Productive arrangement of oysters: a comparative study between two communities in southern Brazil

Arranjo produtivo de ostras: estudo comparativo entre duas comunidades no sul do Brasil

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ABSTRACT

The oyster cultivation in Brazil has a great productive concentration in the Southern region of Brazil, however the consolidation of these productive arrangements occurs slowly and with great variation among the producing communities. Scattered information was found on the reasons for the uneven development of smaller arrangements. Therefore, in view of the relevance of the activity and in order to identify the factors responsible for the inequality in the growth of productive arrangements, a descriptive exploratory study was carried out between March and July 2022 with the leaders of two fishing communities in the local productive arrangement - LPA, Cabaraquara, on the Coast of Paraná, Brazil, being one of them a consolidated arrangement and the other one in development. The research revealed that the difference between the productivity of both does not seem to be linked to factors such as proximity to the consumer market, distribution logistics, manpower, producers’ ability to articulate with the market or even geoclimatic characteristics. The main factors that limit the consolidation of LPAs are the degree of difficulty in accessing production inputs, the lack of technical assistance and the almost non-existence of public policies for the segment. Although oyster clusters have conditions for growth and consolidation, the presence of arrangements of producers in these regions is not a sufficient condition for local development, requiring the formation of links and interdependent relationships among them. Therefore, especially in the Cabaraquara Community, it is necessary to establish a governance model that allows for positive results in terms of efficiency and competitiveness in the dialogue with other actors outside the producing communities.

Keywords: coastal and Island Environments, mollusks cultivation, oyster cultivation.

RESUMO

O cultivo de ostras no Brasil tem grande concentração produtiva na região Sul do Brasil, no entanto a consolidação destes arranjos produtivos ocorre de forma e com grande variação entre as comunidades produtoras. Esparsas informações foram encontradas sobre os motivos da desigualdade do desenvolvimento dos arranjos menores. Assim diante da relevância da atividade visando identificar os fatores responsáveis pela desigualdade de crescimentos dos arranjos produtivos, realizou-se entre março e estudo exploratório descritivo junto a lideranças de duas comunidades pesqueiras, sendo um arranjo consolidado e outro em desenvolvimento. A pesquisa revelou que a diferença entre a produtividade de ambos não parece estar vinculada a fatores como a proximidade ao mercado consumidor, logística de distribuição, mão de obra, capacidade de articulação dos produtores ou mesmo características geoclimáticas. Os principais fatores que limitam a consolidação dos APLs eram o grau de dificuldade de acesso aos insumos de produção, a falta de assistência técnica e a quase inexistência de políticas públicas para o segmento são s sendo mais impactado o APL do Cabaraquara no Paraná. Apesar dos APLs ostras possuírem condições de crescimento e consolidação a presença de aglomerações de produtores nessas regiões não é condição suficiente para o desenvolvimento local, sendo necessária a formação de vínculos e relações de interdependência entre os mesmos, para tal e necessário especialmente na comunidade do Cabaraquara o estabelecimento de um modelo de governança que possibilita
resultados positivos em eficiência e competitividade na interlocução com outros atores fora das comunidades produtoras.

**Palavras-chave:** ambientes litorâneos e insulares, malacocultura, ostreicultura.

1 INTRODUCTION

The Brazilian maritime coasts were occupied by numerous populations of indigenous collectors since before the colonial period, and immediately after the beginning of this period, coastal fishing was carried out in small boats excavated in a single trunk of tree and which these boats they could not go far from the coast and were always subject to the weather. The strength was from the arms and oars. The bow, arrow, spear and small nets were their methods of effectiveness and the distribution of the surplus fished or collected was certain. Shellfish and mussels were equally important for food, but they were also used for other functions, ranging from ceremonial necklaces to burials and land engineering, as is the case with the countless sambaquis1 scattered along the coast of southern Brazil. All these descriptions of fishing, gathering and swiddens were noted by the first travelers who arrived here in the 16th century and who made their colonies in the lands elsewhere. From the letter by Pero Vaz de Caminha in 1500, through the first “Descriptive Treaty of Brazil” of 1587 by Gabriel Soares de Souza (1851) we arrive at the armorer Hans Staden in 1557 (1974) and the Missão Carijó of the Jesuit priest Jeronimo Rodrigues between 1605 and 1607 (LEITE, 1940). In all these literatures, we find part of the descriptions of fishing as an inexhaustible source of resources.

