Institution-based access implications faced by traditional communities in *Amazônia*: towards co-managing protected areas and Terms of Compromise for socio-biodiversity

Implicações induzidas por Instituições no acesso de comunidades tradicionais na Amazônia: gestão equitativa de áreas de proteção integral e Termo de Compromisso em prol da sociobiodiversidade

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ABSTRACT

Given limitations of resource and market access reported by traditional local communities, and a limiting institutional environment for socio-biodiversity in Amazônia, the main question is: how do institutions (re)shape natural resource and market access by *Quilombolas* in the protected area of the Trombetas River Biological Reserve (TRBR)? Implications of the TRBR Term of Compromise (TC) – a formal institution written by Chico Mendes Institute for Biodiversity Conservation (ICMBio) – on livelihood-relevant access to socio-biodiversity products (Brazil nuts) and markets are analyzed.Methods include semi-structured interviews (n=89) focusing on NTFP-gatherers, and observation and focus-group interviews for data triangulation. An analytical framework is developed, combining access theory, institutions and property rights scholarship. Findings reveal that the TC overwrites institutionalized norms of *Quilombola* communities, which regulated such livelihood-relevant access long before the TRBR establishment (1979). The TC not only formalizes BN use but also unintentionally restricts natural resource and market access, limiting Quilombolas' bioeconomy-benefits.

Keywords: Resource and market access. Socio-biodiversity of Indigenous Peoples and Local Communities (IPLCs). (In)formal institutions. Formalisation. Protected areas. Rights-based management

RESUMO

Dadas as limitações de acesso aos recursos e ao mercado relatadas pelas comunidades locais tradicionais e um ambiente institucional limitado para a sociobiodiversidade na Amazônia, a questão principal é: como as instituições remodelam o acesso aos recursos naturais e ao mercado por parte dos Quilombolas na área protegida das Trombetas Reserva Biológica Fluvial (TRBR) e as implicações do Termo de Compromisso (TC) do TRBR – uma instituição formal escrita pelo Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) – sobre o acesso aos meios de subsistência e produtos da sociobiodiversidade (castanha-do-pará) e mercados. Os métodos incluíram entrevistas semiestruturadas (n=89) com foco em coletores de produtos florestais não madeireiros, bem como observação e

entrevistas em grupos focais para triangulação de dados. Foi desenvolvida uma estrutura analítica, combinando teoria do acesso, instituições e estudos sobre direitos de propriedade. Os achados indicam que o TC substitui as normas institucionalizadas das comunidades quilombolas, que regulamentavam o acesso aos meios de subsistência muito antes do estabelecimento do TRBR (1979). A TC não apenas formaliza o uso da castanha-do-pará, mas também restringe involuntariamente os recursos naturais e o acesso ao mercado, limitando os benefícios bioeconômicos dos quilombolas.

Palavras-chave: *Acesso a recursos e mercados. Sociobiodiversidade de povos e comunidades tradicionais (PCT). Instituições (in)formais. Formalização. Unidades de conservação. Gestão equitativa de áreas protegidas.*

1 INTRODUCTION

Evidence on the potential of bioeconomy and its sustainability conditions is mounting (Dietz *et al*., 2018; Smith-Hall; Chamberlain, 2022). However, globally still prevailing debates promoting a profit-driven bioeconomy are not yet inclusive enough of Indigenous Peoples (IPs) and Local Communities (LCs) traditional way of living in and with forests (IPBES, 2019). Such often economically and geographically marginalised rural dwellers are still limited in their access, use and benefit from Non-timber forest products (NTFPs) (Inacio da Cunha, 2018), also referred to as products of the so-called socio-biodiversity (SB) (Diegues, 2005). SB herein refers to the interrelation between biological and sociocultural diversity (MDA; MMA; MDS, 2009, p. 6). Access to resources and markets by sustainable NTFP-gatherers and suppliers is regarded as a precondition for realising the potential use and benefit from SB products on a sound social-ecological basis. Still, traditional communities are often limited in their access both to livelihood-relevant NTFPs and sustainable bioeconomies, often entailed by the context-blind establishment of protected areas (PAs) and formal institutions regulating resource access in PAs. At the same time, the Kunming-Montreal Global Biodiversity Framework (KMGBF) aims to expand PAs worldwide, a significant step towards harmonising with Nature by 2050. Target 3 of the KMGBF aims to protect 30% of lands and waters by 2030 (CBD, 2022). However, establishing PAs calls for a more inclusive approach that considers biocultural diversity and rights-based conservation, including in the Amazon, for securing sustainable livelihoods from IPs and LCs – of local Afrodescendant rightsholders, i.e. *Quilombola Communities'* right to land as per Brazil's Constitution (Brasil, 1988) in this case, and – worldwide.

This article fits into debates on social-ecological tradeoffs as per strict conservation and access by traditional gatherers to SB products while examining rights-based access mechanisms in biodiverse and bioculturally diverse areas. The literature already provides a rich body of knowledge on the importance of biocultural diversity (Lukawiecki *et al*., 2022) – and its role in shaping a sustainable and inclusive bioeconomy (Diegues, 2005; Filocreão, 2007; Maffi, 2001). The socioeconomic importance of NTFPs has also been emphasised (Shakleton; Pandey, 2013; Smith-Hall; Chamberlain, 2022), including Local Communities and Indigenous Peoples (Marrocolo *et al*., 2021). What is not yet extensively examined is what it entails, as NTFPs often occur in areas with high biodiversity and low human development indices (HDIs) (Cunha, 2014), including traditionally occupied and collectively used lands (Almeida, 2011; Inacio da Cunha, 2018). Less addressed are how IPs and LCs come to terms with NTFP access compromises, as referred to by environmental authorities for managing PAs and social-ecological tradeoffs originated per strict conservation. Both the design of such Terms of Compromise and the TRBR council lack local participation of affected communities who bear most costs of conservation and risks of being further pulled into land use pressures and change, particularly if their access to livelihood-relevant NTFPs is hampered.

