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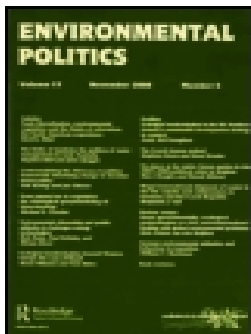
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Implementing community-based forest management in the Brazilian Amazon Rainforest: a strategic action fields perspective

Roberta Amaral de Andrade , Mario Sacomano Neto 
and Silvio Eduardo Alvarez Candido 

Department of Production Engineering (DEP), Federal University of São Carlos (UFSCar), São Carlos, SP, Brazil


ABSTRACT

We assess the conditions under which forest-dependent groups in the Brazilian Amazon Rainforest may overcome inequalities in the legal access to forest resources. Through the development of contrasting case studies, we address attempts made by two community-based associations that represent those groups to legalize their timber production. We explore the dominance and mobilization of resources and draw on the Strategic Action Fields perspective to organize and systematically compare the case studies. Results reveal that to overcome existing barriers to legalization, communities need to create a social movement dynamic to seize opportunities caused by the exogenous interferences in local social orders. Skilled social actors need to mobilize powerful supporters to accumulate resource endowments necessary to put forward the legalization process. These results are particularly important considering the enormous environmental importance of the Brazilian Amazon Rainforest, the increase in deforestation rates, and the precarious socio-economic situation of forest-dependent peoples.

KEYWORDS Collective action; strategic action fields; timber production; community-based forest management; Amazon Rainforest

1. Introduction

Forest management (FM) arose in Europe in the eighteenth century as a set of practices for increasing productivity and profitability from the economic use of forest resources (De Jong *et al.* 2012, Krott *et al.* 2014). In recent decades, environmental concerns gained strength and favored FM, given that it allows the sustainable use of forest resources. Internationally, Sustainable Forest Management (SFM) has been encouraged through the concept of a “global forest regime” (Humphreys 1999, Rayner *et al.* 2010), adopted at the United Nations Conference on Environment and Development (UNCED). In the Brazilian context, SFM converged with legal rules,

CONTACT Mario Sacomano Neto  sacomanoneto@gmail.com

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comprising relatively sophisticated environmental legislation accounting for the conservation of tropical forests (Hochstetler and Keck 2007). Hence, SFM became a condition for legal logging in primary forest areas, challenging conventional logging practices, which are widespread despite their unsustainability and illegality.

The adjustment of FM rules and procedures to specificities related to the forest-dependent people's livelihoods generated the concept of Community-based Forest Management (CFM) (Pagdee *et al.* 2006, Pulhin and Dressler 2009, Lestari *et al.* 2015). CFM aims to conciliate income generation and forest conservation through the planned and rational use of forest resources by forest-dependent people (Amaral Neto *et al.* 2013; Pagdee *et al.* 2006). By adopting CFM, they can formally benefit from timber production.

Despite the adjustment of its rules and procedures, the premises of FM for timber production comprises barriers that tend to benefit the implementation of SFM by companies, making it difficult for forest-dependent people to adopt CFM (Iversen *et al.* 2006, Pacheco 2012). Informality and non-compliance with the regulations impede or hinder their access to markets, exposing them to criminalization by the state (Kaimowitz 2003, Colchester *et al.* 2006, Beckert and Wehinger 2012), and restricting their access to public policies and other forms of support (Mejia *et al.* 2015).

We draw on the Strategic Action Fields (SAFs) approach to understand the complexity that permeates environmental politics. The SAFs is an influential contemporary sociological perspective that accounts for the dynamic of stability and change in social arenas. It synthesizes insights from contemporary sociological approaches, including the sociology of Bourdieu (Bourdieu and Wacquant 1992), symbolic interactionism (Goffman 1974), institutionalism in organizational analysis (Powell and DiMaggio 1991), and social movement theory (McAdam *et al.* 2003). It is particularly influential in economic and organizational sociologies, and scholars have applied it to the cultural and political aspects underlying economic and organizational dynamics (Fligstein 2001, Smelser and Swedberg 2010).

The use of this approach to analyze the community-based associations' initiatives to legalize their timber production may help to overcome shortcomings of other studies addressing the issue (Amaral and Amaral Neto 2000, Kanel and Kandel 2004, Drigo *et al.* 2010, Hajjar *et al.* 2011, Waldhoff and Vidal 2015). These assessments draw on institutionalist or rationalistic views, which dominate forest policy analysis (Arts 2012, De Jong *et al.* 2012). Critics have argued that they emphasize stability over change (Babili *et al.* 2015, Fréchette and Lewis 2011, Husain 2009, Sotirov and Memmler 2012, Wong 2013) and they do not take into consideration the interdependencies of multiple levels of analysis (Agrawal 2001, Pagdee *et al.* 2006).

Our assessment addresses the conditions under which forest-dependent people in the Brazilian Amazon Rainforest may overcome inequalities in the

legal access to forest resources. We compare initiatives led by community-based associations that represent forest-based groups, formed to seek the approval of Sustainable Forest Management Plans (SFMPs), the legal document required for implementing CFM for timber production. We compare the dominance and resource mobilization related to land tenure, technical knowledge, economic capital, and the organizational capacity of the associations, drawing on the Strategic Action Fields perspective (Fligstein and McAdam 2012).

