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COLLABORATIVE GOVERNANCE IN THE CONTEXT OF THE COVID-19 PANDEMIC ON THE BRAZIL-BOLIVIA BORDER IN 2020

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ABSTRACT

The covid-19 pandemic presented a series of challenges in multiple dimensions for the planet's life. Many projects and initiatives were paralyzed due to travel restrictions and contamination risks. Collaborative governance, evoked as an operative concept, might minimize the collective losses, and sustain initiatives related to food security. This paper aims to discuss the collaborative governance between public institutions and peasant families for maintaining agroecological practices and food security in pandemic times. The research was carried out on the Brazil-Bolivia border, in the cities of Corumbá and Ladário as well as in the Land Reform Settlement 72, in Ladário, in the western portion of the state of Mato Grosso do Sul, Brazil. Seven peasant families from the Bem-Estar Group of the mentioned settlement and 138 consumers participated in the research. It was observed that the collaborative governance processes assured the survival of the peasant families undergoing agroecological transition and helped to promote food security. Climatic conditions, small availability of family workforce and financial inability to hire eventual workers explain the Group's internal disparities, and the dynamics of product offer by the peasant families.

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INTRODUCTION

Researchers from the Pantanal campus of the Federal University of Mato Grosso do Sul (UFMS) and Embrapa Pantanal started to develop, in 2011, several research projects which aimed to help peasant families to cultivate alternative production practices on the Brazil-Bolivia border. Those actions were supported by Funding Opportunity Announcements of the National Council for Scientific and Technological Development (CNPq). In an experimental model, sustainable rural territorial development inductions were concentrated in poor peasant families from Settlement 72 in Ladário/MS, Brazil. As the results were largely satisfactory, the scale of action and the partnerships established to promote agroecological production, especially vegetables, were expanded. This experience of inducting agroecological production practices in Settlement 72 led to the creation, in 2015, of an informal group called Bem-Estar ("Welfare") formed by seven of the eight initial peasant families – as one of them didn't join the initiative due to health problems.

In May 2016, the first agroecological fair was inaugurated within a public institution (UFMS) in the city of Corumbá/MS, on the border between Brazil and Bolivia. In the same year, another fair was created at Embrapa Pantanal. The synergy between researchers and farmers, combined with the promising results of agroecological production, attracted the interest of researchers and extension workers from other institutions, such as the Corumbá campus of the Federal Institute of Mato Grosso do Sul (IFMS) and the Agency for Agrarian Development and Rural Extension (AGRAER). As a result, a Center for Studies in Agroecology and Organic Production (NEA) was created, with resources granted by CNPq. In 2018, another institutional agroecological fair was installed on the IFMS campus in Corumbá. Institutional fairs and sales to government programs such as the National School Feeding Program (PNAE) and the Food Acquisition Program (PAA) increased farmers' confidence and income. The virtuous dynamic established by the fairs was broken in early March 2020 due to the covid-19 pandemic, which resulted in social isolation and resulting in the interruption of the fairs.

This context led to the emergence of a form of collaborative governance between researchers/rural extensionists (AGRAER, Embrapa Pantanal, IFMS, and UFMS) and the peasant families of the Bem-Estar Group to create an alternative to keep stimulating the agroecological production and generating income. The Solidarity Agroecological Food Baskets were the solution found and the main motivation for writing this paper. Collaborative governance is a creative way in which public and private institutions work together, usually in forums for consensus on collective actions and referrals. For there to be synergy between the territorial agents, it is essential that some critical variables must be observed, such as the antecedents of cooperation and disagreements, participation in different organizations, the existence or lack of asymmetries of capital and power, the presence of leaders and the format of existing dialogs. Elements such as trust, solidarity ties and perception of communal goals are governance stimulators. It is possible that "small victories" foster a virtuous cycle of collaboration between partners (Ansell & Gash, 2008).

