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AGRICULTURAL TRANSITION IN WESTERN PARANÁ: SUSTAINABLE PROCESSES AND PRACTICES OF PEASANT FAMILY AGRICULTURE

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ABSTRACT

This work aims to analyze the agroecological transition processes in Western Paraná based on ecological experiences in the region. Various participatory methodological tools and procedures were used to gather information about the experiences and the context in which they are inserted. It was concluded that the agroecological transition process occurs at different scales and in a non-linear way, with the participation of various social actors and acting in several dimensions of transition, with an analyzed experience demonstrating that the transition process is complex, which promotes transformations from agro-ecosystems to the way of thinking and relating to society, moving towards a model that excels in the care of natural goods, concern with climate change, maintenance of biodiversity and a more just and solidary society.

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INTRODUCTION

Production and consumption of food, through sustainable and fair processes for all, are the main challenges among the multifaceted problems of contemporary society. Thus, new social demands emerge concerning the development model that societies aim for. The search for a sustainable path takes place, not only in the economic, but also in the environmental, social and cultural levels, with greater transparency and information available on the food systems, providing, in addition to quality, knowledge about the sources, and the social, environmental and cultural impacts. The focus on the rural development in the building of sustainable food systems represents one of the development paths seeking to fight environmental and social issues caused by a farming that is intensive, monocultural, for exporting and based on pesticides. In this context, agroecology is a science, a practice, a movement, and a policy to promote these changes, seeking to identify and develop policies and practices to meet the increasing food demand through sustainable and fair processes that enable a change towards ecological farming systems

able to properly respond to the planet's social, climate and environmental challenges. The epistemological evolution of agroecology in the last decades enlarged this concept. The agroecology, understood – in its first systemized documents as a science - as the application of ecological foundations in the management and design of sustainable agroecosystems, with contributions from the human and social sciences, was recognized as a science, practice, movement and policy towards the transition for sustainable agrifood systems (FRANCIS et al., 2003; WEZEL et al., 2009; ROSSET e ALTIERI, 2019). Thus, new actors of the agroecological transition swing into action and the transition experiences exceed the boundaries of the household production unit, encompassing local, territorial and global processes. Under this holistic and complex conception of agroecology, we understand the agroecological transition as a place with several starting points, but no arrival point. That is, the experiences in agroecological transition are in constant learning and coevolution through the ecological processes, and the path towards sustainable agrifood systems in increasingly greater scales depends upon maintaining such experiences,

propaganda, permanent analysis and feedback, and on the fight (increasingly organized) for the systemic transformation of food systems. The emergence of agroecological experiences, with alternative and sustainable practices, not only in the peasant household units, but also in the social organizations and agrifood networks, is a subject that calls for analysis and such experiences connect to the building of alternative development paths. Thus, the knowledge and understanding of the techniques and practices of local actors require identification, characterization, analysis, encouragement and dissemination, thus promoting actions that move towards sustainable agrifood systems. We also need to identify the obstacles these experiences face, as well as the solutions found to overcome such hardships. It implicates measuring the effects of these experiences in a multidimensional analysis, considering their possible positive and negative externalities. In addition, we need build strategies to promote and foster the multiplication of these experiences, given that the will and the commitment of farmers, technicians, researchers or consumers, by themselves, are not enough to accomplish structural and sustainable changes for the society. Likewise, studying cases of those who chose the agroecological transition towards the system sustainability is essential to seeing the challenges and contributions that these experiences may offer. Thus, this work aims to conceive the agroecological transition context in the hydrographic basin of Paraná III, in the far West of the Paraná state, through a participatory action research based on the identification and analysis of agroecological transition experiences. The process of rupture and motivation for the transition, strategies, agroecological challenges and the perspectives of the experience and of the local context towards the building of sustainable agrifood systems stand out.