The formalization of timber production plans is important because informality may foster the community-based associations' involvement within conventional logging networks that lead to deforestation and forest degradation, and tend to trap them in poverty. Therefore, using the SAFs perspective, we respond to calls from authors to incorporate historical, cultural and political elements into forest policy studies (Babili *et al.* 2015) and to address 'the constitutional rules that condition the distribution of power and defining frameworks for collective action' in this area (Frechette and Lewis 2011, p. 583).

Our findings also offer lessons to environmental politics in general and specifically for developing countries, regarding the circumstances that enable environmental injustices to be addressed. We demonstrate that to overcome existing barriers to legalization, forest-dependent people need to create a social movement dynamic to seize opportunities opened by the exogenous interferences in local social orders. On the one hand, skilled social actors need to succeed in coordinating other actors with different views and identities, temporarily overcoming conflicts, and forming coalitions to activate collective action. On the other hand, forest-dependent people need to converge with actors from proximate fields and mobilize powerful supporters to accumulate the resource endowments necessary to overcome the barriers to legalization. Unveiling these conditions is particularly important considering the enormous environmental importance of the Brazilian Amazon Rainforest, the increase in deforestation rates, and the precarious socio-economic situation of forest-dependent people in this region.

2. Theoretical perspective: strategic action fields

The Strategic Action Fields (SAFs) approach (Fligstein and McAdam 2012) assumes that in modern and differentiated societies, socioeconomic action takes place in circumscribed social arenas that are historical, cultural, and political constructions (Fligstein and McAdam 2012). Fields are the building blocks of complex societies, in which individual and collective actors interact based on shared understandings about: who belongs to the field, what are its purposes, who possesses more or less power and why, and what are the rules and legitimate forms of action (Fligstein and McAdam 2012, p. 9). Moreover,

fields are spaces of organized struggles, involving simultaneous dispute and cooperation, which characterizes actors as incumbents – those who benefit from the cultural order and rules of the field, and challengers – those who possess poor cultural endowments and influence (Fligstein and McAdam 2012).

2.1. Stability and change of fields

SAFs may be in three ideal type states, which vary according to the stability of identities and meanings structuring the interplay of actors. In emergent fields, social order is yet to be created. In stable fields, social order is well defined, with the prevalence of the incumbent's view organizing competition and cooperation. In this case, internal governance structures ensure the routine stability and order of the field (Fligstein and McAdam 2012). Finally, in a state of crisis, social order succumbs, creating instability, and facilitating change. A key difference between the SAFs approach and other field theories is its focus on the interconnection of fields (Candido *et al.* 2017a, 2017b). Fligstein and McAdam (2012) suggest that a field is always embedded in other fields, on which its dynamics depend. Relevant nearby fields may contain or be contained in the assessed field, as a “Russian doll”, or be adjacent to it. Fields are also subject to power relations, and higher status fields tend to disproportionately influence others (Van Gestel and Hillebrand 2011, Fligstein and McAdam 2012, Candido *et al.* 2021).

Instability and change in powerful fields tend to reverberate to the ones nearby, generating exogenous shocks (Fligstein and McAdam 2012), macro-economic changes that affect relations among actors in a field (Mazza and Pedersen 2004). External interference leads to more uncertainties and a sense of opportunity or threat to field actors. Incumbents will tend to behave conservatively, trying to restore the order through which they reproduce their positions. Challengers will tend to act strategically to mobilize resources to fashion alternative conceptions to improve their positions (Fligstein and McAdam 2012).

2.2. Fields and resource dynamics

In contemporary societies, each action sphere involves a set of resources that individual or group actors use dynamically to act. The amount and composition of those resources shape their position in the field, bringing about advantages (Bourdieu and Wacquant 1992, Fligstein and McAdam 2012), facilitating resource accumulation and increasing local inequalities (Bourdieu and Wacquant 1992).

The scope of a field struggles and rules defines legitimate resources, according to what its actors value. Fligstein and McAdam (2012) underline

that identifying legitimate field resources is an empirical and difficult question. Some forms of resources that operate in SAFs may be, for example, the size of a group; its connections with government authorities; its influence on laws, alliances, and knowledge; and its various forms of capital.

Bourdieu's theory is useful as a reference to the basic types of resources recognized in the SAF approach. It includes economic, cultural, social, and symbolic resources, accumulated in the form of capital (Bourdieu 1986, Bourdieu and Wacquant 1992). Economic capital corresponds to material patrimony, measured by money and physical goods (diversified savings and properties). Cultural capital is a set of competencies and forms of knowledge valued in specific social spaces. Social capital is the social connections with potentially reciprocal obligations, represented through a network, which can activate and function as a resource in specific contexts. Finally, symbolic capital can be associated with other forms of resources and relates to status and value attributed to a field actor by other field members or society in general. Field actors may convert certain forms of capital into others within a process that may imply losses (Bourdieu and Wacquant 1992).

2.3. Social skill and collective action

The SAFs approach can be differentiated from other field theories, such as the one developed by Bourdieu (Bourdieu and Wacquant 1992) and by sociological institutionalists (Powell and DiMaggio 1991), mainly in its micro-foundations (Candido *et al.* 2017a), based on the idea of social skills (Fligstein 2001), the ability some individuals have to enable collective action (Fligstein and McAdam 2012). Based on symbolic interactionism (Goffman 1974), SAF regards the collaborative symbolic activity as the foundation of human sociability and the creation of social orders as stemming from our capacity to create shared meanings and identities through languages (Fligstein and McAdam 2012). This process enables the creation of sophisticated forms of cooperation and of relatively stable social worlds, which function as an 'existential refuge' (Fligstein and McAdam 2012). Therefore, instead of simply a space of conflict and domination, the SAF is also a fundamental unit of collective action in complex societies.

