Article

Mercator, Fortaleza, v.20,e20016, 2021. ISSN:1984-2201

MODEL OF TERRITORIAL INNOVATION IN LOCAL PRODUCTIVE ARRANGEMENT OF FAMILY AGRO-INDUSTRY

https://doi.org/10.36517/rm2021.e20016

Bianca Bigolin Liszbinski [a*] - Tiago Zardin Patias [b] - Jorge Oneide Sausen [c]
Gloria Charão Ferreira [d] - Maria Margarete Baccin Brizolla [e]

(a) PhD student in Regional Development. Professor at the Federal University of Santa Maria, Palmeira das Missões (RS), Brazil.
ORCID: https://orcid.org/0000-0001-6390-7337. **LATTES:** http://lattes.cnpq.br/9327173537424100.
(b) PhD in Administration. Professor at the Federal University of Santa Maria, Palmeira das Missões (RS), Brazil.
ORCID: https://orcid.org/0000-0003-4560-6690. **LATTES:** http://lattes.cnpq.br/4374388776612390.
(c) PhD in Production Engineering. Professor at the Regional University of the Northwest of the State of Rio Grande do Sul, Ijuí (RS), Brazil.
ORCID: https://orcid.org/0000-0003-3684-1410. **LATTES:** http://lattes.cnpq.br/5913833180837421.
(d) PhD in Management. Professor at Northwestern Regional University of the State of Rio Grande do Sul, Ijuí (RS), Brazil.
ORCID: https://orcid.org/0000-0002-9329-2510. **LATTES:** http://lattes.cnpq.br/6551717792135865.
(e) PhD in Accounting and Administration. Professor at Northwestern Regional University of the State of Rio Grande do Sul, Ijuí (RS), Brazil.
ORCID: https://orcid.org/0000-0002-5120-0729. **LATTES:** http://lattes.cnpq.br/7802574351230823.

Article history:
Received 08 April, 2021
Accepted 09 April, 2021
Published 15 May, 2021

(*) CORRESPONDING AUTHOR
Address: UFSM - Campus de Palmeira das Missões, Avenida Independência, 3751, Vista Alegre. Palmeira das Missões (RS), Brazil. CEP: 98300-000. Phone: (+55 55) 37428800.
E-mail: biancabigolin@gmail.com

Abstract

This study aims to analyze the movement characterized as Local Productive Arrangement (LPA) by Family Agro-industry and Diversity in the Médio Alto Uruguai and Rio da Várzea, located in the State of Rio Grande do Sul, in order to identify the type of territorial innovation model it represents. It is a case study and for its development, interviews were conducted with members of the governance of this productive arrangement, in addition to participant observation and documentary analysis. It was understood that the constitution of this APL took place as an alternative for economic and social development for rural families and their agro-industries, and its characteristics resemble it partly to industrial districts and partly to clusters. As for the similarity to industrial districts, specialization attributes were identified in a given sector, geographical approximation, understanding of innovation as a determinant of market differentiation, public support, competitive advantages and reduction of production costs. In terms of approaching the clusters, the decisive presence of the public entity for its implementation was identified, a competitive trend among agro-industries, demand for products, labor and infrastructure for production, in addition to the involvement of several entities, among them, universities.

Keywords: Local Productive Arrangement, Family Agro-industry, Cluster, Industrial District.

Resumo / Resumen

MODELO DE INOVAÇÃO TERRITORIAL EM ARRANJO PRODUTIVO LOCAL DA AGROINDÚSTRIA FAMILIAR

Este estudo objetiva analisar o movimento caracterizado como Arranjo Produtivo Local (APL) da Agroindústria Familiar e Diversidade do Médio Alto Uruguai e Rio da Várzea, localizado no Estado do Rio Grande do Sul, com vistas a identificar a tipologia de modelo de inovação territorial que este representa. Trata-se de um estudo de caso e para o seu desenvolvimento realizou-se entrevistas com membros da governança deste arranjo produtivo, além de observação participante e análise documental. Entendeu-se que a constituição deste APL se deu como uma alternativa de desenvolvimento econômico e social para famílias rurais e suas agroindústrias, sendo que suas características o assemelham em parte aos distritos industriais e em outra parte aos clusters. Quanto a semelhança aos distritos industriais, identificou-se atributos de especialização em determinado setor, aproximação geográfica, entendimento da inovação como determinante de diferenciação de mercado, apoio do ente público, vantagens competitivas e redução de custos de produção. Em termos de aproximação aos clusters, se identificou a presença decisiva do ente público para sua implementação, tendência competitiva entre as agroindústrias, demanda para os produtos, mão de obra e infraestrutura para a produção, além do envolvimento de diversas entidades, dentre essas, as universidades.

Palavras-chave: Arranjo Produtivo Local, Agroindústria Familiar, Cluster, Distrito Industrial.