Then, from the industrial revolution on, boats gained engines and finally, these engines gained power, popularity and greater reach from the end of the second world war and for the following decades. Thus, it is possible to say that sea fishing has been carried out on in Paraná Coast since the colonial period of Brazil, and has always been relevant in generating income and also in guaranteeing food for hundreds of families. It is composed of a wide diversity of environments and a wide variety of capture practices that may vary according to the place where the fisherman is inserted and his cultural origins (ANDRIGUETTO FILHO, 2003). However, since the 1970s, the Coast of Paraná has shown signs of a decline in the number of species caught, requiring greater fishing effort and increasing the production costs (ANACLETO et al., 2018).

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1 Formations consisting mainly of mollusk shells, formed over thousands of years by populations that inhabited coastal regions.
According to França et al (2018), the decline in fish production in Paraná was due to two priority factors: excessive fishing effort linked with the presence of large and more modern fishing vessels in the States of Santa Catarina and São Paulo, as well as the inefficiency in monitoring fish stocks for decades.

The difficulties reported promoted the occurrence of a strong exodus of fishing activity on the Coast of Paraná, and according to França et al. (2018) many families sought in the coastal or insular environment other means and forms of survival. Among the activities that were relevant, the cultivation of marine animals, in particular, the cultivation of oysters stands out.

The first records of oyster cultivation on the Coast of Paraná, according to Pereira et al (2016), date back to 1950 in the Guaratuba Bay, when extractors were still empirically collecting oysters from the mangrove, species *Crassostrea rhizophorae* and *Crassostrea brasiliana*. The selected the specimens leaving close to their homes for easier growth and collection during the summer season. Also, according to Pereira et al. (2016) at the end of the 1990s, there was a strong incentive for activity in Paraná, with the distribution of native oyster seeds to producers in coastal municipalities. In this period according to Perin et al. (2007) the local productive arrangement of oysters appeared in the Cabaraquara Community, on the extreme south of the Coast of Paraná.

Oysters, according to Simon and Silva (2006), have relevant economic interest due to the pleasant taste, the food value of the meat, the use of the shell as raw material for handicrafts, as well as being a source of animal calcium and the use in the soil as natural fertilizer. In relation to nutritional aspects, oysters have excellent nutritional value, being an important source of protein and omega-3, they have a high amount of zinc and other minerals, as well as a low caloric value when compared to other meats (PARISENTI et al., 2010).

The Coast of Paraná, especially the extreme south, has waters that are largely favorable to the cultivation of oysters in terms of salinity, average water temperature, free from harmful substances and pollutants, and it is also highlighted that in the region the native oysters have high fecundity and accelerated growth, the most cultivated being those belonging to the genus *Crassostrea*, which has greater economic interest due to its larger size (SIMON; SILVA, 2006). The information is corroborated by Anacleto et al. (2018), who state that throughout the Coast of the State of Paraná, oysters of the native species *C. rhizophorae* and *C. brasiliana* that are found fixed in rocky parts, as well as in mangrove roots are preferred for cultivation due to their resistance. The species *C. rizophorae* is commonly known as "stone oyster" or "mangrove
oyster”, reaching up to 10 cm in height. The species C. brasiliana is called "bottom oyster", and can reach 20 cm in height, being considered a large species (SIMON; SILVA, 2006; ANACLETO et al., 2018).

The oyster cultivation in the region showed strong development and at the end of 2010 there was an increase in production in the order of 45 times in relation to the amount initially cultivated (PEREIRA et al., 2016). However, in the last decade there has been a reduction in cultivation areas, as well as in the number of active producers (ANACLETO et al., 2018).

According to DERAL (2022), the Local Productive Arrangement (LPA) of Cabaraquara Community, which concentrates production in the municipality of Guaratuba, Paraná, was responsible for the production of 173,050 dozen, with a gross value of production equivalent to R$2,206,387.50 (two million two hundred and six thousand and three hundred and eighty-seven reais). Although oyster cultivation is relevant for the survival of families living in these communities, Anacleto et al. (2018) report that there is a lack of information about oyster cultivation in the region, Alves and Anacleto (2018) report that the scarcity of information is even greater when it comes to studies related to LPAs.

The real scenario is an unknown for the most LPAs that involve small communities and activities that are not related to Commodities. Rocha et al. (2019) describe that LPAs in Brazil usually develop in an uncoordinated way and the understanding of the scenario, the ways in which the agents involved in the process act make it possible to establish the similarities and discrepancies that exist within each segment, as well as throughout the production chain. The development of new LPAs in Brazil, according to Leme et al. (2019), is a topic of extreme importance in the current Brazilian economic and social context, given that LPAs are able to develop their regions and consolidate local businesses through organized processes.

