

CLIMATE MITIGATION OR KNOWLEDGE DEPRIVATION? LEARNING FROM INDIGENOUS SOCIO-ENVIRONMENTAL FUNDS

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ABSTRACT

Purpose: To reflect on effects of exposing indigenous peoples to neoliberal approaches to mitigate climate change by examining Brazil's first indigenous peoples' socio-environmental funds, discussing conflicts, collaborations and how funds help or hinder symbiosis of REDD+ with indigenous practices.

Methodology/Approach: Primary data collected between 2011-15; Observation; Open-ended and Semi-structured Interviews; Focus Groups; Coding; Literature Review.

Findings: The analysis undertaken indicates that the realities of neoliberal and capitalist practices impose requirements and demands on indigenous peoples, restricting their ability to properly implement the objectives of the funds and affecting their traditional practices and forms of social organization.

Research Limitation/implication: Last field data collected in 2015, but the lessons we point out are valuable.

Originality/Value of paper: The conflicts and collaborations discussed add to the debate on neoliberalization of nature and give more evidence to suggest that re-thinking climate mitigation strategies is timely and urgent, and indigenous knowledge have a significant role in this process.

KEYWORDS: Brazilian Amazon; climate mitigation; indigenous rights; socio-environmental funds; traditional knowledge.

MITIGAÇÃO CLIMÁTICA OU PRIVAÇÃO DE CONHECIMENTO? APRENDENDO COM EXPERIÊNCIAS DE FUNDOS SOCIOAMBIENTAIS INDÍGENAS

RESUMO

Objetivo: Refletir sobre os efeitos da exposição de povos indígenas a abordagens neoliberais para mitigação das mudanças climáticas, examinando os dois primeiros fundos socioambientais indígenas do Brasil, discutindo conflitos, colaborações e como esses mecanismos financeiros ajudam ou dificultam a simbiose entre o mecanismo de REDD+ e práticas indígenas.

Metodologia/Abordagem: Utilização de dados primários coletados entre 2011-15; observação; entrevistas abertas e semiestruturadas; grupos focais; codificação; e revisão da literatura.

Conclusões: A análise realizada indica que as realidades das práticas neoliberais e capitalistas impõem exigências e demandas aos povos indígenas, restringindo sua capacidade de implementar adequadamente os objetivos dos fundos estudados e afetando suas práticas e formas de organização social tradicionais.

Limitação da pesquisa: Os últimos dados de campo foram coletados em 2015, mas as lições destacadas continuam relevantes.

Originalidade/Valor do artigo: Os conflitos e colaborações discutidos aumentam o debate sobre a neoliberalização da natureza e dão mais evidências para perceber que repensar as estratégias de mitigação do clima é oportuno e urgente, e o conhecimento indígena tem um papel significativo nesse processo.

PALAVRAS-CHAVE: Amazônia brasileira; mitigação climática; direitos indígenas; fundos socioambientais; conhecimento tradicional.

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1. INTRODUCTION

Climate change adaptation and mitigation strategies are mandatory and urgent, yet while strategies aim to be inclusive, they interfere in the cultural practices and values of various societies. Given their territories' contribution to preventing and halting deforestation, indigenous peoples (IP) have a prominent role to play in Reducing Emissions from Deforestation and Degradation and Enhancing Conservation (REDD+). However, local translations of international REDD+ agreements have resulted in ideological concerns around IP participation in REDD+ benefit-sharing. This article reflects on such ideological concerns and the effects of exposing IP to REDD+, to provide insights into how to better connect REDD+ to indigenous practices. We investigate if IP rights and REDD+ safeguards can guarantee that ideological concerns around REDD+ are addressed, drawing on two Brazilian examples to understand how REDD+ benefit-sharing with IP is unfolding in practice, and what types of conflicts and collaborations arise. The article argues that contemporary conservation and development approaches are heavily influenced by politically dominant Western and neoliberal agendas, with the resulting danger that indigenous values and practices will change in use, application and ability to deal with complexity.

Indigenous and traditional communities were the original space of emerging colonial capitalism (Coburn, 2016). Tied to colonialism, capitalist practices helped erase pre-existing indigenous lifeways. Today, IP have access, or are supposed to have, to fundamental information and connections; they can thus be at the center of resistance against capitalist practices while providing alternative options to it (Cadena, 2008). Neither indigenous values and practices nor REDD+ conceptualizations are static, or have a single, linear understanding; both result from diverse socio-cultural-historical processes (Inoue & Moreira, 2016). Recognizing this, we engage with the diversity and difference that are otherwise lost (Wapner, 2010), questioning the intellectual thinking within which REDD+ is set. The analysis in this article rests upon the contemporary variation, both cultural and individual (Onuf, 2013), that exists in the ways people relate with each other and nature; ways that are mediated, negotiated and managed through diversity in knowledge, values and practices (Sullivan, 2017).

Despite uncertainties around REDD+ (Sheng et al., 2018) and the challenges inherent to implementation in IP lands (Osborne et al., 2014), REDD+ initiatives have proliferated in Amazonian indigenous territories. The 'no rights, no REDD+' discourse emerged to guarantee IP rights would be protected under REDD+ initiatives (Howell, 2014). To deal with potential challenges, collaborations and conflicts arising, it is vital to guarantee indigenous traditions are unharmed by rights restrictions, alienations of IP culture, or practices altering indigenous abilities to address climate change traditionally (Federici, 2004). Local socio-environmental funds are appointed for REDD+ benefit-sharing (Funbio, 2013), attracting public and private funding and allowing options for resource expenditure (Oleas & Barragán, 2003), yet how they safeguard IP rights is equally important.

The study this article is based upon concentrates on Brazil's first IP socio-environmental funds: the Kayapó Fund and the Paiter Suruí Fund. To draw insights on how socio-environmental funds for REDD+ benefit-sharing may contribute to transforming local-level practices, we examine how appropriately they address IP rights and REDD+ safeguards. We hypothesize that agreement between actors is possible, or easier, if rights and safeguards are met. We discuss what conflicts and collaborations have emerged, and how the funds have helped or hindered in facilitating symbiosis between REDD+ and indigenous practices. Neither model fully meets REDD+ safeguards, especially relating to IP rights (i.e. to self-determination). More conflicts than collaborations were evident in the cases studied, suggesting strategies like REDD+ demand society to rethink contemporary approaches to climate mitigation, and learn from IP's traditional relationship with nature and their knowledge on responding to complexity and coping with local-level climate variability.

Structurally, the next section presents ideological concerns around REDD+ implementation in IP lands; Section 2 gives background on IP rights and REDD+ benefit-sharing in the cases studied; Section 3 explains the study's methods; Section 4 and 5 present findings and reflect on how conflicts and collaborations arise. The conclusion provides insight on how REDD+ measures can better connect to indigenous practices.

2. 'NO RIGHTS NO REDD+': IDEOLOGICAL CONCERNS AROUND IMPLEMENTING REDD+ IN INDIGENOUS PEOPLES' LANDS

REDD+ is advocated in international political negotiations as an opportunity to combine minimal-cost climate mitigation with sustainable forest management, biodiversity protection, poverty reduction and socio-economic development (Brockhaus & Angelsen, 2012). Most ideological opposition to REDD+ stems from the idea of paying for ecosystems services (Osborne & Shapiro-Garza, 2018). REDD+ has been criticized as an example of the 'increasing privatization and marketing of nature' (Lohmann, 2012, 85), or the neoliberalization of nature (Fairhead et al., 2012). Known as market environmentalism, this neoliberalization of nature is characterized by ecological crises being constructed as opportunities for innovation within the capitalist system (Piketty, 2014). REDD+ is then a result of historical environmental strategies through which political underpinnings are rationalized; the emphasis is on identifying models of individuals and behaviors, and developing arguments and justifications that naturalize observed actions and responses (Gebara & Agrawal, 2017).

