



ORIGINAL ARTICLE

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Implication of the Agro-extractive Settlement Project (PAE) in the participatory governance of common natural resources in Amazon floodplain

Implicação do Projeto de Assentamento Agroextrativista (PAE) na governança participativa dos recursos comuns na várzea Amazônica

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PALAVRAS-CHAVE

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ABSTRACT: Despite covering only 2% of the Amazon basin, floodplains are rich environments with fertile soils sustaining abundant natural resources. Throughout the history of human occupation, floodplains have played a central role in the economy of the Amazon region. Despite the importance of the region, land tenure in these areas has always been ambiguous. Since 2006, the government created 15 Agro-extractive Settlement Projects (PAE) in Lower Amazon floodplains to regulate land ownership and to encourage the process of community participation in the management of natural resources. The main objective of this paper is to analyze the impact brought about by the creation of PAE in the governance of common natural resources and land regulation in the region. Data for this study were obtained through field visits, literature review, focus groups and interviews with 29 community leaders. The study area is located in three Agro-extractive Settlement Projects in the Lower Amazon floodplain of the municipality of Santarém. Among the PAE's communities analysed, 86% had some sort of community fishing agreements for internal control of the use of fishery resources in lake communities. In the interviews with community leaders, 82% of interviewees expressed dissatisfaction towards the process of PAE implementation in the region. In relation to the Utility Plan (UP), 33% interviewees believe that the rules hinder the development of floodplains, and yet, 77% think that the UP is necessary for proper functioning of the settlement. The main problems of land regulation pointed out in the study include the lack of dialogue between the community and governmental entities such as INCRA, the non-delivery of land titles and the lack of definition regarding land occupation by cattle rangers in the region.

RESUMO: A várzea, embora ocupe 2% da Bacia Amazônica, é um ambiente rico, com solos férteis e que mantém abundantes recursos naturais. Ao longo da história da ocupação humana, a várzea desempenhou um papel central na economia da Região Amazônica. Apesar da importância da região, a posse de terras de várzea sempre foi ambígua. Desde 2006, o governo criou vários Projetos de Assentamento Agroextrativista (PAEs) na região de várzeas do Baixo Amazonas para regular a posse da terra e para incentivar o processo de participação comunitária na gestão dos recursos naturais. O objetivo principal deste trabalho é analisar o impacto trazido pela criação do PAE no ordenamento territorial e na gestão de recursos naturais de várzea. Os dados foram obtidos por meio de visita ao campo, de revisão da literatura, de grupos focais e de entrevistas com 29 lideranças comunitárias. A área de estudo situa-se em três PAEs de várzea do Baixo Amazonas, nos municípios de Santarém. Das comunidades de PAEs analisadas, 86% tinham algum tipo de acordo

comunitário de pesca que regula, internamente, o uso dos recursos de pesca nos lagos das comunidades. Das entrevistas com os líderes comunitários na região, 82% demonstraram algum tipo de insatisfação com o processo da implementação do PAE na região. Em relação do plano de utilidade (PU) que define as normas do PAE, 33% consideraram que as normas dificultavam o desenvolvimento de várzea, mas 77% dos entrevistados acreditavam que o PU era necessário para o bom funcionamento do assentamento. Os maiores problemas de ordenamento da região apontados pelo estudo incluíam a falta de diálogo entre a comunidade e as entidades governamentais, como o INCRA, responsável pela implantação do PAE, a não entrega dos títulos de terra e a falta de definição em relação à ocupação da terra pelos criadores dos gados na região.

1 Introduction

The Amazon region is important in the world geopolitical context because of its large ecological and economic resources. More than 60 percent of this area belong to Brazil. According to geographer Becker (2009, p. 105), this region is extremely important, both from the point of view of sovereignty and resource management. This region is the source of many institution of natural resource governance, especially in aquatic resources (Castro, 2002; McGrath et al., 2008; Thomas, 2014).