In this way, investigating and understanding the relationships among the segments of an LPA becomes essential in proposing governance models that favor the productive arrangement as a whole, creating a collaborative relationship and business opportunities. Thus, similarly to what was proposed by Anacleto et al. (2018) and Alves and Anacleto (2018) aiming at a better understanding of the factors that affect the oyster LPA in the extreme south of the Paraná Coast, thus the research sought to promote a characterization of the oyster LPA in comparison with an LPA of similar size in a State ranked as the most developed in Brazil in the sector.
2 METHODOLOGICAL PROCEDURES

The similar study to that one proposed by Muraro (2016) is characterized as qualitative research that involved the study of multiple cases with exploratory-descriptive nature, operationalized through a semi-structured questionnaire.

A comparative study was carried out between a community on the Coast of Paraná still in an embryonic stage of production and a community on the Coast of Santa Catarina that was chosen because it is the largest producer in Brazil, however the two communities chosen have similar socioeconomic profiles (IBGE, 2022).

The sample is classified as non-probabilistic with respondents selected for convenience and accessibility; with data collection carried out in two communities of oyster farmers, namely:

a) Local Productive Arrangement of Oysters – Cabaraquara Community, municipality of Guaratuba, Paraná Coast: in this LPA, the native oyster cultivated is the species Crassostrea Rhizophorae. In this LPA, the existence of seven producers was verified, of which three people of recognized leadership in the community were interviewed, as well as due to their productive expressiveness and local representation.

b) Local Production Arrangement of Oysters of Santo Antônio da Lisboa, Coast of Florianópolis, Santa Catarina: in this LPA the native oyster of the exotic species Crassostrea Giga is cultivated. There were seven producers in this LPA, and a person of recognized leadership in the community was interviewed, who was also considered the high productive expressiveness and local representativeness.

The two regions were selected based on their potential oyster production, configuring themselves as recognized regional centers of commercialization, associated with a growing increase in tourism in both regions. Another factor to be considered is that another 800 coastal communities can be found in Brazil, represented by their fishing colonies that present similar conditions that may also constitute future LPAs for mollusks production (SILVA, 2014; IBGE, 2022).

Data collection from producers on the Coast of Paraná was carried out as proposed by Gil (2009), from semi-structured interviews applied to the producers from March to July 2022, with parallel direct observation in the respective production units.

Similar to what was proposed by Muraro (2016) and Alves and Anacleto (2018), the following factors were considered in the evaluation of both production centers: a) proximity to the consumer market; b) distribution logistics; c) ease of supplying inputs; d) offer of technical assistance; e) existence of public policies aimed at the sector; f) geoclimatic characteristics favorable to the cultivation; g) labor force, including $g_1$: skilled labor for production; $g_2$:...
producers' ability to articulate. Each of these factors was classified, according to their occurrence in the studied locations, as: A = adequate: incidence of the factor in the context of the productive LPA favoring the development; R= regular: deficient incidence of the factor in the context of the productive LPA, hindering the development; I = insufficient: absence of the factor with the productive LPA, being restrictive to the development.

After completing the primary data collection, an interpretative and descriptive analysis of the contents obtained during the interviews was adopted. At this stage, a comparative technique was used, resulting from the observation of the researchers, from the similar answers obtained from the interviewees and from the consulted literature, resulting in the analysis of similarities and discrepancies between the two LPAs by Menezes e Vieira (2019) and Alves and Anacleto (2018).

3 RESULTS AND DISCUSSION

The formation of a LPA can represent an important path for the development of a region, especially as in the case of oysters when the arrangement is associated with communities without different income alternatives. Food production and cost reduction, if considered the essential factors for the sustainable development of the LPA, can be potentiators to make the LPA more competitive. The formation of the LPA can be understood as the concentration of companies and enterprises that present similar productive specialization in a geographic space, but that also develop governance models that facilitate the creation of articulation, interaction, cooperation and learning links among them and with other local actors, such as: government, business associations, credit institutions, teaching and research (QUANDT, 2012), conditions that were observed in the Cabaraquara Community LPA. In this sense, as Basso et al (2018) observe, the structuring of such governance relationships in the LPA and its respective surroundings, provide a considerable increase in collective efficiency and even in the competitiveness of companies, boosting actions such as: purchases, sales, exports, distribution and commercial promotion together.