The REDD+ arena is populated with distinct ideologies on what REDD+ is fundamentally about, as well as its priorities and strategies for action (Brockhaus & Angelsen, 2012). The way the REDD+ debate is framed can justify diverse actions (Leach et al., 2010). Here we focus on one of these ideological concerns – the 'no rights, no REDD+' discourse – to reflect on the effects of exposing IP to REDD+ as a climate mitigation measure. Embedded in the legitimation of IP practices and values related to forest landscape conservation, the 'no rights, no REDD+' discourse emerged as a reaction to the neoliberal genealogy of REDD+ (Howell, 2014). IP protested for the recognition of diverse rights related to REDD+ implementation (Hiraldo & Tanner, 2011). Demands for rights and safeguards resulted in a broadening of REDD+ objectives and scopes (Angelsen & McNeill, 2012); so-called 'co-benefits' – strengthening indigenous rights, better governance and higher capacity for climate adaptation – consequently became core REDD+ goals (Howell, 2014).

For some, REDD+ represents an extension of the capitalism system to forest landscape conservation, a contemporary dynamic for nature appropriation that involves different configurations of political processes, allowing elites to define new rights (i.e. those associated with carbon) and new forms of benefit sharing (i.e. result-based payments) (Bumpus & Liverman, 2008). For Fatheuer (2010) REDD+ brings significant transformations to social actors in the Amazon, converting them into 'service providers' and bringing consequences like new inequalities and radical changes in these groups' social structures. In reality, however, many forest communities perceive themselves as serving other-than-human contexts, rather the reverse, which forms the basis for much current rhetoric on ecosystem services (Comberti et al., 2015).

Under this contemporary neoliberal approach to conservation and development, wherein 'nature' is consolidated as 'natural capital' and the functions of natural systems as ecosystem services (Sullivan, 2014), common goods – inalienable by nature – are transformed into privatized goods, which can be bought and sold. The very materiality of nature, however, presents obstacles to its successful neoliberalization (McAfee & Shapiro, 2010). The dangers of dismembering a complex set of natural relations and processes to isolate a single element of instrumental value, are demonstrated by Scott's depiction of scientific forestry in early modern Europe (Scott, 1998); denying the diversity of ecosystems, to minimize process uncertainties and ensure efficient production of marketable goods, results in breakdown of those systems (Deb, 2009).

IP territories in Brazil are valued for their vast biodiversity, and IP land use practices are fundamental in controlling deforestation and reducing greenhouse gas (GHG) emissions. Many sustainable land use practices in these territories are born, developed and successfully implemented by IP without major influence from external stakeholders (Mistry et al., 2016). Prerequisite for such sustainable solutions is indigenous knowledge, which is local and context-specific, transmitted orally or through imitation and demonstration, adaptive to changing environments, collectivized through shared social memory, and situated within interlinked facets of people's lives (Mistry, 2009). IP practices include the sustenance of future abundance, affective and embodied as opposed to calculative (Sullivan, 2017). Evidence demonstrates that making stewardship an issue of money, rather than fundamental values, contradicts the very ethos that produces caring attitudes towards nature (Liverman, 2004).

The ways that individuals relate to nature are determined by social constructions of value or culture (Balée, 1989). Neoliberalization ruptures this link, rendering value unmediated and impersonal by expressing it in terms of price (Fehr & Falk, 2002). Transforming IP practices into monetized ones could 'crowd out' other motivations for climate mitigation (Frey & Jegen, 2001), and create perverse incentives, both to grab what might be paid for and to cheat on making payments due (Sullivan, 2017). Uncertainty around the scale and types of benefits REDD+ will bring is also notable: there is no agreed national policy on when, how much and by what means local people will receive benefits (Luttrell et al., 2013). Some indigenous rights activists fear that not only might IP receive little or no benefit, but they could lose their traditional rights to forest resources (Winer et al., 2012). Despite IP contributing little to climate change, they are among the most vulnerable populations (Fontelles, 2012); the main reason behind proponents advocating for a rights-based approach in REDD+ implementation (AIPP & IWGIA, 2011). Yet whether IP rights and REDD+ safeguards can overcome such concerns is questionable, as shown next.

3. A BACKGROUND TO REDD+ IN INDIGENOUS LANDS: RIGHTS, BENEFIT-SHARING AND SAFEGUARDS

Indigenous People's rights

The charter of the United Nations (1945) establishes the right to self-determination, stating one of its purposes is to 'develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace'. In practice, disagreements prevail regarding its application, especially to IP, which restricts their freedom of choice (Weller, 2009). The Declaration on the Right to Development (1986) asserts that the human right to development implies full realization of peoples' right to self-determination, including exercise of their inalienable right to full sovereignty over all their wealth and natural resources.

Existence of demarcated indigenous lands helps to avoid and contain deforestation in Brazil and reduce global climate change (Cristostomo et al., 2015). These areas cover 13.3% of Brazil, primarily in the Amazon biome (covering approximately 23% of its territory). The right of IP to lands they traditionally occupy is an original right, prior to the creation of the State itself – in recognition of IP being Brazil's first occupants (Telles do Valle & Yamada, 2010). Indigenous land demarcation guarantees the integrity of natural resources that could be consumed or degraded by third party use, to the detriment of IP. The 1988 constitution assures preservation of customs and firm protection of land rights through official demarcation of tribal territories. According to the constitution, demarcated territories remain vested in the state, but IP have permanent possession and exclusive usufruct rights, recognizing that tribal practices and values are closely tied to ancestral lands (Gebara et al., 2014). Unfortunately, bills under consideration in the National Congress threaten to modify or extinguish IP rights, especially after the 2018 election of extremist right-wing president Jair Bolsonaro (Guardian, 2018).

Based on these constitutionally guaranteed rights and the historic role of IP in conserving their territories, Brazilian civil society organizations argue that carbon rights and REDD+ benefits accrue to IP (ISA & Forest Trends, 2010). A federal legal opinion (AGUAF-1/2011) holds that provision of ecosystem services associated with indigenous territories could be constitutionally subject to commercial agreements on the part of indigenous groups, and that the carbon benefits generated in indigenous lands belong to IP. In 2012, the National Indian Foundation (FUNAI), the federal agency responsible for managing indigenous lands, reported that companies and/or individuals approached over 30 ethnic groups to propose REDD+ initiatives for carbon credits within the voluntary market. FUNAI declared most agreements null, considering them insufficient in light of the constitution and federal legal opinion above (Gebara et al., 2014).

FUNAI determines that any REDD+ benefit-sharing initiative must have a territorial management and resource management plan developed with indigenous communities. Such plans must indicate activity implementation costs (whether governmental or indigenous) and mechanisms for social and conflict resolution throughout implementation. FUNAI (2012) also proposes that REDD+ benefits should be collectively owned by communities, including education, health, sustainable economic alternatives, food security, cultural valorization, territorial protection, transportation, infrastructure, communication, energy efficiency and cultural and institutional strengthening. FUNAI's role in the Bolsonaro government, however, is still very uncertain.