Implications of institutions on access to non-timber forest products by traditional communities in the Amazon is not thoroughly addressed. This includes understanding the challenges in achieving rights-based access to resources claimed by local rightsholders given their affected livelihoods in PAs of

strict environmental protection. There is a need to better understand the role of access mechanisms, especially rights-based ones, in managing social-ecological tradeoffs in PAs. Limited attention has been given to the access limitations imposed by institutions on traditional local communities, such as the *Quilombola* communities in Brazil. This aspect requires a more comprehensive analysis combining theory and evidence. When researching the challenges arising from disputes over resources in PAs, there is a lack of attention given to the restrictions imposed by institutions on access to traditional local communities. These communities have historically and collectively managed biodiverse territories, which have been encroached upon by the establishment of PAs, displacing communities that have lived in the forests for centuries (Brockington, 2002; Tauli-Corpuz *et al*., 2020). This article examines the access mechanisms of ancient local rightsholders within PAs and is grounded in the conflicts surrounding strict forest conservation and resource access by marginalised groups, aiming to secure their traditional sustainable livelihoods while co-existing with nature (IPBES, 2019). The article addresses the reported limitations in resource access by marginalised rural dwellers living in and with forests, as well as the restrictive institutional environment for SB in the Amazon. The main question addressed here is:

How do institutions (re)shape resource access by traditional local communities in a protected area (of the TRBR)? The institutions under analysis are mainly the Term of Compromise (TC, per acronyms in Portuguese), which is a formal document written by the Chico Mendes Institute for Biodiversity Conservation (ICMBio) and signed by the local communities of *Quilombolas*. Alongside the TC as a so-called Compromise Agreement, there are self-declared informal institutions that regulate the access to Brazil nut (BN) stands based on customary agreements made by the *Quilombolas* in their communities, which are overridden by the Compromise Agreement. Resource access refers to access to SB products by affected communities whose resource and also market access are filtered per formal institution and formalisation of BN agreement already in place per TC of the TRBR. This calls for digging up levers towards livelihood-relevant SB of *Quilombola* communities overlapped by the TRBR and affected by the TC (Figure 2).

The point of departure is the challenges and potentialities of the co-existence of *Quilombola* communities' access to SB products with PAs. The focus of analysis lies in dissecting determinants and processes of limited access per TC of the TRBR, which overlaps with *Quilombola* communities formally restricted in their BN use in the Lower Amazon state of Pará, Brazil. Yet, the analytical components are yet to be distilled to understand what a participatory process entails - beyond occasional punctual consultations of the responsible environmental entity - towards jointly regulating the (co)management of livelihood-relevant resources, including in the Amazon.

This study focuses on the TRBR and the TC in Brazil. According to ICMBio, the TC aims to resolve conflicts between ICMBio and long-established forest (stewarding) peoples regarding access to resources in PAs. The unintended effects of the TC on the access to non-timber forest products (NTFPs) that are important for forest (stewarding) peoples' livelihoods are examined. The study specifically looks at the TC of the TRBR (Brasil, 2012), which regulates the harvesting of BNs as a product of SB.

To understand the aforementioned implications, the article is organised as follows: an introduction, followed by the methodology and the findings. The findings include a socio-economic contextualisation of the local importance of SB products and the development of the analytical framework. This framework combines access theory and empirical phenomena to understand institution-based access determinants and processes. The article ends with concluding remarks and policy options.

2 METHODS

For research design, it was very fruitful to have started – at the local level (*Quilombola* communities, Oriximiná) – with problem identification instead of 'bringing a pre-conceived theoretical framework' and/or biased information on determinants and processes concerning natural resource and market

access – of BN gatherers and buyers living in PAs – from the state (Santarém and Belém, Pará) and national levels (Brasília, Federal District) from the very beginning. It was a bottom-up problem-based research approach, in contrast to dominant deductive approaches, including in social sciences, often to the detriment of context-sensitive pre-investigation of what the problem is that materialises at local realities and what concepts could help understand it (based on grounded theory according to Glaser and Strauss (1967, p. 1-2)). This study examines the problem of limited resource access reported by *Quilombolas* themselves. Building on that, the research is designed, including the main question and an analytical framework, which are derived from locally reported problems to address them.

Upon literature review combined with assessment of the empirical phenomenon of limitations of access (based on Ribot; Peluso, 2003), institutions are conceptualised as access determinants (Ikdahl *et al*., 2005; Inacio da Cunha, 2018), as is formalisation (Cronkleton; Larson, 2015) – as process filtering access to resources by *Quilombolas* affected by the TRBR TC. Provided with such theoretical foundation of dependent and independent variables (access and institutions, respectively) contained in the main question, the role of institutions as an access determinant (i.e. the formal institution in use: TC) and its formalisation are analysed drawing from iterating empirical evidence with theory for understanding *Quilombola's* access limitations. The author combined conceptualisations of institutions and the process of formalisation drawn mainly from sociology (Berger; Luckmann, 1967; Weber, 1976) whilst concentrating on examining access to thoroughly understand empirical phenomena around resource access and conservation tradeoffs with affected livelihoods in the TRBR.

Seven fieldwork phases were conducted in the period from 2012-2024 (with pandemic or other interruptions), while fieldwork focused on *Quilombola* communities (Oriximiná) over six months, in total. Multiple data collection techniques were employed, including semi-structured interviews. Purposive sampling of communities was applied as per three criteria: (i) villages in and adjacent to the TRBR which are *Quilombola* communities, (ii) prominent natural occurrence of BNs, and (iii) importance of BNs in traditional livelihoods of *quilombola*, including as a source of subsistence (while avoiding correspondent monetary expenditures for food security of *Quilombola* communities as an economically and geographically marginalised group).

Semi-structured interviews were planned, and different techniques were applied, including narrative and problem-centred interviewing techniques (Diekmann, 2007). In-depth interviews were conducted with BN gatherers and buyers to gather detailed insights, including perceptions on the impact of access to natural resources and markets. Focus-group interviews were conducted at the community level, and there were three online interviews: two with Quilombola leaders who are also BN suppliers and one with a representative from MPF, Brazil's federal ombuds office. Moreover, informal conversations were held with representatives from federal universities based in *Amazônia*, state of Pará – including a Santarém-based advisor on TRBR management – and from Brazil's Ministry of Environment and Climate Change.

What would have deserved further in-depth data collection and analysis are power relations, which were captured to the extent possible due to sensitivities of State-communities overlapping land tenure claims at that time in the field (2012-2015) – when most field research in *Quilombola* communities was conducted. These qualitative methods allowed for capturing processes and determinants of access relations among different actors as well as the TC as a formal institution in use and specific problems faced by *Quilombolas* (BN gatherers) in and around the TRBR.

Beyond interviews, a systematic analysis of documents, inter alia, of Brazil's Federal government, including legal documents, acts and act-based terms of compromise, was employed. In an iterative process between theory (extensive literature review) and empirical data, an analytical framework is developed to understand resource and market access and governance regimes for PA (co)management in *Amazônia* and beyond. The author observed and took part in activities where people were competing for resources. This included attending meetings about the TC of the TRBR alongside *Quilombola* associations and other involved groups. The author took detailed notes in fieldwork diaries to capture

both verbal and non-verbal communication dynamics. These observations helped to validate the data by triangulating different sources of information.

Finally, qualitative data was coded and analysed with MAXQDA. More specifically, collected qualitative data on institutions-based access implications by the TRBR TC and faced by *Quilombolas* was first coded with MAXQDA. Such text-coding was conducted according to thematic codes – e.g., *Quilombolas*' perceptions and ICMBio perspectives on the TRBR and the TC, access to resources and markets, informal and formal institutions – for structuring implications of referred formal institution and its formalisation process by ICMBio reported by interviewees.

