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## **Public policies for strengthening aquaculture in solid enterprises in northeast Pará, Brazil.**

Políticas públicas para o fortalecimento da aquicultura em empreendimentos solidários no nordeste do Pará, Brasil.

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### **Abstract**

Based on family fish farming in northeast paraense, this article addresses the need to prioritize it as a broad and lasting public policy in order to strengthen local development actions, given the potential of this activity as strategic, showing that its efficiency does not require compensatory social policies. Family fish farming is analyzed as an important economic activity for sustainable development from the perspective of solidarity enterprises, their form of work organization, their diversity in terms of economic and social practices due to the principles of cooperation, self-management and solidarity. Thus, it is found that dynamically managed fish farming enables sustainable rural development, particularly when associated with the principles and practices of the solidarity economy.

**Keywords:** Family aquaculture. Solidarity economy. Sustainable management. Social politics.

### **Resumo**

O presente artigo aborda, a partir da piscicultura familiar no nordeste paraense, a necessidade de priorizá-la como uma política pública de caráter amplo e duradouro, a fim de fortalecer ações de desenvolvimento local, em face do potencial desta atividade como estratégica, mostrando que sua eficiência dispensa políticas sociais compensatórias. A piscicultura familiar é analisada como uma atividade econômica importante para o desenvolvimento sustentável sob a perspectiva de empreendimentos solidários, sua forma de organização do trabalho, sua diversidade em termos de práticas econômicas e sociais devido aos princípios de cooperação, autogestão e solidariedade. Assim, verifica-se que a piscicultura gerida de forma dinâmica possibilita o desenvolvimento rural sustentável, particularmente quando associada aos princípios e práticas da economia solidária.

**Palavras-chave:** Aquicultura familiar. Economia solidária. Gestão sustentável. Políticas sociais.

## Introduction

Public policies for fisheries and aquaculture are a dynamic process, with negotiations, pressures, mobilizations, alliances or coalitions of interests (FARIAS et al., 2018; IGARASHI, 2019). It comprises the formation of an agenda that may or may not reflect the interests of the majority sectors of the population depending on the degree of mobilization of civil society to make themselves heard and on the degree of institutionalization of mechanisms that enable their participation (TEIXEIRA, 2002).

Public policies are discussed: their purpose, execution, elaboration and results, impacts among others. This article aims to analyze and show that efficient public policies do not require compensatory social policies, particularly when addressing family fish farming from the standpoint of the solidarity economy, as can be seen from the history of this economic activity in its management strategies and practices. sustainable management for the sustainable development of solidarity enterprises.

Public policies, therefore, are means or devices that materialize actions and services necessary for citizenship to the various sectors of civil society (SERAFIM JR, 2019). They arise from the ills of capitalist industrialization, but begin to expand to the countryside in the face of peasant social struggles that demand new opportunities for rural populations (LIMA; CALLOU, 2015). Thus, actions and programs of intervention and application of public funds for the development of actions, programs and projects appear, as observed in terms of fish farming.

In Brazil, according to Navarro (2001), the absence of a consolidated tradition of analysis of public policies for the rural sector of production is evident, particularly those that largely investigate the initiatives dedicated to sustainable rural development in our agrarian history. This has required an embryonic effort by some academic segments to understand this reality, not only in relation to its impacts, but also in terms of its rationality and operational strategy. Thus, analyzing the importance of the reflections on public policies in the context of family production of fish in the northeastern territory of Pará is inserted as an insight of this exercise (IGARASHI, 2019).

It is observed that management dynamics can be strategic for the strengthening of psychoactive activity as an action for sustainable rural development, especially when associated with the principles and practices of the solidarity economy, in view of its forms of cooperative organization, making it prioritized as the object of a broad and lasting public policy, therefore non-welfare or philanthropic (RODRIGUES, 2019).

To understand the arguments about the potential of fish farming in the context of public policies for sustainable development, it needs to be incorporated into effective solidarity economy practices. Thus, at first, the synthetic discussion about solidarity economy and sustainable development is approached as a support for the discussion of fish farming as an economic activity capable of favoring the elaboration of public policies in synergy with strategic actions of sustainable development in the northeast region of Pará.