METHODOLOGY

This article is part of a doctoral project, in which we analyzed several experiences in Brazil and Mexico, seeking to understand and analyze the agroecological transition processes. In this work, we analyze one of these experiences, connecting it to the regional agroecological movement and to the regional actors. To cover the complexity of the agroecological transition perspective, we choose the participatory action research approach. The participatory action research is a method of study and action that requires the researcher to engage as an agent in the analyzed process, learning not only from observation and data collection, but also from the work with the people the researcher identifies with (FALS BORDA, 1980). This approach has an emancipatory nature, presenting a critical and participative stand by the researcher, through dialogical processes where the researcher assumes a stand of fighting for the power balance. The participatory action research presents an empirical basis with close relation to an action or the resolution of a collective problem, in which the researcher and the participants involved in the circumstance engage in an operative and participative manner. (THIOLLENT, 2003). The analyzed territory in this work is the Paraná III Hydrographic Basin – BP3, a region totaling 28 municipalities in the West of Paraná state mesoregion, comprehending the municipalities within the Paraná River Basin. The initial point consisted of an exploratory phase conducted in meetings, seminars, and events with agroecological transitioning peasants and social actors supporting their transition, such as ATER technicians, consumers, public and social organization managers, environmental educators, etc. in order to collect data and identify the context, demands, challenges and perspectives of the region in regards to the agroecological transition. In this phase, we used a number of methodological tools and procedures, during several meetings with the agroecological social actors from BP3. The goal was to understand the Paraná III Basin context of the agroecological transition, collect problematics and define the actors' desires and the problematics inherent to the transitioning process. Post the contextualization phase and territorial analysis, we sought to identify and analyze the agroecological transition experiences in the BP3 area, concerning rural property, social organization and public policy. For it, we used the relationships and bonds created with the actors' network in the first phase to identify the experiences that qualitatively

represented the intended characteristics for the study of each specific case. Thus, the selection of experiences was a directed sample of qualitative representation (THIOLLENT, 2003), in which we selected experiences in different scales and natures, not chosen for representing agroecological transitioning models, but rather for having history, process and formation stages that collaborated for the study of agroecological transition in the BP3 area. The work involves research and extension actions, inserting the researchers in the environment, along with collective engagement in the building of knowledge shared with the farmers and their organizations, capturing the diversity of problems and alternatives that, in addition to being systematized, are part of the planning for the future, a useful science for both the academia and the community, in the perspective of a citizen science, in the manners of the scientific production by the Graduate Program in Sustainable Rural Development – PPGDRS, described by Zonin et al. (2020).

The agroecological transition: Transition is the change of one stage to another, according to semantics. That is, the agroecological transition consists in the changing of agriculture and agrifood processes considered degrading to the ecological basis of the ecosystems, in addition to being unsustainable in the social, economic, cultural, and environmental dimensions, into processes considered sustainable in various dimensions and scales, involving practices, movements and policies (ZONIN, 2007). Still, how to deal with this transition? At a household production unit level, this is not a simple task and concerns several factors and standards, which direct influence the sustainability of the agroecosystems. The transition to ecological agricultures turns into a hard path as no textbook exists, varying on each case the required adjustments and adaptations, according to their capacities and available resources. (FEIDEN *et al.*, 2002). In addition, a terminological and conceptual confusion happens when referring to the process of changing agroecosystems and agrifood systems towards sustainability. Some field technicians and researchers use conversion terms to refer to the changes in the practices and in the management, while others use the same terminology to refer to the changes in rationality of the transitioning individuals, changing not only their agricultural practices, but also their ways of thinking and their relationship to the nature and the society (FEIDEN e BORSATO, 2011). The epistemological evolution of agroecology in the past decades enlarged the conversion of agroecosystems into a transition of agrifood systems, that is, the changes should not only occur within the boundaries of the household production unit, increasing the scale of action to sustainability, involving the local community, the region and proposing changes to the global food regime (GLIESSMAN, 2015).

Thus, we corroborate the understanding by Guadarrama-Zugasti y Trujillo-Ortega (2019), who understand the “agroecological conversion” as the follow up, monitoring and adjusting of ecological processes applied to the agroecosystem management during the change of a conventional system towards an alternative system. While the “agroecological transition” refers to a broad process in numerous space scales, being a long-term process, which includes the ecological, economic, political, social, environmental, cultural and ethical dimensions and leads to a shift in the production paradigm and in the agrifood systems. We understand that the conversion of agroecosystems is part of a broader transition process, comprehending numerous actors, relations and practices, from an inter- and transdisciplinary perspectives. These inter- and transdisciplinary perspectives in the construction and systematization of knowledge, through participatory methodologies, have objective, practical, and easy-to-understand results, which represent agreements among the actors involved in this process, valuing the technical and academic information in the same manner and level of the opinions from the peasant, workers and managers of household production, organizations, associations, city councils, cooperatives and unions they represent (ZONIN et al. 2020). However, for agrifood systems, the change is much more complex than just selecting, rerouting the path and moving forward to the next stage. It involves several factors, movements and conditionals that have no established roadmap nor magical formulas to speed up the process.