3 FINDINGS: CONTEXTUALISATION AND ANALYTICAL FRAMEWORK

Findings are structured around contextualising sociocultural, ecological livelihood conditions of gatherers and suppliers of SB products and an analytical framework developed for grasping and addressing institution-based access implications.

3.1 CONTEXTUALISATION

3.1.1 SOCIAL-ECOLOGICAL TRADEOFFS IN THE STUDY AREA: COMING TO TERMS WITH COMPROMISE?

Social-ecological tradeoffs are contextualised as a first step towards answering the main question addressed in this study. There is disconnection between socioeconomic conditions and environmental conservation in many areas where BN gathering occurs (i.e. Amazon region in Brazil, Peru and Bolivia; Peres *et al*., 2003). In the Lower Amazon basin, such disconnect also persists despite the well-known potential for BN gathering to reconcile livelihood and forest conservation needs through sustainable use of this SB product (based on Filocreão, 2007; IPBES, 2022). A brief background of contested 'social-ecological systems' – as referred to by Ostrom (2009) – in a PA that partially overlaps with a traditionally occupied land (Almeida, 2011) is provided before zooming into understanding institution-based access implications.

Quilombolas have already been accessing and using BNs as a livelihood-relevant resource on a sustainable basis for over a century. Not only that but they had created a strong sense of belonging to such traditionally occupied and collectively sustainably used areas, when Brazil's Institute for Forest Development (IBDF, per acronyms in Portuguese) came to establish the TRBR in 1979 (Acevedo; Castro, 1998). They had been compelled by IBDF and Brazil's Federal Police to leave their homes – at the TRBR – and to migrate to the community of Tapagem forcedly. This falls under what Agrawal and Redfort (2009, p. 1) called "conservation and displacement". Whilst legacy issues are not the focus herein, Free Prior and Informed Consent (FPIC) should have been applied accordingly for locally establishing and ensuring the TRBR is enacted in conformity with ILO Convention 169 for tribal peoples (ILO, 1989). *Quilombolas* were not consulted to establish this PA of strict environmental protection, where no use of biological diversity is allowed from the outset. Any use of BNs and/or any other natural resource, including by *Quilombolas* living in and around the TRBR, was considered a theft following its establishment (Acevedo; Castro, 1998).

BN is the most livelihood-relevant NTFP in Oriximiná (Inacio da Cunha, 2018; Rocha *et al*., 2021)—not only for maintaining the forests by sustainably using BN stands but also for ensuring liveable socioeconomic conditions while avoiding predatory land uses. Rural Oriximiná is the main study area, depicted in Figure 1, with a focus on different, partially overlapping demands for land use along the Trombetas River.

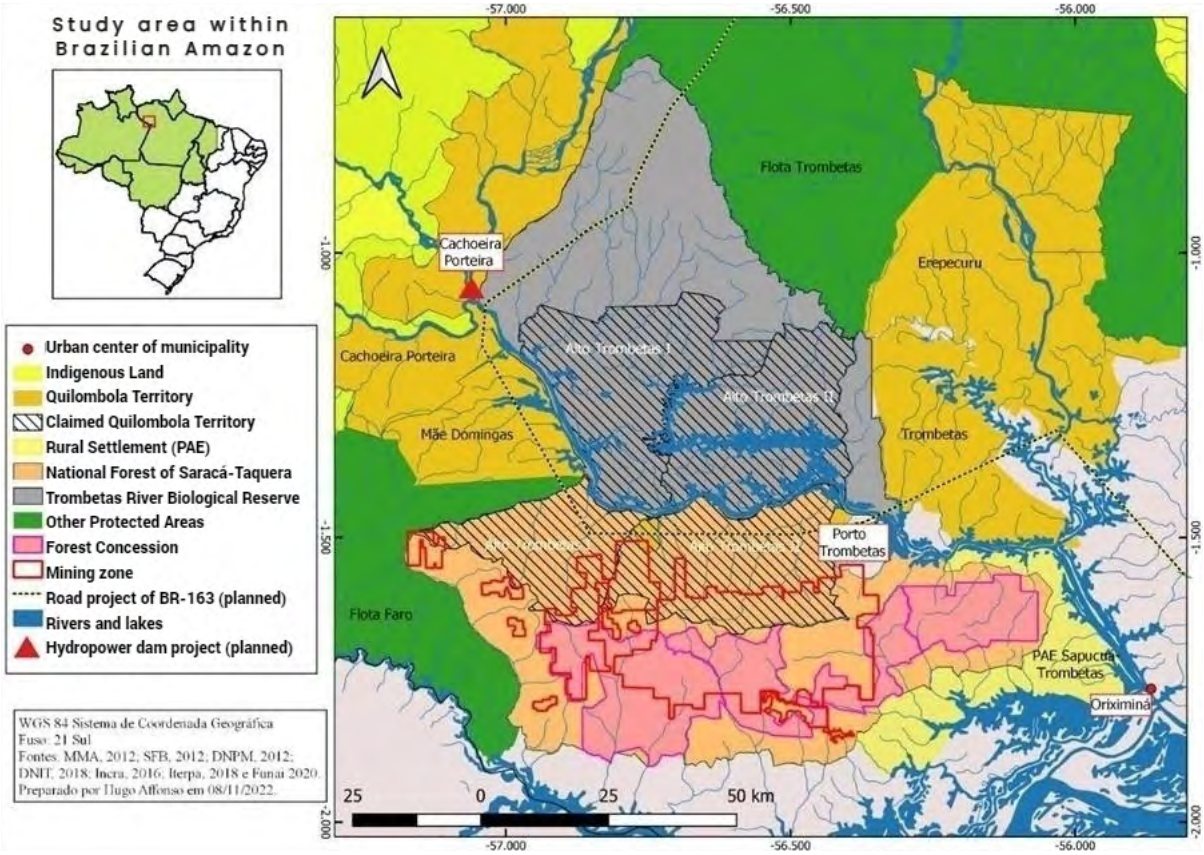

Figure 1 – Map of study area with PA (TRBR) overlapping with claimed *Quilombola* Territory
Source: Based on Rocha et al. (2021).

In the analysed remote rural communities along the Trombetas River in the Lower Amazon basin, access to BNs provides for sustainable livelihoods of NTFP-reliant forest dwellers. Using SB products avoids degrading land use practices – e.g., labour deployment for mining at Brazil's largest bauxite mine in Porto Trombetas in the municipality of Oriximiná and (illegal) timber trade – or expanding the agricultural frontier (through extensive soy fields and cattle ranching).

It remains to be dissected whether/how the TC and its formalisation process help come to terms with compromise. First, why does (limited) access to Brazil matter? Can one do without such access and live with the PA?