## Materials and Methods

The survey on public policies for the strengthening of fish farming in northeastern Pará took place from January to November 2019, by consulting the records of public institutions that make up or have integrated the shared management of aquaculture in the State of Pará, such as: Ministry of

Fisheries and Aquaculture (MPA), State Secretariat of Fisheries and Aquaculture (SEPAQ), State Secretariat of Agriculture (SAGRI), State Secretariat of Environment (SEMA), Technical Assistance and Rural Extension Company of the State of Pará (EMATER/PA), Brazilian Agricultural Research Corporation Eastern Amazon (EMBRAPA), Federal Institute of Education, Science and Technology of Pará (IFPA), Federal Rural University of Amazonia (UFRA) e Federal University of Pará (UFPA), besides the relevant bibliographic survey for the development of the activity.

## **Results and Discussion**

### *Solidarity economy: development potential*

The solidarity economy, according to Singer (1999), comprises the set of collective experiences of work, production, marketing and credit organized by solidary principles, encompassing the experiences scattered throughout the regions of Brazil, in different forms: cooperatives and producer associations, self-managed companies, community banks, barter clubs, people's banks, and various popular urban and rural organizations. For the same author, the specifications that distinguish a solidary enterprise from one based on the rules of the hegemonic economy are the encouragement of solidarity among its members through self-management and the reintegration of purged workers from the labor market (SINGER, 2003).

Thus, it is understood that the solidarity economy to become a dynamic and strategic economic segment, generating work and income, human security and well-being, requires continuous investments of its initiatives and qualification of its subjects and other agents involved. This means that although solidarity-based economic enterprises emerge from collective initiatives, due to various reasons, it must be anchored in the struggles of workers so that it does not constitute a palliative and philanthropic action.

Indeed, when coupled with the workers' historical struggles, it can contribute to demonstrative effects on the accumulation of forces in the resistance field in the face of the aftereffects of capitalism. In addition, in the narrower field, it transforms people and their expectations by creating conditions for building the sustainability of solidarity enterprises, due to the productive potential of collective cooperation of meaningful solidarity. Therefore, it is about the centrality of the human being and the environment as integral parts of the same agroecosystem.

In this line of thought, Coraggio (2001) states that the meaning of the term solidarity economy may differ over time in the same society and between contemporary societies. This is for objective reasons because it constitutes culturally distinct realities or for subjective reasons in the face of interpretations of different theoretical frameworks and utopias. However, this author shows that the solidarity economy is related at least to three dimensions, namely: a) development of the critique of the single thought, that the economy is based and modeled on mechanisms without subjects and separated from society; b) search for practical action aimed at changing the reality about the capitalist market, through the real deconstruction of the exclusionary systems imposed by the political and economic powers; and c) the relationship of economics to the realization of the utopia that a society is possible where solidarity is made absolute by overriding petition and individualism.

For Coraggio (2001), these characteristics point to the solidarity economy in synergy with the logic of sustainable development, with the generation of work and income distribution, through economic growth with protection of agroecosystems. Thus, their economic, social, political, environmental and cultural results are shared, regardless of gender, age and race, implying the reversal of the capitalist mode of production by opposing the exploitation of labor and natural resources. The whole human being is seen as subject and purpose of economic activity.

Thus, unlike Wellen (2008) analysis, Coraggio solidarity economy in its immanent possibilities to human life, in its social praxis, unlike constituting itself as a “resource [that] serves ideologically to justify that capital would not represent a force active in the social totality, but which would be induced according to the subjectivity of each of its carriers”. On the contrary, it assures the solidarity economy as a counter-tendency of a “pseudo reality” absolutely dynamized by the capitalist forces. The hegemony of capital is a factual reality, which cannot be blunted, but that does not mean that the subjects of the solidarity economy “... appeal to the goodwill of the people, to make a solidarity use of their private capital and to expand thus the 'solidarity economy'.

In fact, Silva et al. (2019), to make his political critique of the solidarity economy shifts the context of the solidarity economy debate, mystifying the sense of solidarity in question, to place it “as a competitive differential at the service of these organizations”. It is, therefore, an economist's view in tune with neoclassical economic theory and its mad search for the economic valuation of all things and the senses. The author's mistaken view, part of what he calls the competitive advantages of solidarity, which is not echoed in the field of solidarity economy, given that in capitalist enterprises solidarity is blocked to make room for competition between despotically co-operative workers. on the factory floor.

