in 1950 (7,983,400 hectares), 23.92% in 1965 (4,813,600 hectares), and only 11.90% in 1980 (1,997,100 hectares). According to the 2019-2020 Atlas of Forest Remnants in the Atlantic Forest⁴⁸, the forested area currently constitutes about 13.1% of the state⁴⁹.

The following maps (Gubert Filho, 1988⁵⁰) illustrate these data of the tremendous environmental devastation in the State of Paraná between 1890 and 1980.

The maps' scale does not allow a detailed analysis of the western region of Paraná, but it is possible to observe, roughly speaking, that the region is still predominantly forested in the 1965 image. The socio-environmental transformations were already happening before this period, as in the peak of native yerba mate and lumber exploitation by the obrageras companies, in the first decades of the twentieth century. However, the impacts on the natural vegetation of West Paraná until then do not appear alarming compared to the central-eastern part of the state. This does not diminish the harmful effects of the removal of families, exploitation, and enslavement of indigenous labor at that time. In 1980, the western region was largely devastated.

The report *Land use and vegetation cover in the State of Paraná, in 1980*, produced by the Paraná Institute of Economic and Social Development (Iparades), found that, in the extreme west of Paraná, "the largest area with forest represents the Iguaçu National Park. The rest has scarce tree cover, especially in the northern part [of Western Paraná⁵¹]." That is precisely where Guaíra and Terra Roxa are located.

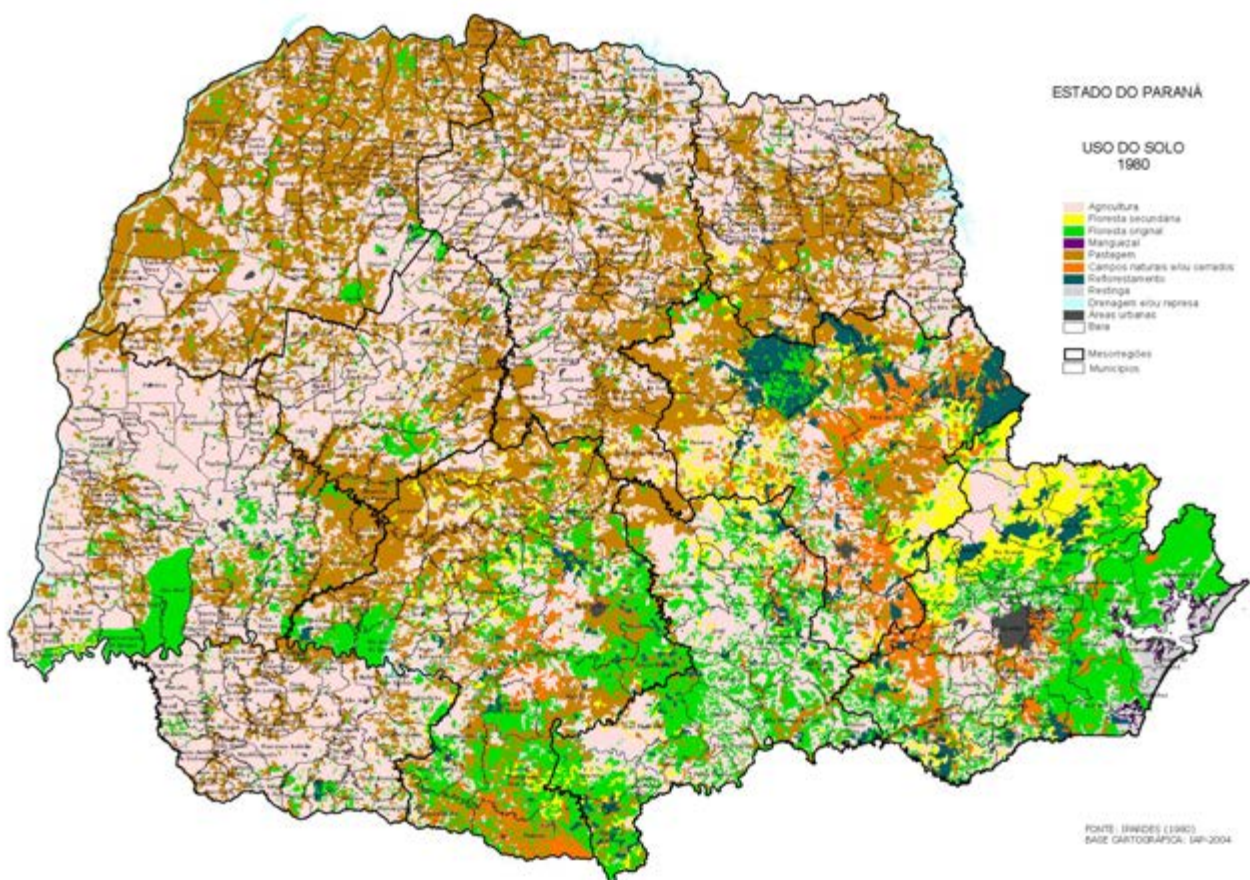
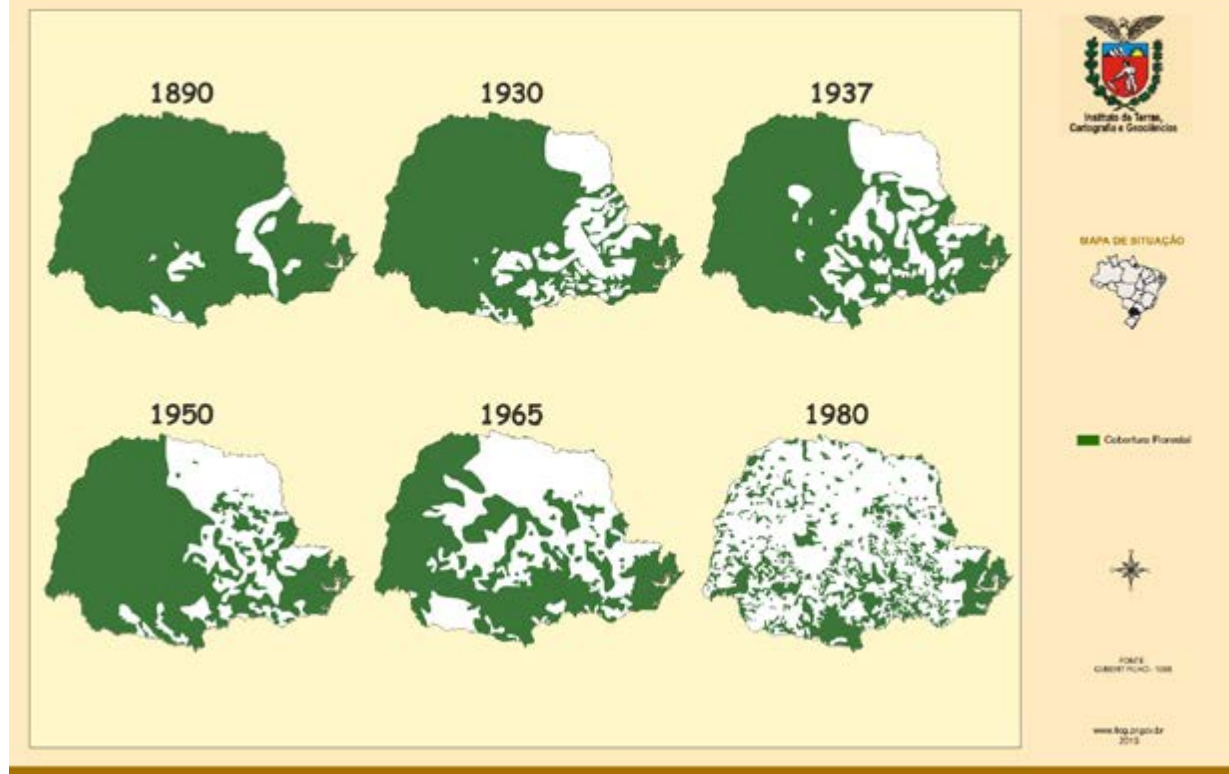
48 https://cms.sosma.org.br/wp-content/uploads/2021/05/SOSMA_Atlas-da-Mata-Atlantica_2019-2020.pdf. Accessed in: July, 2022.

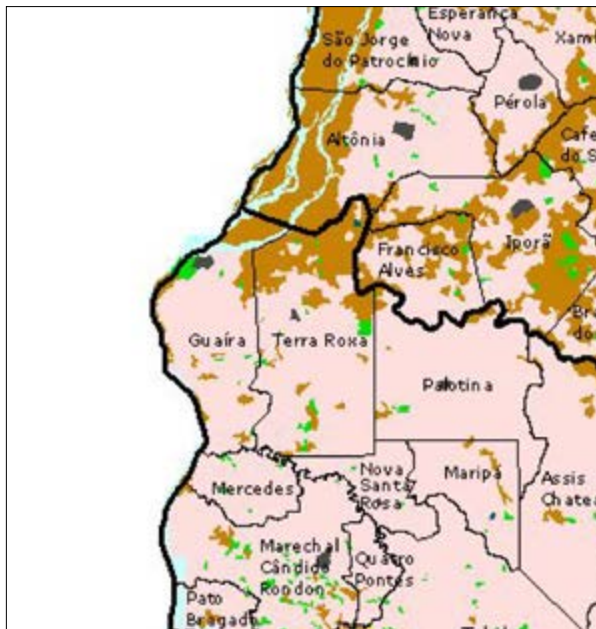
49 Ação Civil Originária nº. 3555, Supremo Tribunal Federal.