The need to expand the limits of food production due to growing population rates across the planet is urgent, as it can guarantee survival in different regions of the world. In this context, according to Fao (2013), the right of everyone to have access to safe, nutritious, sufficient and economically viable food that meets their nutritional needs, as well as maintaining their food
preferences for an active and healthy life can also come from the LPAs in small traditional communities that deserve fair attention from research and funding agencies.

Brazil, as well as other emerging countries, is important due to the fact that there are still many areas available with potential for the insertion of new cultivations, especially marine ones with large areas of water depth suitable for crops. This situation was observed in the two LPAs evaluated. Other essential factors were observed, in particular the strong commercial capacity that occurs in a similar way in both regions (TABLE 1) that can determine the continuity and sustainability of these LPAs.

<table>
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<tr>
<th>Table 1 – Comparative analysis of the levels of sustainability factors in the development of oysters LPAs</th>
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<td>Geoclimatic Characteristics</td>
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<tr>
<td>Cabaraquara</td>
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<td>Santo Antônio de Lisboa</td>
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A = adequate; R = regular; I = insufficient. Source: the authors

The geoclimatic characteristics for the production of oysters of both the native species on the coast of Paraná and the exotic species in Santa Catarina, although in this region the production cycle is shorter, in both cases are considered satisfactory and adequate (SIMON; SILVA, 2006; PARISENTI et al., 2010; ANACLETO et al., 2018).

The consumer market proved to be adequate for both analyzed LPAs. This situation is explained at first due to the strong tourist presence in both regions, which consumes most of the demand for production in the places of origin where gastronomy has strong segmentation. Another factor that favors this adequacy is the proximity of both regions with large consumer centers, especially capitals and their metropolitan regions. The proximity to large consumer centers also favors and determines the adequacy in terms of distribution logistics and production marketing when necessary, having been observed that retailers and wholesalers move easily and at low cost to the production communities in order to purchase oysters.

Easy access to the production inputs and goods gives the LPA of Santo Antônio de Lisboa, Santa Catarina, a competitive advantage over the LPA of Cabaraquara Community,
This condition is corroborated by Pereira et al. (2016), which reveals that production in Santa Catarina is 45 times higher in quantity compared to the State of Paraná.

The general industry in Santa Catarina in this producing region has strong regional production of ropes, plastic containment screens, water buoys, lanterns and pillows for the growth of oysters and other inputs suitable for cultivation, while the Coast of Paraná is devoid of all types of industries for the production of material necessary for cultivation. However, the biggest difference between the arrangements is in the accessibility to the oyster seeds, which is an essential condition for accelerating the cultivation. While the producers from the LPA of Santo Antônio de Lisboa have access to a production laboratory a few kilometers away from their cultivation areas, with a waiting period of 90 days to receive the oyster seeds of the Giga species \( (Crassostrea giga) \), it was verified in the surroundings close to the LPA of Cabaraquara Community there are no laboratories in the region that produce native oyster seeds. Thus, the alternative of acquiring seeds from laboratories located in other states presents low viability in terms of cost. In addition, these laboratories favor the reproduction of exotic oysters and give preference to the service of growers in their own states, which generates to the products from the Coast of Paraná high acquisition cost and long waiting time for the service and receipt of seeds for cultivation.

The difficulty in acquiring seeds and the absence of reproduction laboratories close to the production impose on the LPA of Cabaraquara the need to obtain such seeds by extractivism with the collection of small-sized seeds directly from the mangrove or, still, the use of artificial collectors for the extraction of seeds. However, in both cases there is great genetic variation and high mortality, in addition to the alteration of the normal flows of the species in nature due to the extractivism.

The technical assistance can be considered a bottleneck in both LPAs. In Santo Antônio de Lisboa region, the offer of free technical assistance is considered non-existent. However, it is possible to hire specialized technicians from the private sector. With regard to Cabaraquara, sparse actions by public universities were reported that offer guidance on specific issues and that in a general context cannot be considered as technical assistance.

The local workforce of both LPAs can be classified as a regular situation, as it is basically made by local residents who help in the cultivation of oysters with empirical learning. None of
the LPAs reported the regular offer of training in order to qualify the workforce for the production of these mollusks.