MODELO DE INNOVACIÓN TERRITORIAL EN ORGANIZACIÓN PRODUCTIVA LOCAL DE AGROINDUSTRIA FAMILIAR

Este estudio tiene como objetivo analizar el movimiento caracterizado como Arreglo Productivo Local (APL) de Agroindustria Familiar y Diversidad en el Medio Alto Uruguay y Rio da Várzea, ubicado en el Estado de Rio Grande do Sul, con el fin de identificar el tipo de modelo de innovación territorial que esto representa. Este es un estudio de caso y para su desarrollo se realizaron entrevistas a miembros de la gobernanza de este productivo arreglo, además de la observación participante y el análisis documental. Se entendió que la constitución de este APL se dio como una alternativa de desarrollo económico y social para las familias rurales y sus agroindustrias, y sus características lo asemejan en parte a distritos industriales y en parte a conglomerados. En cuanto a la similitud con los distritos industriales, se identificaron atributos de especialización en un determinado sector, aproximación geográfica, comprensión de la innovación como determinante de la diferenciación del mercado, apoyo público, ventajas competitivas y reducción de costos de producción. En cuanto al acercamiento a los clusters, se identificó la presencia decisiva de la entidad pública para su implementación, una tendencia competitiva entre agroindustrias, demanda de productos, mano de obra e infraestructura para la producción, además de la participación de varias entidades, entre ellas, universidades.

Palabras-clave: Arreglo Productivo Local, Agronegocios familiares, Cluster, Distrito industrial.

This is an open access article under the CC BY Creative Commons license
Copyright © 2021, Universidade Federal do Ceará.

INTRODUCTION

The entire history of humanity is marked by the evolution of the forms of organization of productive systems. It began with the first artifacts made in the Stone Age, which enabled a new way of working, and then the industrial revolutions, until the present era of information and knowledge; each period has its particular characteristics. Among the numerous forms of productive organization are local productive arrangements (LPAs), which act around a productive activity in a given territory and encompass different interconnected actors (BÜTTENBENDER, 2010; GARONE et al., 2015).

In addition to being an alternative for companies and other local and regional actors, the formation of an LPA can be a determining factor for local and regional economic and social development. Combining the actions of public and private institutions in these organizations, focused on creating synergy around innovative projects, consolidates sustainable territorial development based on the production of knowledge and sharing of processes, thereby achieving the competitive status required, based on social capital, networking, and trust (AYARI; ZAIBET, 2019).

Family Agro-industry LPAs are in line with this context, insofar as they are recognized as development instruments that promote a portion of society's economic and social autonomy (COSTA; PATIAS; DE MARCO, 2014). This mode of organization is strengthened by the vital role that agricultural activity plays in the development of society in Brazil and is a strategic sector in stimulating the Brazilian economy, promoting economic development, and the generation of jobs and income. Furthermore, it contributes to food security, reduces poverty and inequality in the country, and cooperates significantly to raise ecosystems' environmental quality (GARCIA; VIEIRA FILHO, 2014). Thus, LPAs are an alternative for micro, small and medium-sized companies or small rural producers to expand the domain and management of a given segment, as the institutionalization of the LPA directs the governance of the actions of each link in the productive chain, in which each executes a function focused on their competence.

Given this background, this study aims to identify the type of territorial innovation model that characterizes the LPA of the Family Agro-industry and Diversity of the Middle Alto Uruguay and Rio da Várzea in the north of Rio Grande do Sul State (Brazil). This region has 42 municipalities and a population of 289,024 inhabitants in a total area of 9,108.1 km2. The study considers the theoretical assumptions related to industrial districts (MARSHALL, 1920; CAPELLO, 2007) and clusters (PORTER, 1993; 1998), which have characteristics close to local productive arrangements, explaining their essence, structure, performance, and results.

The research adopted the form of a case study, defined by Yin as "an in-depth empirical investigation that investigates a contemporary phenomenon (the case) and its real-world context" (YIN, 2015, p. 17). The study is also descriptive and interpretive as it presents a detailed account of a social phenomenon, illustrating the complexity of the situation and the aspects involved (GODOY, 2010). Therefore, a predominantly qualitative, in-depth, and contextualist approach was taken in the research process (PETTIGREW, 1985).

Documentation, interviews, and direct observation were the methods used, and records were created through an observation script used at the interview locations and family farmers' markets in the municipalities of the LPA region. The minutes of the LPA's governance meetings were a rich source of documental information. Seven semi-structured interviews were conducted with key members of the LPA governance, who were selected for their qualifications, diversity, length of participation, and representativeness within the LPA.

Content analysis was used to analyze the data collected, which according to Bardin (2009, p. 40), is "a set of communication analysis techniques that uses systematic and objective procedures to describe the content of the messages." Once transcribed and organized, the data was analyzed using the Nvivo version 11 software, a valuable tool to construct arguments derived from the literature or primary data (KAEFER; ROPER; SINHA, 2015).

After this initial contextualization, the essential characteristics of local productive arrangements are shown from the theoretical assumptions supporting this type of agglomeration. Subsequently, there follows an empirical analysis of the particular LPA studied here.