Skilled social actors are capable of understanding others' perspectives and act empathically to induce cooperation and social organization (Fligstein and McAdam 2012). They may belong to incumbents or challenger groups, and the dominance over resources enhance or limit their action. Their action is especially relevant in unsettled times, in the mobilization of actors and the creation and acceptance of shared meanings, capable of settling a new social dynamic (Sacomano Neto *et al.* 2016).

3. Methods

We developed a comparative and qualitative analysis based on two exploratory case studies (Yin 2001, Voss 2009), exploring the subjective and multiple realities of the processes under analysis using qualitative techniques. We assumed reality both as a ‘contextual information field’ and as a ‘symbolic discourse field’ (Morgan and Smircich 1980, Mariz *et al.* 2005), jointly composing a macro and microanalysis. For the former, we undertook a context analysis, relating CFM history to timber production in the municipality of Lábrea, located in the Southern region of the Amazonas state, in the Brazilian Amazon Rainforest. For the latter, we revealed the subjective dimension of the action, establishing a constant reflexive process (Bourdieu and Wacquant 1992), and applying theoretical concepts and techniques recursively.

3.1. Case study design

The units of analysis were two community-based associations, that represent forest-dependent groups (riverine communities and settlers), participating in the ‘Timber Working Group’ (GT Madeira), a group formed by several organizations and established by the Federal Government to accelerate the legalization of timber production in Lábrea. Two other associations – the Small-scale Furniture Manufacturers Association of Lábrea and the Small-scale Sawmills Association of Lábrea – also participated in the GT Madeira, building a partnership among themselves to lead one of the three initiatives, a joint effort to seek the approval of SFMP in their own areas, in order to supply their businesses with legalized wood. The representative association of the Extractive Reserve of the Ituxi River (RESEX Ituxi) riverine communities led the second initiative; and the representative association of the settlers of the Settlement Project (PA) Pacia led the third one. These four associations were the leading actors composing the three initiatives formed to legalize timber production within GT Madeira, through which they articulated their processes with other relevant actors (Figure 1).

We selected the RESEX Ituxi’s and PA Pacia’s initiatives to develop the case studies as they were both led by community-based associations that represented forest-dependent groups, and had a similar position in the productive chain as timber producers, although presenting contrasting outcomes, fostering a comparative analysis. The initiative led by the riverine association was the successful case, i.e., that had an SFMP approved, and the settlers’ association led the unsuccessful case, and we named them the ‘riverine case’ and the ‘settlers’ case’, respectively.

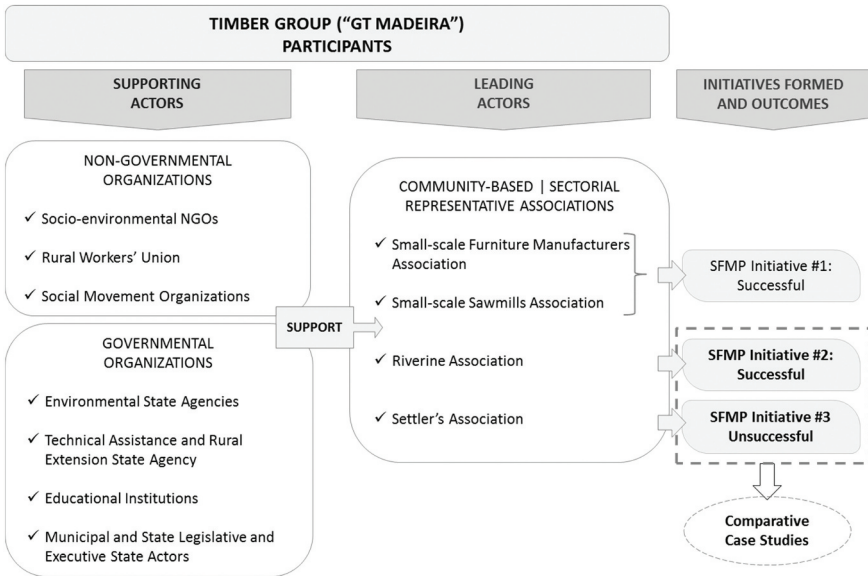


Figure 1. GT Madeira participants, SFMP initiatives, and selected study cases.

3.2. Data collection and analysis

We used three complementary techniques: participant observation, documental analysis, and semi-structured interviews. Participant observation first occurred between 2010 and 2014, when we were collaborators in an organization participating in GT Madeira. Formerly, between 2015 and 2016, we conducted interviews and participated in local events, mainly in Lábrea and for approximately thirty days. Through field notes, we recorded impressions, descriptions and observations, further complemented with a bibliography for data triangulation (Yin 2001).

The document analysis supported data collection and fact-checking for our interpretation. In total, we conducted 26 semi-structured interviews, constituting our main source of data. With one exception, we performed all interviews in person, in the municipalities of Lábrea, Humaitá and Manaus, state of Amazonas; Belém, state of Pará; Porto Velho, State of Rondônia; and Brasília, Federal District. The initial selection of interviewees included representatives from organizations participating in GT Madeira, stratified in “governmental organizations”, “non-governmental organizations” (NGOs), and “community-based/sectorial organizations”. We adjusted the respondents’ selection according to indications made by the initial respondents, limiting interviews by the saturation point (Bertaux 1980). The interview script included the organization’s history and its relation with timber production, its relationship with other actors and relevant

events regarding the SFMP approval process. To organize data related to the context, we structured a narrative in chronological order. In each case study, we performed a resource analysis as an initial comparison parameter.