3.1.2 QUILOMBOLAS' (SOCIO-)BIOCULTURAL TIES TO THE TERRITORY

With reference to Figure 1, risks of loss of biodiversity per land use change can be alleviated by *Quilombolas* stewarding the SB in their traditionally occupied and collectively used lands per access to – followed by sustainable use of – BNs, the most important SB product in the study area (Inacio da Cunha, 2018). An indication of the social relevance of BN gathering is that *Quilombolas* in rural Oriximiná identify themselves not only as *Quilombolas* but also as *castanheiros* (i.e. BN gatherers, which itself is one of *povos e comunidades tradicionais* referred to by Almeida, 2011). Having co-inhabited forests by the Trombetas River along with Indigenous Peoples – per belonging as identifying with place (Leach, 2022). Such belonging relations *Quilombola* communities have to the territory (Acevedo; Castro, 1998), are part of the *Quilombola* BN gatherer livelihoods.

3.2 UNDERSTANDING ACCESS DETERMINANTS AND PROCESSES: TOWARDS AN ANALYTICAL FRAMEWORK

The analytical framework is developed through an iterative process involving theory and empirical evidence to distil insights on the analysis of access determinants and processes in a so-called institutional environment. Both informal and, particularly, formal institutions in use are examined, and in this case, formalisation of the former through the latter institution. It regulates resource and market access (and control) through written rules (intended for environmental conservation, in this case) as well as unwritten norms and power asymmetries (based on Long, 1999), which make up institution-based access implications. Institutions can change over time, including due to diverging interpretation, as human-beings are not regulation-complying robots (Streeck *et al*., 2010).

Whilst it is hereby understood that informal institutions are unwritten customary norms, whereas formal institutions are written rules (Lewins, 2007), it is important to understand such institutions and the environment in which they operate. Whether formal or informal institutions, how institutions are enacted need to be examined (Hodgson, 2006). Such ways refer to whether it is conducted unilaterally by leaders of given social systems (e.g., *Quilombola* communities in case of informal institutions or ICMBio in case of formal institutions) or in a participatory process of inputting to rule design and decision-making for livelihood-relevant access. Building on Hodgson (2006), the 'how' plays an important role in analysing institution-based implications for involved or even excluded social actors, while the relations between institutions and access are to be dissected.

3.2.1 INSTITUTIONS AS DETERMINANTS OF ACCESS TO RESOURCES AND MARKETS

Often, scholars have argued for either formal or informal institutions when it comes to property rights and formal institutions for land tenure security (Feder; Feeny, 1991) or customary norms in relation to natural resource access (Knight, 1992).

One of the primary reasons for this is the lack of formal institutions, such as land titles. This is particularly true in remote areas, including rural *Amazônia* (as discussed in DE Soto, 2000), where land tenure insecurity is widespread. However, the connection between institutions and access to essential resources and markets for livelihoods remains under-examined. Given limited resource access by *Quilombolas* and unbalanced use relations in and around a PA in *Amazônia*, it is key to analyse respective implications of institutions vis-à-vis environmentally sound natural resource and market access. Institutions continue to be the major means by which specific results and actions can be mediated, softened, attenuated, structured, accentuated, and facilitated (Agrawal; Gibson, 1999, p. 637). Institutions play a pivotal role in framing the scope for human (inter)action (North, 1990), as social actors try to access and market their product; in this case geographically and economically marginalised *Quilombola* BN gatherers (as traditional users of SB products). Sociological institutionalism refers not only to institutions as social structures but also leaves room for agency while conceptualising informal institutions as 'social norms' (NEE; Ingram, 1998). It can be argued over whether norms are social, as they can also be constructed by specific 'influential actors' within a social system (in reference to collective action based on Olson, 1965). Informal institutions are commonly unwritten and socially shared as well as created and enforced by involved actors (Schure *et al*., 2015, p. 54), while they can also be changed by them endogenously (NEE; Swedberg, 2005). Conceptualisations of institutions as product of interests (Scott, 2013), which can entail disputes, provides a better balance of agency and structure (Greif, 2003).

The relations between institutions and access to resources and markets are captured in an analytical framework with ingredients for locally adapted formal institution as per TC and synergistic social-ecological governance of PAs (Figure 2).

3.2.2 ACCESS-LIMITING PROCESS: FORMALIZATION OVERRULING INSTITUTIONALISED NORMS

The access-limiting process examined is one of formalisation, which overrules informal institutions that have long been in use. These are, in this case, customary norms internalised by *Quilombola* BN gatherer communities living with forests in traditionally occupied lands which overlap with the TRBR. Despite claimed intentions by ICMBio of the TC as a mechanism to deal with resource use contestations vis-à-vis *Quilombola* communities – living in traditionally occupied lands upon which the TRBR overlaps– the term ends up formally restricting the respective access (Inacio da Cunha, 2018).

Formalisation is defined as the process of increased state intervention in the realm of legal regulation (Ikdahl *et al*., 2005). Long-existent locally established informal institutions – e.g., norms for 'informally' regulating the natural resource and also market access within communities – are interpreted by non-community members and turned into exogenously determined rules, in this case by the environmental government entity (ICMBio). Such informal instructional arrangements can be formalised per written registration in official documents (Ikdahl *et al*., 2005, p. 4; Mitchell, 2009, p. 334), followed by control of compliance with such documents limiting self-determination concerning resource access and use by *Quilombola* communities in this case (based on Acevedo; Castro, 1998).

Formalisation is characterised by a considerable degree of complexity while often exogenously determined and controlled by the government, while it has unanticipated distributional consequences that were not initially objectivised by policymaking (based on Cronkleton; Larson, 2015; Ikdahl *et al*., 2005). Such 'distributional effects' as referred to by Putzel *et al*. (2015, p. 453), relate to the socioeconomic implications of the restrictions to accessing natural resources and markets, in this case, formalised by ICMBio per TC based on the Federal Decree 4340/2002 (Brasil, 2002), whose decision it was at the end to establish the TC of the TRBR in 2012 (Brasil, 2012). Whilst environmental conservation is ICMBio's principal goal, it might not have been intended by this governmental entity to provoke respective negative socioeconomic effects on upstream BN value chain actors (Inacio da Cunha, 2018) as actors upon which sustainable bioeconomies of such SB products mainly rely on. Such implications – per (Clause 10 of the) TC of the TRBR – affecting local communities can be categorised as "unintended consequences of social action" (Boudon, 1982, p. 1).

What is referred to are unpredictable effects of action and, in this case, institution-based implications on human-nature relations. These are to be further disentangled in an analytical framework to deepen understanding of the formal institution in use and its formalisation process.

Herein, norms are referred to as informal institutions to differentiate them from rules as formal institutions. Institutions persist, provided that society views them as a so-called 'permanent solution' to a 'permanent problem' (Berger; Luckmann, 1967).

This contrasts with the formal institution of the TC of the TRBR, which is an exogenously written rule that overrules already existing customary norms for regulating access to and use of BNs in TRBR-overlapping *Quilombola* communities.