50 Available at: https://www.iat.pr.gov.br/sites/agua-terra/arquivos_restritos/files/documento/2020-04/cobertura_florestal_1890_1980.pdf. Accessed in: April, 2022.

51 *Land use and vegetation cover in the State of Paraná, in 1980*. Iparades, Curitiba, 1984. p.52.

COBERTURA FLORESTAL 1890/1980 - ESTADO DO PARANÁ





The better technical quality of the following map, from 1980, allows us to see in detail the land use coverage of Guairá and Terra Roxa, already completely deforested and largely converted to crops that year⁵².

The 1970s, a crucial decade concerning the devastation of West Paraná, is the period compatible with the consolidation of agribusiness in the region. The total area cultivated with the main agricultural crops - soy, wheat, corn, beans, rice, and manioc - went from 237,006 hectares to 1,546,064 hectares between 1967 and 1975. There was a notable expansion of soy: its planted area went from 20,785 hectares in 1967 to 610,512 hectares in 1975⁵³.

The landscape transformations in that period are marked in the memory of the elders of Tekoha Guasu Guavirá. *Chamõi* Ava Jeguaka lives in Tekoha Karumbey, a village that resisted the expansion of the urban area of Guairá. In his statements, he told us about his memories of when he was a *piazão*⁵⁴, in 1975, and still saw the forest in the three corners where he walked around: in Guairá, where he lived, in Mato Grosso, and Paraguay.

⁵² Source: Ipardes (1980). Cartographic base: IAP (2004). In: *Land use and vegetation cover in the State of Paraná, in 1980*. Ipardes, Curitiba, 1984.

⁵³ Data from DEE (1967); Ministry of Agriculture (1972); e IBGE (1975). Consulted in: http://www.ipardes.gov.br/biblioteca/docs/estudo_itaipu_regiao_oeste_17_77.pdf.

⁵⁴ Expression used by Ava Jeguaka to refer to the time when he was young.

Ava Jeguaka tells us that he

still walked by foot, there was a lot of taquaral, a beautiful bush, and could hear the birds singing. But jurua⁵⁵ was coming in, coming in, and started to cut down the forest. First came the settlers, they cut down one bushel, two bushels, and then the farmers started buying from the settlers. They bought five bushels from one, then another, and so on, until he formed the farm.

According to him,

before, they had a place to plant everything and did not go hungry. But after the jurua came in and took the land away, they could not plant anything anymore. And they also got food and medicine from the bush; there was much bush in those days. And there was no lack of water; they drank water directly from the river and did not need to use chemicals for drinking. Anywhere there was a mine, they drank from it, there was no problem.

Ava Jeguaka reported how the settlers worked the land, the beginning of farming mechanization in the region, and the end of manual services like weeding and harvesting, which Ava Jeguaka and other relatives were hired to do:

First, there was no chainsaw, the settlers used only an axe, sickles, and ox carts. The settlers would buy a plow and gather oxen to pull it. It started this way, with an ox, a donkey or a horse, scratching the land to plant food. It was like this, and then came the machinery. In 1982, 1984, there were already machines for both sides. Then manual work also came to an end.

According to Ava Jeguaka, in Guairá and Mato Grosso⁵⁶, both sides had plenty of work in the old days. He worked in the cotton harvest after having worked a long time harvesting yerba mate for the Companhia Mate Laranjeira. Children, women, everybody worked in the cotton harvest. Soon soybeans came, he reports. The first time Ava Jeguaka remembers seeing soybeans was in the mid-1980s. He did not know about it and thought it was beans. Then he started cutting soybeans for the jurua. [He] cut it with a machete, there was no harvester yet, it was manual. Then the work slowed down, and now it is over.

⁵⁵ *Juruá* is a Guarani way of referring to a non-Indian person. Among the Avá-Guarani, it can have the same meaning as *Karai*, mentioned before.

⁵⁶ Currently Mato Grosso do Sul.

His father, Vodoke, *stopped planting in 1980 because he was old and could not work anymore*. Before long, his father died. *Then Itaipu came and made their lives worse*. Ava Jeguaka remembers that around 1975, the news about Itaipu started. *They said that Itaipu was arriving, that it was going to take the ravine. The engineers were going to measure both sides of the river to see how high the water would get.*

This date in Ava Jeguaka's narrative coincides with the moment of the Itaipu Treaty, signed in 1973 between Brazil and Paraguay, for the construction of the Hydroelectric Power Plant. According to his testimony:

It was true; a while later, Itaipu arrived. And they took much of the tekoha on the banks of Paranazão, besides Ilha Grande and Ilha Pacú. Places where the older people walked a lot, had little houses, did their homesteading, and planted orchards.

Nine years after the signing of the Treaty, the formation of Itaipu's reservoir affected the population of the Paraná riverbank. It partially flooded the territory of traditional Avá-Guarani occupation in 1982, consolidating their widespread dispossession and devastation of their territory. Guaíra lost part of its territory bordering the Paraná River; precisely those places with forest remnants where the Avá-Guarani lived dispersed. It left villages, historic and sacred places submerged, making it impossible for the indigenous communities to access a significant part of their traditionally occupied lands⁵⁷. At that time, Ava Jeguaka's family lost their last farm, *and each one went their separate ways*: he and his siblings dispersed between Paraguay and Mato Grosso do Sul, while some remained in Guaíra. *Jurua pushed the Guarani, and now we are like this*⁵⁸.

57 ALCANTARA, Gustavo Kenner et. al. (org.) Avá-Guarani: the construction of Itaipu and territorial rights. Brasília: ESMPU, 2019.

58 The severe impacts of the flooding and its developments were demonstrated in a series of documents previously mentioned. They resulted in Civil Action 3555, filed in the Supreme Court in 2019, requesting that Itaipu and the Union be held accountable and compensated for the damage caused to the Avá-Guarani due to the plant's construction. See, for example, the report prepared by the Indigenist Work Center, by Ian Packer, in 2013, about the Guarani's human and territorial rights violations in western Paraná (1946-1988); the Brazilian National Truth Commission reports, 2014, and the State Truth Commission, 2017, which present specific chapters about the violations suffered by indigenous peoples and the Guarani people in western Paraná during the military dictatorship; the Circumstantiated Report of

In Guaíra, the area occupied by natural forests in 2014 was 5,153.90 hectares, corresponding to only 9% of the municipality. In Terra Roxa, this area was 7,092.10 hectares, also corresponding to 9% of the municipality⁵⁹. This data is also reflected in the Land Use and Occupation map in the cities of Guaíra and Terra Roxa in 2021, presented earlier, in the topic *Guaíra and Terra Roxa, and the advance of soy in western Paraná*.

The following map represents the *Land Use and Occupation of the Tekoha Guasu Guavirá Indigenous Land in 2021*, in which approximately 60% of the area's surface is destined for agriculture and cattle-raising; 2.8% is occupied by eucalyptus production ("silviculture"); 22.8% by aquatic vegetation (Ilha Grande is the most significant part); 0.13% by urban area; and 1.13% occupied by indigenous housing and fields. The forest remnants ("native vegetation") that survived the environmental devastation now constitute only 12.4% of the delimited area, to which the Avá-Guarani are often denied access by private landowners. It means that access to the forested areas fundamental to the Avá-Guarani people is highly restricted.

The Avá-Guarani people report the impacts on the Avá-Guarani territory resulting from the advance of agribusiness under various aspects. Karai Okaju⁶⁰, who currently lives in Tekoha Y'Hovy, in Guaíra, reported the *destruction of this territory by agribusiness*. According to him,

agribusiness came and ran over everything, destroying everything. Today agribusiness is considered the "agropop," but, in fact, it has killed all of nature.

He unfolded his explanation, talking about the need for agribusiness to expand ever more:

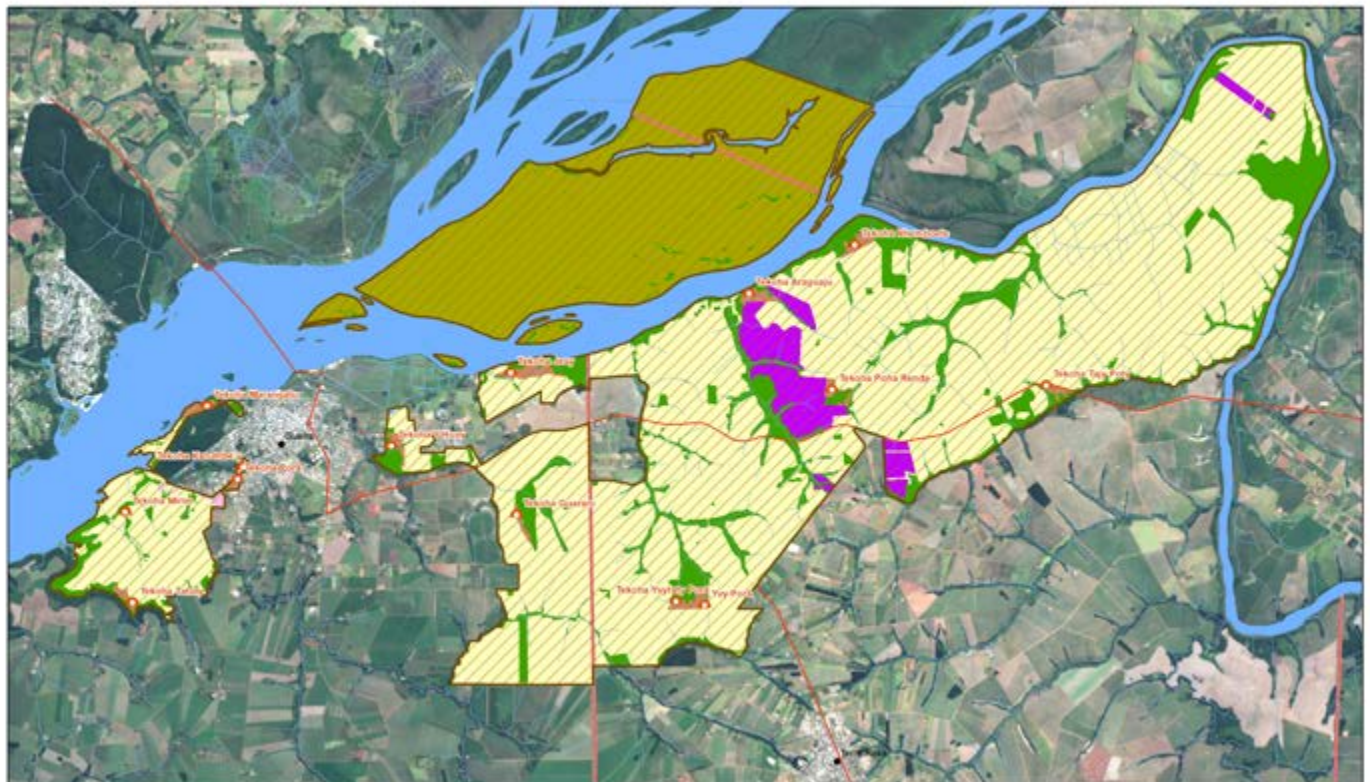
today they need to expand, they need more, because agribusiness dies if it does not expand. That is why they want to expand in any way they can.

