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AGROECOLOGY AND EDUCATION: THE RESCUE OF CREOL SEEDS IN THE TERRITORY OF LATIFÚNDIO SUL-MATOGROSSENSE

AGROECOLOGIA E EDUCAÇÃO: O RESGATE DAS SEMENTES CRIOULAS NO TERRITÓRIO DO LATIFÚNDIO SUL-MATOGROSSENSE

AGROECOLOGÍA Y EDUCACIÓN: EL RESCATE DE SEMILLAS CRIOLLAS EN EL TERRITORIO DE LATIFÚNDIO SUL-MATOGROSSENSE

Melissa Pereira Oliveri[1]
Jhiovanna Eduarda Braghin Ferreira[1]
Rosemeire Aparecida de Almeida[1]
Mieceslau Kudlavicz[2]

Abstract: Brazilian territorial formation is marked by the concentration of land reflected in an authoritarian, violent and unequal society (Almeida, Silva, 2015). The state of Mato Grosso do Sul is an example of this condition. Recognized as a landowning state, it is marked by a ban on the reproduction of the peasant way of life. Brazil underwent a process of agricultural modernization, known as the Green Revolution, which led to changes in the technical basis of agriculture aimed at large-scale production for export. This process of advancing capitalist agriculture did not put an end to hunger in the country; on the contrary, it resulted in a food crisis. This Brazilian reality is also occurring in eastern Mato Grosso do Sul, and it is necessary to overcome it by reclaiming agroecology as a path to the agriculture of the future. With this in mind, we present an experience of agroecological education in the primary school system, through the resumption of dialog on creole seeds. Therefore, the aim of this article is to address agroecological educational experiences developed with Creole seeds in schools located

[1] Universidade Federal de Mato Grosso do Sul
[2] Pastoral da Terra

in the east of the state, actions that began at the 7th Meeting of Peasant Women of the Bolsão Rural Territory in 2019. The article is structured in three parts: the political and historical context of the state, the relationship between the crisis of civilization and agroecology, and experiences of agroecological education. The methodological procedures of this study combine bibliographical reviews, quantitative data analysis and fieldwork.
Keywords: land concentration; peasant resistance; creole seeds; sustainability.

Resumo: A formação territorial brasileira é marcada pela concentração de terras refletida numa sociedade autoritária, violenta e desigual. (Almeida, Silva, 2015). O estado de Mato Grosso do Sul é exemplo dessa condição, reconhecidamente latifundiário tem como marca o interdito à reprodução do modo de vida camponês. O Brasil passou por um processo de modernização da agricultura, denominado de Revolução Verde, que gerou mudanças na base técnica da agricultura voltada à produção em larga escala para a exportação. Esse processo de avanço da agricultura capitalista não acabou com a fome no país, ao contrário, resultou em crise alimentar. Esta realidade brasileira também ocorre no Leste do Mato Grosso do Sul, sendo necessário para sua superação o resgate da agroecologia como caminho para a agricultura do futuro. Neste sentido, trazemos uma experiência de educação agroecológica construída na rede básica de ensino, via retomada do diálogo sobre sementes crioulas. Portanto, o objetivo deste artigo é abordar experiências educacionais agroecológicas desenvolvidas com as sementes crioulas em escolas situadas no Leste do estado, ações que tiveram início no 7° Encontro das Mulheres Camponesas do Território Rural do Bolsão, em 2019. O artigo está estruturado em três partes: contextualização político-histórica do estado, relação entre crise civilizatória e agroecologia, experiências de educação agroecológica. Os procedimentos metodológicos deste estudo articulam revisões bibliográficas, análise de dados quantitativos e trabalhos de campo.
Palavras-chave: concentração de terras; resistência camponesa; sementes crioulas; sustentabilidade.