3.2.3 DEFINING ACCESS

Access is the ability and right to benefit from resources (Peluso; Ribot, 2020; Ribot, 2009; Ribot; Peluso, 2003). Social groups in the margins of society, such as *Quilombolas* in this case, rely on access to be able to use and then benefit from livelihood-relevant resource(s).

The analytical framework concentrates on institution-based determinants and processes related to access to livelihood-relevant natural resources and markets. These processes are based on underlying 'mechanisms of access' (Ribot; Peluso, 2003, p. 155). These mechanisms manifest in institutionalisation

and, particularly, formalisation. At the same time, the focus is laid on the formal institution TC affecting the natural resource and market access by *Quilombola* BN gatherers in this case.

3.2.4 CONCEPTUAL CONTOURS OF ACCESS

Ribot and Peluso (2003) conceptualise the importance of certain means to benefit from access to natural resources (including land) by referring to 'mechanisms of access' required in addition to forest or farmland availability. The authors place property as one of many factors that play a role in access to livelihood-relevant resources and also markets (Ribot; Peluso, 2003). Whilst the focus of the property rights school has been on the formalisation of rights to and titling of land tenure, they put forward a more comprehensive notion of access – beyond property – that includes power and control (Ribot; Peluso, 2003) and institutions shaping the dispute over natural resource access and use.

Power and control, regulating access and property, often preclude the use of natural resources by the poorest of the poor (Sikor; Nguyen, 2007) and even lead to their dispossession (Lund, 2024). Common to such studies is the understanding of access beyond property rights towards power, which differs starkly amongst social actors.

Building on that to develop an extended understanding herein, economically and geographically marginalised groups' lack of access to natural resources does not necessarily come from lack of property only. Such social actors can also be deprived of access per exclusion, as elucidated by Anaya and Espírito-Santo (2018), indicating the negative impacts of PAs on traditional local communities, particularly pertaining to territorial exclusion and well-being limitations. Exclusion has been thoroughly examined and is not the focus of this study; access, as it implies no exclusion, provides more room to constructively examine it as a concept and empirical phenomenon.

3.2.5 RIGHTS-BASED ACCESS MECHANISMS

Given that rights-based access mechanisms were not the focus laid by Ribot and Peluso (2003) but rather relational access mechanisms, the former mechanisms are further developed for a better understanding of what constitutes rights-based access (Figure 2). Building on Ribot and Peluso (2003), access encompasses rights sanctioned by formal institutions that can allow or hinder social actors to benefit from livelihood-relevant natural resources and markets. As regarded herein, access is at the core of the analysis, given its importance as a precondition of use and corresponding benefits potentially stemming from resources. Use and benefits as concepts are dealt with adjacently given their rather material and less abstract character compared to access. Still, it is essential to unpack typologies underlying how the two notions (i.e., use and associated benefits) relate to resource and market access.

In line with Ribot and Peluso's (2003) understanding of processes of rights-based access to resources and markets, they can be hereby referred to as mechanisms which come with power dynamics that manifest specifically in the process of formalisation herein. Herein, based mainly on Ribot and Peluso (2003), rights-based access mechanisms are comprised of formal institutions, including property rights and, particularly by-laws, legally binding rules and federal decrees, in this case, the TC, enacted as per Federal Decree 4340/2002 (Brasil, 2012). This conceptualisation of rights-based ('rights', albeit indirectly related to, are not the same as human rights) mechanisms is further developed vis-à-vis access. Underpinned by property use rights (including laws enacted by governments, in this case, Article 68 of Brazil's Federal Constitution (Brasil, 1988) and the ILO Convention 169 ratified at the national level per Federal Decrees (Brasil, 2003, 2019), amongst others – about access and the right to use and benefit from certain livelihood relevant resources. The rights-based access mechanisms underpinning resource and market access and use and associated direct benefits can be disentangled into four

typologies. These typologies are clustered around two elements of rights-based access mechanisms (i.e. control and use) and are evidenced through the case herein:

3.2.6 CONTROL AS A RIGHTS-BASED MECHANISM FILTERING THE USE OF NATURAL RESOURCES

I. *Management*: refers to the right to (co)manage and (co)govern the use of a natural resource. Whilst the TRBR is currently managed by the ICMBio, as a responsible entity in Brazil's Ministry of Environment and Climate Change for managing such PAs, *Quilombolas* have long been collectively managing their traditionally occupied lands overlapped by the PA. Rights-based access to livelihood-relevant resources is currently neither ensured per recognition of *Quilombolas*' right to land (Brasil, 2021) nor per co-management of the overlapping area where the TRBR is the one that occupies the claimed *Território Quilombola*. Access to natural resources and markets by respective communities was already formally restricted per the establishment of the TRBR in 1979 (Federal Decree 84018/1979). Federal Law 9.985, 18.07.2000 (Brasil, 2000) enacted the National System of Protected Areas (Snuc, per acronyms in Portuguese), which had provisions for the elaboration of management plans. Such a plan for the management of the TRBR was elaborated unilaterally by the Ministry of Environment and Climate Change (based on Article 12 of the Federal Decree 4340/2002 (Brasil, 2002)). Divergence in perceptions of intentions for regulating BN access and overall management in the TRBR is concisely captured through the voices of both TC Parties.

> "The Term of Compromise is also for them [*Quilombolas*] to 'know that they are doing something [BN gathering] with [Federal Decree] backing." (Interview with ICMBio's regional management Santarém, in Santarém, date left out for data protection)

Yet, *Quilombola* leadership voiced the following:

> "The Term [of Compromise] of the [Trombetas River] Biological Reserve and its rules stands on our way to freely move up and down our river [Trombetas]. We always have to show our *papeletas* [permits for gathering and/or buying BNs within the allowed period from January to May every year]. ICMBio wanted to be safe and have an official document [Term of Compromise], even though we already had an agreement for us…what we call the *Acordo da Castanha* ['BN Agreement']. But them [ICMBio] talking about a compromise… I don't know if it's really an agreement or if ICMBio wrote the Term of Compromise and took it to our [*Quilombola*] leader to sign. And before he signed it, there was only one consultation with him [the *Quilombola* leader]. It may even be that ICMBio tried to trick us [*Quilombolas*], asking us to sign saying that it would be good to provide security for the collection of [Brazil] nuts, but what they [ICMBio] wanted was to trick us so that they could have their own rules to control us." (Interview with female *Quilombola* leader, online, 22.02.2024)

This evidences institution-based access limitations per formalisation through the TC, as per the compulsory requirement of the registry as eligible BN gatherer or buyer being granted a papeleta by ICMBio for the BN season. Non-conformity to rules formalised per TC and controlled by ICMBio per monitoring system, e.g., gathering or supplying BNs after May, implied in losing permit, accordingly (Inacio da Cunha, 2018). As a transition to exclusion, the above-cited voice of a *Quilombola* leader puts forward that the TC was designed by ICMBio for *Quilombola's* sign-off, with ICMBio misleading the communities by claiming the TC to be beneficial for formally securing their access. Not only does it undermine procedural justice for bilateral decision-making on TC, but it also formalises access restrictions and, the reason being, as she states, for the environmental entity to control resource access by *Quilombola* BN gatherers. This calls for a deliberative PA governance council that allows for the effective participation of PA-affected in joint management as well as in co-designing TC for it to be locally adapted.