Identification and Delimitation (RCID) of the Tekoha Guasu Guavirá; and the Avá-Guarani: the construction of Itaipu and territorial rights, 2019, the result of the work developed by a group of prosecutors and employees of the Federal Prosecutor's Office (MPF) to provide support for the actions of the Attorney General's Office (PGR) regarding the complaint of rights violation of the Avá-Guarani people resulting from the construction of Itaipu's Hydroelectric Power Plant.

59 ITCG, 2014. In: Brazilian Forest Service. Brazilian National Forest Inventory: main results: Paraná/Brazilian Forest Service - Brasília, DF: MMA, 2018.

60 Testimonies collected in April, May and August, 2022.

LAND USE AND OCCUPATION MAP IN 2021 INDIGENOUS TERRITORY TEKOKHA GUASU GUAVIRÁ



- Guarani Villages
- City headquarters
- Indigenous Territory Guasu Guavirá
- Roads
- Hydrography
- Body of water
- Guaira and Terra Roxa municipalities

- LAND USE AND OCCUPATION
- Indigenous residence and farming
 - Silviculture (Eucalyptos plantation)
 - Deforestation (exposed land and cattle-raising)
 - Native vegetation (forests, bushes and meadows)
 - Aquatic vegetation (influenced by rivers)
 - Urban Area

0 1,5 3 km N ↑



To do so, they must go over indigenous lands, so much so that they are fighting for it. That is why the Guarani territory has dramatically diminished and has become the land we see, with very little forest. The springs disappeared because agribusiness ran over them. Many forest areas that were there no longer exist because they destroyed them little by little until they uprooted everything.

Karai Okaju also spoke about the arrival of *too much heat* as a consequence of this destruction and endless agribusiness expansion:

then is when too much heat comes, because there is no longer that tree that protects the land. It is the same thing as the human being: if the human being does not put on some clothes today, the skin starts to peel, the skin starts to peel off, and it starts to dry out. And the land is also like this, the land today is dehydrated. It has reached its limit. It does not have any shade, it does not have those trees that used to make the land breathe. Because the land also needs to breathe, and today it is not breathing; it needs water, it needs shade, and there is no shade anymore.

In this context, the Avá-Guarani communities of Tekoha Guasu Guavirá are enclosed by agribusiness monocultures around them. Invariably, the *few trees that remain and beg for help not to be cut*⁶¹ constitute their *tekoha*, and the Avá-Guarani people is revitalizing them with their management practices.

Charyi Kunha Takua Yruku⁶², a resident of Tekoha Y'Hovy, after listening to *chamõi* Ava Vera'i during the Oporaiva Kuera Aty, also spoke. She said she was very moved when listening to Ava Vera'i's speech because all that story is true. According to *charyi*:

*Everything on earth also suffers along with nhandekuera*⁶³. *Lately, it does not rain anymore. The sun does not shine anymore. There is no more lightning, and no more wind like there used to be. I ask the praying men to ask Nhanderu Ete why the earth is this way.*

61 Reference to the *chamõi* Ava Vera'i's statement narrated earlier.

62 Testimony from August, 2019.

63 Her people, the Guarani.

Charyi associated the lack of land demarcation with the suffering not only of the Avá-Guarani people but also the suffering of the animals and of everything that exists on the land. Then, she also relates the lack of demarcation and the land devastation to the impossibility of teaching younger people. She expresses her desire to be able to take care of the territory again:

today there are no more armadillos or agoutis, and our children no longer know how to make a trap. Karai kuera destroyed everything, and that is why they do not even find medicine in the forests anymore. And if there is no more medicine in the forest, how can we teach our children?



To teach our children again, we need the land, so demarcation is necessary while we are alive so we still have time to teach our children everything we know.

We want to recover everything that the Karai Kuera destroyed.

THREATS TO AGROBIODIVERSITY

Territorial dispossession and the extensive conversion of forest areas historically managed by the indigenous peoples into monocultures based on industrial systems of agricultural production caused 60% of the area of the Tekoha Guasu Guavirá Indigenous Land (approximately 15,000 hectares) to be currently occupied by agriculture and cattle ranching. Temporary plantations of soybeans and corn predominantly alternate. Another monoculture that has been expanding in recent years is eucalyptus, which currently occupies around 680 hectares of the Indigenous Land area. It is a tiny amount compared to the areas destined for agricultural commodities, but significant compared to 2010, when there was no significant area destined for eucalyptus plantation within the limits of the Indigenous Land.

SIDE The following satellite image shows Tekoha Guarani between forest remnants and crops.

UNDER The backyard of a house in Tekoha Guarani, beginning to be reforested in 2016, right next to a soybean crop (CTI, 2016).





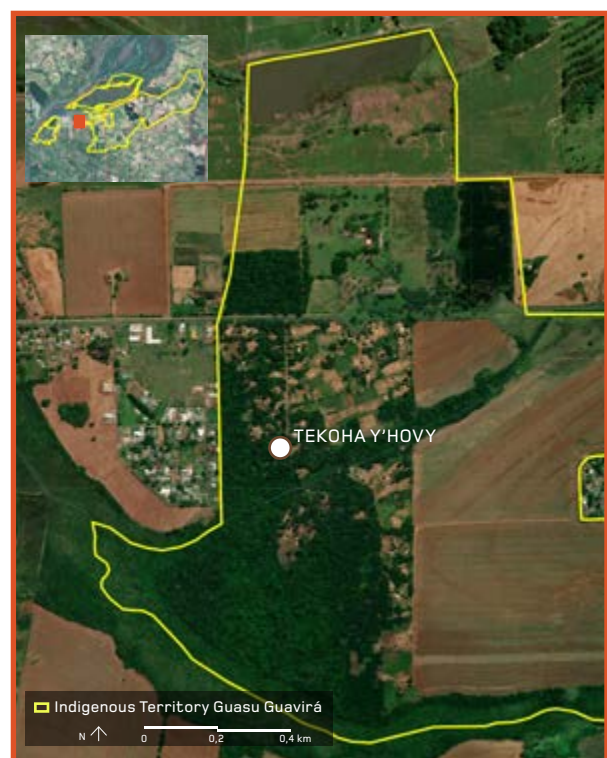
ABOVE A child with seeds harvested in Tekoha Y'Hovy (CTI, 2019).

UNDER The following satellite image shows Tekoha Y'Hovy between forest remnants and crops.

Meanwhile, less than 300 hectares, or 1.13% of the Indigenous Land, is occupied by indigenous housing and fields. This means that the Avá-Guarani people cannot properly cultivate their own fields and manage their biodiverse backyards.

The predominant varieties of industrial agriculture planted in the region in 2020 and 2021 are genetically modified and patented by large biotechnology companies, such as Bayer/Monsanto and Pioneer, and by the Brazilian Agricultural Research Corporation (Embrapa). According to research by Bombardi (2017, p.33), the cultivation of transgenic varieties has been growing in Brazil. In recent years, 96.5% of soybean production (an area of 32.7 million hectares) and 88.4% of corn production (15.7 million hectares) have been made with transgenic seeds. Besides making farmers dependent on these companies to acquire seeds and all the associated technological package (including pesticides), this system allows the genetic contamination of traditional varieties and restricts their free circulation, drastically reducing regional biological diversity.