The concept of governance is relatively recent. It began to appear in the literature in the 1970s, addressing questions on the limits of the State and the incorporation of the territory management of social participation through dialogue (Prats, 2003). It's usually applied as forums, committees and councils that bring together a set of public, private and volunteer territorial actors with different power and decision-making capacities (Kooiman, 1999). Governance isn't an attribute or exclusive prerogative of the State. It can be formatted, for example, by social movements in favor of collective conquests and articulated in different decision scales (Prats, 2003). There are several types of governance: corporate, environmental, public, urban, electronic or e-governance (e-gov) (Kooiman, 1999). Ferrão (2010) believes that governance typologies express a political-ideological stance and present new names: the deregulation governance, linked to a neoliberal economic position; the diversifying governance, of modern civilist character; and the regulatory governance, strategic and collaborative, linked to a neo-modern vision. This paper will focus on the collaborative governance. However, there're several formulations of the concept depending on who triggers the process. Studying the effectiveness of governance mechanisms adopted in three Brazilian states, Pessoa, Muniz and Ckagnazaroff (2020) defined the collaborative governance as a collective arrangement for decision-making based on consensus, which brings together government agencies and non-governmental territorial actors to prepare or monitor the execution of a public policy or government program.

Collaboration and consensual decisions characterize collaborative governance (Bodin, 2017). In this paper, we understand it as a process involving negotiations between territorial actors involved in the continuity of the production in agroecological basis by a group of family farmers, whose objective is to guarantee their production selling in social isolation times imposed by the covid-19 pandemic. It involves, at all times, the continued production of knowledge due to shared social learning processes (Bodin, 2017). Operating standards were agreed upon among researchers/technical staff from UFMS, Embrapa Pantanal, IFMS, AGRAER and the seven peasant families. Those rules were socialized by WhatsApp as a new collective organization initiative was stablished – the Solidarity Agroecological Food Baskets. The entry of individuals into this system presupposed compliance with the operating rules. In this sense, this work conceptually approaches the studies of Thomson & Perry (2006) and Ansell & Gash (2008). It should be noted that public servants of the municipal government didn't participate in this process, which was triggered by the NEA. This is because there was no need for their support in this collaborative arrangement in favor of peasant production sales. Not everyone involved participated in all negotiations, as the issues were often discussed with people who were most able to contribute to the problem resolution. Trust in the group is crucial for decision-making agility, following the understanding of Biggs, Westley & Carpenter (2010). There are some similarities with Community Supported Agriculture (CSA), but it's a different proposal.

CSA involves assembling a group of consumers (so called "co-producers") who dialogue with farmers who, frequently, have differentiated production – such as the organic one. They make a monthly payment, in advance, which entitles them to receive a weekly food basket. Early payment works as a key element to maintain the production of peasant families, avoiding bank loans (Castelo Branco *et al.*, 2011). CSA was created in the 1960s in Japan, arrived in Europe in the 1970s and in the USA circa 1985. The practice originated from the concept of the *Teikei* which literally means "cooperation". In Brazil, the first experience started in 2011 on Botucatu/SP (Melo, Freitas & Calbino, 2020). The main similarities between CSA and the model adopted are the articulation between production and consumption, trusting relationships, healthy food supply, basket of products, short-circuit sales format (Melo, Freitas & Calbino, 2020). Also, door-to-door delivery and seasonal products are common (observing seasonality). The difference between the two systems is that, in the studied case, consumers didn't participate in production planning. In part, this is because local climatic conditions are very peculiar. There are only preliminary recommendations for planting times. Another difference is the purchase commitment. Unlike the CSA, in the worked system the consumer is not obliged to buy every week. A list of available goods, divided into two categories, was published each week. The first category included a base kit, with a standard value and compulsory purchase products. Although there was no obligation to weekly buy the food basket, if this category was chosen there were mandatory goods in the kit. If the food basket was bought, the customer could access a second list, with other optional goods to add to the chosen kit.

Food security is another common element, sought in both systems and lacking a definitive concept. It emerged around the end of World War I (1914-19) closely linked to food availability (sufficient quantity) and access (affordable prices). In Brazil, the term only started to be discussed in the 1980s (Campos, Oliveira & Vendramini, 2014). We could say that food security is much more a goal than a concept. In other words, an individual or family achieves food security when they can access and satisfy their desires for the quantity and nutritional quality of food in favor of their preferences and culture (Belik & Siliprandi, 2010). In this paper, we understand food security as the capacity to generate healthy food, produced on an agroecological basis, enough to feed the peasant families and to sell the surplus. In our case, the commercialization involved fair-price home deliveries through the covid-19 pandemic. This way, it was necessary to think in a resilient agricultural system, capable of preserving the essential functions of food security in a situation of shock, such as the pandemic times. (Ansah; Gardebroek & Ihle, 2019). This paper aims to discuss the collaborative governance between public institutions and peasant families on the Brazil-Bolivia border for maintaining agroecological practices and food security in pandemic times.

