

# Conviviality and sustainability: Case studies on the governance of natural resources in Brazil

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**Abstract:** The multiscale nature of the environmental crisis brings together scientific and political mechanisms that converge on a common discursive axis: sustainability. This text contrasts vernacular and modern meanings of the commons and suggests conviviality as a counterpoint to the dilemmas posed by nature's hypercommodification. Based on fieldwork, it describes governance parameters in the meliponiculture chain and the fishery management of pirarucu (*Arapaima spp.*) in the Amazon and the palm heart harvesting (*Euterpe edulis*) in the Atlantic Forest areas. It explores particularities in these resources' governance as it aims to highlight possibilities and limitations to conviviality provided by these activities. For the cases studied, the convivial perspective is limited to cooperativism directed by the market. Still, a communal sense taken back as a principle for political action can offer broader horizons for the sustainability of governance.

**Keywords:** Conviviality; governance; hyper commodification; natural resources; sustainability.

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## Introduction

The multiscale nature of the environmental crisis confronts the scientific and political-institutional sectors of the contemporary global agenda (EDGELL, 2022). While the former continually requires new epistemologies and evidence around sustainability, the latter makes explicit urgencies about best practices in resource governance (BAILEY; CAPROTTI, 2014). On a broad scale, institutional knowledge reappears across the political and scientific relationships that conform to this agenda. It makes it possible to inscribe sustainability as a hybrid repertoire of responses to the environmental crisis (ANTUSCH, 2022). In particular, sustainability has been part of discussions about the economic valuation of resources not produced by human activity or wholly accounted for by the economy (KOPNINA, 2017). Amid contemporary environmental discourse, the financial language has consolidated operative elements of sustainability that conceive nature as a set of resources potentially appropriated by the market (HAJER, 1995).

Initially, we problematize the economizing of the political and scientific agenda of sustainability (BENNETT et al., 2018) and revisit the dilemma of the commons (HARDIN, 1968) from the confrontation of its vernacular and modern meanings (ESTEVA, 2018; DARDOT, LAVAL, 2017; HARVEY, 2014). Common resource governance parameters are discussed (OSTROM, 1990) and their interfaces with principles of conviviality (ILLICH, 1976). To this end, governance is viewed from dimensions that shape its diversity, quality, and vitality (BORRINI; HILL, 2015).

Secondly, the experiences of appropriation of natural resources in Brazil are presented, taking as case studies the governance of meliponine and the fishing management of pirarucu (*Arapaima* spp.) in the Amazon region and the extractivism of the *juçara* palm (*Euterpe edulis*) in portions of the Atlantic Forest. Particularities in the governance of these resources are discussed, and the objective is to point out evidence of conviviality in these regimes. The empirical analysis intends to show how the appropriation of the scientific and political agenda of the environmental crisis by the economic dimension has contributed to the emergence of supposed solutions based on the hyper commodification of nature (SOUZA SANTOS, 2002). It is argued that a return to the sense of conviviality as a principle of political action (DARDOT; LAVAL, 2017) would allow thinking about the ontological contours of sustainability as an alternative to market privatism (HARVEY, 2014), which operates to reduce communal processes to the condition of natural resources (SULLIVAN, 2018).

## Sustainability in the Context of the hyper commodification of nature

Sustainability can be conceived as a discursive matrix applied to various purposes and triggers aspects of different fields of knowledge (BIGGER; DEMPSEY, 2018). Despite the polysemic nature of the idea of sustainability and the sometimes well-defined boundaries of concepts in the environmental field (JACOBI, 2006), the contributions of economic and ecological sciences gained prominence in an area that seeks to converge sustainability narratives and practices. This field articulates scientific artifacts (theories

and interdisciplinary categories) and political propositions (answers to practical problems), which have significant consequences for socio-environmental dilemmas (SILVA JUNIOR, 2013). In the scientific arena, sustainability was coined within the so-called hard sciences, particularly in systems theory in the 1980s, and incremented by the neoliberal tone in the following decades (BUSCHER et al., 2014). Since then, categories such as ‘resources,’ ‘goods,’ and ‘services’ – accompanied by the adjuncts ‘natural,’ ‘environmental,’ and ‘ecosystems’ – have been widely adopted as operational elements of sustainability in a world of global exchanges (SULLIVAN, 2018; BUSCHER et al., 2014).

An unfinished product of a late type of modernity, the idea of sustainability is crossed by tensions between science and politics, which are only sometimes convergent (ASIYANBI, 2017). If it was the perplexity generated by the perception of the finitude of resources that contributed to inserting the notion of an environmental crisis – assumed as a fact – at the center of the public, scientific and political debate (SACHS, 2002), it was the narratives around the idea of sustainability that advocated the possibility of sustained economic growth based on market mechanisms (LEFF, 2001) and resulted in the primacy of productive power over nature (COLLARD; DEMPSEY, 2013).