Despite the territorial confinement and precarious conditions in which they live, occupying only 1.3% of their claimed territory with houses and fields and 0.2% of the total area of Guairá and Terra Roxa, the Guasu Guavirá *tekoha's* fields and backyards are

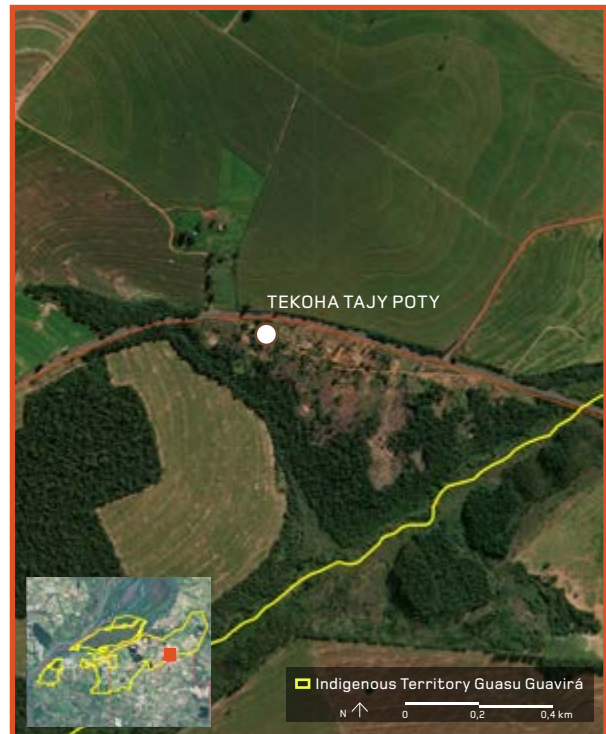


populated with diversity. It makes the counterpoint to the homogenization of industrial agriculture species surrounding their villages. Karai Okaju summarized this situation by saying that this is the main difference: “they plant one species in large territories, and the Avá-Guarani people plant multiple varieties in the small spaces we have.” According to him, “in the indigenous areas, no matter how small it is, there are several species of plants: sweet potatoes, cassava, rice, beans, everything that a family can eat. It is not the same as agribusiness, which is just one plant in an enormous piece of land.”

Although it was not the purpose of this study to conduct extensive research on agricultural diversity in the tekoha, a brief survey identified several varieties of traditional food species in their fields and strategies to preserve them. As an example, the Guarani cultivated *avati ete* (“true” corn) in its different varieties: *avati ju* (yellow corn), *avati pytã* (red corn), *avati morõtĩ* (white corn), *avati hovy* (blue corn), *avati hum* (black corn), *avati para* (coloured corn), *avati parakau* (parrot corn), *avati pororo* (black and white popcorn). There were also several varieties of *kumanda* (beans) planted: *manduvi* (peanuts); *jety* (potatoes), *manji’o* (cassava), *andai* (pumpkin); *takuare’e morõtĩ*, *takuare’e hum*, *takuare’e vaka e takuare’e parã* (varieties of sugar cane), and *bakuku* (a kind of carã).

These traditional agricultural varieties and medicinal species are maintained through selection and adaptation to local ecosystem conditions. There is no massive use of pesticides, and the cultivation and circulation systems are part of Avá-Guarani’s own

practices and knowledge. Several strategies, intentional or not, have been practiced over generations to conserve their species. In the small patches of land where they resist, the elders are the primary promoters of these strategies.



ABOVE The following satellite image shows Tekoha Tajy Poty between forest remnants and crops.

UNDER Varieties of *avati ete*’i in Tekoha Tajy Poty (CTI).





LEFT *Avati ete'i* conserved by *chamōi* and *charyi* in a *Tekoha* Guasu Guavirá village (CTI, 2017).

However, in the face of numerous adversities - territorial confinement being the first - they witness the loss or at least difficulties for the species conservation. The lack of space, insecurity as to permanence in the territory, restrictions of movement between the borders of national states, transgenics, the massive use of toxic chemicals in the crops surrounding their fields, and the increasingly severe climatic effects challenge the protection of seeds.

The spread of the Guarani seed variety through the moving kinship networks in the extensive territory of traditional occupation is a way to protect and rescue these traditional varieties. In this case, one of the many obstacles is the restriction on the movement of plant and animal species - not to mention that of the indigenous people - between the border separating Brazil and Paraguay. These restrictions, however, have never been enough to break the kinship ties that bind the *tekoha* distributed along both sides of the Paraná River.

The history of Tupã Karai, a resident of the Pohã Renda *tekoha*, illustrates the intimidation wielded by the “frontier” on their food systems. The *rama* (*mandi'o*), the beans (*kumandá*), and the sugarcane (*taquare'e*) that they currently cultivate in the Pohã Renda *tekoha* were brought from the Takuapu and Bajada Guasu *tekohas* in Canindeyú, Paraguay. In 2018, a relative brought other species from these *tekoha* to plant in Pohã Renda, *but the Federal Revenue of Brazil seized everything at the border*. The same thing happened to an indigenous resident of the Jevy *tekoha*, *he lost everything. Since then, they have never again brought anything*. Commenting on the importance of agricultural and animal species exchanges, even if the *tekoha* is located on the other side of the border, Tupã Karai also *expressed great concern about the advance of leasing on indigenous lands in*

Paraguay, because leasing is destroying the seeds and the forest areas that still exist.

On the other hand, the problem resulting from territorial confinement and climatic changes reflects the statements of Karai Okaju, who reported that, in the Y'Hovy *tekoha*,

they had a good variety of corn, beans, cassava, and rice seeds. But the space is too small, and the families grew, restricting the planting even more. Also, in recent times, the temperature has changed a lot. When the drought comes, it is powerful. The cold, when it comes, is very cold. The rains with hail often destroy the crops, and the wind blew everything away last time. In 2021 the drought was extreme, so the plants ended up not developing, and many seeds were lost.

In his *tekoha* they planted, but could not harvest.

For example, all the avati ete'i [the traditional, “real” corn] they had was lost, the drought killed everything. The last time, the cold killed it. There were two weather effects in sequence, and now they have very little. There are still some cassava plantations that resisted the drought and the cold, but the plants that need more sun and rain, the ones that do not stay underground, did not resist.

Tupã Karai reported something similar about the loss of *avati para'i*, *avati saiju*, and *avati morōtĩ* in the Pohã Renda village because of drought. In addition, Tupã Karai explained that they *avoid planting the different varieties of traditional corn together so that mixing of the seeds [omendá, a kind of “marriage”] does not happen*. He exemplifies:

we do not plant avati morōtī together with avati tupi, because they can cross. It is common for my father to plant some variety in a small corner, only to keep the seed, even if it is not suitable for consumption. But it is also possible to cross traditional corn seeds with transgenic varieties, those very strong seeds brought by the jurua.

Tupā Karai reported that he planted *avati para'i* and it crossed with the one that *jurua* plants, which is very hard. They plant very close, and the species end up crossing.

The traditional agricultural species and the soil health also suffer from the effects of intensive pesticide use. Karai Okaju said that in the village Y'Hovy, the soil has become weak due to its previous monoculture use. Currently, the intensive use of toxic products around the village continues to damage the health of the soil and crops. According to his narrative,

That is why the plants do not grow enough; they grow to a certain height and then need to be harvested. Cassava does not grow that well because the root rots. Sweet potato does not grow, it gets all dried up.

In the Pohā Renda *tekoha*, according to Tupā Karai's report,

The manioc species planted on the edges of the monoculture plantations, most affected by pesticides, had their development harmed, did not grow well, and became drier and bitter, unlike those planted farther away from the plantations.

In the same village, some *poncā* tangerine trees affected by pesticide drift dried up, some even to death.

Kunha Takua Rocay Ponhy brought up the insecurity regarding the people's permanence in the territory as a risk factor to maintaining traditional species. According to her,

Until a while ago, we kept the traditional seeds; however, because of this conflict of not being sure if they will stay where they are, and families coming and going from one place to another, I believe this contributes to the lack of seeds.

Furthermore, it is different when you live on demarcated land and in a safe space, as Kunha Takua Rocay Ponhy reported.

You can walk one kilometer, two kilometers, or three kilometers looking for the ideal space to plant corn. Or you can walk a few kilometers on the riverbank looking for the ideal space to plant

rice. When you live in a land in conflict, which is not yet demarcated, you take the sweet potato, for example, and plant it in a place that is not good, in a land that cannot rest and recover. This may not work. Then the species you had will be lost because the space is not suitable for that planting.

Karai Okaju shared the abilities of the *chamōi* Tupā Mbaraka Poty Veve, his son-in-law, to protect seeds through his planting practices. Again, one can see in his report that the lack of space for planting restricts the attempts to protect agricultural biodiversity.

The chamōi would plant in a particular area. When this planting had already grown to a certain size, he would plant another quantity of the same species in another area. When the first one was ready to harvest, he would sometimes plant another one. This last one would be ready by the beginning of the cold weather, and then he would harvest just in time. He would harvest the same plant three times, or twice in the case of the slow-growing plants.

He would plant all the seeds in this same method, and then he kept the seeds to plant later. He also kept the manioc branches. He kept what he had to keep, and he let the soil rest in the meanwhile. The land would rest for longer when needed or until the Ara Pyau returned, which is the beginning of the season when everything blooms, when they can plant and the seed will sprout and grow. So the plants developed at different times and in different spaces, and if there was a drought, there was still a part that could be saved.

We can suppose, listening to him, that if they were in a properly protected territory, there would be a greater possibility of the seeds surviving, despite the intense droughts.

The planting was done this way, but with the lack of space, there is nowhere to move. Where are you going to plant a new field? We see with great sadness that we are missing space to do this dynamic activity that is planting.