Table 1. Transition and integration levels of three components required by agroecology for the change into global and sustainable food systems

Level	Scale	Role of the three agroecology aspects		
		Ecological Research	Agricultural practices and collaboration	Social change
1- Increase efficiency of industrial practices	Rural property	Fundamental	Relevant Reduced costs and environmental impacts	Small
2- Replacement of practices and alternative supplies	Rural property	Fundamental	Relevant Changes for alternative practices	Small
3- Redesign the entire agroecosystem	Rural property and region	Fundamental Develop sustainable indicators	Relevant Builds a true sustainability within the rural property scale	Relevant Increases the corporate viability and the social support
4- Reestablish connections between producers and consumers, developing alternative food networks	Local, regional, and national.	Supportive Interdisciplinary research that gives evidences on the need for changes and the viability of alternatives	Relevant Builds direct and supportive relationships	Fundamental Economy restructuring, changes in values and behaviors
5- Reconstruct the global food system so it can be sustainable and fair for all	Global	Supportive Transdisciplinary research that promotes the changes in the processes and monitoring of sustainability	Relevant Provides the practical bases for the paradigm shift	Global system fundamentally changed

Source: Systematized from Gliessmann (2015)

Table 2. Main contributions and challenges in the agroecological transition experiences in the BP3 area

AGROECOLOGICAL TRANSITION EXPERIENCES IN THE BP3 AREA	
Synthesis of diagnostics results and participatory workshops	
Main contributions	Main challenges
<ul style="list-style-type: none"> • Production and Market autonomy. • Resilient agroecosystems. • Minimal usage of external supplies. • Maintenance of the system fertility. • Aggregation and optimization of the soil's physicochemical properties. • No environmental pollution caused by pesticides. • Production system that aims the maintenance of biodiversity and water conservation. • Production model that works against climate change. • Greater efficiency in the usage of natural resources. • Food production without pesticides, industrial and synthetic contaminants. • Maintenance of local variety and cultures, increasing agrobiodiversity. • Revival of local knowledge and tastes. • Access to specific institutional markets, such as the National School Feeding Program (PNAE). • Higher selling prices for organic certified products. • Self-esteem and happiness about the production system and the agroecological way of life. 	<ul style="list-style-type: none"> • Difficulties in pest control. • Little developed alternative close markets, incipient in the region. • Rural family succession. • Scarcity of family workforce. • Some tasks are cumbersome and demand a great deal of physical efforts and work hours. • Contamination by pesticide drift coming from places around the property. • Cross contamination of genetic material. • Markets that value and pay a fair price for organic products (specially the milk chain that has no product specification). • Need of adapted Technologies that easy the hardness of work. • Low productivity and management problems when the agroecological transition is abrupt. • Need for constant ATER monitoring in the early transition processes. • Social pressure to incorporate agribusiness technological packages. • Rescue of native seeds. • Coping with water crisis.

Source: Results from survey conducted by the authors.

More than this, it involves power struggles, war of ideas and world views, conflicts and negotiations among distinct actors (SCHMITT, 2009), and overcoming complex obstacles, which can be fought and resisted only by the union of the agroecological movements composed of multiple actors. To comprehend the agroecological transition, we need to start from the basic unit for the agroecology analysis: the agroecosystem. An agroecosystem is a controlled ecosystem for agricultural ends, consisting of a community of organisms in a certain area, with interactions, flows and material cycles (ODUM, 1969), being a product of the coevolution between agricultural cultures and their environment (GLIESSMAN, 2009). It is not just a natural system, but also a social system (WARNER, 2007). That is, agroecosystems are the results of the interaction among ecological, technological and socioeconomic factors (HERNANDEZ-XOLOCOTZI, 1977), being the basic unit for the analysis of rural sustainability (ALTIERI, 1989). An agroecosystem is sustainable when is capable of maintaining the basic resources it depends on; uses a minimum of artificial external supplies; performs pest and disease control through internal regulating mechanisms and is resilient to the disturbance caused by the management and the crops (GLIESSMAN, 2009, p. 567).