Seeking to alert society to the problems of scarcity, the economic sciences successfully rose and began to conceive of nature as a resource, emphasizing its use attributes – whether as a good or a service (SULLIVAN, 2018; KOPNINA, 2017). Economic rationality sought to solve a dilemma generated by itself, namely, to reconcile a linear (economic) system with a cyclical (ecological) system (MARTINEZ-ALLIER, 2021). Consequently, sustainability continues to gravitate around scientific refinements that identify critical points of environmental systems (ROCKSTRÖM, 2009) or optimal points in the use economy of essential resources for humanity (BUSCHER et al., 2014).

In this perspective, the notion of natural resource refers to an abstraction of the value of elements not produced by humans, pointing to a process of emptying the materiality inherent in the concept of resource. In a context in which the idea of a natural resource was displaced from the scientific arena to the *stricto sensu* political sphere, the transformation of biodiversity elements into components of the production chain requires mechanisms for valuing these components (BUSCHER et al., 2014; HAHN et al., 2015).

Although economic expedients focused on natural resources offer an apparent alternative to more conventional developmentalism, the commodification of nature also generates new dilemmas, whether from a social, political, or ecological perspective (SULLIVAN, 2018), when considering the risks of treating biodiversity as a component of the market and reduce the governance of resources to an act of free choice (COLLARD; DEMPSEY, 2013; VERSCHUUREN, 2019). Critical perspectives on the economic rhetoric in the environmental agenda seek to argue that the scientific basis of the concept of ‘resource’ comes from the intention of transmitting a message consistent with the neoliberal vision of the governance of nature (CORALIE et al., 2015).

When put into practice, the concept of a natural resource reinforces the economic perspective of the governance of nature, in which human benefits remain the focus. Its main risk is allowing intrinsic and non-use values to give way to economic

goals that adopt sustainability only as a backdrop (BUSCHER et al., 2014; ERNSTON, 2013; VERSCHUUREN, 2019). On a larger scale, a wide range of economic instruments began to guide the use of natural resources: conversion of environmental fines, payments for environmental services, environmental compensation, natural capital, and the blue economy are some examples that seek to integrate ecological conservation objectives with approaches of neoliberal economies (MURADIAN et al., 2010; SULLIVAN, 2018). This intended integration will be called the hypercommodification of nature.

However, economic valuation may be less evident in the case of some resources or services provided by nature (SULLIVAN, 2018), and perspectives based on the quality of life and good living (*buen vivir*) of local communities may represent the resumption of other non-economic values in the human relationship with these resources (ACOSTA, 2016). Considering the contemporary environmental crisis and the idea of sustainability as products of the same discursive arrangement, we ask how the preceding notion of conviviality could be resisted in current governance regimes. We also questioned the scope and risks of trends in thinking about interactions between user communities and resources based on privatized approaches to governance. When exposed, the ambivalences of economic and global jargon for the management of natural resources bring back to the scene scales and local organizations (HEJNOWICZ; RUDD, 2017), which can point to a return to the idea of conviviality as a possibility of more diverse perspectives of sustainability.

### **Conviviality and governance: reviewing the Dilemma of the Commons**

Conflicts between individual and collective rationality, which could lead to disappearing common resources, led Hardin (1968) to propose transforming these resources into private goods or goods controlled by the State as a solution. A precursor to the economizing of environmental policies, the ‘tragedy of the commons’ thesis received support in the scientific field and conservationist practices at different scales. Although comprehensive, Hardin’s hypothesis (1969) is incomplete since it is based on assumptions of free access, the absence of restrictions on individual behavior, the irreversible overcoming of supply by demand, and the inability of users to change norms in the use of a resource (FEENY et al., 1990).

Harvey (2014) criticized Hardin’s postulate, questioning the privatizing logic that guides the expedients dispensed to common goods. For Harvey (2014), the commons is not a particular type of resource but social practices that produce communalization processes from resources. The ‘true tragedy of the commons’ would be enunciated by privatizations, enclosures, spatial controls, policing, surveillance, and other instruments that threaten to transform the common into a commodity.

In the realm of natural resources, institutional approaches have emphasized the ability of local communities to create and adapt their own rules of use. Institutions are understood as a set of norms (formal and informal) that allow social interactions, restricting and facilitating human activities that are constantly negotiated and reformulated (GIBSON; AGRAWAL, 1999). In this perspective, the governance of common resources

should be regulated collectively, with rules for the inclusion and exclusion of users and maintenance for all members' balanced and rational use. When created locally, institutional arrangements around commons can strengthen internal cohesion and detect and exclude opportunistic actors (free riders) (OSTROM, 1990; OSTROM; TUCKER, 2009).

If these findings gained ground in small user communities, a pressing question remained: How to resolve the dilemma of the commons on a larger scale? Harvey (2014) argues that the appropriation of the commons on a small scale will hardly be determined in the same ways as the appropriation of resources on a global scale. For the author, reasonable local solutions may not be suitable for planetary problems, and some enclosure may be necessary.