As a result of the diverse conservation skills embedded within their practices and knowledge, including selection, adaptation, cultivation, and circulation techniques, the Guaraní people maintained the most resistant seeds. They adapted them to ecosystem conditions and climatic variations. However, the restriction placed on agricultural practices and agrobiodiversity conservation skills (such as those adopted by the *chamōi* Tupā Mbaraka Poty Veve) suggests that territorial confinement and severe climatic factors (such as the severe droughts that have hit western



Paraná in recent years⁶⁴) are mutually aggravating factors in the risk of losing agrobiodiversity. The consequences can also be seen in the hunger that afflicts the communities. In contradiction, the Avá-Guarani are among the communities most susceptible to losing their agrobiodiversity. These seed species, the associated practices, and the ancestral knowledge can barely survive without their territory being protected; that is, without the communities in their territory being the main characters of their conservation.

In this sense, it is important to emphasize that the protection the Brazilian state gives to the rural sector and the production of agricultural commodities, manifested in rural credits, tax incentives, debt waivers, and subsidies⁶⁵ find no similarity among the Avá-Guarani people. It is not too much to remember that, in addition to being extremely vulnerable to severe climate change, all responsibility for the plantation

64 In December 2021, the intense drought that hit Paraná led the state governor to declare a state of emergency, for example. <https://www.legislacao.pr.gov.br/legislacao/listarAtosAno.do?action=exibir&codAto=258368&indice=1&totalRegistros=419&anoSpan=2022&anoSelecionado=2021&mesSelecionado=12&isPaginado=true>

65 The Interministerial Managing Committee for Rural Insurance has approved the distribution of R\$ 990 million from the Rural Insurance Premium Subsidy Program for the 2022 fiscal year, as per Resolution number 93 of May 13, 2022, for example. Official Gazette of the Federal Government on May 117, 2022.

ABOVE *Chamõi Koty Ravy (in memoriam)*, an expert seed keeper, walking in his field in Tekoha Yvyraty Porã (CTI, 2016).

UNDER The following satellite image shows Tekoha Yvyraty Porã and Tekoha Yvy Porã between forest remnants and crops.



losses falls exclusively on the Avá-Guarani people themselves. They have been losing their agricultural biodiversity without any protection from the state; far from it, in fact. Given the inseparability between the territory and the agrobiodiversity protection systems, we can say that the state has threatened the maintenance of the traditional agricultural varieties, associated practices, and knowledge by perpetuating the dispossession of the Avá-Guarani people. It shakes the foundations of *nhandereko*, the Guarani people's way of life deeply rooted in agricultural practices and knowledge.

IMPACTS OF INTENSIVE USE OF AGROTOXINS IN THE SURROUNDINGS OF THE TEKOKHA

The appropriation of the Avá-Guarani traditionally occupied territory by agribusiness has been associated with the massive use of pesticides. The toxic substances have seriously affected the human and environmental health of the communities and their surroundings. Almost every *tekoha* of Guasu Guavirá, except three villages located in the urban area, is on the border of soybean plantations. Sometimes, there are less than two meters between the plantation and the houses.

The Avá-Guarani frequently complain about the problems resulting from floating pesticides. They cause health complications, discomfort in people and animals, and contamination of the soil, water, and crops in Tekoha Guasu Guavirá. The contamination by pesticides is just another of countless other violations against the Avá-Guarani people, aggravating the vulnerability of the communities and preventing them from remaining in their traditionally occupied lands.

Data from the 2017 Census of Agriculture show that among the 661 establishments in Guáira, 509 reported using pesticides, while 144 reported not using them. In Terra Roxa, 921 of the 1,209 facilities used pesticides, and 281 declared not to use them. Considering the large amount of pesticide used in soybean and corn crops, and that the predominant agricultural

RIGHT The images show the soybean/corn crop less than two meters from a house in the *tekoha* Tatury. In addition to complaints about the strong smell and discomfort felt immediately after spraying pesticides, residents report that “the farm is advancing more and more” (CGY, August 2022). The satellite image shows *tekoha* Tatury between forest remnants and crops.



pattern in the region is interchanging between these two crops, the amount of substance sprayed around the villages is exceptionally high.

The report on Human Rights Violations against the Avá-Guarani people of Western Paraná, prepared by CGY in 2017⁶⁶, showed that health and welfare problems affected the Avá-Guarani people immediately after neighbor farmers sprayed agrotoxins on their crops — especially in the genetically modified corn and soy crops, which uses agrotoxin more intensely, and in cassava crops. There were also reports of the death of animals and damage to their plants. An interviewee reported that they continued to feel the effects of pesticides even if the application was made by tractors instead of aerial spraying.

The testimony of community health agent Takua Yy Rope's confirmed the current reality of pesticide spraying's impacts on human and environmental health. She reported that *the smell of poison is harmful, causing stomachaches, headaches, and diarrhea*. Some families still do not have access to piped water in their homes and rely on water from the Y'Hovy River (or Arroio do Macaco) for drinking and bathing. *When they bathe in the little river, the children get itchy skin and allergies from the contaminated water*. She said that *the children who bathe and drink from the little river get itchy skin much more often than those who do not depend on the river*. An elderly villager reported that they often find pesticide containers dumped in the river where the children bathe and some families fish instead of being correctly disposed of. Karai Okaju explained that *the Y'Hovy River originates in a swamp place, which was later grounded to become a farm*. Upstream, this river passes through crops where the current tenants used its waters to supply the poison container.

In *tekoha* Pohã Renda, in Terra Roxa, Tupã Karai said that

the smell of sprayed pesticides is very strong, causing headaches and vomiting. People feel sick for two or three days after the spraying. After that, the symptoms improve until the pesticides are sprayed again.

The reuse of improperly discarded pesticide containers in the environment is not uncommon among the families of Tekoha Guasu Guavirá. In the Araguaju tekoha, located in Terra Roxa, they have already found containers discarded in the Yvu river, where they drink water. Once, *an indigenous woman reused*

this gallon to store drinking water, and the strong smell did not leave the gallon even after some use, according to a report.

The problems intensify for those families living on the limits between villages and monoculture plantations. Takua Yy Rope reported that

When it is windy, the pesticides hit these families "living on the edge" more intensely. They have more health problems like stomachaches, diarrhea, fever, and headaches. Families closer to the crops' limits always have health problems. But the strong smell and the feeling of discomfort even reach the houses that are further away.

The effects of intensive use of pesticides also impact plants and act on soil depletion, as seen in the topic *Threats to agrobiodiversity*. Besides, it has severe effects on the lives of animals. When the poisons are poured, it is common to find dead animals, especially chickens. In the *tekoha* Pohã Renda village, people reported the death of numerous chickens, not only because of the pesticide spraying, but also because they scratched seeds of poisoned corn - thrown into the eucalyptus plantation bordering the village to kill the leaf-cutter ants.

The impacts of pesticides on animals also occur more frequently among the livestock closer to the crops' border. Karai Okaju said that when he lived closer to the crops, *most of the animals died in November and December. Chicken, dogs, cats, everything died.*

UNDER The satellite image shows Tekoha Araguaju between forest remnants, crops, and eucalyptus monoculture.



66 Guaíra and Terra Roxa – Human Rights Violations against the Avá-Guarani people of Western Paraná. Comissão Guarani Yvyrupa, 2017.



There are suspicions that some pesticides used on farms in the surrounding area are not yet approved for use in Brazil. Besides suspecting that the smell is different, villagers have heard from the tenants themselves that they were using products brought from Paraguay. The suspicion of pesticides being brought illegally from outside the Brazilian territory coincides with numerous confiscations of smuggled pesticides in Guaíra and Terra Roxa, in 2022⁶⁷. These substances' use is certainly not monitored and perhaps not even approved in the country.

⁶⁷ We list, as an example, some news articles referring only to the period between February and April 2022: on February 16, 2022, police officers seized a shipment of 720 liters of smuggled pesticides in the rural area of Terra Roxa, in Paraná (<https://www.gov.br/pf/pt-br/assuntos/noticias/2022/02/pf-e-bpfron-apreendem-veiculo-carregado-com-agrotoxicos-contrabandeados-em-terra-roxa-pr>); on March 06, 2022, police seized two vehicles loaded with pesticides in Guaíra, in Paraná (<https://www.gov.br/pf/pt-br/assuntos/noticias/2022/03/policia-federal-e-bpfron-apreendem-veiculos-carregados-com-agrotoxicos-contrabandeados-em-guaira-pr>); on March 21, 2022, police seized 500 kg of pesticides from Paraguay in Guaíra, in Paraná (<https://www.gov.br/pf/pt-br/assuntos/noticias/2022/03/pf-e-bpfron-apreendem-veiculo-carregado-com-500-kg-de-agrotoxicos>); on April 15, 2022, police seized a shipment of approximately 600 kg of agricultural toxic substances of Paraguayan origin in Guaíra, in Paraná (<https://www.gov.br/pf/pt-br/assuntos/noticias/2022/04/pf-e-bpfron-apreendem-veiculos-carregados-com-agrotoxicos-e-cigarros-contrabandeados-1>).

ABOVE *Tekoha Pohã Renda* (forested area in the background) is systematically affected by pesticides used intensively in the soybean/corn farming and the eucalyptus monoculture bordering the village (CGY, August 2022).

The pesticides found in water also reflect the contamination resulting from the use of these toxic substances. According to data from the Brazilian Ministry of Health⁶⁸, between 2014 and 2017, 1,396 Brazilian municipalities detected in the water all 27 pesticides required by law to be tested. Brazilian Health Regulatory Agency (Anvisa) classified 16 as extremely or highly toxic, while 11 are associated with the development of chronic diseases such as cancer, fetal malformation, and hormonal and reproductive dysfunctions. Among these 27 pesticides, the European Union banned 21 due to the risks to health and the environment; the U.S. Environmental Protection Agency classified five as “probable carcinogens”; and the European Union has identified six as causing endocrine disorders.