METHODS

The present study is multicentered. It was carried out with peasant families from settlement 72, located in the municipality of Ladário/MS, and with buyers of the food baskets from the urban areas of Corumbá and Ladário (Figure 1). Settlement 72 was created in 1999 by the National Institute for Colonization and Agrarian Reform (INCRA), with an area of 2,341.2996 ha, where 85 families were settled, in lots with an average area of 18.5 ha. It lies between the coordinates 19°03' to 19°07' of South latitude and 57°33' to 57°36' of West longitude (Costa, Zarate & Macedo, 2012). A participatory vegetable process of production in agroecological basis was started in 2011, through the joint action of UFMS, Embrapa Pantanal, and, later, AGRAER and Ladário municipality, with support from SEBRAE, and with resources from several projects. The goal was to meet the demands of public policies and improve the quality of life of the families. The results obtained were highly promising (Costa & Feiden, 2020). This article is the result of an action research carried out by the Center for Studies in Agroecology and Organic Production (NEA), from March to December 2020, in the phase of dealing with social isolation due to covid-19. During the course of the research,

we've followed the steps pointed out by Tripp (2005, p. 446), duly customized (Table 1).

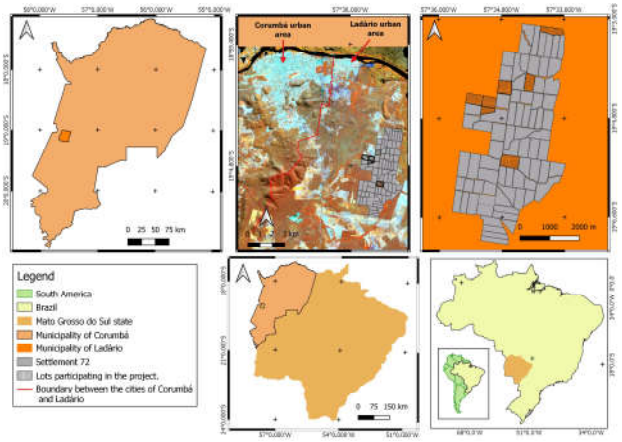

Figure 1. Location of the study area. SOURCE: The authors (2021)

A mixed-method was used as it was understood that it would best translate the objective of this article. The results of the action produced required a quantitative demonstration to get a sense of sales values. On the other hand, the main complaints and how they were resolved by the NEA, few and dispersed in time, indicated greater detail in the qualitative description. The research was carried out on the Brazilian side of the Brazil-Bolivia border, in the cities of Corumbá and Ladário and in the rural area of the latter municipality, located in the western portion of the state of Mato Grosso do Sul. Seven peasant families participated in the action research process. They're members of the Bem-Estar Group, an informal group that has been experiencing the agroecological transition since 2015, benefiting from the implementation of Solidarity Agroecological Food Baskets. These families used to work at institutional fairs (UFMS, IFMS, and Embrapa Pantanal) and are still monitored by the NEA. There were also 138 registered consumers, 71 of whom opted for weekly purchases, 60 quarterly and 7 monthly. Despite the option, not always the purchases were made, but they were part of the register and received the messages and lists. If for some reason, the consumers were not interested in the purchase they should communicate the NEA. In each delivery of a food basket, the consumers were asked to provide feedback. The entire dialogue process took place via Whatsapp, from a telephone number linked to the NEA and with assistance from an university extension project grantee. The survey on sales was obtained from the notes taken by the NEA and filed in a database for each delivery made. It contains the addresses of consumers and their respective orders, the types of vegetables purchased, the producers who delivered them, the date, and how much each family received from the sale of each food basket. To trace the food basket delivery routes, *Google* Earth Pro software was used in the search and identification of the needed addresses. With the consumers identified, delivery routes were traced, the shortest distance and the most suitable route being analyzed. The search for addresses included the recognition of the geographic coordinates of each one, generating a text file separated by commas in CSV format, which was used in the Geographic Information System (GIS) software QGIs, version 3.10. Routes plotted in *Google Earth Pro* were imported into QGIS in KML format. Thus, the maps were produced in the GIS using data corresponding to the delivery routes and addresses of consumers.