The controversies surrounding the dilemma of scale and enclosure of the commons make it possible to resume the notion of conviviality, previously proposed by Illich (1976) and which emphasizes individual freedom as an expedient. From the perspective of conviviality, any normative action (on the part of the State or another central actor) poses a problem. Conviviality suggests the possibility of more autonomous and creative human interactions with the environment, opposing social forms of instrumentation, regulated standardization, dependence, exploitation, and impotence.

Illich (1992) argues that, after successive enclosures, the environment was transformed into a resource at the service of economic undertakings, on which consumption needs are fulfilled. While Hardin (1968) and Ostrom (1994) proposed the commons as an economic alternative, Illich proposed the commons as an alternative to the economy. Three decades ago, Illich (1992) anticipated the idea of Harvey (2014) and warned us that transforming the commons into productive resources would constitute the most imperious form of environmental degradation. The validity of Illich's postulate did not prevent different conceptions of conviviality from being forged over time.

While its vernacular meaning – commonality – is based on the denial of scarcity premises that define economic society and manifest itself in the autonomy of communities (ESTEVA, 2018), a modern meaning inscribes conviviality as a political principle of self-government. For Dardot and Laval (2017), the commons are based on the collective search for new forms of democratic action. Refusing a priori attributes that would define common goods, the notion of the commons would rest on the joint effort itself and on the quality of that action. As an 'instituting praxis,' the commons is an activity that defines and revises rules regularly, contributing to the inappropriateness of the resource.

In this sense, using natural resources can aggregate public, communal, private, and hybrid practices that tension different lenses around the commons and establish other possibilities for conceiving governance based on conviviality. In a broad sense, governance refers to a system of rules, institutions, organizations, and networks that are established in different formats to guide a group or society to promote institutional arrangements for the conservation of natural resources, ecosystem services, and human well-being (BERKES et al., 2013). While the term management refers to the definition of objectives and means to guarantee the desired use of a resource, governance encompasses a broader notion, indicating a process of sharing responsibilities between different actors regarding the use

of this resource (BORRINI; HILL, 2015; BENNET et al., 2018).

However, the definition of governance is often not followed by analysis parameters. Borrini and Hill (2015) suggest that the analysis of governance encompasses three main dimensions: the diversity of types of governance, principles of good governance, and the vitality of the use regime. All over the world, different governance regimes have been recognized according to the composition of actors who hold power and responsibility over a resource or area, configuring shared experiences by governments, communities, and private actors (FREDRIKSEN, 2014). In addition, a set of aspects have been enshrined as principles of good governance, including dimensions of legitimacy, strategic direction, performance, transparency, and justice (BORRINI et al., 2017). In turn, it is understood that the vitality of practices related to resource use depends on the functional integration of users, adaptability, wisdom, innovation, and empowerment that crosses the use regime (BORRINI; HILL, 2015). Table 1 summarizes these dimensions.

**Table 1 – Dimensions of governance**

| Diversity  | Quality   | Vitality  |
|--|---|---|
| <b>By government:</b> official and delegated bodies  | <b>Legitimacy and voice:</b> broad social participation and consensual decisions                          | <b>Functional integration:</b> abundant and systemic connections on multiple levels   |
| <b>Shared:</b> between different categories of actors  | <b>Direction:</b> strategic vision and ability to respond to changes                                      | <b>Adaptation:</b> flexibility, exchange of knowledge, dialogue, empirical learning   |
| <b>By Communities:</b> indigenous and traditional peoples                                      | <b>Performance:</b> resilience of users and efficiency of their decisions                                 | <b>Wisdom:</b> decisions motivated by the common good and broad engagement of actors  |
| <b>Private:</b> individual landowners, rural producers, non-profit organizations and companies | <b>Transparency:</b> integrity and commitment<br><b>Justice and rights:</b> fairness in setting the rules | <b>Innovation:</b> openness to new ideas and support for new rules<br><b>Empowerment:</b> autonomous leading, responsive leadership, and confidence |

Source: elaborated by Borrini and Hill, 2015.