4. Results

In the following sections, we analyze the two cases comparatively. Local associations developed their attempts to legalize logging by approving the SFMP in the context of the crisis in conventional and informal logging practices, as detailed below.

4.1. *The context and its multiple fields*

The municipality of Lábrea is located in the Southern region of the Amazonas state, in the Brazilian Amazon Rainforest. Its local economy is based on the timber industry, an activity that began in the 1970s. At the time, foreign companies led the production of round wood commercialized mainly to other regions of Brazil. In the 1990s, this system collapsed due to several factors, including the expansion of environmental restrictions. This productive configuration became increasingly restricted to the south of the municipality, where nearby roads connected to larger consumer markets. In the north, where the seat of the municipality is located, by the Purus river, the growing population increased the demand for timber, enabling the installation of several small-scale sawmills, owned by the local economic and political elites (Vianna *et al.* 2014). Our case studies are initiatives articulated within the GT Madeira and led by the representative association of PA Pacia's settlers, and the representative association of RESEX Ituxi's riverine communities: the settlers' and the riverine case, respectively (Table 1).

Riverine communities historically supplied local small-scale sawmills with round wood, and logging became an important activity, complementing their income generation together with fishing, agriculture, and the extraction of non-timber forest products. This scenario remained stable until changes in higher-order fields. Impacts in the agrarian field generated by the re-democratization of Brazil caused the initial local changes. During the military regime, which lasted until circa 1985, a 'technical modernization view' strongly dominated this field and favored land concentration (Delgado 2005). The process of re-democratization enabled political opportunities for social movements for 'agrarian reform', which were relatively successful in influencing the Constitution of 1988 and further policy implemented with the involvement of the National Institute of Colonization and Agrarian Reform (INCRA), the state agency that administers the land reform issues, created in the 1970's during the Brazilian military dictatorship. This

Table 1. Information about the case studies.

| | Riverine case | Settlers' case |
|-------------------------------|---|--|
| Land category | Extractive Reserve (RESEX) | 'Conventional' Settlement Project (PA) |
| Year of creation | 2008 | 1999 |
| Responsible State Agency | ICMBio, from the Ministry of the Environment (MMA) | INCRA, from the Ministry of Agrarian Development (MDA) |
| Area (ha) | 776.940 | 5.100 |
| Population | 150 registered families 18 communities | 129 registered families (total capacity: 305) 80 families effectively occupying individual plots |
| Forest Management (FM) system | <ul style="list-style-type: none"> Initially Small-scale and Family-based FM in individual areas After the creation of RESEX CFM in a collective area | <ul style="list-style-type: none"> CFM in the 'Legal Reserve' (RL), a legally protected and collective area belonging to the settlement |
| FM area (ha) | Approximately 1,400 | Approximately 1,700 |

background allowed the establishment of the Pacιά Settlement Project (PA Pacιά) in 1999, regularizing land tenure in the territory of the settlers' case.

The second change in proximate higher-order fields influencing our case studies was the emergence of the environmental field in Brazil, also enabled by political opportunities of the re-democratization process along with economic international influence. The environmental field encompasses two major poles, the conservationist and the socio-environmentalist (Alonso *et al.* 2007). The socio-environmental view became increasingly dominant throughout the 1990s and its proposals intertwined with agrarian issues. The National System of Conservation Units (SNUC) was promulgated in 2000 as a result of the struggles that took place in the environmental field, including those concerning land destination and natural resources use. Although the conservationist pole prevailed, the approved version of the SNUC law considered several suggestions from the socio-environmentalist pole. SNUC included the Extractive Reserve (RESEX) as a 'sustainable use area' category, one of the two Conservation Units (UCs) main classification, together with the 'strict use protected area' category. The sustainable use category includes others types of UCs, like 'National Forest' (FLONA), whose objective is to conciliate environmental conservation and the sustainable use of natural resources. Thus, although it was originally formulated by the rubber tappers' movement in the 1980s (Allegratti, 2008, Cunha and De Almeida 2000), linking land tenure struggles and their livelihoods with environmental purposes, the RESEX concept fitted into the Brazilian legislation through the SNUC.

The RESEX was the most appropriate type of UC for the riverine communities' in Lábrea, who did not have control over their territory and whose area was threatened by illegal loggers from the south of the municipality. This struggle resulted in their alliance with environmentalists and their

alignment with State interests, enabling the creation of RESEX Ituxi in 2008. Both the creation of the RESEX and PA generated a redistribution of resources, namely land property and natural resources. However, the RESEX entailed a much larger area and changed social relations between the local elites and riverine communities, harshening latent local disputes with several episodes of contention (Fligstein and McAdam 2012).

The gradual emergence and accumulation of power by actors in the environmental field in Brazil, especially the part engaged in the conservation of the Amazon Rainforest (Hochstetler and Keck 2007), also increased the enforcement of Brazilian environmental laws (Ungar 2018). Concerning SFM, although the Brazilian legislation incorporated it in 1965, since its regulation for primary forests in 1994 the State has not ensured its effective application in distant regions such as the Amazon. In 2004, the federal government during the administration of Luiz Inácio 'Lula' da Silva, launched the Plan for the Prevention and Control of the Legal Amazon Deforestation (PPCDAM), an essential policy for the intensification of environmental controls in the region (Assunção *et al.* 2015). PPCDAM's actions included articulating institutions operating at multiple levels, drawing up a list of the municipalities that had the higher deforestation rates, including Lábrea (Brasil 2008, 2015) and creating Conservation Units areas, including RESEX Ituxi.