Benefit-sharing: the role of local socio-environmental funds

The main legal document protecting IP rights to benefit sharing is Provisional Measure No. 2186-16/2001. This measure defines rules for access to genetic resources for scientific research, technological development, bioprospecting, benefit sharing, and access to and transfer of technology. Under this measure, IP have rights to receive benefits arising from third-party economic exploitation of biodiversity directly or indirectly associated with traditional knowledge. Although this marks an important step toward the recognition of traditional knowledge and biodiversity benefit-sharing rights, these rules are not monitored and enforced (Heringer, 2007). The absence of institutions and appropriate rule enforcement reflect lack of political will or motivation to guarantee benefit-sharing rights.

The creation of socio-environmental funds has been indicated as an opportunity to make feasible the distribution of collective benefits derived from initiatives in IP lands (Bayon et al., 1999). In the context of REDD+, such funds also offer new possibilities for public-private partnerships and decentralization of decision-making, while benefits can be delivered in different forms (i.e. cash, goods or services) (Meyer, 1997). Diverse fund expenditure options may increase the potential that IP's needs are met and, with appropriate governance arrangements, may lead to more equitable, long-term benefit sharing (Moye, 2002). Likewise, local socio-environment funds allow for more decentralization in decision making and access to benefits, which could promote autonomy (Schellhuber et al., 2001).

Arguably, having various options for structure, operation and funding mechanisms assures funds can contextually adapt to national and local laws and conditions (Oleas & Barragán, 2003). Funds are categorized by the financial transactions they perform, such as cash funds, sinking funds, endowment funds and revolving funds (Sampaio, 2006). 'Cash' funds have the simplest form of operation and use their assets to directly support projects, whether on a 'sinking' or 'revolving' basis. Sinking funds are extinguished after depleting their resources. Revolving funds make grants from a cash fund, but require that users repay or have other strategies for replenishment through long-term financing, such as endowment funds. In endowment funds, most resources are immobilized and only the interest is spent. Revolving funds are replenished sequentially by injection of new resources (Sampaio, 2006).

The design of socio-environmental funds involves stages like: dialogue and consultation with target actors; free, prior and informed consent (FPIC) from beneficiaries; institutional mapping; definition of local demands and priorities; identification of land use and occupation; and local interactions with the landscape and between different actors. According to Barcellos (2016) it

is important to not have pre-defined institutional structures for socio-environmental funds; instead the most appropriate options for institutional arrangements must be decided case-by-base, depending on the social and environmental goals.

Safeguards

Safeguards, intended to minimize any potentially negative impacts of REDD+ on local communities, have been a focus of debate (Duchelle & Jagger, 2014). The 16th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) agreed in 2010 to a broad set of safeguards to be ‘promoted and supported’ throughout REDD+ activities (UNFCCC 2010, Appendix I). However, UNFCCC requirements on safeguards are not legally binding and therefore weak (Savaresi, 2013); and progress on core aspects of social safeguards is highly variable across REDD+ countries (Jagger et al., 2014).

IP have had a cautious, frequently negative response to REDD+ initiatives in Brazil (Lang, 2017), primarily relating to the adequacy of REDD+ safeguards. The Articulation of the Indigenous Peoples of Brazil (APIB) rejects what it calls ‘false solutions’ involving the operationalization of carbon markets. The organization disagrees with approaches that do not add value to the natural forest and biodiversity resources that indigenous territories shelter. APIB also questions the current unsustainable development models that ‘counter’ the changes needed to overcome the climate crisis. It believes that countries in the South must build an alternative development model, implementing changes in the predominant agricultural model – centered on agribusiness and large-scale monoculture – which involve the invasion of indigenous and traditional territories, resulting in high deforestation rates and exploitation of natural resources (Lang, 2012).

Leaders of IP and other civil society organizations were involved in developing ‘Social and Environmental Principles and Criteria for Development and Implementation of REDD+ Programs and Projects in the Brazilian Amazon’ (Bonfante et al., 2010). Recognizing the diverse participation involved, the Ministry of Environment adopted this document as a starting point to debate the national safeguard information system (Shankland & Hasenclever, 2011). During design of the National Strategy for REDD+ (ENREDD+), premises were agreed between FUNAI and the Ministry of Environment to elaborate the Indigenous Component, aimed at meeting IP expectations of REDD+ implementation. Such premises determine REDD+ initiatives should be conducted by IP themselves, with government support and recognition to strengthen self-determination, in respect of the 169 Convention (Indigenous and Tribal People Convention) (FUNAI & MMA, 2012).

Here we selected the following safeguards for analysis: (i) respect for the right of IP self-determination, tied to freedom of choice, protagonism and autonomy; (ii) recognition and respect for the rights of possession and use of land, territories and natural resources; (iii) free, prior and informed consent about fund activities; (iv) guaranteed participation in all stages of fund activities and in decision-making processes, including definition, negotiation and distribution of benefits; (v) fair, transparent and equitable benefit sharing for those with the right to use the land and/or resources and those who implement activities that promote REDD+; (vi) existence of formal mechanisms for conflict resolution, complaints and demands; (vii) transparency around fundraising of financial resources and benefit-sharing; (viii) benefit-sharing for the collective; (ix) periodic and public monitoring of funded activities and the socio-environmental, economic and climatic impacts and benefits of activities. These safeguards were chosen as they are advocated at both international (Cancun Agreements, UNFCCC 2010) and national level (FUNAI & MMA, 2012, 2016).

4. METHODS

We first defined categories of analysis for comparing funds: (i) governance structure, including levels and members, rules for decision-making and fund management; (ii) financing structure and benefit-sharing, including financial and resource distribution strategies, types of benefits and beneficiaries; and (iii) safeguards, including consultation, accountability procedures, transparency, participation and rights. A literature review on REDD+ ideological concerns and

discourses on benefit-sharing and safeguards followed; this set foundations for discussing possible conflicts and collaborations generated by funds.

To investigate analysis categories, we collected empirical data between 2011 and 2015, when both funds started to be developed and implemented. Methods included: (i) observation of meetings (about the process of creating each fund) held between IP and their partners; (ii) open-ended and semi-structured interviews with stakeholders involved in these processes; and (iii) focus groups interviews with IP from the Kayapó and Paiter Suruí tribes.

Data collection concentrated on understanding: (a) the funds' financing agenda; (b) the approach used by fund proponents to identify IP demands; (c) if fund activities were aligned with territorial management; (d) if there was any monitoring of activities funded; (e) if IP needed to stop subsistence activities due to fund implementation; (f) if any geographical areas of the tribes were excluded from fund strategies; (g) if IP were aware of fund governance, contributed to its design, and had a role in its structure; (h) what IP participation there was in benefit definition, and how transparency is evaluated; (i) what IP participation there is in decision-making processes; (j) what the funds' information-sharing mechanisms are; (l) how socio-environmental impacts are monitored; (m) if conflict resolution mechanisms exist and how they work; (n) what the main funds' benefits and beneficiaries are; (o) if fund activities have led to shifts in values and practices on territorial management, including in the use and conservation of natural resources; and (p) what IP understand by self-determination in the context of REDD+ and how this strengthened by fund strategies.

Results, therefore, are based on perceptions of the funds' design and implementation; both perceptions of their beneficiaries, and of stakeholders involved in design and implementation (i.e. partners and public actors). Content analysis was then carried out, involving the use of analytical codes derived from ideological concerns and discourses relevant to the research focus. To understand collected data, local perceptions were codified by their connection with IP rights and safeguard implementation. Results were then re-codified to understand possible conflicts and collaborations generated by introduction of local social-environmental funds to the tribes, and how they relate to the 'no rights, no REDD+' discourse and the different aspects of neoliberalization of nature reviewed here.