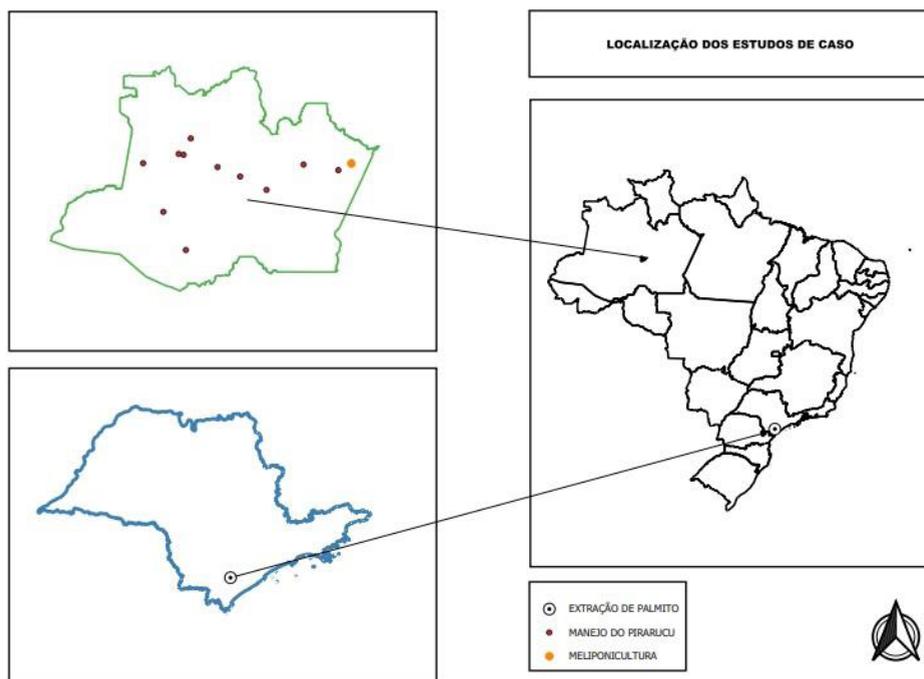
Therefore, different types of governance can support principles of conviviality. When based on communities, governance seeks to establish positive relationships between biodiversity and local livelihoods (SALAFSKY; WOLLENBEG, 2000). For these positive relationships to materialize, partnerships and connections between the different levels of governance involved in conserving natural resources are necessary (OSTROM, 2009). It should be remembered that local populations can also undertake unsustainable use of resources, resulting in their scarcity or even disappearance (CINNER et al., 2012). By reviewing the commons' dilemma in the light of the convivial perspective, we seek to

understand the possibilities and limitations of conviviality governing natural resources. To this end, three case studies illustrate the diversity of governance regimes around natural resources appropriated by communities in different Brazilian contexts.

### Governance of natural resources: Brazilian case studies

The Brazilian socio-environmental diversity can illustrate the complexity of interactions and factors that affect sustainability and the possibilities of conviviality in the governance of natural resources. Three cases of use of natural resources were considered: meliponiculture and arapaima fishing management in the State of Amazonas and extracting the *juçara* palm tree in the Atlantic Forest. Although located in different contexts (Figure 1), in all cases, a natural resource is appropriated by communities, which seek to validate practices known and shared by users. On the other hand, the prism of conviviality in the governance of these resources differs in each case. It reflects the characteristics of the resources themselves, the organization of users, and the ability to formulate, legitimize, and adapt norms. The governance regime for these resources is presented and described below. Subsequently, principles of conviviality are confronted in the three case studies.

Figure 1 – Location of case studies



Source: NUGEO/IBAMA/AM, 2022.

## Meliponiculture of native bees from the *Urubu* River

The beekeeping of native stingless bees is a traditional activity practiced by several communities in the Amazon. It is usually based on local knowledge, often to produce small volumes of honey for medicinal purposes (NOGUEIRA NETO, 1997). The production of stingless bees aimed at commercialization tends to be restricted to some rural groups organized in cooperatives seeking collective solutions to production demands. On the banks of the *Urubu* River, in the *Boa Vista dos Ramos* (AM) municipality, meliponiculture is developed from local practices of native bee management and processing honey. Since 2007, these practices have been fostered by a cooperative – COOPMEL (Cooperative of Indigenous Bees from the Amazon) – which brings together around 40 families distributed in four communities and manages approximately 2,000 bee colonies. Honey processing was also improved with the inauguration of a factory, which aims to facilitate the production and sale of cooperative products, meet government requirements, improve families' income and working conditions, and restore and protect the forest cover. However, the governance of meliponiculture faces difficulties in meeting sanitary needs and logistical bottlenecks, preventing its production from reaching broader markets.

## Pirarucu management

Widely spread among residents of the Amazon floodplain as a subsistence activity, fishing also has some species with established trade, such as the pirarucu (*Arapaima* spp.). This was the first Amazonian commercial fish species to be considered overexploited (RUFFINO, 2014), leading the government to publish protective measures to reduce capture and regulate international trade. In the State of Amazonas, the capture of pirarucu is only allowed in Conservation Units of Sustainable Use (CU), Indigenous Lands (TI), and Fishing Agreement Areas (AP) in the form of traditional fishing. Traditional fishing takes place in around 35 areas, involving more than 300 communities and more than 5,000 people, including fishermen and fisherwomen. In the context of fisheries, it comprises a set of community and government procedures and rules to protect and recover fish stocks to capture a portion of this stock. In management, the fish stock grew considerably (MELLO et al., 2019), generated participant income, and stimulated the protection of the environment and other species in these ecosystems (SILVA; PERES, 2016). However, the insertion of this activity in the market economy has transformed the market itself into the main guide for the work of the community, becoming responsible for valuing the production of the fishermen and women in a retribution that does not always cover the costs of fishing and surveillance (ROSSONI et al., 2018). In response, community fishermen and women have sought to add value to the activity, organizing themselves to explore new commercial spaces.