RESULTS AND DISCUSSION

The Solidarity Agroecological Food Baskets, hereinafter simply referred to as “food baskets”, functioned as a system for home delivery of products from peasant families undergoing agroecological transition, orchestrated by the NEA. The action research had a decisive impact on the success of deliveries and on the quality of the food basket products in the cyclical option of acting – monitoring – evaluating – planning – acting. The month of March 2020 was of experimentation. Proposals were sent only to people linked to UFMS, Embrapa Pantanal, and IFMS who were already attending to agroecological fairs. Despite this, the information was leaked to social networks, such as the most used Facebook shopping groups in Corumbá/MS. We could speculate that people who attended institutional fairs informed their acquaintances about the novelty.

Studying the Canadian coastal basins, Vodden (2015) realized that relationships, together with a consensual leadership, are essential elements for achieving the desired results and accepting innovations. At the same time, reading the context and developing strategies by sharing knowledge and available resources make established collaborative governance an inducer of sustainable development. Saved the due proportions, these conditions were observed in the carried-out study. We've received 112 requests for registration, far beyond the productive capacity of the seven peasant families. The high demand forced the NEA to issue a note on 02/04/2020, sent by WhatsApp, informing the characteristics of the production and its producers, as well as the forecast of calls and future contacts. It was noticed that the majority of requests were not linked to the appeal made for the maintenance of production on an agroecological basis by the peasants, but to the possibility of receiving vegetables at home. This would avoid going to supermarkets to purchase this type of product, which is more quickly perishable. Reflecting on society's confrontation of the covid-19 pandemic, Porto (2020) believes that we've experienced a crisis of civilization with multidimensional impacts and the need to reinvent human health in an emancipatory perspective. The survival of many Brazilian farmers was supported by NEAs. As an example, we can mention the Multidisciplinary Center for the Study of Agroecology and Organic Production (NEA), linked to the State University of the Midwest (UNICENTRO) in Paraná.

This group organized five weekly fairs on the campuses of Santa Cruz and CEDETEG (both UNICENTRO) and at the Federal Technological University of Paraná (UTFPR), in Guarapuava, at UNICENTRO and at the Federal Institute of Paraná (IFPR) in Irati (Ikuta et al., 2020). The created system was implemented as it follows: a) peasant families capacitation to prepare food baskets (the first four were set up with the presence and mediation of the NEA coordinator); b) indication of a university extension scholarship holder to take care of sales and customer/consumer registration; c) the NEA coordinator acted as an intermediary between farmers and the scholarship holder and organized the distribution of orders and amounts sold following the delivery of each family; d) peasant families met every delivery day (Tuesdays and Fridays) in lot 16 of Settlement 72 to assemble food baskets and discuss the composition of the next one based on the production of each one of them; e) one of the peasants, on a rotating basis, carried out the delivery with the help of another scholarship holder pointed out by the NEA and; f) the scholar responsible for sales demanded feedback on the delivery process and the quality of the products; g) the NEA coordinator read, and analyzed the problems with the farmers, via telephone, found an alternative and passed on the answer to the clients. Sometimes, contact with other members of the NEA was used, from a collaborative governance perspective. A mix of available products at R$24.50 was selected weekly. With fees of R$0.50 for packaging and R$5.00 for delivery (freight), it totalized R$30.00 per food basket. It was established the obligatory purchase of the food basket to choose other products, which could be added, from a parallel list of optional products, the equivalent of the “electronic banner” proposed by Ikuta et al. (2020). The peasants' difficulties in rendering accounts among themselves, due to their inexperience in collective bargaining, led to payments only accepted in cash.

Unicentro's Nea adopted a similar procedure in Guarapuava/PR. They’ve worked with two different sizes of food baskets in which the peasants could choose the products considering their availability. They were also responsible for organizing the orders, using scholarship holders to make sales using WhatsApp, and passing on notes to the farmers (Ikuta et al., 2020). By reading and interpreting the movements of Nea Unicentro and NEA, one can see cases of collaborative governance. The first delivery took place on March 27,

2020. Twenty food baskets were sold and delivered, a maximum limit per week due to the limited availability of products resulting in planting slowdown due to the pandemic. As of mid-April, there were two weekly deliveries (Tuesdays and Fridays) of 20 food baskets each. Since May, the number of deliveries has reached 60 per week.