II. *Exclusion*: refers to the right to determine who has use rights (Sikor *et al*., 2017), taking away access (Anaya; Espírito Santo, 2018) and associated rights to use the livelihood-relevant natural resources in and around the PA in question. While not explicitly excluding specific buyers, an additional exclusion process is a formal bureaucratic procedure officially established by ICMBio (Inacio da Cunha, 2018). Such as a cap based on Clause 10 of the TC of the TRBR vis-à-vis, which allowed buyers, and so have the volumes of BNs bought since establishing the TRBR in 2012. This occurred mainly due to the significantly lowered likelihood of buyers from outside *Quilombola* communities – particularly the ones who are not acquainted with BN gatherers living in such communities overlapping with TRBR – to succeed in attaining the required number of signatures (10) and consents of both parties to the TC (Brasil, 2012). This techno-bureaucratic cap leads to limitations in demand by a remaining limited volume and pool of buyers, and it seems that buyers coming from places other than the TRBR (further elaboration on market structure and power implications of such formal provision per TC to the detriment of BN gatherers is provided by Inacio da Cunha (2018).

III. *Monitoring*: refers to the right to monitor the use of a natural resource and confine their use scope when they regulate harvest volumes that are allowed to be transported; in this case, by a limited number of BN buyers per boat passing by the ICMBio control basis to the regional markets in urban centres neighbouring *Quilombola* communities in the Lower Amazon basin. On the riverside of the Trombetas River at the junction with the Erepecuru River, monitoring is done by the local understaffed ICMBio administration. Such control-laden monitoring of resources used by the *Quilombola* gatherers and buyers is done by the ICMBio, as though the former would not have already been gathering at rates lower than natural regeneration (Scoles; Gribel, 2012), and sustainable use of NTFP could only be achieved by the *Quilombola* communities with the monitoring and associated control by ICMBio. Use as rights-based mechanism filtering benefits

IV. *Direct benefits of collective use rights of a livelihood-relevant resource*: Benefits accruing directly through access and use (marketing) of BNs, which is an NTFP upon collective traditional livelihoods of *Quilombola* gatherers rely on in this case. It is understood that access precedes the use of and benefit from such resource access. While ability and relational access mechanisms – which have already been theorised and evidenced by Ribot and Peluso (2003) – also play a role, particularly in the use of and benefit from resources filtered by asymmetric power relations deteriorating *Quilombolas*' livelihoods, the focus is on rights-based access mechanisms. This focus is laid given the role such rights-based access mechanisms play with the TC of the TRBR in this case.

The first two above-featured elements of rights-based access mechanisms (i.e., control) play a significant role in precluding resource access by PA-affected *Quilombola* communities while impeding them from directly benefiting from BN use (Figure 2 for details on the pathway to rights-based access). ICMBio – exerting power, drawing from its responsibility of managing federal PAs – claimed as a formal way out of resource use disputes with *Quilombola* communities of NTFP gatherers (Interview with ICMBio's regional management Santarém, in Santarém, date left out for data protection). This governmental entity of Brazil's Ministry of Environment and Climate Change (in) advertendly formalises access limitations of PA-affected *Quilombola* communities. The formalisation process of informal institutions, i.e., already existing customary norms for, e.g., regulating the access to BN, stands by *Quilombola* communities. So-called 'points of BN collection' are claimed and only used by given families over generations. At the same time, BN pods piled up next to trees already 'belong to someone' (Interview with Quilombola gathers BNs from TRBR, in the community of *Mãe Domingas*, date left out for data protection). It is indisputable that conflicts over resource access and use are problematic, yet even more so the scarcity in access by Quilombola communities since

TRBR establishment, despite long-prevailing traditional collective sustainable use of BNs in and around the PA at the Trombetas River in the municipality of Oriximiná, state of Pará, Brazil. These are both examples of verbal agreements institutionalised over centuries upon being internalised and continuously respected by community members in and around the TRBR.

Whilst ICMBio claims to provide legally based backing 'allowing' for resource access and use for BN gatherers in and around the TRBR, the TC has formal provisions that reinforce power asymmetries between the affected *Quilombola* communities and ICMBio. Its checks at the ICMBio Trombetas riverside base are compulsory and create a perception of control and dependence on techno-bureaucratic monitoring systems (Inacio da Cunha, 2018). Moving away from exogenous agency-limiting formal institutions relates to the well-known argument in support of collaborative institutions for effectively governing the commons against the background of collective local management being at least as valuable as individual or private and to state management (Ostrom, 1990). This calls for further listening to voices of affected rightsholders, in this case of traditional local communities.

A *Quilombola* BN gatherer expressed discontent with implications of the TC of the TRBR, even though it was intended as a document that would reflect *Quilombola* claims over access to BNs as a livelihood-relevant resource.

> […] we cannot do what we used to do, you know? Before [the TC], we did what Nature wanted from us, and now we are limited by the rules that they [ICMBio] have written down [per TC]…they [ICMBio] will come after us if we don't go by the rules (Interview with female *Quilombola* leader, online, 22.02.2024).

This shows how the formalisation process of resource access and use per TC is negatively perceived by affected *Quilombola* BN gatherers in this case. Further, the cited *Quilombola* leader speaks as "we" and indicates control by authority (ICMBio) of compliance to externally written regulation (TC), which in this case is locally perceived as coercive enforcement.

3.3 ANALYTICAL FRAMEWORK: ADDRESSING INSTITUTION-BASED ACCESS IMPLICATIONS

For further answering the main question an analytical framework is developed. The latter focuses on the formal institution, the TC, as a determinant of access and the related access process which build up the core of the response to the main question (also depicted on the left part of the analytical framework). The proposed analytical framework zooms into rights-based access mechanisms. Transitioning to the analytical framework's right side, respective policy options for addressing are provided, moving from social-ecological tradeoffs towards leaving no biodiverse area or anyone behind through synergistic governance for navigating these tradeoffs. The central arrow of the analytical framework depicts replies to the main question for transitioning from such tradeoffs and institution-based access limitations per TC towards livelihood-relevant access based on a locally adapted TC and overall enabling institutional environment also for PA- and TC-affected traditional communities.