THE THEORETICAL PERSPECTIVE OF INDUSTRIAL DISTRICTS

The first studies indicating forms that resemble LPAs address the industrial districts described by Marshall (1920), according to whom the "specialized profession" and the "close neighborhood" were factors that increased product quality and company productivity by reducing costs, offering better accessibility for buyers and improved recruitment of professionals. He also pointed out that the division of labor influenced improvements in product quality and company productivity, which did not necessarily depend on their size. Thus, one of the modes of productive efficiency is linked to small production units specializing in different phases of a single production process in a locality (MARSHALL, 1920; BECATTINI, 1994).

Marshall (1920) divided the economies resulting from the increase in the productive scale into internal and external ones. The latter emerge from the general growth of the industrial sector without being linked directly to company size. He also highlighted three other factors arising from the spatial concentration of companies leading to better financial results and permanence in the market. Firstly, the use of specialized machinery, which is inaccessible in isolation. Second, creating a diverse, robust, and specialized labor market streamlines selection and hiring, and finally, a more substantial attractiveness to consumers, saving time and displacement when making purchases (MARSHALL, 1920; BECATTINI, 1994).

Under this theoretical perspective, the industrial district is "a socio-territorial entity characterized by the active presence of a community of people and a population of companies in a given geographical and historical space" (BECATTINI, 1994, p. 20). The specialization of work reaches high levels, and there is surplus production, requiring a market beyond the local area without an external trade network.

The local community is a determining element, as it has a relatively homogeneous system of values and thinking, with a specific ethic of work, family, reciprocity, and change, in line with business principles and the introduction of technological innovations. Districts can host living communities composed of a tangle of informal knowledge networks about production methods, business conditions, and employment practices that are an intrinsic element of community awareness and help maintain harmony throughout the system (GIULIANI, 2007). Also, they usually specialize in a particular industrial branch, and to differentiate themselves, they seek to develop representative merchandise with particular characteristics (BECATTINI, 1994).

The literature on industrial districts proposes that the district's economies are closely linked to specific spatial, relational, and productive characteristics external to the company. These result from the combination of several endogenous components, such as specialized suppliers and workforce, local knowledge, and technical skills that form the global scale of activity in an area, thus affecting the productivity of all the companies (BRANZANTI, 2015).

Capello (2007) summarizes the main drivers of the district's economy. The first benefit arising from the externalities generated by the district's economy is the reduction of production costs, resulting from the interaction between at least four specific variables: reduced transport costs, a mobile workforce within the cluster, specific subcontracting activities, and the availability of a specialized workforce (CAPELLO, 2007; BRANZANTI, 2015).

Another benefit that increases the tendency of companies to agglomerate is the need to reduce the transaction costs arising from contractual relationships. These costs derive from the companies' decision to outsource specific activities to generate economies of scale by purchasing a cheaper product or service from a specialized supplier (WILLIAMSON, 2000).

The positive impact of the district's economies reflects an increase in the efficiency of the factors of production. In general terms, agglomeration allows a significant degree of efficiency that is rarely obtainable by the individual company (SCHMITZ, 1997) due to the concomitant presence of at least three main variables: the proximity of specialized inputs, infrastructure, and facilities; an industrial atmosphere that values the region's business dimension; and the transfer of implicit knowledge, which provides an information and support apparatus that helps companies manage emerging issues (CAPELLO, 2007; BRANZANTI, 2015).

THE THEORETICAL PERSPECTIVE OF THE CLUSTER

The term cluster originates with Porter (1993, 1998), who defines it as "geographical concentrations of interconnected companies and institutions in a given field, linked by similarities and complementarities" (PORTER, 1998, p. 78). He proposed the "Diamond Theory" based on four vectors, which together create a self-reinforcing system since the effect of one of the vectors impacts on the others: 1) the conditions of factors, regarding the availability of factors of production in the region, such as the specialized labor or infrastructure required to compete in a given industry; 2) the demand conditions, which deal with the nature of the internal demand for the industry's products or services; 3) related and support industries that refer to the analysis of the presence or absence of internationally competitive suppliers and related industries in the region; 4) the companies' strategy, structure, and rivalry, that is, the conditions that govern and guide how companies in the region are created, organized and directed, as well as the nature of internal rivalry (PORTER, 1993).

Along with the four vectors above, a further two variables influence competitive advantage. The first addresses "random" events beyond the companies' control, such as pure inventions, basic technological discoveries, wars, external political events, and significant changes in foreign market demand. The second involves the "government", whose policies can stimulate the competitive environments that strengthen clusters, focusing on increasing productivity and creating a competitive environment by removing obstacles and restrictions to growth (PORTER, 1993; 1998).

Porter's publications sparked much research on this topic, leading to improvements in the concept of the cluster, notably one that combines three elements: 1) clusters are geographical concentrations of specialized companies, skills, and the ability of the workforce and support institutions that increase knowledge flows; 2) clusters have a functional purpose as they provide a range of specialized and personalized services; and, 3) the standard definition emphasizes clusters' social and organizational dynamics (AHLQVIST, 2014).

In turn, Gordon and McCann (2000) point to at least three models of clusters. The first is the "pure agglomeration economies" model that emphasizes external economies of geographic concentration. The second, the "industrial complex" model, primarily views groupings as the spatial counterparts of the regional economy's entry-exit models, geographical concentrations forged by commercial links between companies, and cost reduction. Lastly, the "social network" model, which, as the term suggests, interprets clusters mainly in terms of strong local networks of interpersonal relationships, trust, and institutionalized practices.