Resumen: La formación territorial de Brasil está marcada por la concentración de la tierra, reflejada en una sociedad autoritaria, violenta y desigual (Almeida, Silva, 2015). El estado de Mato Grosso do Sul es un ejemplo de esta condición. Reconocido como un estado terrateniente, está marcado por la prohibición de la reproducción del modo de vida

campesino. Brasil pasó por un proceso de modernización agrícola, conocido como la Revolución Verde, que condujo a cambios en la base técnica de la agricultura orientados a la producción a gran escala para la exportación. Este proceso de avance de la agricultura capitalista no acabó con el hambre en el país; al contrario, provocó una crisis alimentaria. Esta realidad brasileña también está ocurriendo en el este de Mato Grosso do Sul, y es necesario superarla reivindicando la agroecología como camino para la agricultura del futuro. Con este objetivo, presentamos una experiencia de educación agroecológica en el sistema de enseñanza primaria, a través de la reanudación del diálogo sobre las semillas criollas. Por lo tanto, el objetivo de este artículo es discutir experiencias de educación agroecológica desarrolladas con semillas criollas en escuelas ubicadas en el este del estado, acciones que comenzaron en el 7º Encuentro de Mujeres Campesinas del Territorio Rural del Bolsão en 2019. El artículo se estructura en tres partes: el contexto político e histórico del Estado, la relación entre la crisis de civilización y la agroecología, y las experiencias de educación agroecológica. Los procedimientos metodológicos de este estudio combinan revisiones bibliográficas, análisis de datos cuantitativos y trabajo de campo.

Palabras clave: concentración de la tierra; resistencia campesina; semillas criollas; sostenibilidad.

INTRODUCTION

The process of territorial formation in Brazil triggered the development of an atypical, rent-seeking capitalism in the countryside, resulting from the monopolization of land and control of society. Since land is the basis of our existence, the class that concentrates much land controls society, generating a privileged, therefore authoritarian and violent society. An example of this violence against the human condition is the state of Mato Grosso do Sul (MS), a state recognized for its large estates and violence, one of the icons of agribusiness (Paulino; Almeida, 2010).

Violence against rural workers in land conflicts is not restricted to physical violence, but also includes evictions, invasions, hired gunmen, and threats. This reality is confirmed by empirical data collected by the Pastoral Land Commission (CPT), in the Land Conflict Booklet, in 2022. According to the CPT, from 2019 to 2022, 242 land conflict occurrences were registered in MS. Of this total, 75 are land and water conflicts, occupations/repossessions, and rural slave labor. These 75 conflict occurrences in the

state involved 59,152 people, a group composed of people rescued from slave labor, indigenous people, settlers, and riverside dwellers. Also, in the same year, six (06) murders, 18 attempted murders, and 14 death threats were registered in the state. This violence against those who fight for land, which marks the rural area of Mato Grosso do Sul, is the result of land concentration that has historically excluded people from access to land.

In this state, the use of land is not dictated by the basic needs of the subordinate classes – working and peasant classes – but rather by profit. In this sense, production is geared towards the external market, producing commodities instead of food for the domestic market. Through data extracted from the latest agricultural census (2017) of the Brazilian Institute of Geography and Statistics (IBGE), it is possible to demonstrate the concentration of land as a key element of wealth.

Table 1: Mato Grosso do Sul: Land Structure - 2017

Land Size Class (ha)	**Censo Agropecuário 2017**				
	Establishments - No	%	Area (ha)	%	Average Area (ha)
0 to less than 200	53.169	75	1.514.687	5	28,48
200 to less than 1.000	10.95	15	5.412.368	18	494,28
Over than 1.000	6.843	10	23.622.125	77	3452,01
Total	**70.962**	**100**	**30.549.180**	**100**	**3.974,77**

Source: IBGE – 2017 Agricultural Census. Organization: Authors (2023).

The data indicates that small establishments, from 0 to less than 200 hectares, are more numerous, representing 75% of the total establishments, however, they occupy only 5% of the area in the state. On the other hand, large establishments, over 1000 hectares, even in smaller numbers, representing only 10%, concentrate an area of 77%. In other words, there is an inverse logic expressing that there are many people with little land and few people with much land. By dominating the largest percentage of the territory's fraction, these dominant groups control the production, circulation, and consumption model, in addition to generating several socio-environmental problems.

The dominance of the territory by large capitalist property makes Mato Grosso do Sul a landowning state, where land and wealth are historically concentrated, representing a form of capitalist accumulation based on a predatory model of land monopolization and exploitation of nature, which puts the basis of human existence at risk (Almeida, 2023).

According to the National Institute for Colonization and Agrarian Reform (INCRA), the state of MS has 206 settlement projects. The paralysis of agrarian reform

in the state is notorious, especially from the year 2010 onwards. In 2020, the last settlement was created, however, INCRA data did not provide the form of acquisition and when it was obtained, leaving the question of whether the land was obtained during the (mis)Government of Bolsonaro.