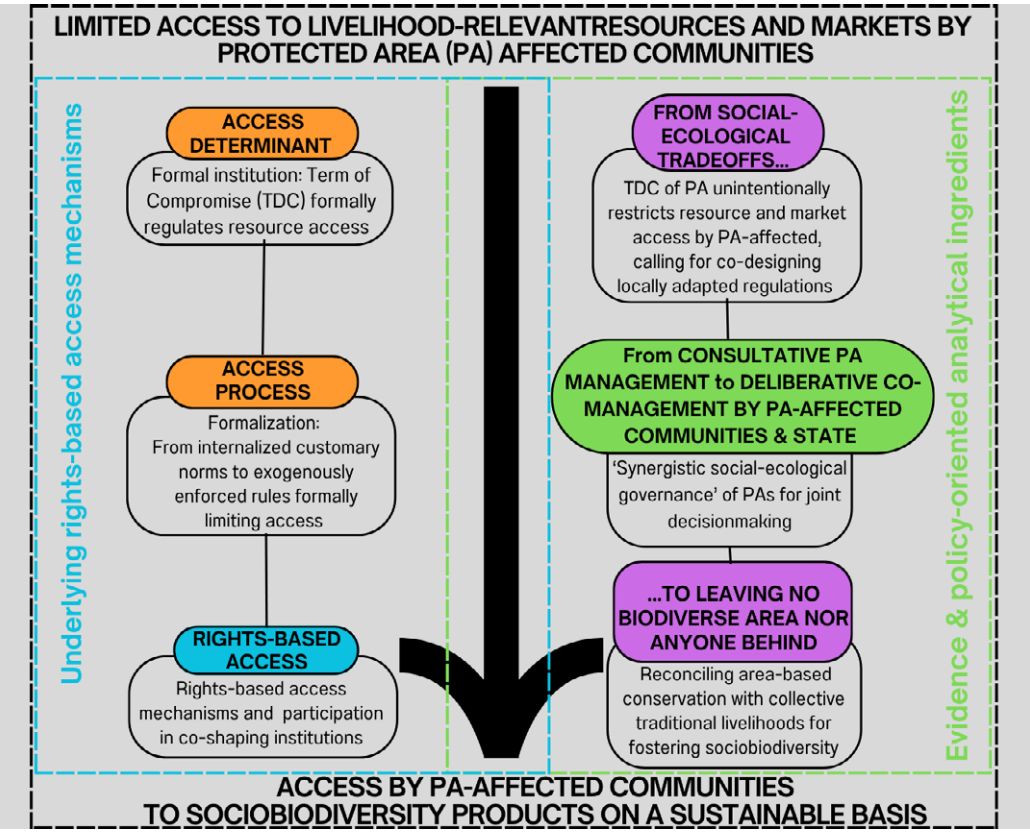

Figure 2 – Analytical framework for synergistic social-ecological governance of protected areas and inclusive sustainable use of socio-biodiversity
Source: Own elaboration

In dissecting 'rights-based access, 'it is evidenced that the TC reinforces power imbalances, given the institution-based restriction of demand for BNs (as a socio-biodiversity product), leading to an asymmetric market structure with few(er) buyers with greater market power vis-à-vis numerous gatherers in a given territory. This exacerbated asymmetry also reinforces price-setting power at the community level by the latter to the detriment of the BN gatherers. Such access has long been regulated per informal institutions at the community level, which was then unilaterally written and formalised by ICMBio through the TC (and its Clause 10). This further reinforces long-existing unbalanced resource use relations.

The underlying rights-based access mechanisms are presented on the left side of this analytical framework– answering the main question of this study. The right side depicts a social-ecological governance process towards policy options of locally adapting the TC of the TRBR in this case and deliberative councils for co-managing PAs in Brazil. This institutional change represents an evidence-based pathway towards livelihood-relevant access to resources and markets of SB products on an equitable and sustainable basis. As depicted above, there is also an overlapping middle ground with the large arrow from access limitations towards livelihood-relevant access, symbolising that the left side contributes to the right on evidence and policy-oriented analytical ingredients.

Transforming the PA governance structures from consultative management to deliberative co-management councils (at the mid-right part of the framework above) would allow for rights-based and environmentally sound access. Such access would be co-decided between the environmental State entity and PA-affected, in this case, traditional local communities. *Quilombola* communities can then effectively engage in adapting the TC towards livelihood-relevant access on a sustainable basis, which

could also transform social-ecological tradeoffs into synergies for leaving no biodiverse area nor anyone behind (pathway presented at the right side of the proposed analytical framework).

In the proposed analytical framework, rights-based access mechanisms (Ribot; Peluso, 2003) are synthesised as rights-based access, which entails co-shaping the institutional environment while co-deciding, inter alia, on the TC as a formal institution (at the lower left part of the proposed analytical framework). In so doing, deliberative PA councils – as a space where joint decision-making between local PA-affected rightsholders and ICMBio would take place – are an option to address institution-based access limitations of *Quilombola* communities who are faced with restrictive TC.

Further, McDermott (2009) puts forward institutions that are conducive to participating in making decisions, as well as institutions that enable access at stake and forge benefits from it. Reaping benefits calls for shaping institutions that guarantee or facilitate resource access and those that provide means for decision-making (ibid.: 251). PA-affected NTFP gatherers fall short of capturing benefits, as she states. The prevailing institutional environment in rural *Amazônia*, especially when it comes to access by such economically and geographically marginalised groups, often does not allow for securing livelihoods per such access. And less so to benefit from sharing, as resources are mostly allocated to (comparatively) powerful social actors.

Employing the above analytical framework for further understanding and drawing learnings from this case, access and resource use have long been regulated per informal institutions at the community level. Such collectively shared and internalised as well as institutionalised norms are overwritten through the formal institution of the TC. Such formalisation occurs as an exogenous process led by an environmental governmental entity (ICMBio) based on the legally binding Federal Decree 4340/2002 (Brasil, 2002), which undermines the previous endogenous institutionalisation process (Inacio da Cunha, 2018). While *Quilombola* communities accompanied by the MPF are in the process of establishing a Free Prior and Informed Consent (FPIC) protocol under the ILO Convention 169 (Interview with female *Quilombola* leader, online, 28.02.2024), this protocol would not directly apply to the TC as it came after, entering into force in 2012. Still, it is a step towards recognition of *Quilombola's* rights to access resources, including collectively used and traditionally occupied land (based on Almeida, 2011). ICMBio has conducted two 'brief consultation meetings' with *Quilombola* leaders to agree on and sign the TC of the TRBR (Interview with female *Quilombola* leader, online, 28.02.2024). Meanwhile, transforming PA councils from consultative to deliberative could be a step towards rights-centred access and locally adapted TC while fostering SB maintained by *Quilombola* communities.