Many other elements are discussed in studies on clusters, including learning, teaching organizations, and learning in regions (RUTTEN; BOEKEMA, 2007), which are fundamental to the innovation process (DELGADO; PORTER; STERN, 2014; FANG, 2015) and are characterized by interactive learning between actors in the cluster (FREEMAN, 1995; BAPTISTA; SWANN, 1998). On the other hand, Wolfe and Gertler (2004) evidence regional peculiarities, such as specific laws, regulations, and conventions that influence the development of clusters. They highlight five determining elements for a cluster's development: learning, the work, leadership, public and private actors, and location.

In the case of extension, the most frequent clusters involve micro and small companies, characterized by the quest for survival and the production of low-quality consumer goods for local markets, especially in activities where the barriers to entry are low. Companies in these clusters have many features of the informal sector. Productivity and wages are much lower than those of medium and large-scale companies. The degree of specialization and cooperation between companies is low, reflecting the lack of specialization of the local workforce and a fragile social fabric (lack of confidence, opportunistic behavior). Also, the business culture often lacks learning mechanisms, and imitation is common (ALTENBURG; MEYER-STAMER, 1999).

Studies report the difficulty of standardizing clusters as a single concept, but in general, they are understood to be companies in a given region that produce similar or related products. There are other actors and entities in this region, such as suppliers, customers, specialized labor, and public agencies and institutions (for example, universities, community colleges, industrial and commercial associations,

public and private organizations), which enable cost saving for companies, as well as knowledge overflows that generate innovative products or processes (WOLMAN; HINCAPIE, 2015).

Based on the theoretical framework above, the following section analyses the LPA investigated here. Once the essential characteristics of this productive arrangement have been presented, it is compared with the hypotheses about industrial districts and clusters.

THE CHARACTERIZATION OF THE FAMILY AGRO-INDUSTRY AND DIVERSITY LPA OF THE MIDDLE ALTO URUGUAY AND RIO DA VÁRZEA

The proposal for this LPA started with a presentation by the State Government to the Corede do Médio Alto Uruguay (CODEMAU) through the Program to Combat Regional Inequalities, when support to LPAs was included in the proposed actions. Due to the diverse activities developed in the region, it was understood that an arrangement closer in line with regional dynamics should encompass different segments. The focus would be on adding value through agro-industrialization to generate jobs and income and transversally protect the productive chains of milk, meat, sugarcane, fruit, calabash gourds, grapes and wine, precious stones, metallurgy, and grains.

At the end of 2012, this LPA was officially recognized, and the Regional Integrated University of Frederico Westphalen took on the initial management role. The articulation process to consolidate the project was developed, culminating in forming the Middle High Uruguay Development Agency to act as the definitive management body and coordinator of the LPA's governance. Currently, this governance is composed of several actors from different segments.

It is noteworthy that the recognition of the LPA enabled access to public sector resources to ensure the project's success. This led to the acquisition of fixed assets and the hiring of qualified technical labor, facilitating the evolution of the LPA's Development Plan, contemplating a short, medium, and long-term action agenda.

One of the significant challenges facing the LPA was the requirement for the municipalities to implement the Municipal Inspection System, which allows the legalization of agro-industries and the sale of their products in the municipalities, as well as adapting to meet state and federal requirements for sale throughout the national territory. The LPA's also support agribusinesses to commercialize products through the implementation of a product quality badge, which is a visual certification of the origin of the small farmers' products from the 42 municipalities that make up the LPA.

Participation in fairs and events is also encouraged to provide further visibility and consequent increases in sales by agro-businesses. Furthermore, through a project with the state government supporting commercialization, the LPA accessed mechanisms to formalize and commercialize the agro-industries, given that it is estimated that many of these operate in the informal sector.

THE LPA OF FAMILY AGRO-INDUSTRY AND DIVERSITY OF MIDDLE HIGH URUGUAY AND RIO DA VÁRZEA FROM THE PERSPECTIVE OF INDUSTRIAL DISTRICTS

In Brazil, the debate about LPA's has grown since the 1990s. This process took place much later in the LPA of Family Agro-industry and Diversity in the Middle High Uruguay and Rio da Várzea, formally only in 2012. It began with a public policy that focused on combating regional inequalities when this LPA's region was considered deficient enough to require government support.

Notably, the regional leaders who prepared the first documents imagined that the LPA could help by improving with planning and training, adding value through agro-industrialization to generate jobs and income. This transversal approach would protect the productive chains of milk, meat, family agro-industries, sugarcane, fruit, calabash gourds, grapes and wine, precious stones, metallurgy, and grains.

The LPA lacks many of the elements found in the theoretical framework, such as solid intra-cluster institutionality, cooperation and competition, flexibility, information and communication technologies, qualification, versatility, geographical mobility, learning, and innovation (PIORE; SABEL, 1984). Thus, State intervention is needed to put forward a public policy that fosters some of these elements, thereby improving development rates and achieving the status of a successful rather than a peripheral region (BENKO; LIPIETZ, 1992; ALTENBURG; MEYER-STAMER, 1999).