During the crisis caused by the Covid-19 pandemic, some studies pointed to the need to encourage resilient agricultural practices and agri-food systems. In other words, to imprint a collaborative capacity endowed with smooth changes, at first, accompanied by a reading of socio-environmental tensions, and, finally, expanding the productive capacity (Darnhofer, 2020; Worstell, 2020). It was found that peasants had difficulties in finding the addresses of the clients in the cities of Corumbá and Ladário, as the system of street and number was completely foreign to their logic of orientation. Therefore, it was necessary for the NEA to place a scholarship to help locate the addresses. Based on this finding, a script was created to establish the delivery order and optimize time and fuel. Unicentro's NEA adopted the same strategy, using fellows, professors, and partners to support the location of addresses (Ikuta et al., 2020). From the registered addresses, the consumers were spatialized and separated between *weekly consumers* (Figure 2), with delivery on Tuesdays and Fridays; *quarterly consumers* (Figure 3), with deliveries in the first and third week of the month, and those with deliveries in the second and fourth week; and, finally, *monthly consumers* (Figure 4), with deliveries only once a month. Weekly consumers were divided by the days of the week and, thus, four routes were traced for weekly deliveries: deliveries made on Tuesdays of the first and third week and those made on Fridays, with the same criteria used in the routes of the second and fourth weeks. In summary, seven routes for the delivery of food baskets were traced, all starting from lot 16 of Settlement 72, the central point for organizing and assembling the food baskets.

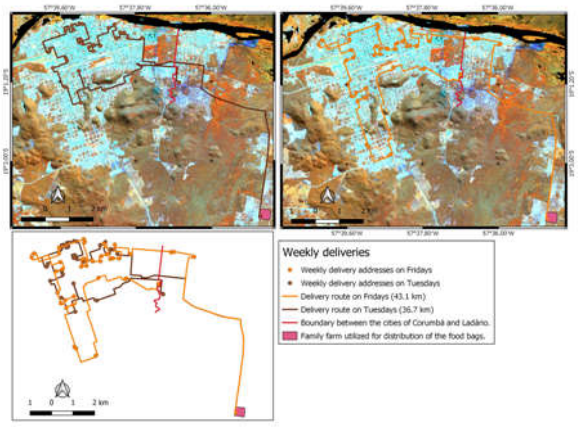

Figure 2. Weekly delivery schedule for NEA-supported food baskets in 2020. SOURCE: The authors (2021)

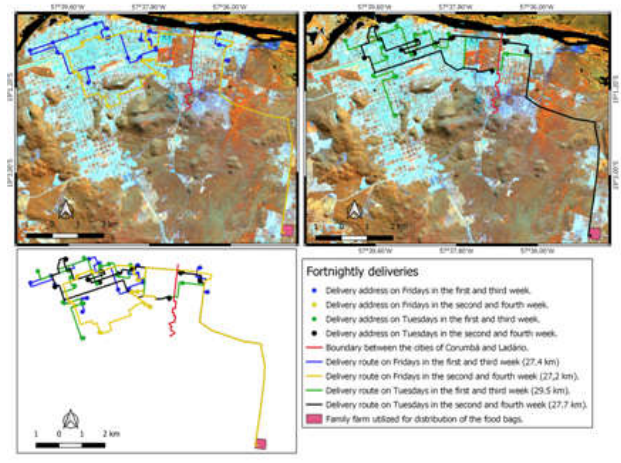

Figure 3. Quarterly delivery itinerary of food baskets supported by the NEA in 2020. SOURCE: The authors (2021)

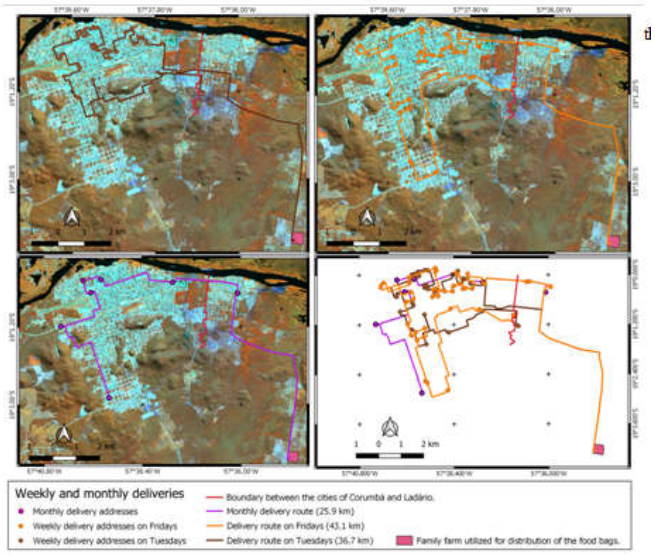

Figure 4. Monthly delivery schedule for NEA-supported food baskets in 2020 Source: The authors (2021)