## Juçara palm heart extractivism in the *Ribeira* Valley

The extraction of the *juçara* heart of palm (*Euterpe edulis*) in the Atlantic forest illustrates how the dilemma of resource appropriation can also characterize users' insertion in exogenous conflict resolution models. As the removal of the heart of palm depends on cutting down the palm trees, this production causes tremendous ecological pressure on the species. The risk of extinction due to unrestrained use results from environmental regulations introduced with the creation of Integral Protection UCs, which changed the governance of the resource (MARINHO; FURLAN, 2008; REIS et al., 2000). In addition to palm tree felling, the defaunation of large frugivores is another threat to the extinction of the *juçara* (GALETTI et al., 2013), producing genetic homogenization among palm populations (CARVALHO et al., 2016). Located in the most extensive remnants of the country's Atlantic forest, the *Ribeira* Valley is home to a set of protected areas in southeastern Brazil, whose surroundings are occupied by rural communities that, faced with the impediment of cutting down, have become extractivists and clandestine hunters (GALETTI; FERNANDEZ, 1998). In the region, extractivist communities interact with different policy regulations and environmental organizations and are encouraged to adapt to income generation alternatives, little known by extractivists. Despite the proposal of sustainable practices, these communities are significantly pressured by police patrols around the protected areas.

**Figura 2 - Natural resources from the case studies: juçara, arapaina, and meliponine**



Source: Authors; IBAMA, 2022.

### **Results: Characterizing the dimensions of resource governance**

The case studies (Figure 2) illustrate not only a diversity of governance regimes but also how these regimes can overlap over time or even how the same model can manifest

particularities in similar contexts. Using Amazonian resources – stingless bees and pirarucu – configures a shared type of governance (FREDRIKSEN, 2014). In fishing, communities control surveillance, protection, and activity monitoring actions. Different government levels recognize these practices and are responsible for fishing authorization and management of fishing areas. In contrast, the governance of meliponiculture shows a dependence on local cooperativism in relation to non-governmental organizations, characterizing asymmetrical power relations that compromise the autonomy of honey governance. Self-government in the appropriation of meliponine from the *Urubu* River loses vitality with the absence of monitoring and punishment of violators of common rules, amplifying the ‘opportunistic effect’ (OSTROM, 1990) in honey production. Finally, different factors influenced a transition of governance models in *juçara* extractivism in the Atlantic Forest. Originally, a cutting pace consistent with the reproduction rate of the species met a relative balance between local consumption and external demands. The intensification of the palm tree extraction rate reflects the lack of participation in creating UCs in the *Ribeira* Valley and the increase in the palm heart consumption market on a regional scale. Governance conducted by government actors replaced community practices and focused on promoting enforcement and punishment. Even centralizing decisions about the use of the resource, the State has not been able to prevent clandestine extraction and, more recently, shared regimes have sought to encourage sustainable uses of the resource – such as restocking actions, certified management, pulp production, agroforestry systems, and indirect uses, like tourism.

Governance quality and vitality parameters are also specific in each case. On the *Urubu* River (AM), the management of native bees presents good governance indicators, evidenced in endogenous decisions, the capillarity of the producers’ cooperation network, the diversity of partnerships, the transparency of the cooperative’s actions and the existence of sound environmental practices, as a seal of inspection. However, the production and sale of honey without processing and opportunistic behavior by non-cooperative members undermine the quality of governance. The vitality of the meliponiculture use regime is favored by the success of COOPMEL in consolidating integrations with different levels of decision, as well as by the synergy between traditional and scientific knowledge and by the openness to innovative management practices, such as *Melipona* pastures. On the other hand, critical points are found in local adaptive capacities and external dependency for inspection and monitoring. Good governance indicators are also found in the arapaima fishery management, highlighting local capabilities to formulate and adopt rules for use. This increased the stock of fish used for food, trade, and other species, such as chelonians. Even if invasions in areas of management threaten the vitality of governance, local communities organize themselves to combat unwanted occupations and trigger government agencies responsible for inspection. This collective organization strengthens decision-making capabilities and monitoring of fishing practices. In turn, the governance of *juçara* has few quality indicators. As clandestine cutting tends to be the main form of resource appropriation in the region, *juçara* extractivism illustrates how community action can result in unwanted environmental effects (CINNER et al., 2012). The vitality of *juçara* governance is affected by local resistance to alternative uses, external dependency, and the heterogeneous organizing capacities of the communities. Table 2 compiles the primary evidence of governance parameters for the three resources presented.