The livelihood and overall implications of the TC – i.e. formal institution in use and its formalisation – for *Quilombola* BN gatherers living with forests in the TRBR have been undesirable as per primary data collected, including on endogenous norms overridden by exogenous rules while capturing perceptions of strict monitoring and control by ICMBio. Further evidenced per documental analysis accessed via the ombuds office accompanying Local Communities and Indigenous Peoples' access and use rights struggles are institution-based access limitations entailed by the external coercive imposition of 'compatibilisation ' of livelihoods to the terms written by ICMBio per formal institution in use, TC of the TRBR (Brasil, 2021). While the wording of the 'Term of Compromise' may convey a compromise by ICMBio allowing for resource access beyond strict environmental protection in the TRBR, the contrary is the case – it strictly reinforces access restrictions and formally further unbalances asymmetric relations along the local BN chain.

4 CONCLUDING REMARKS AND (POLICY) OPTIONS

> "[…] access becomes perhaps the most critical resource of all if people are to build sustainable, poverty alleviating rural livelihoods" (Bebbington, 1999, p. 2022).

Findings reveal that the TC of the TRBR formally overwrites institutionalised norms of affected *Quilombola* communities, which regulated such livelihood-relevant access before the TC and the establishment of the TRBR (1979). ICMBio (inadvertently) not only undermines local participation but also overrules such existing informal norms of *Quilombola* gatherers who have long collectively managed natural resources on a sustainable basis. The TC of the TRBR not only formalises BN use but also unintentionally restricts natural resource and market access, limiting *Quilombola* communities' rights and the ability to benefit from SB products. There is limited consideration of the rights to resources of Brazil's SB and of local customary norms in traditionally occupied areas (Almeida, 2011). This occurs in spite of well-known conservation contributions of IPs and LCs (Benzeev *et al*., 2022), including per sustainable use of SB products (in this case, BNs) in and around PAs (Belcher *et al*., 2005; Shackleton; Pandey, 2013; Smith-Hall; Chamberlain, 2022). PAs are often established in so-called biodiversity hotspots with low HDI and high occurrence of SB products. Recurring social-ecological tradeoffs entailed by PAs overlap with claimed Indigenous Lands and Territórios Quilombolas, which too often lack recognition of their constitutional right to land in Brazil (Brasil, 1988). Such spots can further function as protected lounges without choking the livelihoods of forest (stewarding) peoples and communities if context-sensitive institutions determine PA establishment and co-management for equitable State-community decision-making. Social-ecological tradeoffs can be transformed by the synergistic inclusive governance of PAs while addressing rights-based limitations in terms of access, use, and benefits. Without access, Indigenous Peoples and Local Communities (e.g., *Quilombolas* in Brazil) cannot use nor then benefit from livelihood-relevant resources. Yet, what are rights-based mechanisms and formal institution processes filtering resources access at the first place.

Against the background of navigating social-ecological tradeoffs associated with PA(-TC) and their natural resource management, despite access herein preceding use and benefits from resources, it is under-addressed by institution(al) analyses – as is access theory rarely combined with the latter. In this realm, an analytical framework combining theory(ies) of access, institutions as well as formalisation, and (collective) property rights scholarship are developed in an iterative process of analysing empirical phenomena and concepts for substantiating a grounded understanding of locally reported limited resource access. This analytical framework can serve to dissect access mechanisms in and around PAs as well as other units of analysis characterised by tradeoffs, such as food chains – particularly of SB products – to analyse the role of the institution(alisation) in shaping access to resources and markets by upstream chain actors in bioeconomies of SB products. Whilst the framework herein draws mainly on the 'Theory of Access' (Ribot; Peluso, 2003), the approach for developing is rooted in grounded theory (Glaser; Strauss, 1967) and local governance of the commons (Ostrom, 1990). The framework provides analytical ingredients towards a context-informed and rights-centred approach to addressing access limitations by traditional local communities affected by PAs and associated formal institutions.

The TC of the TRBR formalises BN access but unintentionally restricts it, affecting traditional livelihoods. The TC is *de-facto* 'unilateral' instead of a bilateral agreement per informed sign off by both Parties (ICMBio as environmental entity currently responsible for PA-management and *Quilombola* leadership), does not do justice to *Quilombolas*' inclusive sustainable access to livelihood-relevant SB products (locally claimed for access to BNs).

This calls for transforming the current consultative council for managing PAs of strict environmental protection in Brazil. In fact, replacing – in this case and else – consultative governance structures with deliberative PA management councils would enable PA-affected *Quilombolas* (and other traditional local communities) to effectively co-shape the TC of the TRBR instead of the term shaping their livelihood- and resource access limitations (per direct benefits of using BNs). Rights-based access can be particularly ensured by providing access to MPF as an 'official' ombuds office that could resolve TC-based access limitations faced by *Quilombolas* living in communities overlapped by the TRBR in this case. Local adaptation of the TC can be leveraged if PA-affected traditional communities channel associated complaints through MPF.

This could lead to a mutually beneficial TC while ensuring livelihood-relevant access to SB products by the mentioned affected groups of rightsholders (falling under ILO Convention 169). Further, it could set a precedent for other PAs of strict environmental protection in Brazil and beyond to accordingly transform their governance regimes, particularly where PAs overlap with traditionally occupied lands. Learnings can be drawn from this case that are applicable to other PAs overlapping with ancestral lands characterised by resource disputes between environmental entities and Indigenous Peoples and Local Communities in Brazil and elsewhere. This case can serve to inform environmental policies, including on SB, which enjoy post-dismantling momentum (Fonseca *et al*., 2022), particularly with Brazil's government in power as of 1st January 2023 – when the Ministry of Indigenous Peoples was established.

By distilling institution(al) determinants and processes of access towards rights-based access for securing traditional livelihoods of Local Communities and Indigenous Peoples: This research intends to inform debates on SB and multi-scalar environmental governance towards a social-ecologically sound implementation of KMGBF Target 3 that allows for sustainable access to resources and equitable bioeconomy benefits (CBD, 2022). This is conducted in a (path)way towards rights-based recognition of sustainable use of SB products as a means to keep our world's lounges alive without compromising sustainable livelihoods of traditional local rightsholders living in and with forests. Simply put, what also lacks recognition is the understanding that through sustainable and inclusive access to SB products and local markets by traditional local communities, forests have been conserved and can be further protected.

Policy options for addressing TC access restrictions affecting Local Communities include (i) livelihood-relevant resource access by changing consultative to deliberative councils for effective co-management by *Quilombolas* (in this case) inter alia in Biological Reserves of strict environmental protection (such as the TRBR), and (ii) locally adapting the TC while co-creating an enabling institutional environment for PA-affected rightsholders to co-decide on access limitations in contested PAs. These options can be implemented effectively, providing a synergistic social-ecological governance of resources through meaningful participation in joint decision-making on an equal footing between the environmental entity and Local Communities. Moving forward, a sociobioeconomy could help further combine bioeconomy and biocultural diversity: away from maximisation of utility extracted from so-called natural capital and beyond strict area-based conservation towards rights-based access for leaving no biodiverse area nor anyone behind.

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