Nonetheless, in conceptual terms the study LPA has the characteristics described by Lastres, Cassiolato, and Maciel (2003): a) geographical proximity: the LPA is located in a region with a high incidence of family agro-industries or with a tradition of agroindustrialization of production, which has potential; b) sectorial specialization: the region is predominantly agricultural and has cities that are primarily dependent on the results of agriculture and animal production, leading to the specialization of companies and people; c) participation of small and medium-sized companies: although there are conceptual discussions about whether or not the small rural producer should be considered a small business owner, here this is understood to be the case and therefore, there is the participation of small and medium-sized companies in the LPA; d) intensive collaboration: this is a fragile element but it is strengthening with public policy support and the constitution of governance,; e) competitive process based on innovation: as previously highlighted, innovation is still incipient, the need to innovate is understood, mainly to achieve market differentiation; f) trust as a social and cultural factor: this is a problematic characteristic, but our research sought to identify elements that could help understand this aspect; g) support from organizations for common services: there has been a strong presence of universities and associations throughout the process of discussing the LPA; h) financial and capital support from local and regional agencies: in addition to direct support from the state government, there are PRONAF policies developed by official banks.

Alongside the characteristics listed above, the learning and innovation arising from an LPA is the subject of several studies (MALMBERG; MASKELL, 2002; MARTÍNEZ-DEL-RÍO; LORENTE, 2014). In the LPA in question, progress can already be seen in these areas, including producers developing innovative products. Concerning learning, the seminars and courses held over time are evidence of the desire to develop small rural producers, demonstrating the possibilities of adding value to their production.

Another element that deserves attention when studying an LPA is internal and external economies resulting from agglomeration (MARSHALL, 1920; BECATTINI, 1994). An external action in this LPA is the Central de Comercialização, where all agro-industries can take advantage of specific machines, such as, for example, packaging, labeling, and cold storage. Consequently, they can serve the consumer market more efficiently, guarantee regular production, and optimize deliveries to consumers, thus achieving better financial results and maintaining their income.

Table 1 shows the externalities, triggering factors, and evidence indicating agglomeration (CAPELLO, 2007). The data makes it clear that there is enough evidence to consider the LPA as an agglomeration, even though the formal constitution is still in the initial phases. This limitation is minimized by the strong cultural tradition in the region, both in production and commercialization, approaching the characteristics present in industrial districts. As a result, there is an evident reduction in production costs, an increase in productive efficiency, an exchange of knowledge and learning, the achievement of competitive advantages (SCHMITZ, 1997; WILLIAMSON, 2000), and higher incomes for producers, resulting in a better quality of life.

Externalities	Triggering factors	Evidence
Reduction of Production Costs	Lower transport costs	We have to keep working, and we've been working on projects that can find resources for infrastructure investments that I call infrastructure vectors, so […] transport structures […], right because many can't get investments. (E3)
	Outsourcing	In the end, they hire temporary labor to help with the production and harvest of the herb.
	Available specialized labor and workforce mobility	Most of these agro-industries only used family labor to develop activities. It is characterized by up to two people working in agro-industrial activities. (PDP, 2014)
Reduction of Transaction Costs	Search and Demand similar work.	[…] consultants have to be paid, if you turn up today and say to people, guys, let's make a vineries' network and everyone pays R$200, 300, 500, whatever, to pay a consultant, you won't even be able to set it up.
	Shared Behaviour Codes	The regional culture favors the demand for agro-industrial products (PDP, 2014) [...] to take the work seriously and have people who can work, because the rules for agro-industry, the culture exists (E4)
	Informal networks	The APL was tough, more than organizations who had been meeting and debating for some time
Increase in the Efficiency of Factors of Production.	Availability of inputs and specialized products	[…] sausage production is a regional tradition (E4) Family farming tradition
	Industrial atmosphere	The region has a vast tradition in the production and agro-industrialization of food products (PDP, 2014)
	Transfer of implicit knowledge	Support from the university with a training course. Hear the URI has a course for family agriculture, there is an expert (E1)
Increase in Dynamic Efficiency.	Local accumulation of knowledge	[…] we've a project from Pronera, the National Program for Agrarian Reform, we have 100 students (E4)
	Shared risk of innovative activities	[…] The software that we want to build here is to show so what we have in the production region, the products, what amounts, which Seasons when this product is available, and who the consumers are (E3)
	Competition / cooperation for innovation	The calabash pickles were an innovation that was sold for twice the price of other pickles; it was a sales success
		[…] the main innovation was the vision people had that they needed to unite and really work for the region and not work just to say that I did something or it was my organization that did it (E1)

Table 1 - Economy of the district: externalities and triggering factors. Source: Research Data (2020)

In studies of industrial districts and LPAs, the local community is decisive to the extent that a set of values are shared. In the study LPA, there was some evidence in this regard, such as searching for a good relationship among agro-industries, and participation in community events and local social entities. Additionally, the LPA has announced the creation of a brand for LPA products, an action that seeks differentiation, and together with the quality and fulfillment of contracts, can strengthen the market and competitive achievements.