5. RESULTS: GOVERNANCE, FINANCING, BENEFIT SHARING AND SAFEGUARDING FRAMEWORKS IN THE KAYAPÓ AND PAITER SURUÍ FUNDS

Both funds are intended as benefit-sharing mechanisms, for REDD+ initiatives and other actions to reduce GHG emissions. The design of each, however, followed a different pathway and differing levels of IP participation. This section outlines differences between the funds' structures and governance frameworks (Table 1), financing and benefit-sharing (Table 2) and safeguards (Table 3). Results here are based on the analysis categories mentioned in Methods. This section, therefore, identifies whether and how each fund meets the safeguards chosen for our analysis.

Governance structure

Kayapó Fund

In 2008, Conservation International (CI) initiated the idea of creating the Kayapó Fund to ensure long-term financing of indigenous associations. The fund was intended to help with administrative costs and activities of associations in the Kayapó territory in southern Pará and northern Mato Grosso states. The mechanism was devised to support five of the eight Kayapó indigenous territories: Kayapó, Menkragnoti, Capoto Jarina, Baú and Badjonkôre. A year later, the Amazon Fund expressed interest in supporting the Kayapó people affected by construction of the Belo Monte Hydroelectric Power Plant (Fleury & Almeida, 2013). Involved local associations negotiated creation of a fund with support from the Amazon Fund, inviting the Biodiversity Fund

(Funbio) to integrate these two processes and be the operational and financial manager of the Kayapó Fund.

The Kayapó Fund governance structure comprises of a donor committee, technical committee and the fund manager. The donor committee consists of Amazon Fund and CI representatives, and has responsibility for approving project proposals evaluated by the technical committee, which consists of FUNAI, CI, NGO and academic representatives. The technical and donor committees are responsible for all decision-making processes. Kayapó representatives may attend technical committee meetings as observers, with the right to speak, but not vote. The Kayapó Fund Operational Manual (Funbio, 2012) describes observer participation as subject to the internal rules of the technical committee. Potential projects are presented by organizations meeting eligibility criteria in the Operational Manual before being approved by the technical, and subsequently donor, committees and FUNAI.

Paiter Suruí Fund

The Paiter Suruí Fund was designed to guarantee long-term benefit-sharing from the Suruí Forest Carbon Project (SFCP) to four patrilineal Paiter Suruí clans in the Sete de Setembro Indigenous Land, on the borders of Rondônia and Mato Grosso states: Gameb, Makor, Kaban and Gamyr (Funbio, 2013). During SFCP development, organizations voiced concerns over how to manage resources from the initiative to avoid individual appropriation (i.e. a few leaders benefitting). Metareilá, the organization created to represent the Paiter Suruí clans, proposed a fund as a transparent way to transfer SFCP resources. Funbio was invited by Metareilá to design the Suruí fund and support development of its design and structuring, consolidation and operation.

The Suruí Fund governance structure was initially composed of a deliberative body, consisting of Paiter Suruí representatives, and a conflict resolution chamber, consisting of elders. Donors, investors, technical experts and public partners played advisory or observer roles. The deliberative body was responsible for supervising selection of projects to be implemented by the eight local Paiter Suruí associations, Suruí indigenous people and expert partners, or consultants. A management body, composed of a facilitating organization and the fund manager, was created to administrate financial resources, guaranteeing operational management for donors.

This governance structure was adjusted throughout the fund's implementation. In reality, the planned institutional structure and bodies were not implemented; Metareilá assumed most roles by creating a project committee of indigenous and non-indigenous staff members. This committee now selects and monitor fund-supported initiatives. Funbio continues to act as the financial manager of the mechanism, but its role has been criticized by IP due to high operational costs and low engagement. These structural and institutional modifications represent efforts by the Paiter people, especially Metareilá members, to resolve conflicts during fund implementation as well as strong pressure from external actors, including SCFP partner organizations.

Table 1: Governance structure of Kayapó and Paiter Suruí Funds

Governance Structure	Partners	Covered areas/clans	Arrangements
Kayapó Fund	Conservation International; Indigenous Associations; Amazon Fund; Funbio.	Kayapó; Menkragnoti; Capoto Jarina; Baú and Badjonkôre.	Donor Committee (Amazon Fund and CI); Technical Committee (FUNAI, CI, NGOs and academia) and Fund Manager (Funbio).
Paiter Suruí Fund	Metareilá; Funbio.	Gameb; Makor; Kaban; and Gamyr.	Project Committee (Suruí representatives and non-indigenous representatives); Conflict Resolution Chamber (elders); Fund Manager (Funbio).

Financing structure and benefit-sharing

The Kayapó Fund financing agenda needed to align with actions envisioned by the Amazon Fund. This resulted in an agenda exclusively focused on the institutional and political strengthening of associations representing the Kayapó. The main fund objectives are: sustainable productive activities, political and institutional strengthening, prevention of deforestation, conservation of biodiversity and territorial protection. Beneficiaries include indigenous associations working in territories covered by the fund; this was to guarantee wellbeing improvements for the Kayapó people and protection of their forests. Initially, the Paiter Suruí Fund was designed as a benefit-sharing mechanism for SFCP. However, through its design, its financing agenda was expanded. Nowadays, the fund aims to guarantee distribution of benefits from diverse sources, including REDD+, to finance a ‘50-Year Life Plan’ to benefit Suruí clans in land protection and conservation, wellbeing and culture (Fabiano et al., 2011).

The Kayapó Fund receives funding through voluntary and non-reimbursable donations from the Amazon Fund and CI, to the value of approximately USD 4.4 million. Some funds remain to be disbursed by the Amazon Fund and will only be distributed if resources are also fundraised by partner organizations, or by CI itself. If they fail, release of the remaining balance is conditional on the evaluation of social, environmental and economic indicators that demonstrate improvement in the Kayapó people’s wellbeing. Resources disbursed by the Amazon Fund are invested as a sinking fund and must be used by the end of the approved project; counterpart resources instead adopt an endowment strategy. The logic behind this approach is aligned to the REDD+ rationality of payments for results, and consistent with a public funding strategy defended by the Brazilian government in ENREDD+, the National Strategy for REDD+ (Government of Brazil, 2015).

Conversely, the Paiter Suruí Fund has a funding structure allowing for financial resources from diverse origins. Resources managed by the fund are however mostly from REDD+ carbon credit commercialization, carried out on a voluntary basis. The adoption of a model that has a private financing strategy conflicts with ENREDD+, which doesn’t allow for the commercialization of REDD+ credits and offsets (MMA, 2016). The Suruí Fund will initially operate as a revolving fund, which calls for a long-term fundraising strategy. In future, the fund will operate as an endowment fund, immobilizing a large volume of resources and using only revenues received as a result of interest on investments. This operating format has limitations; maintenance of a balance between the availability and demand of financial resources depends on attaining an adequate volume of fixed capital. Its application, however, could represent an opportunity for securing long-term financing of recurrent costs and the sustainability of the fund. Initially, there were great expectations around the volume of resources that would be generated by the SFCP (anticipated to be around USD 15 million). However, until 2015, the Paiter Suruí Fund raised just USD 1 million (approximately), through a partnership with the Brazilian cosmetics company Natura, the International Federation of Football Association (FIFA) and a small donation from the OAK Foundation.