In the eagerness of his criticism of the solidarity economy, Silva et al. (2018) mystifies the analysis of social relations inscribed in the context of the community, stating that by affirming the community as the first space for solidarity, the determinations of capitalism are suspended, which becomes an ideological discourse without concrete foundation and at the same time, in its false notion, absolutizes the capitalist economy and its notion of the market. In this critical eagerness, he forgets that revolutionary subjects do not arise from "the great night"; they are not immanent to history, but are built on social struggles, so they constitute the field of resistance to the manifold contradictions manifested in the machinic capitalist system of exploitation of labor and nature, focused on commodity fetishism.

His view takes reality as a linear space and time, because fixed in narrow orthodoxy no longer grasps the actual reality to fix in the hegemonic dynamics of capitalism. Thus, his analysis does not verify that the fabric of necessity articulates the possibilities and moves human life, to cling to a mystical conception of transformation without going through the processes of historical mediation of workers' struggles. Thus, he thinks that in order to overcome capitalist ideology and to submerge authentically human qualities of capitalist transformation socialism, it is necessary a movement that embraces social totality and that is not restricted to the community, that is, not limited to the position that “rationality is based on the working community [...], which is based on reciprocal bonds that dilute the eventually rigid boundaries between individual and collective interests” (VERONESE; GUARESHI, 2005).

Therefore, the author ends up interpreting capital not as a dynamic social relationship and in constant crisis process, which requires always updated analyzes to decipher it. Thus, in considering that the solidarity economy is a thingified relationship, it completely reverses its meaning to affirm that in the solidarity economy “the commodity comes to be regarded as possessing human

capacities, as, dialectically, human capacities are sold as commodities (WELLEM, 2008)". His reading of the reification of social relations is immanent in his narrow analysis of the economic relations operated by capitalism. In his view, the product of concrete human labor is seen as a simple thing, another narrow feature dictated by capitalism. In this sense, it does not observe that the commodity cycle in the solidarity economy goes beyond production and circulation to reach the relations obscured by capitalism, such as cooperation, solidarity, reciprocity and management as dynamics aimed at building the labor economy.

When buying a commodity of the solidarity economy, in addition to price, one can understand the forms of collective and solidary organization of production, labor relations, whose principle is not exploitation, in view of the equitable distribution of marketing results in the region market (REIS et al., 2015). In this sense, the solidarity economy movement, unlike the orthodox view, is constituted in the history of the proletarian class, as a strategy of accumulation of strength and resistance of the working class, with contradictions and limits given by the material subsumption. Thus, when the products of human labor, in the solidarity economy, are turned into exchange values, they express a workforce seized by their own producers, not dispelling the essence of their production, as the associated workers are aware of the printed relations. In this production, although it takes place under the cloak of the capitalist market, an essential contradiction, but it does not invalidate the workers' struggle.

Implicit alienation to the apparent form of commodities inscribed despotic cooperation of capitalism as a self-independent workforce. In this respect, another characteristic applies to abstract work, valid for the particular form of commodity production under the work employed under the command of a third party - the capitalist - and therefore the exploitation of the work of others. The phenomenon of the solidarity economy, by contrast, bears similarities with the peasant economy in many (FELIZARDO et al., 2015). One of the most important is the social relations of production developed in solidarity-based economic enterprises distinct from wage-earners.

Thus, it can be said that the problems and limits of the solidarity economy are imprinted on the circulation, when it leaves the sphere of cooperative and solidarity production, therefore, it leaves the labor economy and penetrates the interstices of the capitalist economy, an essential contradiction that does not surpass the capitalist order, thus limiting its transformative potential, since it now considers the legal formats of commercial contracts, reducing the degree of innovation in self-management and solidarity-based relations (BARBOSA et al., 2011).

Under the imperatives of the market, there is a reversal of the internal dynamics of the production circuit of the solidarity economy, variables that require clarity, as the movement of movement operates limits to solidarity. However, the character of equitable distribution, already in the context of solidary enterprises, changes as the principle and purpose of extracting surplus labor. For these reasons, solidarity economy is understood as a space of resistance and accumulation of forces due to the effect of learning and democratization of the means of production as results.