**Table 2 - Dimensions of resource governance**

| Quality                     | Meliponine   | Pirarucu  | Juçara  |
|-----------------------------|--|---|---|
| <b>Legitimacy and voice</b> | Endogenous decisions; Perennial dialogue; Low turnover in cooperative management and weak youth engagement.  | Local organization for fisheries, supplemented by government regulations; Gradual punishment; Consolidated participatory mechanisms.  | External norms not observed; Few local representation; Punitive and exogenous rules.  |
| <b>Management</b>           | Depends on monitoring clandestine production and other infractions; Non-cooperators have less decision-making space; Prohibition of burning and deforestation to guarantee honey production. | Fishing management proposed as an alternative to restrictive legislation and reduction of fish for food; Recovery of fish stock contributes to food security and family income.                             | Prohibition of cutting as the only strategy; Incoherent alternative uses; Conflicting external norms.   |
| <b>Performance</b>          | Related to the diversity of partnerships and income possibilities; Affected by the discontinuity of public policies and natural factors (drought).   | Management areas have better established partnerships; Community interest defines the continuity or not of fishing; Resilience depends on fisheries participation in the budget, partnerships, and threats. | Related to the diversity of partnerships and income possibilities; More effective learning when promoted locally; Payback time discourages participation; Financial returns can generate new conflicts. |
| <b>Transparency</b>         | Regular meetings contribute to the cooperative's history of transparency, Cooperative vs. uncooperative conflicts, and Other productive activities outside the flowering period.             | Within an area, not everyone joins in fishing; Clear roles and obligations; Annual reports on using financial resources. All management categories must have internal regulations.                          | Associated vs. non-associated conflicts; Unclear roles and dependence on formal leadership; Lack of transparency discourages participation in new initiatives.  |

|                               |   |   |   |
|-------------------------------|---|---|---|
| Justice and Rights            | Communities see environmental standards as a cost; Good practices are important, but they do not prevent clandestine production; government payment delay stimulates production without processing, Wide network of actors. | Management provides legal fishing opportunities; any category can submit a fishing management plan. Enforced environmental standards; Direct trade, and access to public procurement markets may occur; Price variations and institutional instability are threats. | Environmental standards are considered a high cost and are disrespected; The repressive history hampers shared governance; Higher decision levels limit alternatives proposed by UC managers. |
| <b>Vitality</b>               | Meliponine  | Pirarucu  | Juçara  |
| <b>Functional Integration</b> | Cooperative mediates local interactions, Network of connections with multiple levels, and power asymmetry.  | Project financing and consumption diversity stimulate interactions at different scales: Small-scale fishing and involving local communities.  | There are few external interactions and occasional connections between communities in the region.   |
| <b>Adaptation</b>             | Some producers resist new productive forms; Deforestation, fires, and drought affect adaptive capacity.   | Protected environments led to increased fish stocks; Resilience affected by encroachments in management areas.  | Older extractivists and hunters resist alternative uses; Adaptive capacity affected by defaunation and climate change.  |
| <b>Wisdom</b>                 | The synergy between local and scientific knowledge; Communities interested in external support.   | Fishing encouraged collective practices to replace individual ones. Integration with local knowledge at the base level.   | Forms of extractivism and use vary regionally; Sustainable uses are limited to a few users.   |
| <b>Innovation</b>             | Opening (Melipona pastures) favors pollination, fruit yield, and food security.   | Main innovations: sanitary adaptations, search for new markets, and slaughter practices aiming at animal welfare.   | Agroforestry systems have low community engagement; Adherence to intensive monocultures in the use of pesticides.   |
| <b>Power</b>                  | Local organization is structured in some communities; Inspection and monitoring depend on the State.  | Different levels of organization do not prevent the search for partnerships that make fisheries management viable.  | Different levels of local organization; Centralization in the role of the State weakened community organizations.   |

Source: Authors, 2023.

## Discussion: The possibilities of conviviality in governance

By reviewing the governance of natural resources, we seek to understand how convivial perspectives permeate the regime for using these resources. In principle, conviviality in the appropriation of meliponine in communities on the *Urubu* River is evidenced in the role of the local cooperative responsible for creating partnerships with a vast network of actors. This capacity for articulation allowed meliponiculturers to be included in government food acquisition programs. Beekeepers have expanded the consumer market by meeting sanitary requirements, earning a state inspection seal. Although inspection and origin certifications serve different purposes, the external seal on community productions symbolizes nature's economic value and illustrates how hypermercantilization instruments are mixed with community practices (ASIYANBI, 2017). Thus, the process of value abstraction that guides governance with an economic bias (BUSCHER et al., 2014) has become a condition to guarantee the flow of community productions, even if on small scales. In addition, the autonomy of producers in *Boa Vista dos Ramos* (AM), the basis of commonality (ESTEVA, 2018), is compromised by aspects of the representativeness of cooperative members and the formation of new leadership. Therefore, commonality in meliponine governance seems limited to productivist cooperatives, distancing itself from the idea of commonality as a political principle that seeks new democratic forms of action (DARDOT; LAVAL, 2017).