Table 2: Financing and benefit-sharing arrangements of Kayapó and Paiter Suruí Funds

Financing/benefit-sharing	Kayapó Fund	Paiter Suruí Fund
Type	Sinking (Amazon Fund); Endowment (counterparts).	Revolving (present); Endowment (future).
Objectives	Sustainable productive activities; political and institutional strengthening; prevention of deforestation; conservation of biodiversity and territorial protection.	Guarantee long-term distribution of benefits from diverse sources, including REDD+, to finance the ‘50-Year Life Plan’.
Beneficiaries	Indigenous associations that work in the territories covered by the fund.	Different Suruí clans.
Source of funding	Voluntary and non-reimbursable donations from the Amazon Fund and CI.	Diverse origins.

Safeguarding

Operationalizing safeguards in IP territories remains challenging for REDD+ (McDermott et al., 2012). While safeguard implementation will lead to more equitable benefit-sharing (Brockhaus et al., 2014), in practice safeguarding frameworks have proved inadequate in supporting objectives they are meant to achieve (Arhin, 2014). These two cases are no exception; in each fund (Table 3) poor safeguard implementation has generated conflicts linked to governance structure, financing and benefit-sharing.

Table 3: Safeguard frameworks of Kayapó and Paiter Suruí Funds

Safeguard	Kayapó Fund	Paiter Suruí Fund
Respect for the right of IP self-determination	Safeguard not met. Decision-making limited throughout different stages of fund design and implementation.	Safeguard partially met. IP have decision-making responsibilities, but participation is not open for all tribe members and information is limited.
Recognition and respect for the rights of possession and use of land, territories and natural resources	Safeguard partially met. Respect for possession and exclusive usufruct rights, but fund did not address the issue of ownership over carbon credits.	Safeguard met. Aspects of property rights have been widely discussed, including those relating to ownership of carbon credits.
Free, prior and informed consent	Safeguard not met.	Safeguard partially met. There was extensive and inclusive FPIC for the design of the SCFP, but not for the fund.
Participation in all stages of the fund's activities and in decision-making processes	Safeguard not met.	Safeguard partially met. IP are responsible for decision-making, but participation is not inclusive of all tribe members and information is limited.
Fair, transparent and equitable benefit sharing	Safeguard partially met. The rules are transparent but have not been defined with the participation of IP and are rather restrictive.	Safeguard not met. The rules currently applied have not been formalized, are not transparent and have been designed with restricted participation of IP.
Existence of formal mechanisms for conflict resolution, complaints and demands	Safeguard not met. IP associations and CI receive complaints informally.	Safeguard not met. Fund's manual describes a conflict resolution mechanism, but it has never been used. Meteirelá receives complaints informally.
Transparency, accountability and information-sharing	Safeguard partially met. The means and formats of information-sharing, and the languages used, are inadequate for IP. There is no periodic accountability.	Safeguard partially met. Adequate language (meetings were conducted in Portuguese and Tupi Mondé). But information previously defined and disclosed in the fund's manual has been extensively modified without disclosure to all beneficiaries. There is no periodic accountability.
Collective benefit-sharing	Safeguard partially met. Although the rules of the fund are not explicit in this sense, it does seek to approve projects that have a collective character.	Safeguard partially met. There is no clarity in this regard. Clan associations benefited from the projects they implement. Initially, benefits were mainly distributed to just few IP, and Metareilá's administrative expenses are still covered by the fund.
Monitoring of activities and impacts	Safeguard partially met. There is a lack of monitoring regarding the socio-environmental, economic and climatic outcomes.	Safeguard partially met. Approved projects are monitored, but not other funded initiatives. There is a lack of clarity around the use of other resources made available by the fund, mainly because information on fund's impacts is not public.

6. DISCUSSION: TIME TO RE-THINK CLIMATE MITIGATION STRATEGIES

That neither fund has fully implemented safeguards raises concerns; both that local-level conflicts are linked to the protection of IP rights, and that fund activities are triggering shifts in IP

values and practices linked to territorial management. Here we discuss these conflicts and how collaborations sought to deal with them.

Money talk: are rights enough to avoid conflicts?

The financing structure and benefit-sharing strategies of both funds aim to strengthen local indigenous associations and bring improvements to the Kayapó and Paiter Suruí populations. Conflicts thus far arise from how funding and benefits strategies were defined and implemented. With the Kayapó Fund, it remains unclear how conflicts and collaborations could materialize. Although CI collaboration was key for translating Kayapó needs, there was no inclusive IP participation in the definition of activities and benefits to be financed by the Kayapó Fund. Because benefit-sharing had to meet the Amazon Fund's restrictions and requirements, Kayapó participation was facilitated in collaboration with indigenous associations. Results suggest these peoples' right to self-determination is not guaranteed. Equally, the Kayapó governance structure appears to seriously restrict Kayapó participation in decision-making, with likely implications for benefit-sharing (Gebara, 2013; Luttrell et al., 2013). The Kayapó case demonstrates how lack of inclusive participation can be explained by failure to manage power inequalities (Rifkin, 2014), in this case between IP and outside stakeholders such as fund partners and donors. As such, information-sharing and the ability to negotiate power relations are essential if a more legitimate path is to be pursued, allowing the Kayapó people full understanding of arrangements.

The Paiter Suruí Fund's funding agenda was defined during lengthy dialogues to design their '50-year Life Plan' and, later, the Suruí Fund. For the first projects funded, FPIC was formally implemented, with participating actors including indigenous associations and NGOs (IDESAM, 2011). Paiter Suruí leaders and representatives of clan associations and partner organizations were also vocal during the Suruí Fund's participative creation. Information-sharing was much more democratic here as all meetings were conducted in IP language. According to most research participants, at least during fund design, the Paiter Suruí people's right to self-determination was observed; they were able to freely determine their needs during construction of the '50-year Life Plan' and design of the Suruí Fund. Indeed, during both processes IP and partners managed to focus on Anaya's four realms of self-determination (1994): cultural integrity; lands and other natural resources; social welfare and development; and self-governance.

The Suruí case, however, shows that a well-structured FPIC process may not be enough to avoid conflicts, despite being fundamental for high levels of consent (Gebara et al., 2014). Despite cohesion among the Paiter Suruí population in initial conversations regarding SFCP establishment, the need for collective decision-making and collective interests represented in a single position has little precedent in this community. Relations between clans have been marked historically by conflict not cooperation (Le Quesne, 2013); consequently, the SFCP introduced new social division and conflicts (i.e. over some families in the tribe benefiting more than others) (CIMI, 2015). This exemplifies failure to balance power inequalities, but here within Suruí clans; introducing new practices prevented some groups from benefiting from the participatory process to improve their self-determination (Dasgupta & Beard, 2007).

Regular flow of financial resources was a significant conflict trigger in both funds. In 2015, faced with uncertainty around the continuous flow of funding from the Government of Norway (the main Amazon Fund donor), an issue arose around the deadline (if 2017, 2018 or 2022) for distributing financial resources from the Amazon Fund to the Kayapó Fund. In future calls for Kayapó projects, this resulted in a tendency to increase the amount of resources requested for disbursement by the Kayapó Fund, to allow full distribution of Amazon Fund donations. Research participants (both indigenous and non-indigenous) raised concerns about the capacity and commitment of IP associations to absorb these resources without disturbing their traditional ways of use and conservation of natural resources. This demonstrates how power inequalities between IP and outsiders could cause problems around territorial management, as donors push external agendas that may overburden communities with unreasonable responsibilities (Nichter, 2008).