In addition to the dismantling of agrarian reform policy, another central characteristic of the blockade of agrarian reform is the presence of large productive estates, because the land-capital alliance has brought a new guise to the unproductive estate, politically hindering agrarian reform, which has as its principle for realization unproductive land (Almeida, 2011). However, IBGE land use data reveals the inefficiency of the productive estate, when considering the size of the land monopoly (Kudlavicz, 2011; Ferreira, 2023). In consonance, Fernandes (2004) emphasizes that this strategy did not work, as the violence of the image of the estate/landowners still prevails in social consciousness.

> The large estate carries within it the image of exploitation, slave labor, extreme land concentration, coronelismo (local political bosses), clientelism, subservience, political and economic backwardness. It is, therefore, a space that can be occupied for the development of the country. A large estate is associated with land that does not produce, which can be used for agrarian reform. Although they have tried to create the figure of the productive large estate (sic), this action was not successful, as there are more than five hundred years of exploitation and domination, for which no adjective can modify the content of the noun. (Fernandes, 2004, p.1).

However, despite the blockade to the realization of agrarian reform by the productive and unproductive large estates, the expulsion of rural populations, and the decrease in food production (Ferreira, 2022), paradoxically, the Agroecology Study Center of Bolsão (NEA/BOLSÃO) was created and implemented in 2017, linked to the Federal University of Mato Grosso do Sul, Três Lagoas Campus. Since its creation, NEA has supported agroecological activities developed by rural workers, in addition to creating projects with them, especially for the rescue of agroecological knowledge. The projects and activities developed by NEA/BOLSÃO are based on the tripod of agroecology: science, movement, and practice (Almeida, 2023).

Among the various activities developed is the rescue of creole seeds, which aims, in addition to creating a creole seed bank, to promote rural autonomy based on the popular knowledge of rural workers, local biodiversity, the exchange of knowledge between rural workers, especially for the production of healthy food.

In this sense, Kudlavicz (2021) highlights the importance of creole seeds for the search for a new model of agriculture, in which agroecology is placed as the agriculture of the future. In this direction, the debate on the rescue, preservation, and multiplication of creole seeds is opportune, since it meets the agroecological debate, which is the only way to overcome the unsustainability of capitalist agriculture that is imposed, characterized by the concentration of large tracts of land and the adoption of the technological package provided by the Green Revolution.

Thus, the objective of this work is to address the experiences developed with creole seeds in schools in the East of the state, which began at the 7th Meeting of Rural Women of the Bolsão Rural Territory in 2019. The methodological procedures were articulated in bibliographic reviews; analysis of quantitative data; observations; and fieldwork carried out in eleven distinct activities.

DEVELOPMENT

RURAL RESISTANCE, AGROECOLOGY AND CREOLE SEEDS AGAINST THE ADVANCE OF EUCALYPTUS-CELLULOSE AGRIBUSINESS TERRITORIALIZATION.

The East of Mato Grosso do Sul has a history of land concentration and extensive, low-productivity livestock farming, currently marked by agrarian change towards the territorialization of monopolies in the cellulose agribusiness sector. The municipality of Três Lagoas/MS, known as the "world capital of cellulose" - a nickname given by Law No. 4,336, of April 11, 2013, by the then Governor of the state of Mato Grosso do Sul in that period and current Minister of Planning and Budget of Brazil, Simone Tebet - is experiencing a period of ascending economic growth, but this is not synonymous with social development.

The movement of reality has indicated the construction of ideological policies to form a popular consciousness in favor of this economic growth model in Três Lagoas, whose basis is land concentration and authoritarianism. This process occurs through social actions by companies, with state support, aiming to educate for the consensus of subordinate classes (Bersani, 2022), in favor of territorial harmony, that is, the absence of conflicts. In this sense, Bersani (2022, p.190), referring to the actions of the company

Fibria (operating in the east of Mato Grosso do Sul, at the time of the law's creation), states:

> This political-ideological incursion by the company is carried out through a set of tactics used to establish contact, generate trust, and implement programs and projects that enable the formation of consent – which allows it to exercise a form of domination and management of socio-territorial conflicts – necessary for its expansion and capital accumulation.