However, stipulating which are the sustainability standards and which conditions it has to maintain in order to have a sustainable functioning is a great challenge. The roadmap to changes in the food systems crosses a number of variables, such as the diversity of sustainable agroecosystems of several scales, adjusted to the local conditions (GLIESSMAN, 2009); support and investment in agroecological rural extension as a transformative tool (CAPORAL e COSTABEBER, 2000); better conditions and funding to scientific research in agroecology (BUTTEL, 2007); interdisciplinary teaching in multiple levels (FRANCIS, *et al.*, 2003) and environmental education; resignifying the bonds and interactions between consumers and producers, promoting agroecological markets and spaces valuing the local food (DAROLT, 2013; SANTOS, 2003); organization and social engagement of the ecological actors towards the creation of sociotechnical networks (WARNER, 2007) and agroecological movements (BRANDENBURG, 2002); among others. In addition to these guiding principles, a need for political stand exists (GUTERRES, 2006), along with reducing the power of the food corporations and of the public agents coopted by them, as conditionals for the building of fair and sustainable agrifood systems (ISHII-EITEMAN, 2013). According to Zonin (2007), agroecological

transition is a set of technical, social and institutional changes that occur in the short, medium and long-term, establishing a new relation of the man who produces towards the nature and the consumer, creating more autonomy and solidarity. The evolution focus of the transition proposed by Gliessman sets on sustainability indicators, identifying where and how the changes in the ecological bases of the agroecosystems occur, to perform the required management and implement practices in accordance with the conditions of the production unit. Five stages represent this transition, in a slow and progressive manner, learning from the mistakes and successes, monitoring the ecological processes and choosing the most suitable practices in each circumstance. This transition model, however, does not necessarily systematically follow these stages. Depending upon the local and historical context, the transition may begin at any level, in a multilinear manner and not necessarily starting with the change in the agroecosystems (GUADARRAMA-ZUGASTI y TRUJILLO-ORTEGA, 2019). Gliessmann (2015) identified levels of agroecological transition, having the agroecology as science, practice, movement and policy for the promotion of sustainable agrifood systems (Table 1). The author considers ecological research, agricultural practices and collaboration to social changes as the three main aspects affecting this process. The five levels altogether may serve as map describing a process of evolutionary change for the entire global food system (GLIESSMAN, 2015). The evolutionary focus of transition proposed by Gliessman was (and still is) the inspiration for the elaboration of public policies and rural extension plans aiming the agroecological transition in many countries (GUADARRAMA-ZUGASTI y TRUJILLO-ORTEGA, 2019). In Brazil, the national public policies implemented during the first decade of the 20th century, and the agroecology referential framework made by Embrapa considered this approach of agroecological transition as the foundation for the development of programs and actions (EMBRAPA, 2006; CAPORAL, 2009).

The Paraná III Basin Profile

The Paraná III Basin is located in the far West of the Paraná state, in the Paraná River hydrographic basin, in an area consisting of 25 municipalities that have their economic basis in the agriculture and most of their population living in the rural area (in some municipalities, the majority of inhabitants live in the country). Although the agrarian structure in the region consists of “family” properties (up to 72 hectares), the hegemonic production model is the production of commodities for export, based on an intensive agriculture and with a great use of technological packages and pesticides in the production (IBGE, 2017). In this context, several agroecological experiences seeking for a new path for rural development and an ecological relation with the productive processes and agrifood networks erode. The BP3 represents a territory that organizes a variety of actors, articulated towards the promotion of sustainable agrifood systems. The diversity of actions developed in favor of the conservation of basins and micro basins in the region composed a “background” that originated ecological movements that not only sought the water conservation, but also claimed agroecology as a productive principle and the transition to sustainable agrifood systems as the final goal. We emphasize that the BP3 region is a hub for commodities and integration forms in cattle ranching. Having the majority of farmers classified as family farmers, the heterogeneity of this group emerges in a range of rationalities of the farmers, who, in majority, produce for the soy, the corn, the swine and chicken integration, and milk chains. In addition, a share of the peasant family farming in the region produces food items not included in the great commodities production chains, and mostly market their products in alternative agrifood networks. Within these two spectra, a diversity in the agricultural “making”, strategies of distributing products and practices come to life. Comprehending these dynamics and identifying the bottlenecks and possible paths towards fairer and healthier agrifood systems become of great relevance. Concerning the socioeconomic indicators in the region, the municipalities part of the Paraná III Basin are among the top HDI in Paraná state, considered of high development and low poverty rates. The Paraná is the second state in Brazil with the lowest levels (second to Santa Catarina), according to a study by