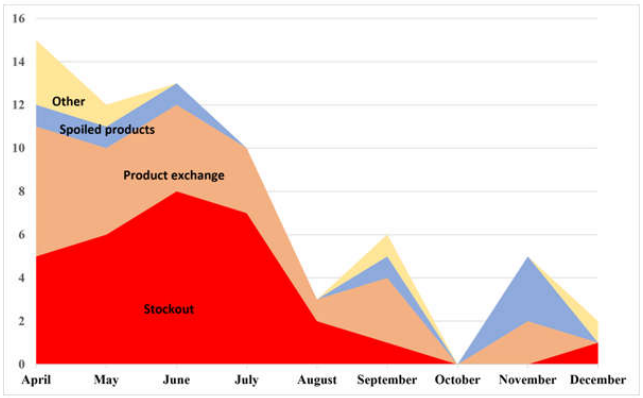

Figure 5. Quantity (number of) and type of complaints received about food baskets sold by peasant families of the Bem-Estar Group, Ladário/MS, Brazil, between April and December 2020, during the pandemic. SOURCE: NEA Database, 2020

Figure 6 – Quantity (unit) and average price (actual) of food baskets sold by peasant families of the Bem-Estar Group, Ladário/MS, Brazil, between March and December 2020, during the pandemic. SOURCE: NEA Database, 2020

The organization and operation of the system weren't easy. Peasants had many difficulties in accessing and operating virtual communication technologies in carrying out collective sales and making home deliveries. They were afraid, as most of them belonged to the covid-19 risk groups. Setting up the food baskets presented an unexpected challenge: among the problems observed, simple attitudes can be highlighted, such as defining the order of placing the products in the food baskets. It took almost two hours and they were wrongly assembled.

Table 1. NEA action research compared to Tripp's (2005) proposal

Tripp's proposal (2005, p. 446)	NEA developed actions
"ACT to implement the planned improvement".	Solidarity Agroecological Food Baskets creation.
"Track and DESCRIBE the effects of the action".	Satisfaction survey with consumers and reports to the farmers of the Bem-Estar group.
"EVALUATE the results of the action".	Discussion with the farmers about the errors and possibilities for improving services.
"PLAN an improvement of the practice"	Consensus between farmers and NEA, adjustment of errors and feedback from consumers on implemented improvements.

SOURCE: Adapted from Tripp (2005, p. 446). Org. the authors, 2021.

Table 2. Value traded by the peasant families of the Bem-Estar Group, Ladário/MS, Brazil, between March and December 2020, during the pandemic, in Reais (R$)

Producers	March	April	May	June	July	August	September	October	November	December	Average Apr-Nov
A	434,00	1.853,00	2.418,00	2.427,00	2.299,50	1.571,00	2.153,50	966,50	706,00	514,00	1.799,31
B	558,00	1.579,00	2.177,00	2.468,50	2.240,00	1.607,50	1.261,00	700,00	1.732,00	649,00	1.720,63
C	129,00	330,00	62,00	69,00	35,00	195,00	361,50	447,00	270,00	40,00	221,19
D	378,00	568,00	1.611,50	2.033,00	2.133,00	3.290,50	3.089,50	2.091,00	1.491,50	1.220,50	2.038,50
E	153,00	45,00	66,00	627,50	220,00	77,00	-	-	-	-	172,58
F	60,00	1.200,00	1.502,00	2.422,50	3.958,00	2.043,50	2.078,00	1.200,50	980,00	858,00	1.923,06
G	40,00	423,00	570,00	784,50	782,50	853,50	926,00	778,00	598,00	478,00	714,44
Total Mensal	1.752,00	5.998,00	8.406,50	10.832,00	11.668,00	9.638,00	9.869,50	6.183,00	5.777,50	3.759,50	8.546,56

SOURCE: NEA database, 2020.

It was necessary to designate a scholarship holder for follow-up and training, using all security protocols. An assembly line was set up with the introduction of product separator boxes. We've taken the opportunity to clarify criteria for personal and customer safety, in addition to the hygiene of products in the preparation and delivery of food baskets in relation to the pandemic. Several other Neas, such as the one from Unicentro-PR (Ikuta et al., 2020), worked with farmers to prioritize human life, with the dissemination of preventive care against covid-19. The sum of the actions of the Neas generated resilient agricultural systems and fostered protection networks against the disease, in collaborative governance schemes. Most complaints from customers were due to the assembly of food baskets (Figure 5). Sometimes they exchanged products (34.85%) or failed to put the correct products in the food baskets (45.45%). Problems such as yellow or wrinkled leaves goods, slightly green eggplant, and broken eggs were grouped into spoiled products (10.61% of complaints). Others (9.09%) included delays in deliveries (mostly), broken pots, and insects found in one of the food baskets.