⁶⁸ The Brazilian Ministry of Health's data were obtained and treated in a joint investigation by Repórter Brasil, Agência Pública, and the Swiss organization Public Eye. They are part of the Information System for Monitoring the Quality of Water for Human Consumption, which gathers the results of tests done by supply companies. See more at: <https://portrasdoalimento.info/2019/04/15/coquetel-com-27-agrotoxicos-foi-achado-na-agua-de-1-em-cada-4-municipios/#>. Accessed in: May, 2022.



ABOVE The following satellite image shows *tekoha* Pohã Renda between forest remnant, crops, and eucalyptus monoculture.

Paraná detected the pesticide cocktail in 326 municipalities, including Guaira and Terra Roxa. In this sense, we also mention a study published in July 2022 in the scientific journal *Environment International*⁶⁹, conducted by researchers from Western Paraná State University and Harvard University. The study examines the extent of drinking water contamination by 11 proven, probable, or potentially carcinogenic pesticides in 127 grain-producing municipalities in Paraná, Brazil's second-largest grain producer and a significant consumer of pesticides. The analysis observed that the levels of pesticides were substantially above the safe limits recommended by the European Union in virtually all the municipalities analyzed, correlating these levels of contamination with the cases of cancer reported by the Brazilian National Cancer Institute in Paraná in the same period. It suggests that contamination may increase the risk of cancer in the regions affected by the intensive use of these proven or potentially carcinogenic pesticides.

The massive use of pesticides in the Tekoha Guasu Guavirá is in line with Bombardi's research, showing

a significant concentration of pesticide use in regions where agribusiness predominates. The main products of Brazilian agribusiness, such as soy, corn, sugarcane, and cotton, account for almost 80% of the total pesticides used in the country. Soy is in the first place, with more than half of the total (52%), followed by corn and sugarcane, with 10% each⁷⁰. Corn is often planted in rotation with soybean - the predominant case in west Paraná - so the pesticides used in the different crops fall on the same areas.

According to the researcher⁷¹, Brazil consumes about 20% of all pesticides sold worldwide. The consumption has increased significantly in recent years, from 170,000 tons in 2000 to 500,000 tons in 2017. Comparing Brazil and the European Union regarding the use of pesticides, Bombardi shows that there is an absolute asymmetry: among the 504 active ingredients with registration authorized by the Brazilian National Health Surveillance Agency (Anvisa), 30% are banned in the European Union for their high toxicity. The levels of pesticide residues considered tolerable for human health in Brazil are also totally different from those in the European Union.

Her research showed that, in Brazil, there were 150 pesticides authorized for soybean cultivation. Thirty-five (23%) were banned in the European Union - most of which were banned more than 15 years ago (Bombardi, 2017, 46).

For glyphosate herbicide residues, for example, the amount allowed in Brazil is two hundred times greater than that in the European Union. Belgium is the only country in the European block with records of more than 2kg of glyphosate per hectare. In some Brazilian states, such as Paraná, the consumption of this herbicide is between 9 and 19 kg per hectare (Bombardi 2017, p.47). In a report published in 2015, the World Health Organization admitted that glyphosate could cause cancer in animals treated in laboratories and potentially cause changes in the DNA structure and chromosomal structures of human cells. In France, the herbicide will be banned from 2022 due to evidence of carcinogenicity and other harm to human health⁷².

In Brazil, glyphosate is the main used pesticide, and its massive usage is associated with the expansion

69 <https://www.sciencedirect.com/science/article/pii/S0160412022002483?s=08#!>

70 Data from SINDIVEG (National Syndicate of Plant Protection Products Industry), from 2015. In Bombardi, 2017, p.33.

71 Bombardi, 2017.

72 Bombardi, 2017.



LEFT A tractor sprays poison next to Tekoha Nhemboete, observed by children (CGY, 2022).

of transgenic varieties that are largely tolerant of the herbicide. The cultivation of transgenic varieties has grown in the country, with 96.5% of the soybean production (corresponding to an area of 32.7 million hectares) and 88.4% of the corn production (corresponding to 15.7 million hectares) having been with transgenic seeds in recent years.

Besides the new seed varieties resistant to glyphosate, a new soy seed resistant to the herbicide dicamba⁷³ has recently started to be commercialized in the western region of Paraná. Brazilian Institute of the Environment and Renewable Natural Resource (Ibama)⁷⁴ considers dicamba dangerous to the environment. Anvisa⁷⁵ classifies it as highly toxic.

Another active ingredient among the most used in Brazil - and present in pesticides sold in Guaíra and Terra Roxa - is acephate, which is banned in the European Union. In a technical note produced in 2017, Anvisa pointed out its “marked neurotoxicity” and suspected carcinogenicity (Bombardi, 2017, p. 40).

⁷³ <https://www.agro.bayer.com.br/mundo-agro/agropedia/bayer-lanca-as-primeiras-variedade-de-soja-com-a-tecnologia-intacta-2xtend>. Acesso em 25/05/2022.

⁷⁴ <http://www.ibama.gov.br/registros/quimicos-e-biologicos/agrotoxicos/registro-de-agrotoxicos-destinados-ao-uso-em-ambientes-hidricos-e-a-protecao-de-florestas-nativas-e-outros-ecossistemas>. Acesso em 13/07/2022.

⁷⁵ <https://documents.basf.com/f5dd00a82dfc1a33ff08e079eb8fb35fc605857a>; https://www.adapar.pr.gov.br/sites/adapar/arquivos_restritos/files/documento/2020-10/dica-max0220.pdf. Acesso em 13/07/2022.

President Jair Bolsonaro's government, which broke records in pesticide release, accentuated the great permissiveness of the use of pesticides in Brazil. Between January 2019, when he took office, and June 2022, 1,801 products were registered, as shown in data organized by researcher Sônia Hess and published by Agência Pública and Repórter Brasil.⁷⁶ Almost half of them have at least one active ingredient banned in the European Union, and 79% of these products are used in corn, sugarcane, cotton, and especially soybean crops.

As a matter of fact, in February 2022, the Chamber of Deputies approved bill 6299/2002, known as the Poison Package, for making the use of pesticides - highly harmful to health and the environment - even more flexible. Now, the Senate is deliberating about the matter, renamed to bill 1459/2022⁷⁷. The legislative bill also weakens the role of agencies such as Ibama (Brazilian Institute of Environment and Renewable Natural Resources) and Anvisa (National Health Surveillance Agency) regarding the approvals and registrations of toxic products, concentrating the power in the Ministry of Agriculture, Livestock and Food Supply.

Larissa Bombardi (2016 and 2017) brings up another vital point to this debate by comparing the use of pesticides in Brazil and the European Union. In

⁷⁶ <https://apublica.org/2022/09/banidos-na-europa-made-in-china-e-usados-na-soja-os-agrotoxicos-aprovados-por-bolsonaro/>. Accessed on September 29, 2022.

⁷⁷ <https://contraosagrotoxicos.org/pacote-do-veneno/>. Accessed on September 29, 2022.

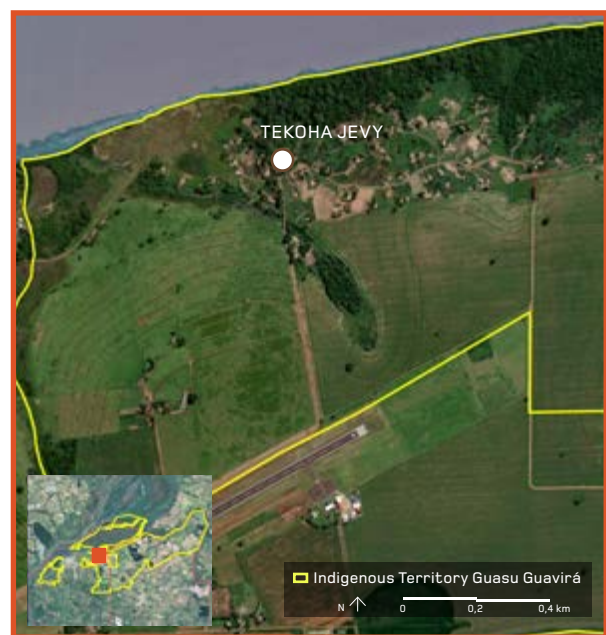
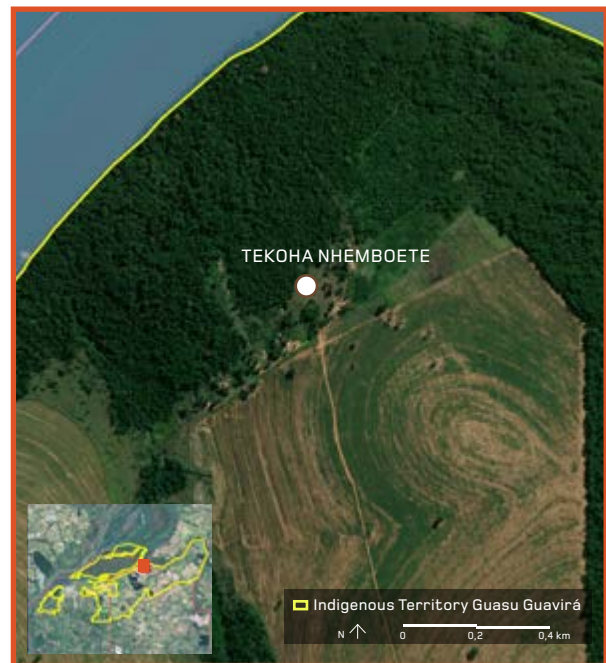
RIGHT The following satellite images show Tekoha Nhemboete, Tekoha Jevy and Tekoha Mirim between forest remnants and crops.

addition to showing the tremendous disparity of permissiveness in both legislations, the research shows that there is a massive restriction on the consumption of pesticides in the European Union; however, there is no prohibition on producing and selling pesticides to other countries. Some pesticide companies are based in the European Union, and their factories are being transferred to places where legislation still allows the usage of such harmful substances.