the IPEA (2017). The Gini Index (a global index to measure inequality) in the Paraná state was of 0.469 in 2013, lowest rate in the state’s history. The Brazilian average in 2013 was of 0.527. The index ranges from 0 to 1, the closer to zero, the lower the inequality. The Paraná state is one of the greatest agricultural production in the country. It is the third state in Value of Agricultural Production – VAP in 2018 (R\$ 69.9 billion), being the second state in grain production and standing out in the milk, swine and chicken production (MAPA, 2019). Holding great advantages in the production of commodities, the Paraná state also stands out from other states for its movements in favor of agroecology and organic production. The state is the first in certified organic rural farms, holding 3,053 certifications, representing 15.8% of the country (CNPO, 2019). Among the Paraná state mesoregions, the West of the state is the biggest agricultural producer and has its economic basis on agriculture, predominating the corn and soy cultures, integrated to milk, swine and poultry (OBSERVATÓRIO TERRITORIAL, 2018). These are high environmental impact activities, especially due to the waste production and to the intensive use of pesticides. Hence the need of working, beyond the resolution of collective liabilities in the hydrographic micro basins, by the adoption of production techniques that enable the economic, environmental and social sustainability of the rural properties (ITAIPU, 2019).

The studies conducted by the Observatório Territorial (2018) show that 89% of the agricultural properties in the West of the Paraná state are associated to a cooperative. Altogether, the Western cooperatives presented 47,000 associates and 772 million reais in 2016. Among the fifteen largest cooperatives in the state, seven of them are in the West of the Paraná state and are respond for 4% of the exports in the country. These relevant figures show the potential of the agribusiness cooperatives that work mostly in the commodities market and have strong credit and export subsidies. However, the same agribusiness strategies do not represent an agricultural category, which seeks in the ecological production, in the self-management and in the solidarity its principles of existence and survival. These are the agroecological farmers of the peasant family farming and their social organizations. In the West of the Paraná state, these organizations consist of family farmers that prevail in a sustainable agriculture based on agroecology and produce mostly fruits, vegetables and poultry, minimally processed and agro-industrial byproducts (in the family agro-industries) of animal and vegetable origin, such as fruit desserts, cheese, salami and correlates. Due to the great diversity and small quantity, the farmers associate to organizations and cooperatives aiming to compose larger batches to access markets demanding a greater quantity of goods, seeing, in solidarity, a strategy to access markets. The West of Paraná region comprehends 42,551 rural properties totaling 1,744 million hectares, meaning that 76% of the West in the Paraná state consists of rural areas. With the highest number of rural properties, Cascavel is the first municipality, totaling 3,221 rural properties, seconded by Toledo, with 2,609. Marechal Cândido Rondon comes in third, with 1,934. In majority, these properties have an area up to 50 hectares, characterized as family farms (IBGE, 2017).

These municipalities with the highest number of rural properties house the majority of rural properties holding organic certificates. According to the data in the National Register of Organic Producers (CNPO), the Marechal Cândido Rondon municipality is the one with the highest number of certified rural properties in relation to the other rural properties. Despite being a small share, the regional leadership of the municipality derives from the work done by ATER companies aimed to support ecological farmers. We emphasize in the agroecological experience of the Marechal Cândido Rondon municipality, the contributions by the Center for Support and Promotion Of Agroecology – CAPA, and by the Rural Assistance and Extension Enterprise – EMATER in the monitoring and efforts supporting agroecological and in-transition farmers, given that 31 rural properties had their organic certificates through the Ecovida Network (CNPO, 2019), a Participative Organization for Compliance Evaluation, through the West Branch, with the incisive participation of the ATER bodies. It is worth saying that the figures presented