Thus, it breaks with a deterministic and economicist view, to think in the sphere of the complexity of social relations in the domain of the critique of the mercantile world and capitalist sociability, understanding that conflicts and contradictions become supports of the constitution of political subject. important collective in social struggles, which is the solidarity economy; a space for permanent reflection of political action in the present day obscured by the thought of left and right orthodoxy.

*Sustainable Rural Development: Changing the course of natural resource use*

Navarro (2001) describes that the idea of rural development is not recurrent today, but there have been, over time, some controversies in the political and academic discourse revealing the guiding conceptions of such proposals. In the mid-1990s discussions about sustainability and the environment incorporated the concept of rural development, due to the increasingly severe and consequent criticism of the “Green Revolution” agricultural model, driven from the mid-1980s onwards (SCHNEIDER, 2010). Understands in Latin America four major moments: the first one marked by projects and initiatives of regional community development; the second, for the major land reform projects; the third, for what is conventionally called integral rural development; until, finally, the moment of the projects that talk about territorial development and fight against poverty.

Despite the discursive innovation, the documents do not express an interpretation of the relevant problems for the promotion of the development of rural spaces and do not seem to grasp the teachings of the studies that have emphasized the idea of territorial development (FAVARETO, 2010). It is, therefore, the proposition of guidelines with openness to new institutions, coherent with this new frame of reference, but without a coherent strategy to support it, therefore, without mechanisms that can favor its creation, this conception seems more like a rhetoric than a factual reality.

Driven by the paradigm of rural territorial development, rural workers are organized in various collective ways to fight for access to public policies, credit and sustainable development articulated to productive processes in rural areas, often without support from governmental bodies. For Rosa (2013) “the modern local communities, endowed with juridical personality, would have to have recognized, also and above all, the sovereignty to manage and co-manage the natural resources of the soil and subsoil existing in their territories”, particularly when one can observe the limits and failures of the Green Revolution and its internationally supported financing, infrastructure, credit and assistance policies. The author draws attention to the forms of organization and management of local subjects themselves, as they have historically been guaranteed the sustainability of their agro-systems.

In this context, the debate on sustainability and use of natural resources can define public and private policies in peripheral countries, as a result of the possible identification of two forms of concentration: territorial and material. The first emphasizes the issue of state power, which refers to the expansion of the territory and the second emphasizes the expansion of competence in matters related to particular powers, with autonomy.

In this space, agrarian cooperatives, according to López et al. (2014) “are entities with a broad social base and are characterized by being important generating agents of activities capable of decisively contributing to the sustainable development of rural areas, both from the economic, social and economic perspective. environmentally friendly”.

This is why cooperatives and joint ventures can be considered to reverse actions of the self-centered development model and, at the same time, to advance the practices of rural territorial development and sustainable agriculture. These subjects demand the implementation of comprehensive intersectoral public policies with investments not only in infrastructure (national, state roads), precisely in meeting local demands, such as back roads; silos; small port structures for the flow of family-based production, which operates in precarious situations, but mainly in training and technical assistance on principles of agroecology.

In this sense, it is corroborated by Barbosa et al. (2011) when addressing the issue of Amazon development; different territories, reflected from Rosa (2013), on the self-management and the pertinence of the action of popular cooperatives and solidarity enterprises in the dynamics of territorial development and strategic management and in the formulation of public policies in the face of the destruction and devastation of the region. nature and its people.

### *Sustainable Aquaculture and Environment*

To understand aquaculture, this economic activity stands out as the fastest growing livestock sector in the world (DE-CARVALHO et al., 2013). According Valenti (2002) is a production activity of organisms with predominantly aquatic habitat, in restricted environments, in any of their developmental stages (eggs, larvae, post-larvae, juveniles or adults). Thus, there are several organisms that can be cultivated, among them: fish, shrimps, mollusks, frogs, turtles, among others (SANTANA, 2010). This agricultural sector is an important space for job generation, income, job absorption, food production, among others.

The production chain of aquaculture is considered a predominantly multidisciplinary activity, referring to the cultivation of various aquatic organisms, and the intervention or management of the breeding process is essential for production, in view of the best use of resources available on the property, increase in nutritional quality of the family diet and the generation of additional revenue by marketing the surplus (KUBITZA; ONO, 2010).