In March 2010, in parallel to the PPCDAM's control operations, the Chico Mendes Conservation Institute (ICMBio), the state agency responsible for the federal UC's administration, closed and fined small-scale sawmills and furniture manufacturers accused of using illegal timber from RESEX Ituxi. Through this action, known as the 'Matrinxã Operation', the State exerted its capacity to define the rules (Fligstein and McAdam 2012). As illegality was the dominant frame (Goffman 1974) in the local timber industry, the Matrinxã Operation functioned as an 'exogenous shock' that propelled initiatives by local actors to legalize the timber production. It was at this point, to support them, that actors interested in the process along with the Federal Government established the GT Madeira.

4.2. The logging field and associations' resources

The main incumbent pole of the logging field is SFM practiced by forest companies, typically led by actors who are not directly dependent on forest resources nor involved in FM activities. CFM, for instance, is the challenger pole, typically characterized by its scarce resource endowments and collective endeavors, gathering forest-dependent people who are directly involved in the FM activities. As the community-based associations in our case studies represent groups that are forest-dependent, they are both positioned in the CFM pole of the logging field. We also considered the basic forms of capital

Table 2. Esource endowments comparison.

| Resources | Riverine case | Settlers' case |
|---|--|---|
| Economic Capital (land, forest resources, and financing) | RESEX communal land tenure was incompatible with individual SFMPs. Communities agreed to adjust it for a collective SFMP, within an area in which forest resources were preserved, but hard to access. Financing possibilities were low and credit was hard to access. | CFM was unfeasible with PA individual land property. Settlers agreed to implement SFMP in a collective area in which forest resources were easy to access but over-exploited. Financing possibilities were low and credit was hard to access. |
| Cultural Capital (technical knowledge, professional requirements, and bureaucracy understandings) | Communities dominated cultural resources partially with some understanding of bureaucracy. | Settlers did not dominate any of the cultural resources. |
| Social Capital (connections) | Governance structures from the environmental field (GT Madeira and RESEX Deliberative Council) favored connections with external supporters and between communities. | Governance structures from the environmental field (GT Madeira) favored connections with external supporters, but it did not guarantee the missing resources. |
| Symbolic Capital | External actors associated riverine communities with forest conservation. | External actors associated settlers with deforestation. |
| Organizational capacity (leadership and social cohesion) | Governance structures from the environmental field (RESEX Deliberative Council) and the presence of leadership favored social cohesion within communities and conflict resolution. | The presence of leadership did not facilitate cohesion between settlers, delegitimizing the SFMP process, and enhancing existing conflicts. |

described by Bourdieu to compare their resource endowments to analyze similarities and differences that could help explain their outcomes, as summarized in [Table 2](#).

As resources grant power to fields and their members, enabling their action (Fligstein and McAdam 2012), forest-dependent people face important constraints for their development. Based on what Hajjar *et al.* (2011) called the ‘development phase’, the first stage of CFM for timber production, we can identify and compare the community-based associations’ resources to explain their differential capacity to overcome the challenges for SFMP approval. We considered how our data could influence theoretical precepts and we used the theoretical references reflexively for the empirical investigation, presented below.

4.2.1. Economic capital

Formal land ownership or tenure and formal rights to use natural resources are the first requirements for approving a SFMP, which we considered as a patrimony, a form of economic capital. Starting from them, we furthered

the comparative analysis based on Hajjar *et al.* (2011), detailing specific related resources, and the following elements stood out: physical access to land; preserved and economic potential of primary forest areas; and legal instruments for implementing land tenure.

Physical access to land and forest resource conditions were distinct between cases. In the riverine case, access to the production area was difficult but had great economic potential. In the settlers' case, road connections facilitated access to the area and, consequently, illegal logging. In both cases, legislation guaranteed group access to the logging area and resource exploration rights through FM. The State role included the control of illegal activities and support for community-based economic initiatives, both in the RESEX and in the PA. However, the existing legal instruments for this were distinct and related to the institutional history and the background for each of those land categories.

Regarding the SFPM approval process, at first in the riverine case legislation was an obstacle. Before the creation of the RESEX, some riverine families had already obtained SFMPs in their areas. Nevertheless, they became invalid due to divergences between their individual characteristic and the RESEX communal land tenure, and due to the administrative requirement to transfer its land domain from the Amazonas state to the federal government. After adjusting administrative procedures, in a second attempt to obtain a collective SFMP, external actors claimed the property of the chosen area. Although the RESEX legislation foresaw private land expropriation, if it was carried out it would take years to complete the procedure. Thus, the riverine association selected another area, without domain conflicts or legal obstacles, but more difficult to access and with reduced economic potential.

In the settlers' case, as a conventional settlement category, PA Pacía had two distinctive domain areas: small individual plots, which should become settlers' private properties in the future, and a communal protected area, legally established for environmental conservation purposes. The implementation of SFMP in individual plots was economically and technically unfeasible, as each one had different uses, mostly oriented to agriculture with scarce forest areas. Thus, the solution was to establish a SFMP in a common protected area that contained a continuous primary forest, with the potential to guarantee an economically viable volume of timber production.