herein, on themselves, do not represent the width of agroecology in the region. Despite the record of only 166 organic certified properties in the region, a greater number of farmers are in agroecological transition or perform ecological and sustainable management in their properties. In the *Cultivando Água Boa* program, from Itaipu Binacional, around 2,400 families are registered, receiving ATER directed at an ecological manner of producing (ITAIPU, 2019). In addition, the troubles, costs, and bureaucracy for the certification still are an obstacle for the farmer to decide for the certification (COMUNELLO, 2013). Comprehending how these agroecological experiences survive and multiply in a scenery where the modernization of agriculture and the development of agribusiness for export are increasingly stronger is important to analyze the agroecological transition in the region, its dynamics and possible paths and perspectives. Additionally, according to Boff (2012), in certain regions, the sustainable logic succeeded, mobilizing actors and building experiences that are true sustainable islands in the middle of a planet degradation scenery. For the author, the BP3 presents characteristics of these “model regions”, especially due to recent socioenvironmental programs in the region, with an agroecological transition character. Thus, is essential to comprehend the processes, experiences and territorial arrangements that lead to this conception of the BP3.

Contributions and challenges for the agroecological transition in the BP3

The identification and analysis of agroecological transition experiences in the BP3, comprehending the historical building processes, the challenges and the inherent achievements during their experiences, showed that the agroecological transition is complex, multifaceted and does not have a standard starting point, nevertheless a role model, being adjusted to the natural conditions of the local environment, and to the abilities of the actors transiting it. As a transition guiding principle, we identify the resignification of relations between the human beings and nature, with the change in the people's perception about the ecological processes applied not only to the agroecosystems, but rather in every aspect of life (CAPRA, 2012). The BP3 area agroecological experiences dialogue with agroecological movements existing in the region, representing an overlapping in the transition levels, a diversity in the redesign of agroecosystems, and a synergy of practices, multidimensional, multiscale, and of multiple actors, mobilizing changes in the agroecosystem, in the lives of peasant family farmers, social organizations, public policies and institutions. The agroecological transition does not happen in a schematic manner, with sequential and consecutive steps, starting at an initial level towards a final level. The evolutionary transition model proposed by Gliessman, with 5 transition levels, beginning with the optimization of conventional supplies aiming to reduce their use (Level 1) towards the change of the global agrifood systems in a multidimensional sustainability (Level 5) is a reference for transition proposals and research projects on the subject, but does not represent a classifying and mandatory model to passing phases towards sustainability.

The agroecological transition levels proposed by Gliessman (2005) contribute for the analysis of processes, but it is not universal in its logic of sequential phases. That is, the transition may start by optimizing conventional supplies in order to reduce their usage or replacing the modernizing technological packages for others considered more sustainable, but may also be triggered by communitarian activities, collaboration among farmers and researchers, and even as a result of external impacts that lead the population to question the agrifood systems hegemonic model. Thus, for agroecological transitions to progress, multiply, boost, and remain over time, they need to reach other areas. Corroborating Ipes Food (2018), the four main areas for these changes are: (1) practices of agricultural production; (2) creation and dissemination of knowledge; (3) social and economic relations; (4) institutional structures. Transition may occur from the agroecosystem towards more sustainable practices, but also from public policies that stimulate the incorporation of agroecology principles, providing benefits and

advantages to the participants; from the social organization of actors and the joint decision that the agroecological transition is required for the social survival and reproduction; or as a productive model of the agrifood systems imposed by leaders or representatives that defines it. We emphasize, therefore, that agroecological transition does not involve household production units only, and that experiences receiving the organic certificate are not the “destination point” of transition, as certain technicians and certification agents claim. The certification attends to criteria and rules national and internationally backed and, in the cases of participatory guarantee systems, it involves local adjustments and the engagement of consumers, technicians and other actors in the process. Its process considers the dimensions of sustainability applied in the agricultural production, yet other “makings” of agriculture and social relations based on the sustainability principles exist, equal or superior to those of the organic certifications, that do not meet the certification standards. It is fundamental to adopt a new agroecological paradigm, in which the relations among agriculture and environment and food systems and society be radically different from the current. The case studies presented in this chapter describe examples of how, despite many obstacles preventing change, some people managed to rethink and deeply reform the food systems to articulate them according to the agroecology principles. Table 2 presents a synthesis of the main contributions and challenges presented by analyzed the agroecological transition experiences.