Due to these socioeconomic and environmental benefits, it allows the use of aquaculture by producers, associated with the great availability of their natural resources, which allows us to affirm that there is a potential for job and income generation, besides contributing to the improvement of the diet of the populations that develop it activity (OSTRENSKY et al., 2007). From this perspective, aquaculture contributes to the social and economic development of a given region. According to the thought of Castellani and Barrella (2005), this possibility is based on three pillars: profitable production, preservation of the environment and social development, essential and inseparable components for a perennial activity.

Aquaculture uses natural resources such as water and soil, inputs such as feed, agricultural correctives, energy requiring trained workers for the administration, operation and maintenance of the enterprise. From this perspective, the way these resources are used determines productivity and, as a result, business results, which are not restricted to economic aspects. Recently, the concept of "Sustainable Aquaculture" was introduced to designate the desirable way to produce aquatic organisms without degrading the environment, profitably and with social benefits (VALENTI, 2002).

Knowing fish farming in its physical, social and economic aspects is important, because it is a growing activity, generating environmental impacts, a source of fixed or eventual income for farmers and also a way to nutritionally qualify the population's food (APOLLO; NISHIJIMA, 2011).

Fish farming, in turn, can be developed by different methods, either by the research component, extension or by the producers themselves in order to meet self-consumption and market demands. In this sense, the aquaculture activity, over time, has the capacity to guarantee processes of autonomy of aquaculture farmers in view of the market growth, in different scales, given the fact that it is food production, the possibility of building networks to strengthen the production chain and the viability of the activity.

Because it is an economically emerging activity, despite its millennial origin, it is today faced with the challenge of adapting itself to the concept of sustainability for all human activities (ASSAD; BURSZTY, 2000). According to Sachs (1993), for development to be effectively sustainable, it is necessary to contemplate at least five primordial dimensions: economically viable, socially fair, ecological, spatial and cultural equity.

For Insull and Shehadeh (1996, p. 47), aquaculture can contribute to sustainability beyond its potential for food security. However, for this activity to constitute a sustainable development action, policies need to be “protection of the environment and biodiversity; economically viable production; responsible use and management of resources; equity in the distribution of the benefits developed”, assuming “integrated resource management; environment; institutional support and human resource development”. In this sense, aquaculture is able to create a virtuous circuit to solve hunger and malnutrition problems, as well as the socio-productive inclusion in regions with such problems.

### *The role of public policy in aquaculture*

Farming, as a productive sector, has always been strategic for public intervention, and can be classified as a state matter because it produces food and generates significant jobs, considering all segments involved in the economic chains of different products (SILVA, 2005).

However, how to classify this economic activity in the modalities of rights, in which the state becomes the main promoter of actions, often without observing the particularities of each region? This is because public policies diffuse citizenship rights and may materialize ethnic and economic actions.

Public policies, in this sense, aim to respond to demands, especially from the marginalized sectors of society, considered as vulnerable. These demands are interpreted by those in power, but influenced by an agenda that is created in civil society through social pressure and mobilization. Thus, expanding and enforcing citizenship rights that are managed in social struggles and are now recognized institutionally, is not an easy task, especially when it comes to sustainable rural territorial development, which requires the creation of alternatives to generate work, employment and income.

In the specific case of aquaculture, defining it as part of these rights is essential for food, whose debate extends to food security and sovereignty. Thus, public policies directed to the development of Brazilian agriculture, in general, mobilize scientific research, technical assistance services and rural extension, credit and legislation related to environmental, sanitary and commercial aspects (SILVA, 2005). When it comes to family farming, the National Program for Strengthening Family Farming (PRONAF) is considered the first and has been one of the most important policies for strengthening subsistence fish production and selling surpluses.

PRONAF is a rural development support program aimed at strengthening family farming as a generating segment of jobs and income. The Program is implemented in a decentralized manner and its protagonists are family farmers and their organizations. Importantly, there are various opinions about the progress of PRONAF, which “is managing to produce the institutional environment needed to expand the social base of the national credit and rural development policy” (ABRAMOVAY; VEIGA, 1999). The authors state that this public policy has been a conquest of the social and union movements of rural workers in recent decades. Their struggles can be



symbolized by the Screams of the Earth Brazil, led by CONTAG and Rural Unions, in the case of the Northeast Paraense mesoregion, by the actions and pressures on Family Farming.