THE LPA OF FAMILY AGRO-INDUSTRY AND DIVERSITY OF MIDDLE HIGH URUGUAY AND RIO DA VÁRZEA FROM THE PERSPECTIVE OF CLUSTERS

The attributes of this LPA also approximate a cluster as described by Porter (1993; 1998). This is evident from the definition of a cluster, as a geographical concentration of companies and institutions, - which can be understood here as small family agro-industries and all the entities involved with the LPA. Agro-industrialization is the LPA's field of action, without disregarding other forms of adding value, expressed in diversity.

Porter's (1993; 1998) "diamond theory" enables an analysis of the LPA. The conditions of factors regarding the availability of specialized work and infrastructure exist. The specialization of labor is the result of a historical learning process in the production of raw materials, such as pigs (for the manufacture of sausages in general), maize (flours and their derivatives), fruits and vegetables (wines,

juices, and jams), and the traditional yerba mate, which nowadays is often used as a complement to other recipes such as pasta and bread. This workforce specialization may have been a determining factor for large meat and dairy companies to settle in the region.

Also, concerning job creation, it was observed that many LPA agro-industries involve the labor of up to four people, and this workforce typically involves the family members themselves.

In terms of infrastructure, given that the large consumption centers are distant from the region, it has access to the principal state and federal highways, all of which are in reasonable condition, allowing the flow of production. Also, there is an education infrastructure, with public and private schools and universities, which gives the population access to education and professional development so that they can enter the labor market with qualifications.

There is an account that demonstrates the work related to demand conditions for agro-industrial products:

> [...] to start bringing demand and supply closer together. [...] The fact that we have already been able to talk with the regional education coordinators to start bulk purchasing and not by school, so for example, the CRE here has almost 100 schools in its area, and each school buys its own produce, so we're discussing it, there is already the idea of making bulk purchases in school administrations and the CRE [...] (E3)

"Thirty percent" refers to Law 11,947 / 2009 that determines that a minimum of 30% of the sum transferred to states, municipalities, and the Federal District by the National Education Development Fund for the National School Feeding Program must be used to purchase foodstuffs directly from family farming and rural family entrepreneurs or their organizations. The purchase of products from family farming may be carried out through a Public Notice, which dispenses with the tendering procedure.

Related and support industries refer to internationally competitive supply and related industries. In this LPA, family agro-industries depend almost exclusively on daily work by their family group and produce and market their products almost exclusively at the local level. However, this productive arrangement is inserted in a different context, as highlighted by one of the interviewees:

> Now it is a matter of creating these policies, then it starts to threaten Sadia's products, the products of I don't know who [...] It becomes a battle in the market, you begin to understand why legislation takes so long to pass, often the government itself is not interested, often the professionals themselves aren't interested, because there is the issue of whether you believe in this proposal or not. (E4).

Competition is present in any commercial activity, be it family or business. Therefore, it is necessary to pay attention to the market and seek differentials. There are large agro-industries in the region, which indirectly influences the entire segment. They buy raw materials and market their products with international competitiveness, so that product prices are determined by demand, affecting small rural producers and their agro-industries.

The final portion of Porter's diamond deals with the companies' strategy, structure, and rivalry. In this regard, as they are inserted in a competitive environment, family agro-businesses also tend to act, for the most part, according to market logic, which is not always ethical and is also individualistic:

> [...] even mobilizing entrepreneurs, because it is a field that still has a lot of individualism [...] I say that the main obstacles, it is breaking this barrier of individualism, it is difficult, because if you go looking at cooperatives, associations, they are few, and to make matters worse we have many bad examples of cooperatives, all over Brazil, you know, so everyone is kind of suspicious [...] the biggest problem is the distrust that the people have, you know, people end up, as I say, preferring individualism, that they have more control, right, over the business. Then you have an association where you are a partner and the others manage it, right, it takes a while for you to gain confidence (E6).

It is clear from the interviewees' statements that individualism, competition, and rivalry exist in the environment of family agribusinesses in this LPA. From Porter's perspective, this rivalry motivates companies to reduce imitation and price competition, which is harmful to all, seeking strategic

differences by identifying attractive market segments and encouraging continuous improvement (PORTER, 1998).

In addition to these variables initially presented by Porter, the author includes two that he believes to be important in cluster analysis: chance and the government. Chance is the eventualities and events beyond the companies' control that may arise during the process. In the context of this LPA, the type of remarkable occurrence that could be attributed to chance was not identified. Regarding the government, several pieces of evidence confirm its central role in boosting agro-industries and the LPA through public policies. The first and perhaps the primary evidence is the state government of RS's policy supporting LPAs, which has already directly invested around R$400 thousand in the LPA of the Family Agro-industry and Diversity of the Middle High Uruguay and Rio da Várzea to obtain positive results. There are also public policies to support family agro-industries, such as the Support Program for Family and Peasant Agriculture, which promotes integrated projects to structure agro-industrial units, add value to agricultural products and include family farmers and peasants in productive regional chains.