The rural extension is a fundamental strategy for the sustainable rural development process. However, the ATER process must have at its core the co-building of professionals and locals, integrating knowledge for the idealization of a desired rural development project, rather than a project imposed by hegemonic models. As a process, the rural extension have its basis on participatory methodologies. For the transition towards sustainable systems, the agroecology provides the scientific bases. However, this approach needs to establish the ways of supplying a constant and capacitated ATER. Thus, the agroecology, related to the peasant family farming, in its counterhegemonic logic, would be dealing with all the links from the agrifood system, with chances to influence the territories through the configuration of rural spaces and urban areas in favor of the food, social, economic, and political requirements of the actors, out of the capital logics. The ecological experiences in the production and consumption represent resistance and a path towards sustainable agriculture and society, highlighted by the environmental, social, economic, cultural, and territorial potentialities, which demand support from the society and the widening and fastening in the implementation of socioenvironmental agendas, such as the 2030 Agenda, as well as the progressing in the public policies that promote ecological farming. Such experiences are opposed to the capitalist logic of modern society, in which the agroecosystem of the rural household unit is just a mean for capital and income, considering labor and land mere goods (POLANYI, 1977). The rationality of agroecological experiences don't considers the human being as master of the nature, but rather as an integrant biological species, that learns, evolves and adjusts to local conditions, through reciprocal processes of coevolution (TOLEDO e BARRERA-BASSOLS, 2008).

FINAL CONSIDERATIONS

The study of experiences in the West of Paraná state shows the social, environmental, cultural, ethical and economical complexities of the agroecological transition process. They reaffirm the idea of agroecological transition as a multilinear process, involving technical, social and institutional changes, both internal and external, through advancements and drawbacks in transformations that occur in several scales, in a complex and transdisciplinary process that seeks the reconfiguration of practices and strategies towards sustainability. In face of being experiences that are recent, fragile, and of great potential for the sustainable rural development, they need to be well studied, with the aim of understanding the process that occur at the same time in different locations, promoting mutual learning and sharing with the peasant family farmers elements that may be

strategic in the progress of these experiences, regardless of possible setbacks in the governmental policies. The agroecological transition to sustainable agrifood systems, however, will only be possible if a rupture with the current development models happen, as these focus on the capital accumulation and economic growth above any other dimension. It is a complex, arduous task and that seeks to shift a paradigm that has been dominant for centuries. However, the increasingly stronger perception of the society about the civilization and systemic crisis that the world is in, in addition to the increasingly greater promotion of experiences based in another development path, may be a triggering mechanism for this rupture. Thus, the agroecological transition must aim for a deeper society transformation, progressively articulating with all sectors involved in the agrifood systems, proposing relations between the environment and the society that exceed the limits of the healthy food production, recognizing the impacts of agriculture and the growth limits, involving communities, from local to global in the discussion about what really means to live sustainably. This transition to sustainable agrifood systems is not an exclusivity of rural actors, of peasant family farmers and their support organizations, but rather of the entire society, who equally suffers from the civilization crisis symptoms. It is not enough for the planet's sustainability that farmers work sustainably in their agroecosystems, organically producing and choosing alternative markets, if consumers have an ultra-industrialized diet, contaminating water and polluting the environment in various ways.

Neither is enough the change of habits towards a sustainable consumption that seeks the minimum environmental contamination while large industrial complexes throw tons of pollutants in the air and the water without environmental concerns. Individual actions must turn into mass actions, in addition to working for the change in hegemonic models that deteriorate the ecosystems. To overcome the civilization crisis, the entire society needs to take action, in addition to the need of an ecological education that allows new perceptions and the paradigm shift. This is the greatest challenge in favor of live on Earth, for our own and future generations. It is a complex, slow process, wrapped in a major power struggle between dominant models and alternative resistances. A roadmap does not exist, yet the experiences analyzed in this work show paths, with individual and collective actions, involving several society sectors in designing experiences that represent a sustainable rural development. It is worth saying that the sustainability goals and targets (SGSs) from the 2030 Agenda are an important step for us to advance towards the building of a new agroecological and solidary paradigm in Brazil, in Latin America and in the entire Earth. The agroecological transition is the change we want to see in the world, and even if neoliberal governments and their dismantle of public policies cause profound damage, it is always fundamental to have the hope that, caring for the human being and the nature is the only path for the peace, social justice, fraternity and solidarity suggested by Pope Francis.

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