The governance of natural resources in the Amazon is complex because of the diversity of resources system and the social actors who use them. Since the writing about the common resource theory by Hardin in his “Tragedy of Commons” (1968), there were several other theories that attempt to address the issue of governance of common resources (Olson, 1986, 1999; Ostrom, 1990, 2000, 2009; Kooiman, 2003; Jentoft, 2007). It is difficult to know which theory is appropriate to understand the analysis of management of natural resources of Amazon.

In recent years, there have been some changes in the structure of social system in Amazon, which have affected the social organizations present in this region. The traditional communities are being more empowered through their associations that seek to resist the large economic projects. The State introduce these economic projects like large mining and hydroelectric dam without regular participation of the communities. Such resistance is present, especially in indigenous, riparian and African decedent populations. These groups use social network to organize their struggle and to spread their ideology throughout Brazil. At the same time, aiming at settling the conflicts between the various interest groups present in the Amazon, the State has sought to order regulation of land as part of its new agricultural and environmental policy in Brazil. The areas of floodplains come under this policy of the government.

The objective of this article to analyse the implications of the creation of agro-extractive settlement project (PAE) on governance of the common resource in the lower Amazon Floodplain, in the State of Pará.

2 Methodology

The research data were collected from Janeiro 2012 to December 2013 by field studies and literature reviews, which included the analysis of the documents from the electronic pages of State bodies and non-State entities related to the object of research. The study site is located in three Agro-extractive Settlement Projects (PAE), Aritapera, Urucurituba and Tapara.

All these PAEs are in floodplains of the lower Amazon River, in the municipality of Santarem, State of Para in Brazil.

The preliminary analyses of the data made available by Institute of Amazon Research (IPAM) and publications of researchers Castro (2002) and McGrath et al. (1996) helped to choose these areas for study. Preliminary studies indicated that all the three PAEs had multiple levels of internal organization. The communities of these three PAEs had their own fishing agreements that regulated internally the use of fisheries resources in their areas. In addition, these communities showed a greater participation in the management of fisheries resources in the region through institutions such as Fishermen’s Council and Fishermen’s Colony (*Colônia de Pesca*).

Most of the communities of the Amazon are historically similar in their basic structure, but they differ in their strategy of economic survival. The communities of Lower Floodplain of Amazon have a history of institutional organization in their struggle for economic survival (McGrath et al., 1996; Almeida et al., 2009)

The study used participatory observation methodology to analyse the expansion and construction of new capacities for the management of natural resources in the communities of floodplains of the lower Amazon. During the fieldwork, the researcher participated meetings and other activities held in the community. The social construction of knowledge and interaction presupposes cooperation between various actors. For this purpose, the methodology included interviews and focus group meetings in the communities.

The focus groups were important to know the perception of community leaders about implementation of PAE and the changes that are happening from this process. The focus groups informants were consisted of community leaders, identified during the initial survey and observation in the PAEs. 29 leaders from three PAEs were interviewed during the research. The focus group allowed verifying the participation of leaders on issues related to the implementation and working of PAEs.

3 Agro-extractive Settlement Project in Amazon Floodplain

The government created Agro-extractive Settlement Project (PAE) to regulate land ownership and encourage community participation in the management of natural resources of the floodplain (INCRA, 1996). By doing this, the State has incorporated the existing community based resource management system in to the new institutional model of PAE. It is a special mode of settlement, where the activities to be developed based on

extraction of natural resources, sustainability and participation of stakeholders (INCRA, 1996).

The proposal of the PAE includes that the Council elected from the community does the administration of the settlement. In accordance with the land-use model, the title of the property belongs to the State and the community would receive "Concession of Real Use" which guarantees community possession of the area.

The floodplain, although occupy 2% of the Amazon basin, is a rich environment, with fertile soils and water resources. Throughout the history of human occupation, the floodplain played a central role in the economy of the region as a source of food, employment and environmental services to humanity (Falesi & Silva, 1999; Ribeiro, 2007; Junk & Furch, 1993; Junk, 2000).