Furthermore, clusters improve the strategic positioning of a local economy by promoting competitive practices, creating an environment of local adjustment that reduces imitation and price competition. This factor promotes the pursuit of strategic differences, making it easier to identify attractive market segments and stimulate a culture of continuous improvement (PORTER, 1998). This finding was evidenced during the research, according to the following account:

> [...] the supermarket issue too, it is already a conflict activity, you know, and because we called the supermarkets to discuss this, we minimized it, they had a lot of conflict with the city and with the farmers' markets and viewed them a market dispute and such, so if today we take the agribusiness products and have minimally the formalization that they have, they already start to argue differently. They no longer see themselves as a competitor or someone who has to get rid of this, and they understood at the meeting, that we said that the farmers' markets were necessary, because that was where the first process where that agribusiness or that product starts to be seen, and there it will be polished, and there it can be transformed into formalized and in a process, and when it becomes formalized, it looks for sales channels that have a larger audience, with more consumers (E5).

There is consistent evidence that the LPA for Family Agro-industry and Diversity in the Middle Alto Uruguay and Rio da Várzea can be recognized as a cluster; however, perhaps not in the traditional and most commonly studied format. It is closer to the debate around clusters of micro and small companies with different characteristics from those where large companies are present. Informality is a common characteristic of this type of cluster (ALTENBURG; MEYER-STAMER, 1999) and the LPA in question is no different. Many family agribusinesses are still working in the informal sector or selling products that do not have health certification. There was concern and action on the part of the leadership to regularize this situation, based on advisory actions to eliminate barriers for formalization.

CONCLUSION

This case study analyzed the movement characterized as the Local Productive Arrangement (LPA) of Family Agro-industry and Diversity in the Middle Alto Uruguay and Rio da Várzea to identify what type of territorial innovation model it represents. The contextual analysis was carried out from the theoretical assumptions related to industrial districts and clusters.

As its legal formation dates back to mid-2012, it is clear that the study LPA is still in formation. Therefore, it is a process under construction due to its early stages, but positive results have been achieved. Moreover, the LPA is characterized by diversity; therefore, all the actors with common objectives sought the construction of alternatives to solve local social problems. The public authorities, in turn, played a central role in this project by providing resources that made it possible to implement public policies to benefit the actions proposed for this productive arrangement.

The actions developed show an experience that seeks to build economic support mechanisms focused on rural families and their small agro-industries, which play a vital social role in maintaining rural spaces, avoiding exodus, and the consequent migration to urban spaces. In this way, this productive

arrangement is a new organization of social space and relations of production, articulating actions around common objectives, which go beyond the commercial. Social relationships are transformed, with social inclusion, job and income generation, and improvements in living conditions.

Regarding the theoretical assumptions underpinning this study, it is evident that the LPA partly resembles both industrial districts and clusters in an overlapping arrangement. Its resemblance to industrial districts included: close geographic location; specialization in a given sector; participation of small producers / agro-industries; understanding that innovation is a determining factor for differentiation in the market; financial support from the public authorities; learning and knowledge exchange; reduction of production costs; and competitive advantages.

As for the theoretical definitions of clusters, the following characteristics were observed: the geographical concentration of agro-industries; the involvement of various entities and institutions, such as public bodies, universities, cooperatives, and councils; the presence of factor conditions, especially labor and infrastructure; demand conditions for the products; and a competitive trend among agro-industries. The government's presence is also relevant and decisive in implementing the LPA and promoting its activities.

The focus of this study in determining which of the LPA's characteristics are closer to models of territorial innovation opens up the possibility of further research with the same intention. One possibility is the analysis of this productive arrangement as a strategy for maintaining rural families in their properties, thus minimizing the impacts of the rural exodus, and improving the life of this social group.

REFERENCES

AHLQVIST, T. Building innovation excellence of world class: the cluster as an instrument of spatial governance in the European Union. International Journal of Urban and Regional Research, v. 38, n. 5, p. 1712-1731, 2014.

ALTENBURG, T.; MEYER-STAMER, J. How to promote clusters: policy experiences from Latin America. World Development, v. 27, n. 9, p. 1693-1713, 1999.

AYARI, D.; ZAIBET, L. Modelling trust and contractual arrangements in a local economy. Development in Practice, v. 29, n. 4, p. 525-533, 2019.

BAPTISTA, R.; SWANN, P. Do firms in clusters innovate more? Research Policy, v. 27, n. 5, p. 525-540, 1998.

BARDIN, L. Análise de conteúdo. Lisboa: Edições 70, 2009. 288p.

BECATTINI, G. O distrito marshalliano. In.: BENKO, G.; LIPIETZ, A. (Org.) As regiões ganhadoras. Celta: Oeiras, 1994. p. 19-32.

BENKO, G.; LIPIETZ, A. Les régions qui gagnent. Paris: PUF, 1992. 420p.

BRANZANTI, C. Creative clusters and district economies: towards a taxonomy to interpret the phenomenon. European Planning Studies, v. 23, n. 7, p. 1401-1418, 2015.