For the Suruí, relying on the voluntary market has proven risky and has increased conflicts (Gebara et al., 2014). The absence of timely financial flows to meet the group's needs, principally those dependent on productive activities, was a main cause of conflict as the only accessible economic options in the reserve are environmentally damaging: illegal logging, cattle ranching and agriculture (Da Silva & Ferreira Neto, 2014). Because of the long time required to generate economic and social benefits for the population, dissident groups continued to extract timber, contrary to timber harvest moratoria signed by the indigenous associations, exacerbating local conflicts (Paiter Suruí, 2015; Ferronato & Nunes, 2018). Indigenous research participants also felt the SFCP increased visibility in Suruí territories and monitoring and control of their lands had increased, restricting some subsistence activities. This culminated with Almir Suruí, the initiative's main leader, being threatened by illegal loggers authorized to use IP lands by other leaders of the tribe (BBC, 2016), under the argument that they needed to generate income as SFCP benefits had not materialized. Finally, the SFCP was criticized by the Indigenous Missionary Council (CIMI), who drew attention to on-the-ground conflicts (CIMI, 2015). Many respondents believe this was a CIMI strategy to increase its relevance in Suruí lands.

Whose governance?

In terms of governance, the Kayapó deliberative body is more diversely composed than the Suruí one. It consists of technical and donor committees, thus technical, institutional and financing issues can be addressed more collaboratively. However, this may also increase conflicts around centralized decision-making, with implications on the legitimacy of the benefit-sharing process (Kowler et al., 2014). Benefit access is also more restricted in the Kayapó Fund. Being limited to specific indigenous associations and excluding less structured ones, such as local organizations, potential conflict may arise from IP's limited participation in decision making, both over the destination of financial resources and access to them. IP participation in external initiatives has proven more collaborative when IP are involved as owners of their land and natural resources (O'Faircheallaigh & Corbett, 2005); showing that they are the most capable of deciding on territorial management issues, including use and conservation of natural resources.

In contrast, the Suruí's initial deliberative body – composed of Suruí people – increased autonomy and empowerment, and improved activity planning and implementation under the '50 Year Life Plan'. However, the wait for financial resources, and frustrations around the amount to be received, left the Suruí people questioning the initiative's complexity and feasibility. Governance structure challenges also emerged after resources began to flow in and be distributed, leading Metareilá to adapt the structure by adding a project committee. This allowed more transparency in resource transfer and helped to meet expectations, but did nothing to minimize conflict and criticism; the decision-making process became centralized, highlighting a less legitimate and transparent benefit-sharing process (Kowler et al., 2014).

Diverse natures: culture, values and practices

It is doubtful whether 'neoliberalization of nature' is an appropriate way of describing the local socio-environmental funds studied. Even adopting the most basic criteria – that funds' beneficiaries and donors have a marginally similar conceptual understanding of what is in question, and they agree on the terms of financial investments and benefit-sharing – it is questionable whether such criteria are met. The studied parties seemingly agree on different interpretations of the same thing; concepts such as 'carbon' and 'ecosystem services' have no equivalent category within indigenous categorizations of nature and land use practices, and indigenous perceptions and values of territoriality are not compatible with the neoliberalization of natural resources (Osborne et al., 2014). How, then, can they be said to be in agreement upon the object of negotiations (Shankland & Hasenclever, 2011)?

For the Suruí, the concept of 'carbon payments' remained abstract to community members, i.e. 'how to commercialize something that cannot be seen, touched, or known?' (Metareilá et al., 2010). For them, the value of the forest is not as a producer of 'ecosystem services' that, in

intangible ways like carbon storage, allow ‘human life’ to function; the forest is instead valuable as a means for ensuring practices that generate the material and spiritual wellbeing of the Paiter people (Rival, 2012). Likewise, the Kayapó people, due to an absence of clear information-sharing, did not understand (and still do not) the logic of an endowment operation.

Interviews with Suruí Fund partners revealed that proponents advocate for REDD+’s feasibility in IP territories, resulting in pressure on Suruí leaders to succeed in SFCP implementation. Suruí research participants affirmed they were encouraged to comply with certification requirements, and not expose the initiative’s fragilities nor Paiter people’s challenges in dealing with its bureaucratic processes, to ‘prove to the world’ (in their own words) that REDD+ and carbon markets are successful solutions for climate mitigation.

Although partner organizations were fundamental, both in fund activity design and in engagement of IP in such activities, collaborations were not strong enough to avoid the conflicts generated by introducing social-environmental funds to the tribes. During meetings between Suruí leaders and partners to minimize conflicts, IP elders – part of the conflict resolution chamber – realized that arising conflicts were not exclusively cultural, but also structural and financial, thus differing from the nature of problems traditionally faced by the Paiter people. They concluded that IP would be unable to solve such conflicts because ‘they act culturally, by protecting each other’ (in their words), highlighting the need for a new sphere of conflict resolution.

Despite conflicts, the Suruí example was critical in increasing trust and acceptance of REDD+ amongst Brazil’s indigenous groups. Almir Suruí acted as a ‘bridge’ between indigenous and non-indigenous cultures (Independent, 2008), facilitating diverse collaborations; he was also actively involved in redefining cultural difference, and in articulating new spaces for the expression of indigenous identity (Pereira, 2013). Strategies pioneered by Almir, and since adopted by others in the Suruí community, can be described in terms provided by Goodale (2006, 635), who suggests contemporary indigenous political strategies embody a ‘subaltern cosmopolitanism’; they excel in non-Indian subjects or practices, whilst still being Indian.

7. CONCLUSION

In this paper, we examine the first two IP socio-environmental funds in Brazil to understand how REDD+ benefit-sharing may have contributed to transform local-level practices. We discussed the diverse conflicts and collaborations generated by the initiatives, to better understand how contemporary approaches to climate mitigation are unfolding within IP cultures. Neither model fully meets REDD+ safeguards, especially relating to IP rights (i.e. self-determination right). As a result, more conflicts than collaborations were evident.

The conflicts and collaborations discussed add to the debate on neoliberalization of nature and give more evidence to suggest that re-thinking climate mitigation strategies is timely and urgent, and IP have a significant role in this process. Human behavior can be responsive to local environmental conditions, as demonstrated by the use of traditional ecological knowledge by indigenous cultures globally (Mistry & Berardi, 2016). This implies that designing an ecologically consistent post-neoliberal model for conserving forest landscapes would benefit from different cultures reconnecting with nature, so they experience and create a dynamic understanding of natural systems and human–environment interdependence (Amel et al., 2017). As already argued by Escobar (1995) we need a type of social change that occurs not only within economics, but one ‘envisaged as a whole life project, in which the goals and means of individual and collective endeavors are re-imagined’ (p. 83).

The analysis undertaken indicates that the realities of neoliberal and capitalist practices impose requirements and demands on indigenous peoples, restricting their ability to properly implement the objectives of the funds and affecting their traditional practices and forms of social organization. Also, deciding how they want to use their land, and are able to translate those desires

into practice, requires dealing with the relentless pressure of resource extraction, and the changing priorities and values of IP themselves. Involvement of neoliberal values in this decision-making process has reinforced amongst IP the idea that prosperity and wellbeing are linked to the accumulation of money, rather than spiritual harmony and collective strength. This is moulding IP perceptions of wellbeing to correspond with broader Western and neoliberal cultures.

We suggest REDD+ benefit-sharing strategies in indigenous lands should instead better engage with the spiritual, aesthetic, cultural, recreational, productive and other values associated with nature, those that cannot be quantified by a metric or traded off against one another (Martinez-Alier et al., 1998). Further research is required for a more encompassing and systematic view of 'diverse natures'. We recommend efforts to conserve forest landscapes and deal with climate change complexities should first engage with IP and other significantly affected local communities. This would begin from the premise that traditional and local knowledge could help alter how contemporary societies think and live, and design physical, governmental and cultural systems that privilege our profound interdependence with nature.