Some of these pesticides go back to the countries where the companies are headquartered and to a large part of the world through the export of agricultural commodities and derived products. Regardless, the direct impacts of their spraying and serious consequences stay in the places where the commodities are being produced, mainly affecting the workers directly involved in the production and the surrounding communities.

It is essential to reproduce the question made by the researcher Larissa Bombardi, who wonders if it is possible to consider some acceptable limit of pesticide intake. "Assuming that yes," continues the researcher, "we ask: with what parameter is it established that the amount of residue tolerable to human health in one country can be 250 or 400 times higher than in another?" (Bombardi, 2017, p.49)

The situation makes explicit the racist logic that structures even the foundations of agribusiness. There is the assumption that some lives are worth less than others, with the poisoning of indigenous bodies and territories being authorized even though the serious effects of pesticides are widely recognized and have long been announced by the Avá-Guarani people. In addition to being systematically exposed to drifting pesticides and their resulting risks, the Avá-Guarani people have even witnessed the use of toxic substances as chemical weapons, intentionally sprayed on villages to reach homes, fields, and the indigenous people themselves.





ABOVE a tractor sprays agrottoxins next to Tekoha Nhemboete, observed by children (CGY Collection).

THE WORLD'S GRANARY AND HUNGER IN TEKOKHA GUASU GUA VIRÁ

While representatives of the rural sector and governmental actors sustain the narrative that Brazilian agribusiness feeds the world, hunger reveals itself as a perverse consequence of territorial confinement and the widespread conversion of the Avá-Guarani traditionally occupied territory into agribusiness monocultures.

Frequently, Avá-Guarani families go hungry or are on the verge of starvation. In this diagnosis, in which we analyze the impacts of agricultural commodities produced on the Tekoha Guasu Guavirá Indigenous Territory communities, it is important to ask why families are going hungry in a region where modern agribusiness predominates - the one that promises to feed the world.

Territorial confinement is the fundamental condition that, intersected with other factors, results in the lack of access to basic food in sufficient quantity and quality for the physical reproduction of the families of Tekoha Guasu Guavirá.

In this context, discussing food and hunger also involves discussing the land's importance for the Guarani people. Their way of life is deeply rooted in agricultural practices, and they depend significantly

on the food grown in their fields to make up the basic daily diet of their families.

Their Indigenous Lands are not yet regularized: more than 60% of its delimited area is appropriated by agribusiness; indigenous farms and dwellings precariously occupy only 1.3%; forested areas occupy 12%. This division dramatically restricts the areas for planting and harvesting. In terms of food composition, the seeds cultivated are fundamental but insufficient. In the current land circumstances, the crisis is aggravated by countless obstacles to the maintenance of agro-biodiversity and by territorial confinement [see more in the topic *Threats to agrobiodiversity*].

Tupã Karai, from the *tekoha* Pohã Renda village, in Terra Roxa, reported that

in the old days, my family ate food from their crops. They planted cassava, corn, beans, and even rice. Now there is very little, and some families can't plant because they don't even have space to live in.

They plant almost everything together on the same piece of land. They know which species is good to plant together with another and which one harms the other. They plant beans with cassava in the same hole. But even so, they need to buy a lot in the market. In their *tekoha*,

the only thing we don't buy is cassava; even the amount of manioc we plant sometimes does not last the whole year. The rest is bought because there is no more space to plant enough. The place that was supposed to be handled and used for planting something is full, and we avoid messing with the bit of forest left. On top of that, the farmers are squeezing the community more and more, and slowly they are coming.

Tupã Karai said that, in his community, when a family goes hungry, everyone goes hungry because everyone helps each other. In other words,

when one does not have any more, it means that nobody has anymore. And when one goes hungry, everybody goes hungry because if one has, he gives or lends to the other who needs it. Some receive the Bolsa Família, but they don't get much, and others are retired. They don't buy only for themselves, they share everything. In times of hunger, they still have some cassava they plant in the crops, and bananas. They manage to get by until... Even so, there are hard times. Sometimes they skip meals. So there are moments when they reach that point when people need to stop eating, and there comes a moment when they get desperate.

The breeding of small animals is also limited by the lack of space and material conditions for breeding. Hunting, harvesting, and fishing are practically non-existent realities - or very limited - where rivers are fenced and polluted. Forested areas have been reduced to 9% in the municipalities of Guaíra and Terra Roxa. Tupã Karai said *they try to fish or hunt and return with nothing because the game is almost gone*. In this sense, the report prepared by CGY in 2017⁷⁸, previously mentioned, also showed that indigenous people face violence from landowners when they try to access rivers or forest remnants.

Although the cause and effect relation is not absolutely linear - it is crossed by other factors - we can say that the greater the territorial confinement, the least the participation of food coming directly from their territory in the nutritional composition of the families' meals, and the greater the vulnerability of the families regarding the guarantee of food. As we will see, the Tekoha Guasu Guavirá people have strategies to ensure access to food. However, they have not been sufficient to supply daily food to everyone. In some cases, families even depend on collecting food scraps discarded in the municipal garbage dump of Guaíra.

Access to food in the retail market depends on the income obtained from paid services, which almost always happens under very precarious conditions. There are one-day services or hired labor in construction, domestic work, or, seasonally, removing corn or cassava stalks on farms. There are jobs in apple harvesting in Santa Catarina or Rio Grande do Sul, where people migrate temporarily during the harvest season; occasionally, there are jobs in local businesses. They rarely find work in the highly mechanized regional farming and cattle-raising business. In addition to these services, people from the Avá-Guarani communities are employed by the state as teachers, health agents, and drivers for Sesai. They also work as "self-employed," sometimes selling handicrafts, food, or recyclable materials collected in the landfill of Guaíra, or the city. In specific cases, they have income from retirement or as beneficiaries of social programs.

The work search leads to a frequently reported situation by the Avá-Guarani people: getting jobs in the region is difficult. This problem was already noted

in the report prepared by CGY (p.49)⁷⁹, according to which access to work "is made difficult and even impossible by the anti-indigenous sectors of society, such as rural producers, businessmen, and politicians." According to the report, "hostilities make it impossible for many Avá-Guarani villagers to obtain financial resources for their sustenance, with consequences for the nutrition and health of their families." In this context, in which the income obtained by each family strongly influences their ability to have daily meals, *the difficulty and even impossibility of obtaining a payment reiterate the picture of hunger or imminent hunger among families of Tekoha Guasu Guavirá*.

The territorial confinement, crossed by the circumstances reported above, makes them much more dependent on the state's food assistance programs. These programs, which should have an emergency character, have become systematic and combined with confinement. However, the food baskets delivered by the National Indian Foundation (Funai)/ National Supply Company (Conab) and Reference Center for Social Assistance (Cras) are insufficient in quantity and nutritional quality. The number of baskets delivered does not cover all families. There is no regularity in the delivery by Funai or the Cras, even when a court decision obliges them to do so. Moreover, even when delivered, they are insufficient to feed a family for a month, especially when the families are larger. A few days of delay are enough to strongly affect some families' feeding conditions.

School meals also play a fundamental role in the composition of the families' diet, despite being composed of products with low nutritional value and ultra-processed products containing large amounts of sugars, fats, and preserving substances, just like the food baskets. According to Tupã Karai's statement, the school meal partially guarantees the children's food. *When there is food left, they divide everything among the families of tekoha Pohã Renda. Otherwise, sometimes the children who go to class eat, but those who stay home do not. Even the mother, the father, and the families that stay home sometimes don't have anything to eat*. Kunha Takua Rocay Ponhy's testimony resembles Tupã Karai's. According to her, in the tekoha Y'Hovy elementary school, *it is not only the students who show up when there is a snack, but other children come, children with another child around their waist, trying to get a snack too*. In her words: "So this is our reality. It's sad when it's told. But still, we

78 Guaíra and Terra Roxa – Human Rights Violations against the Avá-Guarani people of Western Paraná. Comissão Guarani Yvyrupa, 2017.

79 Guaíra and Terra Roxa – Human Rights Violations against the Avá-Guarani people of Western Paraná. Comissão Guarani Yvyrupa, 2017.

manage to help each other. We get through one day after another.”

In 2020 and 2021, even more impacted by the Covid-19 pandemic crisis, hunger has worsened throughout the country. Since mid-2020, inflation in Brazil has skyrocketed, with food prices rising far above the Minimum Wage variation⁸⁰. The increased cost of living has reached the most impoverished population in a much more significant proportion, crossed by race and gender questions⁸¹. For the Avá-Guarani people, who were already in a situation of nutritional vulnerability, the need for social distancing and the reduction of the already precarious possibilities of obtaining income aggravated the hunger. In addition, there were high food prices, and school lunches were cut for some months. According to Kunha Takua Rocay Ponhy, more people went hungry without school meals when they were cut off during some months of the pandemic. *Not to mention that prices increased a lot.*

⁸⁰ <https://www.dieese.org.br/notatecnica/2021/notaTec264InflacaoConflitoDistributivo/index.html?page=9>. Accessed in: July 12, 2022.