4.2.2. Cultural capital

Cultural capital refers to competencies and forms of knowledge recognized as legitimate in the FM field. Our data are consistent with the findings obtained by Hajjar *et al.* (2011) who found evidence of two main resources: technical knowledge and professional capacity oriented to FM and the understanding of the SFMP approval process bureaucracy. Both associations

lacked the former and did not have economic resources to hire professionals, but as representative organizations from ‘traditional communities’ (riverines), and ‘beneficiaries of agrarian reform’ (settlers), they could demand governmental support for Technical Assistance and Rural Extension (ATER). They could also articulate cooperation with organizations participating in the GT Madeira. However, only the riverine association mobilized to achieve this, requesting support from ICMBio and establishing cooperation with other NGOs. The settlers’ association did not demand ATER to INCRA, as their process stagnated before they needed it.

Concerning the understanding of the SFMP approval process bureaucracy, riverine communities had an advantage. Although the process had specific rules aligned to the RESEX norms, the riverine association, and some families had minimal comprehension from their previous experience on obtaining individual SFMPs.

4.2.3. Social capital

As Fligstein and McAdam (2012) point out, measures of social capital are ambiguous, as social connections are not all equal. Therefore, it is important to specify why access to certain networks matters. Analyzing the previous forms of resources, we found that social connections were useful to compensate associations’ lack of economic and cultural resources and that the riverine association was more successful in deploying social capital than the settlers’ association.

Commonly, forest-dependent people are physically isolated from large urban centers, leading to difficulties in establishing external social connections. Nevertheless, governance structures from environmental policies may enable communities’ social ties with relevant external actors to CFM and other development initiatives. Due to the public character given to the forests in the Brazilian constitution (Gueneau and Drigo 2013), SNUC incorporated participatory governance principles, establishing consulting and deliberative councils through which relevant civil society organizations and communities could participate in the management of territory and governmental decision-making. Through the RESEX deliberative council meetings, the riverine association established connections with environmental NGOs and other potential supporters and strengthened their representative legitimacy with communities. The RESEX council also fostered conflict resolutions in the SFMP process, as noticed by one interviewee.

On the other hand, norms governing conventional settlements date back to the 1960s, rooted in distinct principles. As noticed by Allegretti (2008), participatory structures found in the RESEX emerged precisely in opposition to conventional settlement structures. Settlers, in turn, only had one participatory instrument, the Settlement’s Development Plan (PDA), a document for planning and monitoring PA’s actions and results. Hence, in this case, the

association had limited opportunities to accumulate social capital and to mobilize resources.

PPCDAM's actions also stimulated civil society participation through local committees, engaging actors in coalitions to promote sustainable productive alternatives. Those instances boosted the organization's social capital, enhancing cooperation to supply the missing resources. The preexistent links of the riverine association with organizations of the GT Madeira facilitated the development of productive ties. Moreover, the organizations of the environmental field connected to the riverine association were better endowed than the organizations of the agrarian field to which settlers could connect.

4.2.4. *Symbolic capital*

Symbolic capital relates to the status and legitimacy of each field. The insertion of the cases in the Amazon rainforest, considering its environmental value and the recognition of Amazonian forest-dependent people as 'guardians of the forest' were essential elements in our analysis. This recognition approximated riverine communities with the socio-environmentalist discourse and they had a symbolically better position than the settlers did.

Settlers' insertion in the agrarian field, and specifically in a conventional settlement, which historically contributed to deforestation in the Amazon, put them at a disadvantage. Although INCRA had gradually created environmentally differentiated settlement categories, the structures of the agrarian field represented a barrier to their implementation. Settlers had fragile symbolic capital within the environmental field, even though in some cases they also were 'forest people', with bonds and practices close to those from the riverine.

4.2.5. *Social skill and organizational capacity*

Socially skilled actors understand the perspective of others and create identities and meanings that facilitate cooperation, enabling collective action (Fligstein and McAdam 2012). Outputs produced by them are similar to what Hajjar *et al.* (2011) named 'organizational capacity'.

In the settlers' case, conflicts among leaders and mistrust prevailed throughout the SFMP approval process affecting their social organization. There was a suspicion that some of them were acting out of self-interest and an interviewee from the INCRA staff attributed the stagnation in the process to the absence of a 'technical and political support' and 'organizational cohesion' capable of pushing it forward. A key issue here was the accusation about an alliance for illegal logging between some of the association's leaders and external actors from the local timber productive chain, affecting the association's legitimacy and support. As stated by the interviewee:

Our main concern is sustainable management [...] and none of the settlements have technical and political support to achieve this. [...] we tend to implement CFM when there is organizational cohesion to make things happen.

In the riverine case, we identified two socially skilled actors particularly relevant to unifying divergent opinions within communities and to connect to supporters, conditioning organizational capacity and resource mobilization, converting social capital into other forms of resources. One of them was the association president, who was also a preacher. Before the creation of the RESEX, he convinced isolated families along the Ituxi river to organize themselves into communities. For the RESEX creation, he unified them in its favor, connecting the environmental conservation, income generation, and guarantee of rights discourses:

We are a riverine people, and this forest is ours, from where we take our livelihoods. We want the RESEX because this is everything for us. It will bring us peace, dignity and protect the environment [...].