In spite of the important of the Amazon floodplain, the land situation of these areas has always been ambiguous (Benatti, 2005, 2009; Treccani, 2005). On one side, the floodplain has long been considered as State property and on the other hand, this area has been divided into individual possessions occupied by families. In addition, as families trade the floodplain lands on informal real estate market. In recent times, individuals occupy most part of floodplain land in an unregulated manner. They explore both natural common forest and aquatic resources present these areas. The speculation of land has been one of the big motivating forces of appropriation of land by private property owners in this region. This has led to many conflicts between these occupants and traditional populations who live in floodplains for centuries.

In the Amazon floodplain, fishermen, farmers, traditional communities and other users share the common resources like forests, pastures, rivers, estuaries, ponds, lagoons and lakes. These users depend on the cited resources for their economic survival. However, there are conflicts between various stakeholders about the access to these common resources.

In the decades of 1970, there was an increase in the exploitation of fisheries resources in the floodplain. The lack of demand for jute, which maintained the economy of the region for decades, caused a large number of migration of people from agricultural sector to fisheries sector (Santos, 2005). In addition, there was also an increased demand for fish to meet the food necessity of population in the growing cities of the region. This led to an over exploitation of fisheries resources by commercial vessels who invades the area traditionally used by the local communities. The pressure on fisheries resources led to more conflicts between the traditional communities, who depend on fish for their livelihood and the commercial fishermen, who depend these resources for their economic activity.

The local communities threatened by the new situation, initiated organizing itself to protect their fishing areas. With little presence of the State authority, the Catholic Church occupied an important role in developing awareness of the population about social organization in floodplain (McGrath et al., 1996; Castro & McGrath, 2003; Santos, 2005). This was fundamental in the community organization of fishermen in the region.

From 1980s, the communities in the floodplain started to elaborate community based fishing accord with access rules and management of Lakes in the region. However, the government had the exclusivity of regulating fishing

activities in Brazil. It is only in 2000, the government started recognizing the community based fishing agreements initiatives. In accordance with McGrath et al. (2011, p. 123), the process of participation in the governance of common resources in the region covered three dimensions of possession and use of floodplain. The Community fishing agreement gave the basis for the aquatic system management; and agreement on grazing cattle gave basis for terrestrial habitat management. Finally, the regulation of floodplain land paved the way for individual and community rights of property on floodplain land and its resources.

Since 2006, the Government started creating PAEs in the floodplains of the lower Amazon, where the communities had their informal institutions for the governance of natural resource, especially of fish stocks (Castro, 2002; Castro & McGrath, 2003; McGrath et al., 1996; Ruffino, 2005; Thomas, 2014). 20 years of experience in social learning of the communities led them to construct the informal institutions for governance of aquatic resources, known as fisheries accords.

The attempt of the regulations of the land of low floodplain Amazon is a recent phenomenon. From the year 2000, with the regulation of Community fisheries agreements, the Government began checking the possibilities of regulation of floodplain lands through the exclusive use of resources (fisheries, pasture and forest) for communities (Castro, 2013).

The *Provárzea* project, linked to Brazilian Institute of Monitoring Natural Resources - IBAMA who worked in floodplain during this period, sent a series of proposals to government for regulation of the lands in the region. One of the proposals was to transfer legal competence for the regularization of floodplain to the National Institute of Colonization and Agrarian Reform - INCRA (Santos, 2005). This process had support of both the community and social movement in floodplain. However, the State paralysed the process due to political interference in the region.

From 2005, community organizations, Non-governmental Organizations - NGOs and Government resumed the discussions on the regulation of floodplain. After long debates and pressure from community organizations, the Federal Properties Management Office - SPU initiated the process of land regulation of floodplain and decided that the land of floodplain would come under Agro-extractive Settlement Project - PAE.

Agro-extractive settlement project is a mode of settlement for the traditional populations to explore extractive wealth, through economically viable and ecologically sustainable activities, introducing the environmental dimension to agro-extractive activities (Brasil, 1996). Such areas are of public domain administrate by the local population settled there.

The Ordinance No. 284, of October 14 (Brasil, 2005), of SPU allowed the granting of collective use authorization of these areas to the community. An agreement of technical cooperation between SPU and INCRA allowed the transference of regulatory competency of floodplain to INCRA.