It is important to highlight that the East region, with emphasis on the municipality of Três Lagoas, has for a long time coexisted with extensive rural properties of low agricultural productivity, functioning as a reserve of value (Kudlavicz, 2011). The conservative forces holding this land monopoly, very well-articulated, managed to prevent agrarian reform (the municipality has only two rural settlements) and today celebrate the arrival of eucalyptus-cellulose and the increase in land prices, under the guise of economic development for all[3].

Despite this reality of rent-seeking land monopoly in the east of MS, rural resistance has found gaps to reproduce its way of life, with agroecology and creole seeds as the greatest symbols of this struggle.

> This region is marked by the dominance of large properties geared towards extensive livestock farming and land speculation and, more recently, by eucalyptus monoculture. **It is in this environment of capital hegemony that rural workers are situated and the struggle for the recreation of their way of life** (Almeida, 2023, p. 210, our emphasis).

In places characterized by the territorialization of monopolies, where there is great control over land and the productive process in the countryside, there is a tendency to block rural reproduction. The East of the state of MS is dominated by the territorialization of the countryside geared towards the eucalyptus-cellulose agribusiness sector, focused on export. This reality is evidenced by data extracted from the official websites of the cellulose sector companies territorialized in the municipality of Três Lagoas/MS, where

[3] According to a JPNEWS report, approximately 50,000 people live in poverty or extreme poverty in Três Lagoas/MS, demonstrating that economic development, widely defended by agribusiness companies in the eucalyptus-cellulose sector, is not synonymous with social development. Information available at: https://www.rcn67.com.br/jpnews/tres-lagoas/mais-de-20-mil-familias-vivem-em-situacao-de-pobreza-em-tres-lagoas/165612/#:~:text=Tr%C3%AAs%20Lagoas%2C%20cidade%20com%20125,popula%C3%A7%C3%A3o%20do%20munic%C3%ADpio%20nesta%20situa%C3%A7%C3%A3o. Accessed on: 12/20/2023.

the company Eldorado Brasil[4] indicates the production of 1.8 million tons of cellulose produced per year; 249 thousand ha of planted eucalyptus "forests"; 2.5 million tons of cellulose per year; and the export of cellulose to more than 45 countries, and Suzano "Paper and Cellulose"[5] indicates a production capacity of 3.25 million tons per year in two production lines, only at the Três Lagoas/MS factory.

In the eucalyptus-cellulose agribusiness, there are local large estates focused on eucalyptus production, concentrating large tracts of land for production in the shortest possible time (with eucalyptus cutting in five years), relying on the technological package of the Green Revolution, based on fertilizers and pesticides, which implies the devastation of the local morphoclimatic domain, imbalance of fauna and flora, expulsion of rural populations (Dubos-Raoul, Almeida, 2022), compromising the food security of the local population.

Therefore, the strength of rural resistance in this region is striking, even if it is not very expressive in terms of numbers, but very significant, as they contribute to the preservation of a way of life; preserve the environment; conserve ancestral knowledge; perform systemic services to the environment demonstrating more harmonious relationships with the land; in short, this rural presence guarantees more food security for the city. Despite all the difficulties that these rural workers encounter in reproducing as a class, in a territory dominated by agribusiness, they exist, which strengthens the understanding that "the (re)creation of the rural worker is not guided only by access to land, but also by the incessant search to remain on it" (Silva; Almeida, 2017, p.176).

At times, this rural way of life is at risk due to various factors, such as monoculture encirclement, lack of incentives and public policies; the hegemonic discourses of the Brazilian bourgeoisie that attribute to agro-industries the role of modern, advanced and developed, and to rural workers the title of archaic, outdated. For Almeida (2023, p. 212) rural existence is made as an "uncomfortable presence".