As the figure shows, between April and June the complaints remained high. However, as there was an increase in the number of food baskets delivered in the period, this suggests a relative decrease in complaints. From July onwards, there was a slow decrease in the complaints number, and it seems to indicate that, slowly, the peasants were taking care in the set up the food baskets. Furthermore, it is the period when weather conditions are more favorable for production leading to better quality. In October, complaints reached a minimum but then increased again. This coincides with the entry into the final production period when weather conditions become less favorable and product quality begins to decline since artificial plant protection practices are not allowed in agroecological systems. As the most sought leafy vegetables, such as lettuce and arugula, were the most affected in this period, it was observed that farmers tried to replace them with less conventional alternatives, such as chicory, almeirão, bertalha and ora-pro-nobis in the fixed part of the food baskets. This caused some strangeness among consumers not used to these products. A study carried out in the Federal District demonstrated that social networks are important structures for interaction between farmers and food consumers (Lopes; Viana & Alfinito, 2020). The networks were used for dissemination, sales, clarification of doubts, discussion of suggestions, and feedback on observed problems. As a result, we worked intensively on the articulation of the group of registered customers to understand the importance of supporting the production initiative on agroecological basis. Improving the relationship between producers and consumers became an obsession for the NEA, as it was part of the methodology adopted and which they wanted to expand in the collaborative governance arrangement.

Immediately upon the emergence of the problem, the NEA articulated the producers to find a solution together, considering their knowledge. At the same time, a message was sent to the customer offering a justification and pointing to the measures taken. The training resulted in an improvement in deliveries. The assembly of the food baskets started to be executed in 45 minutes. Errors have been reduced, but not completely eliminated. The important thing is that every time the farmer was notified, the product was replaced in order to develop a sense of trust and solidarity. It is also worth mentioning an important set of suggestions made by consumers. Some were met, such as product identification, uniformity in the patterns of packs, and avoiding the repetition of pumpkins in food baskets. Others were not possible due to the logic adopted and the impossibility of holding more training courses due to covid-19. It can be mentioned the use of many plastic bags for packaging, the lack of information about the validity of some products, and more payment options (such as transfer, card, monthly payment, or pix). On the other hand, the suggestion of the possibility of purchasing only extra products was adopted at the beginning of 2021, when the peasant families themselves started to manage sales, as recommended by the NEA. This fact proved the resilience of the induced production and commercialization systems and the established collaborative governance. Due to the initial difficulties for the operationalization of the new modality, the beginning was complicated, and production only stabilized from June onwards. From June to September, deliveries reached their maximum potential with small variations between months - ranging from 50 to 60 food baskets per week (Figure 6). From then on, due to the reopening of the fairs and the beginning of unfavorable weather conditions, the number of food baskets was reduced. The project ended in the second half of December after a torrential rain destroyed most of the vegetables. Moreover, the temperature rising, which traditionally impacts summer production, was also a factor to be considered. The food basket's average monthly value floated between R$ 40.00 and R$ 50.00. Individual purchases ranged from R$ 30 to 280 per buyer. This demonstrates that there were significant purchases from the non-mandatory list, with emphasis on milk by-products such as cheese and sweets. Peasant families stated that the values obtained from food baskets exceeded sales made at institutional fairs in 2019. It is worth noting that fairs are important channels for the commercialization of peasant production. For this reason, not all of them were closed in Brazil during the pandemic in 2020. An example of this is a study carried out in the Rio Pardo Valley, formed by 23 municipalities in the central portion of Rio Grande do Sul. Of the 18 existing fairs, only three were closed, precisely because they occur within institutions. The others continued to function and were advised by the Riograndense Association of Technical Assistance and Rural