Regarding the level of adequacy of the producers’ ability to articulate, there was a good exchange of technical and scientific knowledge, as well as it was observed that there is solidarity support among producers. This solidary support helps in the development of this activity through actions that may result in changes in the local cultivation conditions and in the physical improvement of the cultivation. It was also observed that there is a constant concern in both LPAs in relation to the insertion of innovations in the improvement of production and crop management, as well as the existence of active and representative associations of local producers in the two communities. However, this capacity for articulation has not been able to translate efforts into more significant improvements to the LPAs, since associativism does not result in governance models that facilitate the creation of articulation links with other actors linked to the LPAs such as industries and laboratories. Similarly, despite the expansion of internal dialogue in these communities, with regard to the external, the capacity for interaction, cooperation and dialogue with the various spheres of government, business associations, credit institutions and, in particular, research institutions, is limited.

The scenario of consolidation of an LPA must translate over time into the ability to promote and pressure the occurrence of public policies that benefit the sector and, consequently, the communities, a situation that was considered insufficient in both LPAs analyzed. The unique government support informed by them was the possibility of obtaining financing through Pronaf\(^2\) for mariculturists at 6% interest per year, however, none of the interviewees carried out this financing given the difficulties of accessing credit. However, with regard to the LPA of Santo Antônio de Lisboa, due to the historical issue of incentives by regional governments, they have easier access to bank credit, diesel oil exemption and bureaucratic facilitation in the legalization of crops.

The comparative analysis between both LPAs shows a worrying reality in view of the fact that the prospection regarding measures to face adversities, the organization of communities to help in the internal problems of cultivation is apparently the only measure adopted, despite the scenario not be favorable. This situation reveals that despite the historical and tourist relevance

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\(^2\) Programa Nacional de Fortalecimento da Agricultura Familiar - National Program for Strengthening Family Agriculture
and being a relevant alternative for development, the bargaining capacity of the producers and their respective LPAs is reduced.

4 SIMILITUDES AND DISCREPANCIES BETWEEN THE LPAS

The study revealed that both LPAs have the ability to develop actions in cooperation and partnership among producers, which compared to other areas of agribusiness can be considered an important advance in the consolidation of LPAs. The producers involved in this process often formed partnerships, as they had common economic activity and needs, making the logistics process more effective in some production-related issues. However, in processes of consolidation of the productive arrangements, only acting in the internal environment does not result in a greater competitive advantage for the LPA.

The development of a LPA requires dialogue among the various actors involved. Dialogue must be a premise so that it results in carefully articulated actions in a collaborative way, otherwise the weakest link tends to abandon the productive activity, because people involved in the production segment, especially socially vulnerable families, are not always able to self-organize to get better prices and reach more specialized markets without external help. In addition, they are not always aware of their technological limitations in terms of production quality. Thus, it is necessary and urgent to think of planned forms of management that are effective in pursuit of competitiveness, seeking partnerships with raw material suppliers that can generate a capacity to react diligently to the constant changes of the competitive market and to insert oysters in an even more consolidated way, at the seafood market.

Partnership activities developed off-property and considered the collective issues of the external scenario, can bring with them several possibilities among producers, in particular the collective use of physical storage spaces and cultivation at sea area, situations already described as common practice in other productive segments in Brazil.

Despite the oyster LPAs having conditions for growth and consolidation, the presence of clusters of producers in these regions is not a sufficient condition for local development, requiring the formation of bonds and interdependent relationships among them. To this end, it is necessary to establish a new and more efficient governance model that enables positive results in terms of efficiency and competitiveness. Such a governance model must be anchored in actions of frequent interaction among LPA participants. This interaction, in turn, allows for the
establishment of a culture arising from the relationships of the leaders that emerge in the arrangement. This culture may be able to generate informal rules that serve to outline common goals and forms of cooperation among LPA members and their relationships with other institutions. In a broader sense, governance has the power to establish decisions that will guide strategies for overcoming the common challenges faced by the LPA, making work more efficient and outlining cooperation actions among agents in order to reduce predatory competition and increase the efficiency of each producer and collectivity of the arrangement as a whole (BASSO et al, 2018).

The need to adapt to the dynamism of the competitive market and pressure from substitute products on oysters reveals the urgency of establishing alliances of partnerships as a way of ensuring competitive advantages that are beneficial to all, a situation that apparently in a short period of time is not foreseen as feasible due to the absence of governance systems for LPAs.

The public power in a general context does not promote the necessary changes in entrepreneurial and production activities based on development policies for communities covering the ecological and social dimensions, aimed at strengthening the market in all segments of the LPA specially the producers.