Hence, despite the local elite's mobilization against it, he skillfully used his religious authority to enable cooperation between communities. The other social skilled actor was the RESEX Chief, a state employee at ICMBio, who had become the target of the local opposition since the Matrinxã Operation. In his words:

[...] when ICMBio invited me to assume the office [...], there was great tension between ICMBio and local actors, and they needed someone to deal with this situation, in a slightly more diplomatic way [...] there was all that mess, but there was also a proposal. [...] Some of the ICMBio staff admitted that implementing CFM would be a measure to resolve the tension [...]. But there was resistance within the ICMBio itself, as some staff members recognize exclusively the exploitation of non-timber forest products, as the appropriate productive activity for the RESEX category [...]

In his evaluation, he understood that misinformation within communities and resistance among distinct actors constrained the development of CFM. Hence, he convinced external actors to support training activities, to level communities' understandings about the SFMP process, facilitating their cooperation. Supporters, in turn, tended to evaluate the degree of communities' social cohesion to make alliances, as part of the basic risk evaluation of their projects. We observed this in the interview with a member of one of the support organizations:

[...] I saw great potential in my first contact with the RESEX. We did a workshop and I saw a strong social cohesion and their desire to work legally, and I felt that they were ready for a more robust discussion about CFM.

Thereby, in the riverine case, skilled social actors facilitated cooperation and resource mobilization. The participatory governance structure of the RESEX

provided relevant spaces of interaction to the resolution of conflicts also enabling collective action.

5. Discussion

Our assessment indicates the conditions under which CFM could flourish in the Brazilian Amazon Rainforest and the issue at stake was the local timber production practices in the region. Following the suggestion of Fligstein and McAdam (2012), and considering the claims of authors highlighting the importance of interdependencies of levels of analysis in the CFM (Agrawal 2001, Pagdee *et al.* 2006), we assessed the attempts of the community-based associations to legalize their timber production considering the multiple fields setting their contexts. Figure 2 schematically represents these interconnected arenas influencing the cases.

Our analysis shows that environmental measures deployed by the federal government to promote conservation led to a crisis that triggered the local actors' attempts to legalize their economic activity. Correspondingly, the SAFs approach emphasizes the authority of State fields to set the rules and give legitimacy over non-state fields (Fligstein and McAdam 2012). In developing countries, states tend to be relatively weak and heterogeneous (Perez 1991, Gilley 2006), and are often incapable of imposing practices effectively. This difficulty is accentuated in remote regions such as those found in the Amazon Rainforest (McAllister *et al.* 2010, Tollefson 2018). However, the continuous international pressures since the 1980s for the conservation of this biome, and the increasing acceptance of environmental regulations, enabled the State to gradually improve its implementation in the region (McAllister *et al.* 2010). The election of Luiz Inácio 'Lula' da Silva and the appointment of Marina Silva, a former rubber tapper, as the Minister of the Environment, pushed this gradual process further. PPCDAM favored the establishment of Conservation Units areas such as RESEX Ituxi, together with integrated control operations. These policies generated 'exogenous shocks' (Fligstein and McAdam 2012) in Lábrea, restricting informal logging and imposing FM.

These external influences destabilized power relations among actors of local supply chains (Candido *et al.* 2017b), including forest-dependent people, small-scale sawmills, and furniture manufacturers. At first, the latter reacted as incumbents of the field, trying to maintain the established social order that benefited them, as predicted by the SAF approach. For the forest-dependent people, the challengers actors from the timber supply chain, the crisis opened up political opportunities and favored connections with organizations from proximate fields, who participated in the GT Madeira and supported them. These proximate fields are those with recurring ties to, and whose actions routinely affect the field (Fligstein and McAdam 2012).

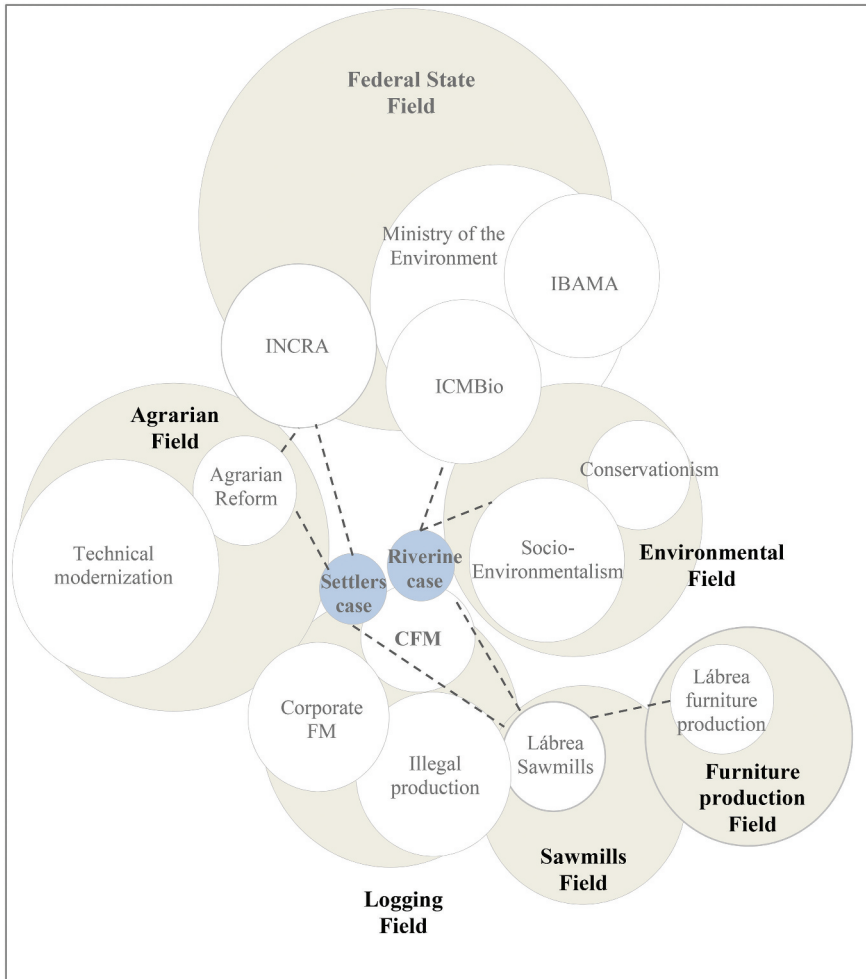


Figure 2. Interconnected field influencing the cases.