⁸¹ The concern about the food and nutritional situation, particularly among indigenous peoples, is reflected in the technical note prepared by the Brazilian Association of Collective Health (Abrasco) and the Articulation of Indigenous Peoples of Brazil (APIB). It is also mentioned in the Alana Institute's declaration for admission as *amicus curiae*, within the scope of the Breach Arguments of Fundamental Precept 709, proposed by APIB and six political parties. They wanted measures taken to repair the severe harm done to the fundamental precepts of the Federal Constitution concerning the failures and omissions in combating the Covid-19 pandemic among Brazilian indigenous peoples.

**“DO THEY NEED TO KILL US TO FEED THE WORLD?”:
the profound socio-environmental implications of agricultural commodity production on the Avá-Guarani people of Tekoha Guasu Guavirá**

We are the world's largest food producer per square meter and will assume this vocation (Paraná governor Ratinho Junior's opening speech on January 1st, 2019).

Besides adequately feeding its population of 212.235 million people, Brazil is becoming an important food supplier to the world (Study conducted by researchers from Brazilian Agricultural Research Corporation and published on the company's website in March 2021).⁸²

Brazil's depiction as the “world's granary,” disseminated by the national ruralist sector and its representatives in Paraná, cannot be constructed without violently erasing the original presence of the Avá-Guarani people in the west of the State. The consolidation of agribusiness in the region since the 1970s coincides with the widespread devastation and deepening of the traditionally occupied territories' dispossession. The State promoted this process and articulated with private agents, who privileged settlers in access to land, marking the racial character of the regional land ownership structure that persists to this day. In the early 1980s, the human and territorial rights violations were consolidated when the Itaipu reservoir construction partially submerged the Avá-Guarani territory. In those precise areas, forming their *tekoha* near forest remnants was still possible.

These transformations converted a large part of Guairá and Terra Roxa municipalities into agribusiness monocultures and pastures. They reduced the forest vegetation to less than 10% of its area. The forest remnants that survived the environmental devastation currently constitute only 12% of the Tekoha Guasu Guavira Indigenous Land, to which the indigenous people are often denied access by private landowners. It means that the Avá-Guarani people have had the basis of their physical and cultural

reproduction profoundly disrupted by the transformations in the region. Even today, they have not been compensated for their severe damage. The extreme vulnerability in which they live aggravates when the State refuses to protect their territorial rights.

The apparent success of agribusiness still masks numerous other serious socio-environmental implications of agricultural commodity production. They systematically fall upon - and not only - the indigenous communities of Tekoha Guasu Guavirá.

The massive use of pesticides in monoculture plantations has seriously affected the human and environmental health of communities and their surroundings. These circumstances make even more explicit the racist structural basis that sustains agribusiness. The only plausible explanation for consenting to the poisoning by pesticides (banned in regions of the global North and whose potential for illness and death are well known) is the assumption that some lives - in this case, indigenous lives - are worth less than others.

The agrobiodiversity, historically conserved by the Avá-Guarani people, is also at risk when traditional agricultural systems are destructured. It threatens the maintenance of agricultural species and the knowledge associated with them. Consequences also increase the communities' food vulnerability.

Karai Okaju's considerations about the region's conversion into agribusiness monocultures end up in the severe hunger problem faced by Avá-Guarani families. According to him, *there are large fields of soybeans as far as the eye can see, and the ruralists say they are planting for Brazil to eat. But who are they feeding if the Brazilian people are not going to eat a plate of soy here, another plate of corn there, and feed themselves early in the morning and late at night on soy? So, while they say they are feeding Brazil, we see with great sadness that they have only one kind of plant in a vast amount of land.*

Some facts go against the idea that Brazilian agribusiness feeds the world, as propagated by the hegemonic ruralist narrative. While Brazil is the largest soy-producing country in the world, at the end of 2021, 125.2 million people faced some level of food and nutritional insecurity⁸³, and 33.1 million people faced the most severe form of hunger - they had nothing

⁸² The Brazilian agrobusiness feeds 800 million people. Available at: <https://www.embrapa.br/busca-de-noticias/-/noticia/59784047/o-agro-brasileiro-alimenta-800-mil-hoes-de-pessoas-diz-estudo-da-embrapa>. Accessed in: April, 2022.

⁸³ There is uncertainty about food access, in addition to the already compromised quality of the food; there is a quantitative restriction to food until reaching the reality of hunger (National Survey on Food Insecurity in the Context of the COVID-19 Pandemic in Brazil).

to eat.⁸⁴ Inflation in Brazil skyrocketed, and the living cost increase hit the most impoverished population in a much more significant proportion, crossed by race and gender questions.⁸⁵ At the same time, some benefited from the inflationary process, especially the agribusiness and the mineral extraction industry. Agribusiness set records for soybean harvests, revenues, and exports of agricultural commodities in 2021, relying on the high international prices of commodities⁸⁶. According to the Institute of Applied Economic Research (IPEA), the trade balance of Brazilian agribusiness reached the end of 2021 with a positive balance of US\$ 105.1 billion, 19.8% higher than in 2020. These are the results of the historical record in exports, which reached US\$ 120.6 billion in 2021.⁸⁷ In Guairá and Terra Roxa, the leading cooperatives and agribusiness companies - C.Vale, Copagril, Integrada and I.Riedi Grãos e Insumos - had record sales.

In Tekoha Guasu Guavirá, the rural sector narrative takes on especially perverse contours. Producing commodities that - it is said - would free them from hunger actually produces hunger. Monoculture inverts the elementary function of the indigenous plantations that it breaks: the function of feeding families every day disappears. Above all, monoculture is established by transactions on the global

market, negotiated on the stock exchanges, and indifferent to their food characteristic.

Tupã Karai's thoughts are symptomatic of the human and territorial rights violations in which the communities currently find themselves and the dissonance of the rural sector's speech. For him, *here in Brazil, they want to expel or kill people to feed some world, but we do not know which world, because we see that people are starving.*

During the 2021 Oporaiva Kuera Aty (the elderly meeting) in Tekoha Guasu Guavirá, the *chamõi* and *charyi kuera* messages were unanimous about the magnitude of the suffering caused by the destruction of their territory and about the urgency to demarcate it. The words of the *charyi* Kunha Takua Yruku echo those messages: the destruction of the territory does not only affect the indigenous people, *but everything that exists here on earth also suffers with us, also cries with us*; and it is urgent to have their land demarcated in order to *recover everything that the karai kuera destroyed.*

⁸⁴ National Survey on Food Insecurity in the Context of the COVID-19 Pandemic in Brazil

⁸⁵ See more on the topic *The world's granary and hunger in Tekoha Guasu Guavirá*

⁸⁶ The representation of the agriculture and cattle raising sector in the Brazilian Gross Domestic Product (GDP) is worth mentioning. In the article "Why can we say that agro is hunger?," Yamila Goldfarb discusses the differences in the treatment given to the various segments in the countryside. Large landowners receive most of the public resources in credits, incentives, tax exemptions, and debt forgiveness; at the same time, the small and medium-sized producers have less and less credit and no public policies to make their production and disposal feasible. The author highlights that agriculture and cattle raising in Brazil represent only around 8% of the Brazilian GDP, not the 27% that the sector usually claims. According to her, 27% refers to the entire production chain, involving parts of the industrial and service sectors. For her, "if each segment of the economy wants to justify its importance by analyzing entire production chains, we would have double counting the contribution of a particular product countless times." <https://diplomatie.org.br/por-que-podem-dizer-que-agro-e-fome/>. Accessed on: October 20, 2022.

⁸⁷ https://www.ipea.gov.br/portal/images/stories/PDFs/conjuntura/220116_notas_2_comercio_exterior_agro_2021.pdf. Accessed on: July 11, 2022.

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TECHNICAL DATA SHEET

Defending forest areas against soy

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Comissão Guarani Yvyrupa (CGY)

Comissão Guarani Yvyrupa (CGY) is a non-profit legal entity, cultural in nature, formed to defend the collective interests of the Guarani people and their territorial rights guaranteed by the Federal Constitution and international conventions. Among its objectives, there are: articulate leaders of the Guarani people to participate in the work of recognition and protection of their lands in various regions of their territory; mobilize the Guarani people in defense of their rights; support the holding of articulation meetings in the villages; contribute to strengthening the national indigenous movement. Learn more: <http://www.yvyrupa.org.br/>

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Impacts of agricultural commodity production on the Avá-Guarani communities of the Tekoha Guasu Guavirá Indigenous Land/West Paraná

Testimonies

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Sources: Municipal headquarters and City Limits, IBGE, 2010; Body of water, hydrography and roads, BGDex, 2020; Villages and Indigenous Land, Order nº 2, Official Gazette, September 2nd, 2020. Satellite image. Landsat 8 TM, October 2021. Coordinate system: Datum: SIRGAS, 2000, UTM 22S.

Design

Bruna Keese

Photography

Camila Salles de Faria (p.40): a tractor sprays agrotoxins on top of a house in Tekoha Guarani, in 2013 (CTI Collection).

Resident of the Nhemboeté community (p. 42): a tractor sprays agrotoxins next to Tekoha Nhemboete, observed by children (CGY Collection).

Teresa Paris: other photos (CGY and CTI Collection).

Drawing of the second and third covers made by Avá-Guarani child from Tekoha Guasu Guavira, 2016.

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