In this sense, a political-ideological mentality is created against rural workers, including alienating the working class, which should unite with them in defense of land for life and work. This favors the territorialization of monopolies in the east of MS, since the absence of class conflict allows the advancement of eucalyptus-cellulose capital

[4] Information retrieved from the official website of the company Eldorado Brasil. Available at: https://www.eldoradobrasil.com.br/pb/a-eldorado-brasil/quem-somos/. Accessed on: 12/04/2023.
[5] Information retrieved from the official website of the company Suzano Papel e Celulose. Available at: https://nascomunidades.suzano.com.br/regional-mato-grosso-do-sul. Accessed on: 12/04/2023.

without many questions. The capital operating in the region develops strategies for ideological control of the population, even if this coercion goes unnoticed by the perspective of a large part of the affected people – including the rural workers themselves, and thus, a relationship of social consensus around development is instituted, created by companies with state support. "It is possible to add that the public fund also plays a fundamental role in the reproduction of bourgeois domination, especially in the passivation of subordinate social classes through a specific way of educating for consensus" (Bersani, 2022, p.130).

To spread this consensus around sustainable development, companies in the eucalyptus-cellulose sector, such as Eldorado Brasil and Suzano Papel e Celulose, deliver sustainability speeches in harmony with economic development, hiding the conflicts arising from land concentration, loss of socio-biodiversity, and overlapping uses and ways of life, under the risk of the disappearance of the peasantry. The following speeches were taken from the official websites of these mentioned companies[6], respectively:

> We operate with sustainability: Eldorado Brasil is a forest-based company committed to nature, biodiversity, the responsible use of natural resources, and the development of the communities where we operate. With this purpose rooted in our organizational culture, we continue to grow in the global cellulose market in an environmentally sustainable and socially responsible manner. [...] Our commitment: to be sustainable. Sustainability permeates all our activities – from the seedling nursery to the planting, harvesting, and transportation of eucalyptus, from the manufacture of cellulose to the logistics of product distribution to the world. **We are sustainable in everything we do.** In practical terms, it means producing responsibly and obtaining the best results for our business, the environment, the communities, and our employees, under a modern and transparent management and governance model" (Eldorado Brasil, 2023, our emphasis)

> Sustainability is in our daily lives and is part of our strategy for today and for the future. We work to be a competitive company and a protagonist in the transformation of our value chain and society. We want to help make everyone's life more sustainable through our products. And that they know that we work to generate positive impacts from responsible actions. [...]. In the environment, we invest in the preservation of more than 900 thousand hectares of native forest, an area equivalent to 900 thousand football fields, and we carry out one of the largest restoration programs in Brazil. **Our environmental initiatives contribute to climate regulation and the preservation of biodiversity and ecosystems, in addition to the maintenance of soils, rivers, and their springs** (Suzano, 2023, p.23).

[6] Information retrieved from the companies' official websites. Available at: https://www.eldoradobrasil.com.br/pb/sustentabilidade/operacao-sustentavel/ and https://www.suzano.com.br/sustentabilidade/. Accessed on: 12/03/2023.

Almeida (2023, p. 201) states that "sustainability is not possible without the preservation of cultural diversity nurturing local agricultures," therefore, these discourses are biased, since capitalist agriculture does not care about diversity, much less about food production for workers' tables, the preservation of culture, and natural resources. Added to this is the use of chemical management to care for the soil, generating environmental liabilities, therefore, they care not to achieve the preservation and the "sustainability" for all so defended by their discourses, but to mitigate conflicts and care for capitalist accumulation, which allows them to appropriate large profits.

What we have is a territory dominated by agribusiness, with rural resistance against the grain. In this region, the advance of capital over land has happened in an unbridled way in view of high land concentration, state incentives and subsidies, absence of social movements, and few people in the countryside, since the territory had already suffered a sociocultural and environmental "cleansing" in the territorial formation for livestock.

The Cerrado, the morphoclimatic domain of the East region, is dominated by monocultures, especially grains and eucalyptus. Currently, the region is going through the same problems pointed out by Fabrini (2018) when discussing the processes of the Green Revolution, especially cultural and environmental devastation, with damage to natural resources, food contamination, loss of soil capacity, and simplification of ecosystems.

> The domination of nature by technology with the intensive use of modern inputs, such as scientifically selected seeds, machinery, fuels, pesticides, irrigation, among others, as highlighted earlier, was justified by a noble cause: the increase in agricultural productivity to feed people and solve world hunger (Fabrini, 2018, p. 66).