Extension Enterprises (Emater/RS Ascar) and by the local municipalities (Preiss *et al*., 2021). Table 2 shows the values of products sold monthly by each of the families covered by the NEA throughout 2020. The average was calculated only from April to November since March and December didn't have regular deliveries. In March, due to momentary disorientation both by the team and the farmers and due to the closing of the fairs. In December, as it was already at the end of the vegetable production cycle, the beginning of the rainy season, when the farmers can't produce vegetables in the open and do not have structures for protected cultivation. Concerning the total amounts sold per month, a strong effect of the seasonality was noted. There was a progressive increase in the sales values from April to July, with a peak of R$ 11,668.00. Although there was some reduction until September, the totals remained at a reasonable level and then began to decline. In part, this seasonality can be explained by the more favorable climatic conditions for production, the better organization of the group, and the domain of the new sales modality to meet the demands of consumers. On the other hand, from October onwards, the weather conditions became more unfavorable to production and, with the reopening of the open markets in Ladário and Corumbá, new shopping alternatives were created without the obligation to purchase a fixed set of products. Regarding the monthly average values obtained by each of the seven peasant families, two groups can be highlighted: a group with four more active families, with monthly average sales between April and November above R$ 1,800.00; and a group of three less active families, with monthly average sales below R$ 750.00. These three have in common the limited availability of workforce, as well as the lack of financial resources to hire occasional workers, which prevents the expansion of production. In this group we found *Family E*, which already had low availability of products for commercialization and, after the approval of the retirement of one of the members, in September 2020, no longer had commercial production in volume and constancy that allowed its participation in the food baskets. *Family C* has always prioritized the open market over institutional fairs and, during the pandemic, set up a weekly fixed point in the city of Ladário to serve its customers. *Family G*, despite having sold far less than the more active families, maintained its production capacity from pre-pandemic fairs, limited by its availability. These results show that there is high inequality between group members caused by the difference in the availability of resources, both financial and human, which directly influenced their performance. Analyzing the Table 2 data, it is observed that from April to November peasant families had an average monthly income of R$ 1,220.94, with sales of food baskets which combined with production for self-consumption - not accounted for in this work - can allow a reasonable condition of survival. If only the four most active families were analyzed, the monthly average would reach R$1,870.38, with the lowest monthly average in November (R$1,227.38) and the highest in July (R$2,657.63). The food basket system, although being a palliative, was important to guarantee the survival of peasant families. Food security, however, cannot be guaranteed, especially at the end of the year, due to the seasonality of production motivated by the inability to control excess water. Studying lettuce production in Naviraí/MS, Yokoro & Pereira (2020) observed that climatic conditions affect, significantly, the production systems of this culture. Lettuce is the most sold hardwood in Brazil and has seven production cycles during the year, four of them when temperatures are higher in tropical climate locations, as in this study. Under these conditions, the cultural cycle is accelerated and can reduce plant size and flowering time (Henz & Suinaga, 2009). The possibility of plasticulture is not very interesting due to the necessary financial resources and the occurrence of storms with winds that easily destroy its structure (Yokoro & Pereira, 2020). It can be said that organizational factors of a formal nature, such as very clear rules, appropriated structures, and regulated and respected functions, informal factors such as facilitating leadership, trusting, and committed relationships were built to obtain the intended results. For Bianchi, Nasi & Rivenbark (2021), these factors can define the success or failure of collaborative governance actions. Added to this, the structuring of the NEA's values, categorically reaffirmed throughout the process, anchored in the principles of agroecology and food security to put collaborative governance into practice and generate sustainable results.

CONCLUSION

The results showed that food baskets were an important palliative to guarantee food security and income for the families involved. The natural elements that promote seasonality have, in part, frustrated income generation. Weather conditions began to reduce production potential from September onwards, becoming more severe in December, when the sale of food baskets was interrupted. This way, income alternatives are vital for the summer period which, in the geographic space studied, is the period of greatest vulnerability for vegetable production. The attempt to include alternative plants, more adapted to the conditions of the weather, ran into resistance from consumers, showing the importance of an educational process for the adoption of these goods in domestic menus. The results also showed that there is a strong internal inequality in the group, caused by the availability of financial and human resources, which allowed some families a better insertion in the program and made it difficult for others to participate. Finally, it can be said that the collaborative governance generated to face the context of the covid-19 pandemic was efficient in sustaining the agroecological transition process of a group of peasant families. The elaborated alternative allowed the survival of these families and the offer of healthy products to a hundred homes in the urban area. It is worth mentioning that the precautions and biosafety procedures recommended by the NEA, inductor of the project, were efficient since none of the farmers and scholarship holders were contaminated during the execution of the food baskets.

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