BÜTTENBENDER, P. L. Arranjos institucionais, cooperação e desenvolvimento: redes econômicas, tecnológicas e sociais: sementes do desenvolvimento agregando valor. Ijuí: Ed. Unijuí, 2010.

CAPELLO, R. Regional economics. New York: Routledge Advanced Texts in Economics and Finance, 2007. 378p.

COSTA, A. M.; PATIAS, T. Z.; DE MARCO, D. Arranjos produtivos locais e o desenvolvimento ousando mudar as estruturas estabelecidas: uma análise seniana do APL do leite e dos assentamentos em Santana do Livramento/RS. In: PINHEIRO, V. F.; PAIVA, M. J. G.; MORAIS, J. M. L. (Org.) Gestão do território, políticas locais e desenvolvimento sustentável. Crato-CE: URCA, 2014. p. 225-245.

DELGADO, M.; PORTER, M. E.; STERN, S. Clusters, convergence, and economic performance. Research Policy, v. 43, n. 10, p. 1785-1799, 2014.

FANG, L. Do clusters encourage innovation? A meta-analysis. Journal of Planning Literature, v. 30, n. 3, p. 239-260, 2015.

FREEMAN, C. The national system of innovation in historical perspective. Cambridge Journal of Economics, v. 19, n. 1, p. 5-24, 1995.

GARCIA, J. R.; VIEIRA FILHO, J. E. R. Reflexões sobre o papel da política agrícola brasileira para o desenvolvimento sustentável. Texto para discussão 1936. Instituto de Pesquisa Econômica Aplicada. Brasília: Rio de Janeiro: Ipea, 2014.

GARONE, L. F.; MAFFIOLI, A.; DE NEGRI, J. A.; RODRIGUEZ, C. M. VÁZQUEZ-BARE, G. Cluster development policy, SME's performance, and spillovers: evidence from Brazil. Small Business Economics, v. 44, n. 4, p. 925-948, 2015.

GODOY, A. S. Estudo de caso qualitativo. In: GODOI, C. K.; BANDEIRA-DE-MELLO, R.; SILVA, A. B. (Org.). Pesquisa qualitativa em estudos organizacionais: paradigmas, estratégias e métodos. 2 ed. São Paulo: Saraiva, 2010. p. 115-146.

GORDON, I. R.; MCCANN, P. Industrial clusters: complexes, agglomeration and/or social networks? Urban Studies, v. 37, n. 3, p. 513-532, 2000.

GIULIANI, E. The selective nature of knowledge networks in clusters: evidence from the wine industry. Journal of Economic Geography, v. 7, n. 2, p. 139-168, 2007.

KAEFER, F.; ROPER, J.; SINHA, P. A Software-assisted qualitative content analysis of news articles: example and reflections. Forum: Qualitative Social Research, v. 16, n 2, art. 8, p. 1-20, 2015.

LASTRES, H. M. M.; CASSIOLATO, J. E.; MACIEL, M. L. Pequena empresa: cooperação e desenvolvimento local. Rio de Janeiro: Relume Dumará, 2003.

MALMBERG, A.; MASKELL, P. The elusive concept of localization economies: towards a knowledge-based theory of spatial clustering. Environment and Planning A, v. 34, n. 3, p. 429-449, 2002.

MARSHALL, A. Principles of economics. London: MacMillan, 1920. 319p.

MARTÍNEZ-DEL-RÍO, J.; LORENTE, J. C. Competitiveness and legitimation: the logic of companies going green in geographical clusters. Journal of Business Ethics, v. 120, n. 1, p. 131-146, 2014.

PETTIGREW, A. M. Contextualist research: a natural way to link theory and practice. In: LAWLER III, E. E. Doing research that is useful in theory and practice. San Francisco: Jossey-Bass, 1985. p. 53-72.

PIORE, M. J.; SABEL, C. F. The second industrial divide: possibilities for prosperity. New York: Basic Books, 1984. 368p.

PORTER, M. A vantagem competitiva das nações. Rio de Janeiro: Campus, 1993. 897p.

_____ Competitive advantage: creating and sustaining superior performance. New York, NY: Free Press, 1998. 668p.

RUTTEN, R.; BOEKEMA, F. The learning region: foundations, state of the art, future. Cheltenham: Edward Elgar, 2007. 320p.

SCHMITZ, H. Collective efficiency and increasing returns. IDS Working Paper, n. 50. Bringhton: Institute of Development Studies, 1997.

WILLIAMSON, O. E. The new institutional economics: taking stock, looking ahead. Journal of Economics Literature, v. 38, n. 3, p. 595-613, 2000.

WOLFE, D. A.; GERTLER, M. S. Clusters from the inside and out: local dynamics and global linkages. Urban Studies, v. 41, n. 5-6, p. 1071-1093, 2004.

WOLMAN, H.; HINCAPIE, D. Clusters and cluster-based development policy. Economic Development Quarterly, v. 29, n. 2, p. 135-149, 2015.

YIN, R. K. Estudo de caso: planejamento e métodos. Porto Alegre: Bookman, 2015. 212p.