Therefore, the analyzed process regarding the need for agroecology has as its backdrop the modernization of agriculture that "privileged monoculture aimed at export and destroyed the support base of rural workers, which is subsistence production" (Kudlavicz, 2021, p.1). This modernization, also called the Green Revolution, attributed the ancestral knowledge of rural workers to the notion of backwardness, and instituted a technological package for agriculture that would represent modernity, featuring machinery, exchange of inputs, homogeneous productions, transgenic seeds, and pesticides. For Almeida (2023, p.212) "the result has been the territory surrounded by capitalist agriculture as an expression of the Green Revolution: large property, monoculture, pesticides, and export".

It is evident that the Green Revolution did not serve to eliminate hunger, since agribusiness production is not focused on producing food for the worker's plate, but rather on producing commodities for export, and thus, capitalist agriculture surrounds rural communities, consumes water, destroys cultural diversity, uses many chemical inputs, degrades the soil, and even institutes a mental monoculture in the population (Almeida; Fabrini, 2023) through hegemonic discourses of sustainability and economic and social development, which easily permeates the minds of a population that, plagued by unemployment and the lack of basic rights, reproduces the discourse of another class, living a true mass alienation and social coercion.

The eastern region of MS, once undervalued with very cheap land and low income, now demonstrates the realization of income expectations with eucalyptus-cellulose production. Not having territorial conflict is crucial for land income, since conflict undermines income, for this, the pedagogical actions carried out by capital often act directly at the base, in the education network, through the elaboration of educational and professionalizing projects. An example of these educational projects is the Eldorado Sustainability Program (PES), which is an environmental education initiative aimed at students from schools in the region, communities, and employees[7]. In this sense, the action of liberating education committed to agroecological principles in the region is necessary, which causes a rupture in this process of mass alienation that develops consensus in local society.

Given this space-time context, this work aims to highlight the agroecological educational practices developed by members of the Agrarian Geography Laboratory and the activities carried out by NEA/BOLSÃO, bringing to the fore the resumption of the creole seed debate in the eastern region, acting as a counterpoint to capitalist agriculture in search of a more harmonious relationship with nature, more balanced, aiming to overcome the rupture between society and nature conducted by capital, which separates human beings from nature "since this rupture is the result of a production model oriented towards exchange values and the incessant pursuit of profit" (Almeida, 2023, p.99). This educational process has a commitment to agroecology.

Creole seeds are an agroecological expression of utmost importance, since seeds are essential for the reproduction of life, it is from them that foods exist. They are

[7] Information retrieved from the official website of Eldorado Brasil. Available at: https://www.eldoradobrasil.com.br/pb/sustentabilidade/eldorado-brasil-nas-comunidades/. Accessed on: 12/04/2023.

necessary to reclaim something as valuable in the rural way of life: autonomy, which from the Green Revolution was affected and left the hands of many rural workers. Thus, it is extremely necessary and urgent, "poner en manos de los pueblos que alimentan el mundo el control de las semillas, la biodiversidad, la tierra y los territorios, el agua, los saberes, la cultura y los bienes comunes" (LVC, 2015, apud Giraldo; Rosset, 2016, p.17).

These seeds have not been chemically modified by humans, they are seeds passed down from generation to generation and that respect the local morphoclimatic domain. We agree with Kudlavicz (2021, p.2) "that the rural worker needs to return to being a researcher of nature and a producer of knowledge inherent to their survival as a class and for the reproduction of their way of life". The rescue of creole seed production is one of the fundamental tools to start this process of autonomy for rural workers in the face of agricultural production.

With the Green Revolution, part of the ancestral knowledge of rural workers was disregarded and seeds were modified, demonstrating a great cultural loss. Therefore, the rescue of the debate on seeds is essential in society, since a large part of the new generation does not even have knowledge of these seeds, much less about how food is produced.

TRAJECTORY OF THE EXTENSION EXPERIENCE: THE CREOLE SEED DEBATE IN BASIC EDUCATION IN THE EAST OF MS

Just as land was transformed into a special commodity within the capitalist logic of production, seeds and food also became commodities, allowing for the expanded production and reproduction of capital. Food Empires (PLOEG, 2008) control and appropriate natural resources and local economies, in order to succumb to small businesses, monopolizing the rural territory, through the action of intermediaries. Control through Food Empires directly interferes with food flavors, customs, health, and nature. According to the Food and Agriculture Organization of the United Nations (2010), in the last century 75% of crop diversities were lost, as an example, only five varieties of rice are cultivated, representing 95% of the harvest.