In arapaima fishing, the definition of management areas includes traditional knowledge about the resource and the rules of use resulting from community organization, representing a practice of communalization (HARVEY, 2014). Fishing has a territorial and communal basis, defined by the need to monitor shared environments and maintain or increase fish stocks. Interestingly, although it is the same resource, the fishing areas and the community's logistical and managerial capacities are heterogeneous. However, this heterogeneity does not affect the sustainability of governance. As suggested by the vernacular conception of the commons (ILLICH, 1992), more autonomous interactions with the resource are created when collective action escapes standardizing practices. Even if inserted in a context of direct resource commercialization, the organization of communities of fishermen and women suggests a repertoire of activities aligned with democratic principles. Community strengthening (FREDRIKSEN, 2014) occurs through the local search for training, institutional connections, and opportunities to improve working conditions at all management stages (fishing, capture, and marketing).

Historically, *juçara* extractivism in the *Ribeira* Valley demonstrates how rigid external control has undermined possibilities for self-government (HARVEY, 2014). In the 1980s, the consolidation of top-down conservationist policies, based on creating protected areas, competed with rival local communities and environmental agencies, intensifying clandestine logging. Despite attempts to implement sustainable management of the heart of the palm, the initiatives were unsuccessful due to conflicts between regulatory and monitoring powers between different institutions. Even the recent proposal for selling *juçara* pulp, which aims to maintain the stock of palm trees in the forest, comes up against demands inconsistent with the reality of the communities. In this case, environ-

mental norms represent a ‘tool’ (ILLICH, 1976) that tends to standardize heterogeneous management practices, weakening convivial forms of resource use. On the other hand, initiatives shared between communities and regional partners are intended to foster communal skills, such as the implementation of agroforestry systems (SAF’s), ecotourism as an added value to rural products, and the formation of a community network (*Rede Juçara*). Even if they emerge as alternatives within a production chain constrained by an environmental policy hierarchized by the market (BUSCHER et al., 2014), these proposals face community distrust.

Although they contain particularities, the three usage regimes have points in common. External regulations strongly influence the possibilities of conviviality in the governance of these resources. Even if common norms depend on the validation of external institutions (OSTROM, 1994), the search for autonomous collective practices is a commonality principle often limited by the standardization that affects the use of resources (ESTEVA, 2018). In the investigated cases, commonality tends to manifest itself initially in a framework of local institutions (mainly associations and cooperatives), even if many of these organizations operate more to meet bureaucratic requirements than community demands.

Generally, local arrangements are important governance tools for exchanging knowledge and articulating with external partners, reaching broader territories, and connecting with perspectives of good living in communities (ACOSTA, 2016). The creation of *Coletivo do Pirarucu* and *Rede Juçara* illustrate these possibilities. On the other hand, local conflicts have been accentuated by competition between resources managed collectively and others obtained irregularly. The vulnerability of communal arrangements has a double consequence: they make the prices of communal products less attractive when compared to uncontrolled resources and contribute to new ecological risks. In Table 3, we synthesize the main possibilities and challenges to conviviality in the governance of resources in the case studies.

**Table 3 - Possibilities and limitations to conviviality in the governance of resources**

| Possibilities   | Limitations  |
|---|--|
| <ul style="list-style-type: none"> <li>• agreements to define fishing areas</li> <li>• partnerships between users at different scales</li> <li>• diversity of local institutions</li> <li>• exchange of community experiences</li> <li>• economic valuation of common products</li> </ul> | <ul style="list-style-type: none"> <li>• collusion with environmental violations</li> <li>• formation of new local leaders</li> <li>• regulatory and sanitary conflicts</li> <li>• exclusivity of external control over monitoring</li> <li>• competition with products without control</li> </ul> |

Source: Authors, 2023.

When compared, the governance regimes indicate that conviviality in the use of resources reflects the nature of institutional arrangements, which can be consolidated

(fishing), fragile (meliponine), or non-existent (*juçara*). The convivial perspective (ILLICH, 1992) can be enhanced or limited by governance in which communities operate as watchdogs of the resource (fishing) or in regimes in which communities are watched (extractivism). The number and maturity of community partnerships with other actors (BORRINI et al., 2017) also contribute to the use of resources reaching broader markets recognized for their trust and quality, as in the cases of honey and pirarucu; or because of its unknown origin, as in the case of heart of palm.

Both in meliponiculture and in *juçara* extractivism, the economic valuation of resources intends to guarantee the integrity of the natural remnants where they occur. This valuation in fishing manifests in strategies to gain traceability seals and sustainable certification. At the same time, the search for new consumer markets is an attempt to keep fishermen and women in management. On the other hand, the increase in fish stocks plays an important role in the food sovereignty of the populations of the Amazon floodplain. Despite the ambivalence of economic valuation mechanisms in the governance of these resources, certification practices are a clear example of instrumentalization of the process of hypermenchantilization of nature (HAHN et al., 2015).