The implementation of PAE is a new experience of territorial organization and participative management of natural resource in this region. PAE involves not just a community, but also the entire lakes system and both small and large properties. However, the project considers only the inhabitants of small proprieties as beneficiaries for settlement (McGrath et al.,

2011). As per the project, the government will regularize the traditional community with collective ownership of land. The managing council of the PAE will be responsible for the regularization of individual possession of land for housing.

4 Result and Discussion

Until 2008, there were 41 PAEs demarcated in eight municipalities of the Lower Amazon floodplain with approximately 740 thousand hectares of land occupied by 4.444 families (IPAM; INCRA, 2010). Despite the implementation of PAEs was a local demand of the population, the process became something that came from top to bottom and highly technocratic (Castro, 2013). According to the same author, incomplete information and lack of transparency of the government organs installed mistrust in the population of floodplain. This has led that both the community and the ranchers to oppose the implementation process of PAE.

With the process of creation of PAEs ranchers felt threatened their right to remain in the floodplain. They consider that the creation of PAE as a strategy of INCRA to remove them from the floodplain and they do not believe that the implementation of PAE as true process of regularization of land of floodplain (McGrath et al., 2011; RUFFINO, 2005, 2011). Despite the political mobilization of the ranchers, the process of creation of PAEs is consolidating in the region.

The interviews with the leaders of the communities of PAEs, Uricurituba, Aritapera and Aritapera in the municipalities of Santarem clearly demonstrate the dissatisfaction of the population in the process of implementation of PAE in Floodplain. Among 29 leaders interviewed in these PAEs, about 86% of them participated in one or other discussion on the implementation of PAEs. Majority of the leaders who participated in the meetings were women (59%) who represented their community.

The State considered the creation of PAEs as a symbol of agrarian reform in the region of floodplain. However, today these settlements pass through many problems. The biggest problem pointed out by 92% of respondents in these PAEs was the lack of support by the State authority. By the regulation of PAE, monitoring is the responsibility of the communities along with INCRA. However, the community has no police power to monitor the PAEs. According to community leaders, monitoring authorities as IBAMA often do not attend the request made by them and the community has no financial or personal resources to do monitoring of PAEs. In this sense, as communities feel abandoned by State authorities.

Another problem raised by respondents (72%) was the lack of concrete actions by the Government within the PAEs. The State had made numerous promises of support such as financial and technical assistance for agriculture, creation of small animals and aquaculture. However, going through six years of existence of PAEs in the region, there very few concrete actions realized by the State in the floodplain. Besides the initial financial support and the construction of 34 houses, there were no other concrete action done in these areas. The Settlement Project has been stagnated for more than six years. For the community leaders, this stagnation was due to the lack of interest and the exaggerated bureaucracy of State.

For 55%, the implementation of PAE reduced the autonomy of the community to make their own decisions. All the decisions made by the Council of PAE are subject to approval of the INCRA.

Despite the broken promises and the difficulties listed by settlers, the clear majority, 76% of the leaders in t in the PAEs studied responded in favour of the Settlement Project. In their view, the main problem of the PAE is the lack of support and the bureaucracy of government agencies responsible for the implementation of PAEs. For these leaders, the proposals of PAE are beneficial for the sustainability of the region but in the implementation process, the State has failed to meet the demands of the community.

The INCRA initiated the process of PAE in the floodplain from the demand of the local population who lived there for years. For the communities of floodplain, while having their land regularized, they could manage its natural resources, protect them from invaders and would have the possibility of access to government benefits. The whole process had support of social movements and NGOs operating in the area. However, on the other hand, the interest of the Government was showing number of families settled by agrarian reforms in Brazil.

The numbers of settlements in the Amazon region enabled the government to increase in national indexes of families settled by agrarian reform policies in Brazil. The study done by Mattei (2012) shows that until 2012, the northern region leads with 42% of the total number of settlers. According to this Mattei (2012, p. 113), “[...] the very process of agrarian regularization in the region might be influencing the total number, considering that the simple regularization of land tenure is usually computed as agrarian reform”. In fact, there was no settlement of new families in the floodplain region, but only regularization of the families who had been already living there.