The recovery of indigenous knowledge and diverse natures is important to indigenous peoples, to different contemporary societies and for future generations. We conclude that this recovery is vital for global environmental governance. As IP have unique knowledge of their homelands and ecosystem (Wilson, 2004), there are pragmatic reasons to include their knowledge in the broad and complex solutions needed to cope with the global socio-environmental crisis. Such solutions should transcend capacities of science, technology and existing political institutions, to encompass a wide spectrum of levels of knowledge(s) and practices that include not only natural and social sciences, but also culture, philosophy, and spirituality/religion in a broad sense (Leis, 1999). This would make traditional knowledge more acceptable and relevant to different cultures, while critically promoting social justice and establishing self-determination as a key principle of engagement (Viatori, 2007). Instead of IP following the values associated with cultures driving climate change and deforestation, such cultures should come away from this knowledge deprivation and learn from the diverse ways IP have been contributing to climate change mitigation for centuries.

8. REFERENCES

- [AIPP & IWGIA] Asia Indigenous Peoples Pact and International Work Group on Indigenous Affairs. (2011). *ASEAN, climate change, REDD+ and indigenous people*.
- [CIMI] Conselho Indigenista Missionário. (2015). *Lideranças Suruí afirmam ao presidente da Funai que não querem mais o projeto de carbono em suas terras*. Accessed 1 January 2019. <https://cimi.org.br/2015/02/36982/>
- [FUNAI & MMA] Fundação Nacional do Índio & Ministério do Meio Ambiente. (2012). *Premissas acordadas entre a fundação nacional do índio e o ministério do meio ambiente para a elaboração do componente indígena da estratégia nacional de REDD+*. Accessed 1 January 2019. http://redd.mma.gov.br/images/publicacoes/premissas_funaimma.pdf
- [FUNAI] Fundação Nacional do Índio. (2012). *Esclarecimentos da Funai sobre atuação do mercado voluntário de REDD em Terras Indígenas*. Accessed 1 January 2019: http://www.funai.gov.br/ultimas/noticias/2012/03_mar/PDF/EsclarecimentosREDD.pdf
- [Funbio] Fundo Brasileiro para Biodiversidade. (2013). *Fundo Paiter Suruí: Manual operacional*.
- [Funbio] Fundo Brasileiro para Biodiversidade. (2012). *Fundo Kayapó: Manual operacional*. Accessed 1 March 2019: <http://www.funbio.org.br/wp-content/uploads/2012/04/Manual-Operacional-FUNDO-KAYAPO.pdf>
- [IDESAM] Institution for the Conservation and Sustainable Development of Amazonas. (2011). *Project description: Suruí Forest Carbon Project*.
- [ISA] Instituto Socioambiental & Forest Trends. (2010). *Avoided deforestation (REDD) and Indigenous Peoples: Experiences, challenges and opportunities in the Amazon context*.
- [MMA] Ministério do Meio Ambiente. (2016). *ENREDD: Estratégia nacional de REDD+*. Accessed 1 January 2019. http://redd.mma.gov.br/images/publicacoes/enredd_documento_web.pdf



- [UNFCCC] United Nations Framework Convention on Climate Change. (2010). *Report of the Conference of the Parties on its sixteenth session*. 15 March 2011. FCCC/CP/2010/7/Add.1.
- Amel, E., Manning, C., Scott, B., & Koger, S. (2017). Beyond the roots of human inaction: Fostering collective effort toward ecosystem conservation. *Science*, 356(6335), 275-279. <https://doi.org/10.1126/science.aal1931>
- Anaya, S.J. (1994). The native Hawaiian people and international human rights law: Toward a remedy for past and continuing wrongs. *Georgia Law Review*, 28, 309. <http://scholar.law.colorado.edu/articles/853>
- Angelsen, A., & McNeill, D. (2012). A evolução de REDD+ In A. Angelsen, M. Brockhaus, W. Sunderlin & L. Verchot (eds.), *Análise de REDD+: Desafios e escolhas*. (pp. 31-48). Center for International Forestry Research (CIFOR).
- Arhin, A. (2014). Safeguards and dangerguards: A framework for unpacking the black box of safeguards for REDD+. *Forest Policy and Economics*, 45, 24-31. <https://doi.org/10.1016/j.forpol.2014.05.003>
- Balée, W. (1989). The culture of Amazonian forests. In: D. Posey & W. Balée (eds.) *Resource management in Amazonia: Indigenous and folk strategies*. *Advances in Economic Botany*, 7, 1–21. <https://doi.org/10.2307/215642>
- Barcellos, L.M. (2016). *Fundos ambientais: instrumentos de financiamento de políticas públicas ambientais municipais*. IBAM.
- Bayon, R., Deere, C., Norris, R., & Smith, S. (1999). *Environmental funds: Lessons learned and future prospects*. Global Environmental Fund.
- BBC News Brazil. (21 November 2016). *Tenho medo de morrer na própria aldeia: Como 'cacique-modelo' da Amazônia se tornou alvo de índios madeireiros*. Accessed 1 January 2019. <https://www.bbc.com/portuguese/brasil-37980120>
- Brockhaus, M., & Angelsen, A. (2012). Seeing REDD+ through 4Is: A political economy framework. In: A. Angelsen, M. Brockhaus, W. Sunderlin & L. Verchot (eds.) *Analysing REDD+: Challenges and Choices*. Center for International Forestry Research (CIFOR). <https://doi.org/10.1111/cobi.12933>
- Bumpus, A., & Liverman, D. (2008). Accumulation by decarbonization and the governance of carbon offsets. *Economic Geography*, 84(2), 127–155. <https://doi.org/10.1111/j.1944-8287.2008.tb00401.x>
- Cadena, de la, M. (2008). Alternative indigeneities: Conceptual proposals. *Latin American and Caribbean Ethnic Studies* 3 (3), 341–349. <https://doi.org/10.1080/17442220802462501>
- Coburn, E. (2016). Alternatives: Theorizing colonialism and indigenous liberation: Contemporary indigenous scholarship from lands claimed by Canada. *Studies in Political Economy*. *A Socialist Review*, 97(3). <https://doi.org/10.1080/07078552.2016.1249126>
- Comberti, C., Thornton, T., Wylliede Echeverria, V., & Petterson, T. (2015). Ecosystem services or services to ecosystems? Valuing cultivation and reciprocal relationships between humans and ecosystems. *Global Environmental Change*, 34, 247–62. <https://doi.org/10.1016/j.gloenvcha.2015.07.007>
- Cristostomo, A., Alencar, A., Castro Silva, I., Mesquita, I., Fellows Dourado, M., Moutinho, P., de Araújo Lima Constantino, P., & Piontekowski, V. (2015). *Indigenous lands in the Brazilian Amazon: From budgeting to climate change mitigation*. IPAM Amazon Environmental Research Institute. Accessed 1 January 2019. http://ipam.org.br/wp-content/uploads/2015/04/indigenous_lands_in_the_brazilian_amazon-2.pdf
- Da Silva, N., & Ferreira Neto, J. (2014). A monetarização da vida social dos Paiteer Suruí. *Boletim do Museu Paraense Emílio Goeldi. Ciências Humanas*, 9(1), 163–181. <https://doi.org/10.1590/s1981-81222014000100011>
- Dasgupta, A., & Beard, V. (2007). Community driven development, collective action and elite capture in Indonesia. *Development & Change*, 38(2), 229–49. <https://doi.org/10.1111/j.1467-7660.2007.00410.x>
- Deb, D. (2009). *Beyond developmentality: Constructing inclusive freedom and sustainability*. Earthscan. <https://doi.org/10.4324/9781849770545>
- Duchelle, A., & Jagger, P. (2014). *Operationalizing REDD+: Safeguards challenges and opportunities*. CIFOR REDD+ Safeguards Brief Intro. Center for International Forestry Research (CIFOR). <https://doi.org/10.17528/cifor/005183>
- Escobar, A. (1995). *Encountering development: The making and unmaking of the Third World*. Princeton University Press.
- Fabiano, T., Ferreira, I., & Ferreira, I. (2011). *Adapting to emerging institutions: REDD+ projects in the territories of the Suruí and Cinta-Larga Indigenous Peoples*. Center for Sustainable Development, University of Brasília. Accessed 1 January 2019.