While recognizing the complexity of interactions that influence the use of natural resources, the cases suggest that incorporating principles of conviviality in their governance can act as a political action for the very sustainability of the resource. In contrast, using regimes guided by individual or rigidly hierarchical decisions limits the idea of the commons to the spheres of productivist cooperativism (DARDOT; LAVAL, 2017). Nevertheless, these inferences can guide conviviality in different contexts of communities active in the governance of other natural resources in search of their sustainability (SULLIVAN, 2018).

### Concluding Remarks

The regimes for the use of natural resources that shape the practices of beekeepers, fishermen and women, and extractivists are embedded in governance models that allow resuming dilemmas around the scale, enclosure, and appropriation of the commons (DARDOT; LAVAL, 2017; OSTROM, 1994). When the 'commons' is transformed into a 'natural resource' (KOPNINA, 2017; SULLIVAN, 2018), the overlapping of the privatizing logic with possible communalization practices can lead to the 'true tragedy of the commons' (HARVEY, 2014).

Starting from the premise that governance can be analyzed based on its diversity, quality, and vitality (BORRINI; HILL, 2015), this study compared three resources in the Brazilian territory. As presented, the governance of meliponine and the traditional fishing of pirarucu in the Amazon and of the *juçara* palm in the Atlantic Forest differ not only because they are located in different contexts but also because of the possibilities and limitations to the commonality of management practices undertaken by the users of these resources.

While the vernacular sense of commonality advocates autonomous communities

that subvert the economic logic of scarcity (ESTEVA, 2018), the contemporary use of the ‘commons’ allows us to understand it as a political principle that seeks to update democratic forms of action. However, the cases demonstrated that conviviality in use regimes tends to be limited to productivist cooperativism, reflecting ambivalences of the hyper commodification of nature (HAHN et al., 2015). An ‘instituting praxis’ (DAR-DOT; LAVAL, 2017), founded on joint action and manifested in social struggles, is more evident in regimes of use in which collective action prevails over individual decisions.

In all cases, communal practices are based on demands for commercializing natural resources. In these cases, the possibilities of conviviality seem not to deny the market but to promote alignments between self-government demands and economic valuation mechanisms (BUSCHER et al., 2014). We emphasize, however, that the centrality of the market in the valuation of natural resources produces contradictions that may disregard the value of the collective action of the communities that have and are responsible for conserving these resources. Within these contradictions, resist communal practices that must be observed as a source of a broader sustainability repertoire.

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# Convivencialidade e sustentabilidade: estudos de caso sobre a governança de recursos naturais no Brasil

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**Resumo:** A natureza multiescalar da crise ambiental aglutina mecanismos científicos e políticos que convergem para um eixo discursivo comum: a sustentabilidade. Esse texto contrapõe sentidos vernáculos e modernos do comum, sugerindo retomar a convivencialidade como contraponto aos dilemas colocados por processos de hipermercantilização da natureza. Com base em trabalhos de campo, são descritos parâmetros de governança na produção de meliponíneos e da pesca manejada do pirarucu (*Arapaima spp.*) na região amazônica e do extrativismo do palmito juçara (*Euterpe edulis*) em porções da Mata Atlântica. Explorando comparativamente particularidades na governança desses recursos, objetiva-se evidenciar possibilidades e limitações à convivencialidade em seu regime de uso. Nos casos estudados, constata-se que a perspectiva convivencial tende a se limitar ao cooperativismo produtivista e conclui-se que retomada do sentido comunal como princípio de ação política pode oferecer horizontes mais amplos para a sustentabilidade dos regimes de governança.

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**Palavras-chave:** Convivencialidade; governança; hipermercantilização; recursos naturais; sustentabilidade.

# Convivialidad y sostenibilidad: estudios de caso sobre gobernanza de los recursos naturales en Brasil

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**Resumen:** La naturaleza multiescalar de la crisis ambiental reúne mecanismos científicos y políticos que convergen en un discurso común: la sustentabilidad. Este texto contrasta los significados vernáculos y modernos del común, sugiriendo retomar la convivialidad como contrapunto a dilemas que plantean a hiper mercantilización de la naturaleza. Con base en trabajos de campo, se describen parámetros de gobernanza en la producción de meliponinas y en la pesquería manejada de pirarucú (*Arapaima spp.*) en la región amazónica y de la extracción de palma jugara (*Euterpe. edulis*) en la floresta atlántica. Al explorar particularidades en la gobernanza de estos recursos, el objetivo es evidenciar posibilidades y limitaciones a la convivencialidad en su uso. En los casos estudiados, la perspectiva convivencial tiende a limitarse al cooperativismo productivista y se concluye que la reanudación del sentido comunal como principio de acción política puede ofrecer horizontes más amplios para la sostenibilidad de la gobernanza.

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