We can interpret the creation of PAEs in floodplain as a process of institutional bricolage based on the fisheries agreements. Cleaver (2002, p. 28) considers that the introduction of new bureaucratic institutions or organizational arrangements is not necessarily robust and durable, even automatically ensures benefits for collective action and optimizing use of resources. Research shows that, in the case of the floodplain, the PAEs were unable to recognize the depth of socio-cultural insertion and cooperative relations in the decision-making process. The Council of the PAE lacks decision-making autonomy and all the decisions taken by the governing Council are necessarily be recognized by INCRA.

For sustainability of resources of the floodplain it is necessary to create an interactive governance (Jentoft, 2007; Kooiman, 2003) where prevail negotiations between stakeholders to resolve conflicts, strengthen consensus and build trust. However, the study shows that, in the case of the floodplain, the implementation of PAEs, besides not facilitating this interaction hindered the construction of mutual trust. The absence of cooperation and dialogue between stakeholders were evident during the study and it might seriously compromise the goal of achieving an interactive governance of natural common resources of floodplain.

One of the objective of the PAEs was to offer minimum infrastructure for the communities. In the social field, there

would be investments in health, education and leisure. In production, would be built roads for transportation of agricultural products, storage structures and there would be incentives for agro-industries and handicrafts (INCRA, 1996, p. 14). However, after six years of creation of PAE, there were no new infrastructure added to these communities. In all the three PAEs, lack health facilities to attend the demands of the communities. In relation to education, there was no new investment was made after the implementation of PAEs. Leisure is limited to football matches in the communities. In addition, there were no investment in any initiative of agroindustry to benefit the traditional communities.

According to Mitraud (2013, p. 368) the introduction of new structure by the settlement project caused the organizational and financial weakening of the main social actor in the management of natural resources – floodplain residents and dismantled its main management tool – the fishing accords. By incorporating the fisheries agreements in the Utility Plan of PAEs, the State contributed to undermine the community management process of resources built by the communities of the floodplain during decades of experience.

The technocratic development and natural resources management practices from top to bottom are widely contested by traditional communities (Jentoft, 2005; Kooiman, 2003). These communities do not accept passively the coercion from the State to adopt unpopular conservation and management programmes, especially when resources like fish, forests, and wildlife are intrinsic to their livelihood. In these cases, the coercive State conservation and management generally do not bring the expected results. Many studies indicate that poorly prepared project, inefficient implementation and corrupt State organizations, without the participation of stakeholder, lead to failure of State-centred governance of resources (Agrawal, 2002; Armitage, 2005; Sultana, 2009).

Participation is an integral part of the interactive governance and sustainable development. This participation is the basis for a decentralized decision making process. This requires the direct intervention of the various social actors in the production of knowledge, planning, execution, control, evaluation and dimensioning the actions from local demands (Ruffino, 2005). The study pointed out that the involvement of stakeholders was limited only in the initial discussion of PAEs.

5 Conclusion

Amazon floodplain region has a real need for territorial ordering as a way to curb the degradation of natural resources and ensure the right of the people who live there for years in extractive activities. At the same time, it is essential to choose appropriate models of settlements on floodplain that may contribute with the participation of users in the management of resources and their way of life. The current model of the PAE failed to promoting sustainability of resources, besides not guaranteeing autonomy of the communities. It is because the State began to enforce its decisions unilaterally to the communities. Therefore, the implementation of settlements projects aiming to regularize the Amazonian lands without the effective participation of users, neither can improve the

sustainability of natural resources of the floodplain, nor can advance in the process of empowerment of communities.

The study shows that the success of the floodplain regulations by State intervention depends on the effective participation of all the stakeholders involved in the process. The forced implementation of PAE can seriously affect the governance of the common resources of floodplain. The exclusion of certain social actors as ranchers and big property owners may lead to more conflicts in the region and can affect the sustainable use of natural resources in the region.

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