The form of organization of production and expanded reproduction of capital founded on capitalist agriculture and Food Empires, imposes challenges to think about an agriculture of the future. That being said, in this article, agroecology is proposed as the only path of agriculture, being understood from its tripod: science, movement and practice

(Almeida, 2023). And it is in this sense that the Agroecology Study Center of Bolsão (NEA-Bolsão), linked to the Federal University of Mato Grosso do Sul, Três Lagoas Campus, coordinated by Professor Dr. Rosemeire Aparecida de Almeida, has been developing projects with rural farmers.

The projects linked to NEA/Bolsão were built from the needs of the settlers, with a sense of urgency in the face of the abandonment of this class. Immediately the projects were focused on the commercialization of surpluses and, subsequently, focused on agroecological management and plot redesign practices. However, within the various objectives of NEA/Bolsão, the rescue of seeds was also present, to return to the rural worker their productive autonomy from the resumption of popular knowledge.

The experiences with seeds began in 2019 during the 7th Meeting of Rural Women of Bolsão with the theme: "Agrarian Reform, seeds and food". The event in question took place at the Alecrim Settlement, located in the municipality of Selvíria, in March 2019.

To continue the debate about the importance of creole seeds in the search for the promotion of agroecology and rural autonomy, it took place during the 8th Meeting of Rural Women of Bolsão, at the Pontal do Faia Settlement, in Três Lagoas, in October 2019, a conversation circle about creole seeds with the settled rural workers, the guardians of the Triunfo Collective of Paraná and the students and employees of UFMS.

From the rural experiences and the exchange of knowledge in agrarian reform settlements and at the Federal University of Mato Grosso do Sul, Três Lagoas Campus, NEA-Bolsão published, in 2020, the Creole Seed Booklet of Bolsão MS. The booklet aimed to address with simple language the rural daily life, the exchanges of popular knowledge and the importance of preservation, multiplication and exchange of creole seeds (Figure 1).



Figure 1: Cover of the Creole Seed Booklet of Bolsão -MS.
Source: NEA Bolsão-MS Collection, 2020.

From the Booklet, activities were developed in basic education schools in rural and urban areas, and at UFMS in order to address the importance of creole seeds for agroecology, the impacts caused by agriculture based on the Green Revolution, the importance of agrarian reform, popular knowledge and women in the process of preserving and multiplying seeds. The activities are coordinated by Professor Me. Mieceslau Kudlavicz, a member of the Pastoral Land Commission and a guardian and multiplier of creole seeds.

In 2023 (Figure 2), two activities on creole seeds were developed at the Federal University of Mato Grosso do Sul, Três Lagoas Campus. In May 2023, a workshop on creole seeds and defensive broths was held at the "IV Regional Meeting in Commemoration of the Geographer's Day" and, in November 2023, at the end of the Seminar "Potentialities and perspectives for the Green Belt of Três Lagoas" with the residents of the Green Belt, creole seeds were distributed, in an attempt to restore the autonomy of these residents and emphasize the importance of the seeds.



Figure 2: Activities developed at UFMS/CPTL
Source: NEA/BOLSÃO (2023).

At the São Joaquim Rural Municipal School, located in the São Joaquim Settlement, municipality of Selvíria, three activities were developed between the years 2022 and 2023. In the year 2022, the first activity was developed, with the presence of guardians of creole seeds from the state of Paraná and Professor Leandro Barradas Pereira, a teacher at the State Technical School (ETC) Sebastiana Augusta de Moraes, in Andradina (SP). On the occasion, the guardians donated seeds to the children, encouraging the appreciation and multiplication of the seeds, Professor Leandro addressed the diversity of crop varieties, and the quality of creole seeds. During the visit in December 2023, seeds were distributed to settlers, teachers, and students with the aim of multiplication (Figure 3).



Figure 3: Activities developed at the São Joaquim Rural Municipal School
Source: NEA/BOLSÃO (2023).

At the Federal Institute of Mato Grosso do Sul - IFMS (figure 4), in the city of Três Lagoas, a workshop on seeds and defensive broths was given during the Science and Technology week that took place in October 2023. In this context, there was active participation from the students, as some students resided in the countryside.



Figure 4: Workshop on creole seeds and defensive broths given at IFMS/CPTL
Source: NEA/BOLSÃO (2023).