Our data show that the resource endowments conditioned the capacity of the associations to take advantage of these opportunities and legalize their production, improving their position in local supply chains. In contrast to what rationalistic and institutionalist approaches suggest, we demonstrate that social action is conditioned by power relations and those better-endowed actors are more likely to achieve their goals. Categories from the basic forms of legitimate social power (Bourdieu 2005), allied with the challenges of CFM highlighted here (Hajjar *et al.* 2011), made it possible to compare the resource endowments of associations and the empirical analysis on the logging legalization process. We found the interrelation between the different types of resources and observed that coalition with actors from

proximate fields could compensate for the overall lack of economic and cultural capital of the associations.

Two major forms of legitimate resources were key in explaining differences in the outcomes: symbolic and social capital. Riverine communities had a greater environmental recognition as ‘guardians of the forest’ and had their territory associated with conservation, vis-à-vis settlers, whose territory and institutional structures were associated with deforestation. This provided an advantage to the riverine association. Although in this specific context, settlers and riverine had similar livelihoods and were both forest-dependent, we observed that proximity and identification to the socio-environmental subfield, the dominant pole of the environmental field, was more advantageous in terms of symbolic capital concerning the agrarian reform subfield, the challenger pole of the agrarian field.

Social capital also influenced the different outcomes. The riverine association had greater social capital due to two factors. The first one was the RESEX council, a governance unit that holds regular meetings that lead to the accumulation of connections with communities and organizations interested in supporting them. This structure, which did not exist in the Agrarian field, strengthened the alliances formed within the GT Madeira. The second factor was the proximity to the incumbent pole of the environmental field, which favored alliances with who had better resource endowments, in the riverine case. Hence, not only did they have more, but also better, connections compared to the settlers’ association.

Concerning the collective action analysis, wherein lies a fundamental difference between the Strategic Action Field approach and the theory of Bourdieu, we found that this also influenced the outcomes. Addressing how cooperation influences the dynamics of the fields, authors introduce the idea of social skill, understood as an individual form of resource. Socially skilled actors can induce cooperation by creating shared meanings and identities necessary to establish coalitions, enabling what Hajjar *et al.* (2011) call organizational capacities.

We found that social skilled actors were essential in uniting the riverine communities and in mobilizing supporters in the riverine case. Social skill was a condition for them to benefit from their symbolic and social capitals. In the settlers’ case, on the other hand, our data did not show prevailing individual actions in favor of the legalization process. We argue that, although the opportunity for action established by the field crisis was common to both cases, capital disadvantages presented in the settlers’ case represented additional challenges. Hence, even if social skill were present it would have been less likely to prevail.

Using the SAFs approach, our analysis indicates that several interrelated factors enabled the establishment of more sustainable logging practices, entailing its legalization and the adoption of CFM: the context where each

association was inserted, institutional relations, associations' resources, and leadership capacity counted on the outcomes observed. To sum up, the SFMP initiative in which the leading actor had more in its favor, that is, the riverine case, achieved a successful outcome.

6. Final remarks

We have illuminated the circumstances under which forest-dependent groups may overcome barriers to CFM implementation and legalize the timber production in the Brazilian Amazon Rainforest. Through comparative case studies, we observed how differently organized fields may influence the ability of actors to obtain favorable policy outcomes. We demonstrated the utility of using the Strategic Action Fields perspective to understand that the journey towards more sustainable use of the forest resources demands disruption of historically established and stable social orders leading to deforestation and socio-environmental inequalities. Actors interested in changing these inequalities and unsustainable economic practices through socio-environmental action will face substantial opposition, and their success will depend on the effectiveness of collective action to seize opportunities in specific contexts. Furthermore, the emergence of these opportunities depends on the dynamics of interconnected fields and the alliance with powerful allies helps determine their outcomes.

Through SAFs, we deployed an analysis integrated into a common set of concepts within multiple levels of assessment, historically addressing the dynamics of change in different and more or less aggregated social settings and making sense of underestimated factors critical to collective action outcomes. Therefore, we addressed the shortcomings of rationalist and institutionalist explanations, commonly used in forest policy studies and environmental analysis. Having a framework capable of satisfactorily addressing the elements that matter in terms of policy effectiveness is essential for environmental analysts and professionals. Understanding the game facilitates a political prognosis and, consequently, supports better decisions in the context of growing environmental threats and social conflicts.

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ORCID

Roberta Amaral de Andrade  <http://orcid.org/0000-0002-4863-3611>

Mario Sacomano Neto  <http://orcid.org/0000-0002-2561-1700>

Silvio Eduardo Alvarez Candido  <http://orcid.org/0000-0002-5275-6577>

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