Thus, it is emphasized that the dialogue among the actors is an essential condition in the process of developing new approaches that aim at the development of these regions in a rational way, since it can point out the needs of adjustments, logistical corrections and technological changes that can generate to the producers the reduction of the dependence on other commercial spheres, resulting in the strengthening of production units. The lack of approximation between public authorities and oyster producers with the commercial sectors has proved to be a serious obstacle to the activity development. The joint action organized by the government by specialized technicians who consider the effective participation of producers can generate a set of actions that work as facilitators in the development and improvement of these LPAs, given that as important as credit, work, access to new markets and technological processes, these communities also need organizational networks, which are classified as crucial elements for the development of the LPA.

Negrelle et al. (2014), report that, among the existing challenges in communities similar to those in this study, there is a dilemma, the most important challenge that any development policy faces is the organization of those who are in a situation of need, or those who have fewer
chances to take advantage of the economic opportunities, and, in this sense, the participation in the discussion of these socioeconomic processes becomes fundamental in the context of the development policies and the proposition of new social structures organized in a collaborative way.

The partnerships of oyster producers with suppliers, retail customers, wholesalers and representatives of the public power can be considered as dynamic relationships, subdivided into stages, initially planning for the establishment of the alliance is an essential condition for success or failure, evidencing the importance of managing alliances in order to closely monitor the performance level of oyster production units.

It is noteworthy that the generation of alliances and partnerships is based on the strengthening of the LPA facing a competitive and often globalized market and that the search for partnerships and alliances extra property can only be carried out when the communities already have capacity of internal organization within the communities, being necessary to expand this management and governance model. According to Braga (2011), local production systems that get to establish solid strategic partnerships and alliances have the ability to generate technological leadership and economies of scale in proportions comparable to those generated by large companies, in addition to making it possible to face the uncertainties of the scenario, in this context, the development potential of the LPA can be more easily achieved if the management model is externally directed, increasingly strengthening endogenous development.

The concept of endogenous development described by Amaral Filho (2009) can be understood as a process of economic growth that implies a continuous expansion of the capacity to add value to the production, as well as the absorption capacity of the region, whose unfolding is the retention of the economic surplus generated in the local economy. Braga (2011) also adds that the management and governance system for endogenous development is the only viable way of fair development, given that when partnerships and alliances are proposed, the needs of the collective of producers are considered.

5 FINAL CONSIDERATIONS

The research revealed that the difference between the productivity of both does not seem to be linked to factors such as proximity to the consumer market, distribution logistics, labor, producers' ability to articulate or even geoclimatic characteristics.
From the study carried out, it was found that the factors that influence the sustainability and growth of oyster productive LPAs occur with some similarity in the studied places. However, the offer of technical assistance appears to be insufficient in the two LPAs, being more aggravated in the LPA of Cabaraquara Community, Paraná.

Inequality of access to seeds for production is another crucial factor for the differential in the production of both LPAs, given the predilection of seed selection to producers in Santa Catarina, which in turn favors and strengthens this LPA.

The producers from Cabaraquara Community showed good capacity for internal articulation, however, there is still a lack of more efficient governance models that can seek solutions to external problems.

Another factor that may explain the great difference in production is that the State of Santa Catarina has historically had a strong presence of public policies that have fostered programs in order to support and grow mollusks cultivation, encouraging the consolidation of this productive LPA.

The need to adapt to the dynamism of the competitive market and pressure from substitute products on oysters reveals the urgency of establishing partnerships as a way of ensuring competitive advantages that are beneficial to all, a situation that apparently in a short period of time is not seen as feasible due to the absence of governance systems for the LPAs.

The development of a LPA requires dialogue among the various actors involved. Dialogue must be a premise so that it results in carefully articulated actions in a collaborative way, however, especially the Cabaraquara Community is made invisible by the various spheres of public power, which through public policies could strengthen and promote the consolidation of this oyster LPA.

Although the oyster LPAs have conditions for growth and consolidation, the presence of agglomerations of producers in these regions is not a sufficient condition for local development, requiring the formation of bonds and interdependent relationships among them, for this it is necessary especially in the Cabaraquara Community the establishment of a governance model that enables positive results in terms of efficiency and competitiveness in the dialogue with other actors outside the producing communities.

Although the findings of this study are relevant to the oyster production context in Southern Brazil, at least one limitation can be indicated. In this sense, even though the difficulty
of external communication and the absence of a governance structure are factors verified in both LPAs, it is important to highlight the asymmetry between the two groups studied. In this sense, future studies can explore compatible arrangements in structural terms so that the constituent elements of mature LPAs are observed. In this way, a survey with this limitation overcome can become a “guide” for overcoming difficulties in LPAs in early stages.
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