### *Family fish farming in northeastern Pará*

In the northern region of the country, the aquaculture activity is less developed compared to other (BOSCARDIN, 2008), considered an incipient activity in this region (OLIVEIRA et al., 2012), although it is shown to be potential, given the Amazonian features abundant in water resources, favorable climate and great diversity of species, with possibility of cultivation. But there needs to be recognition for its expansion (ONO, 2005). With regard to aquaculture activity in the Eastern Amazon, precisely carried out in the state of Pará, Lee and Sarpedonti (2008) highlight fish farming as an emerging economic activity.

As in Brazilian aquaculture, in Pará predominates continental fish farming, practiced in several municipalities of Pará, with diversified cultivation modalities, ranging from subsistence fish farming to large producers with production turned to the interstate market (DE-CARVALHO et al., 2013). Ostrensky and Boerger (1998) show that fish farming in Brazil is developed by small and large producers, emphasizing that fish production in small structures is rarely the main economic activity of the property, becoming a complementary activity to income and consumption familiar.

Baccarin et al. (2009) point out that fish farming stands out as an alternative to be tried in family farming due to the high productivity per area, but also because it has as a final product a protein food of high nutritional value. However, it is observed that fish farming in the municipalities of Pará is a secondary activity, used more myth for subsistence, that is, as insertion of animal protein in the family diet and as a supplementary income activity, when selling surplus farmed fish and / or use it as a bargaining chip in the form of barter.

Research by De-Carvalho et al. (2013) on aquaculture in the Guamá microregion/PA shows that in the enterprises visited (23.4%) fish farming was the only and main activity and (56.3%) as sporadic activity. Thus, the low rate of fish farming as a main income activity may be related to the lack of organization of the activity, especially of a collective culture, such as production in associations or cooperatives of aquaculture farmers to boost this activity. Results of the research conducted by Silva et al. (2012) on the characterization of pirarucu cultivation in the municipality of Conceição do Araguaia in the state of Pará, revealed that (70%) of fish farmers showed interest in participating in an association or cooperative, as a means of reduce costs in the activity.

Thus, there is a need to strengthen this production chain based on a set of interactive components, including production systems, suppliers of inputs and services, but also industrial resources for processing and transformation, as well as distribution agents. and marketing, aiming to supply the consumer with certain products or by-products (CASTRO, 2001). For this, it is necessary to understand the production chain, from the following dimensions: (1) visualize the chain in its entirety; (2) identify weaknesses and potentialities; (3) motivate the establishment of technical cooperation; (4) identify bottlenecks and missing elements; and (5) certify the quality conditioning factors for the insertion of this production in the market.

Given these assumptions, we highlight the high cost for the acquisition of inputs for fish nutrition, in this sense, the feed becomes a problem, especially for the small producer (LEE; SARPEDONTI, 2008), constituting as a biggest obstacles in relation to the fish production chain in Pará. Another problem stems from the small consumer market, given the lack of technical

information and government agencies responsible for monitoring and supervising this activity, another difficulty to be faced, as observed by Silva et al. (2010) in the southeast of Pará State.

In this sense, in order to contribute information to leverage this activity in the state, Brabo et al. (2013) have been working to disseminate the economic viability of net pond fish farming in the Tucuruí / PA hydroelectric power plant reservoir, the results obtained This study indicates that the fish farming production chain in Pará needs to be better structured to meet the expectation of a public policy to increase fish production in an organized manner, an emerging activity, but with the potential to generate work and income for agriculture. a public policy strategy capable of generating gains for sustainable rural territorial development.

## Conclusion

In this article, we sought to reflect on the importance of public policies to enhance effective actions in aquaculture, especially with fish production, as has been happening in northeast paraense, aiming to contribute to solve hunger problems associated with the generation of work and income, particularly in regions where water resources favoring sustainable development and improving the quality of life of local populations occur.

Thus, the study of the dynamics related to the production of fish under the principles and practices of the solidarity economy, of cooperation, prioritized as an object of broad and lasting public policy is an essential condition for strategic management processes of sustainable rural development.

The path taken and the topics briefly approached aim to show that it is possible to advance in the construction of public policies capable of building strategies to overcome social vulnerabilities and contribute to the implementation of rural development mechanisms promoting the leverage of aquaculture in northeast paraense.

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#### **Artigo(s) relacionado(s)**

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