Another activity developed was at the João Ponce de Arruda State School (Figure 5), located in the city of Três Lagoas, in June 2023. On the occasion, the workshop was

taught by Prof. Me. Jhiovanna Eduarda Braghin Ferreira and Prof. Melissa Pereira Oliveri, professors and researchers linked to NEA/Bolsão and members of the Agrarian Geography Laboratory, who accompany the guardian Miesceslau Kudlavicz in workshops and fairs in the East of the state. The invitation was made by the Biology Professor, Emily Lima Cunha Perciliano, with the purpose of addressing the importance of agrarian reform, agroecology, and creole seeds to contemplate the formative itinerary on "food preservation".



Figure 5: Activity developed at the João Ponce de Arruda State School.
Source: NEA/BOLSÃO (2023).

At the Afonso Xavier Trannin State School (Figure 6), in the district of Arapuá (municipality of Três Lagoas), activities were developed with students and teachers. Professors Leandro Barradas Pereira and Mieceslau Kudlavicz addressed the importance of preserving and multiplying creole seeds, in addition to showing the variety of some crops, taking corn cultivation as an example. The students, most of whom reside in the countryside, chose seeds to plant and multiply, and seeds were also donated to the school garden.



Figure 6: Activity developed at the Afonso Francisco Xavier Trannin State School, in the district of Arapuá (municipality of Três Lagoas).

Source: Authors (2023).

The activities regarding the booklet yielded many works, it is worth drawing attention to the Dona Maria Paula de Oliveira Municipal School, located in the Alto Tamandaré District, in the municipality of Paranaíba, and to the Padre João Tomes State School, in the city of Três Lagoas. At the Dona Maria Paula de Oliveira Municipal School, two activities were carried out, one in 2022 and the other in 2023.

In 2022, seeds were delivered to the Dona Maria Paula de Oliveira school and the students, together with the entire pedagogical and administrative staff of the school, followed up on the experiences and learning developed by the NEA/Bolsão project and implemented a creole seed garden at the school. In 2023, the school held an event to present the seeds multiplied by the students and the production of defensive broths. The school community, students and employees of UFMS, the seed guardian Mieceslau Kudlavicz and the Triunfo Collective were present at the event (Figure 7).



Figure 7: Reproduction of creole seeds by children at the Dona Maria Paula de Oliveira Municipal School
Source: Authors (2023).

At the Padre João Tomes State School (figure 8), a multidisciplinary work was developed about the Creole Seed Booklet, with the participation of the entire teaching and student body of the school. The presentation of the works took place during Black Awareness Week, with various forms of presentation. The students presented the guardian Mieceslau Kudlavicz with a "Creole Seed Dictionary" and, on the occasion, the garden with the cultivation of creole corn seeds was presented.



Figure 8: Activity developed at the Padre João Tomes School.
Source: Authors (2023).

CONCLUSION

The political-historical contextualization of MS based on the concentration of land and power and the insertion of the debate on agroecology, through creole seeds in basic education, is of utmost importance for the advancement of society, as we are losing knowledge of the importance of seeds for the reproduction of life. Thousands of years ago, seeds were domesticated by humans, however, post-industrial societies, based on the Green Revolution, began to adopt hybrid seeds, then transgenic seeds, seeking to adapt seeds to the capital turnover time, and not to nature's time. In this way, the farmer lost autonomy over the productive process and food took the form of commodities that do not necessarily serve to eliminate people's hunger, but rather, to feed capital.

Agroecology goes precisely against this model that devastates nature, as it seeks balance by considering that land and production are inherent to life, not only for the current generation, but also for future ones. Therefore, it is not just a different way of producing, but rather a social change. However, the agribusiness model marked by the Green Revolution had broad state incentives, even reaching schools and universities in the country, and its dissemination was so great that there were no gaps for rural workers to compete with this global market logic, since they are considered farmers of the past.

From this perspective of the need for an extension action focused on agroecological education, the experiences in basic education schools were successful,

with children and adolescents of various ages debating the society and nature relationship. The debate was hopeful, as the participants showed great interest in the content, reported personal experiences, discovered what real food is like, since many only know some of these foods in ultra-processed form – such as mustard. We conclude that the school as an educational space has great potential to boost the agroecological education movement for collective awareness and social change.

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