- https://www.researchgate.net/profile/Fabiano_Toni/publication/267303017_Adapting_to_emerging_institutions_REDD_projects_in_the_territories_of_the_Surui_and_Cinta-Larga_Indigenous_Peoples/links/545f78a80cf295b56161c462.pdf
- Fairhead, J., Leach, M., & Scoones, I. (2012). Green grabbing: A new appropriation of nature? *Journal of Peasant Studies*, 39(2), 237–261. <https://doi.org/10.1080/03066150.2012.671770>
- Fatheuer, T. (2010). *Dólares, esperanças e controvérsias – REDD na Amazônia*. Henrich Boll Stiftung. Accessed 1 January 2019: <https://br.boell.org/pt-br/2010/12/03/dolares-esperancas-e-controversias-redd-na-amazonia>
- Federici, S. (2004). *Caliban and the witch: Women, the body and primitive accumulation*. Autonomedia.
- Fehr, E., & Falk, A. (2002). *Psychological foundations of incentives*. Joseph Schumpeter Lecture. European Economic Review, 46, 687–724. [https://doi.org/10.1016/s0014-2921\(01\)00208-2](https://doi.org/10.1016/s0014-2921(01)00208-2)
- Ferronato, M., & Nunes, R. (2018). *A exploração ilegal de madeiras na terra indígena sete de setembro, cacaoal –ro. Porto Velho, Brazil: Universidade Federal de Rondônia*. Accessed 1 January 2019. https://www.researchgate.net/publication/268386169_A_EXPLORACAO_ILEGAL_DE_MADEIRAS_NA_TERRA_INDIGENA_SETE_DE_SETEMBRO_CACOAL_-_RO
- Fleury, L., & Almeida, J. (2013). The construction of the Belo Monte Hydroelectric Power Plant: Environmental conflict and the development dilemma. *Ambiente & Sociedade n São Paulo*, 16(4), 141–158.
- Frey, B., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Surveys*, 15(5), 589–611. <https://doi.org/10.1111/1467-6419.00150>
- Gebara, M.F. (2013). Importance of local participation in achieving equity in benefit-sharing mechanisms for REDD+: A case study from the Juma Sustainable Development Reserve. *International Journal of the Commons*, 7(2). <https://doi.org/10.18352/ijc.301>
- Gebara, M.F., & Agrawal, A. (2017). Beyond rewards and punishments in the Brazilian Amazon: Practical implications of the REDD+ discourse. *Forests*, 8, 66. <https://doi.org/10.3390/f8030066>
- Gebara, M.F., Muccillo, L., May, P., Vitel, C., Loft, L., & Santos, A. (2014). *Lessons from local environmental funds for REDD+ benefit sharing with indigenous people in Brazil*. CIFOR Infobrief 98. Center for International Forestry Research (CIFOR). <https://www.cifor.org/library/5198/>. <https://doi.org/10.17528/cifor/005198>
- Goodale, M. (2006). Reclaiming modernity: Indigenous cosmopolitanism and the coming of the second revolution in Bolivia. *American Ethnologist*, 33(4), 634–649. <https://doi.org/10.1525/ae.2006.33.4.634>
- Government of Brazil. (26 November 2015). *Decree No. 8.576/2015*. Accessed 1 January 2019. http://legislacao.planalto.gov.br/legisla/legislacao.nsf/Viw_Identificacao/DEC%208.576-2015?OpenDocument
- Heringer, A. (2007). *Os conhecimentos tradicionais associados e o acesso aos recursos genéticos: um estudo sobre a regulamentação da medida provisória n° 2.186-16/01*. Revista Amazônia Legal de estudos sócio-jurídico-ambientais 1(2), 131–48.
- Hirald, R., & Tanner, T. (2011). *The global political economy of REDD+: Engaging social dimensions in the emerging green economy*. United Nations Research Institute for Social Development. 24.
- Howell, S. (2014). *No RIGHTS–No REDD: Some implications of a turn towards co-benefits*. Forum for Development Studies 41(2), 253–272. <https://doi.org/10.1080/08039410.2014.901241>.
- Independent. (13 April 2008). *Amazon tribe enlists Google in battle with illegal loggers*. Accessed 1 January 2019. <https://www.independent.co.uk/environment/green-living/amazon-tribe-enlists-google-in-battle-with-illegal-loggers-808492.html>. <https://doi.org/10.1590/0034-7329201600209>
- Inoue, C.Y.A., Moreira, P.F. (2016). Many worlds, many nature(s), one planet: indigenous knowledge in the Anthropocene. *Revista Brasileira de Política Internacional*, 59(2). <https://doi.org/10.1590/0034-7329201600209>.
- Jagger, P., Brockhaus, M., Duchelle, A., Gebara, M., Lawlor, K., Resosudarmo, I., & Sunderlin, W. (2014). Multi-level policy dialogues, processes, and actions: Challenges and opportunities for national REDD+ safeguards measurement, reporting, and verification (MRV). *Forests*, 5(9), 2136–2162. <https://doi.org/10.3390/f5092136>
- Kowler, L.F., Tovar, J.G., Ravikumar, A., & Larson, A.M. (2014). *The legitimacy of multilevel governance structures for benefit sharing: REDD+ and other low emissions options in Peru*. CIFOR Infobrief 101. CIFOR. <https://www.cifor.org/library/5201/>. <https://doi.org/10.17528/cifor/005201>
- Lang, C. (2012). *Indigenous Peoples Terra Livre Declaration at Rio+20 rejects REDD*. REDD Monitor. Accessed 1 January 2019. <https://redd-monitor.org/2012/06/22/indigenous-peoples-terra-livre-declaration-at-rio-20-rejects-redd/>
- Lang, C. (2017). *Xapuri Declaration: We reject any form of climate colonialism*. REDD Monitor. Accessed 1 January 2019. <https://redd-monitor.org/2017/06/20/xapuri-declaration-we-reject-any-form-of-climate-colonialism/>



- Le Quesne, F. (2013). *Indigenous experiments with payments for ecosystem services and the new frontiers of sustainability*. Master thesis, Philosophy in Development Studies. University of Oxford.
- Leach, M., Scoones, I., & Stirling, A. (2010). Governing epidemics in an age of complexity: Narratives, politics and pathways to sustainability. *Global Environmental Change*, 20(3), 369–377. <https://doi.org/10.1016/j.gloenvcha.2009.11.008>
- Leis, H.R. (1999). *A modernidade insustentável. As críticas do ambientalismo à sociedade contemporânea*. Editora Vozes, Editora da UFSC.
- Liverman, D. (2004). Who governs, at what scale and at what price? Geography, environmental governance and the commodification of nature. *Annals of the Association of American Geographers*, 94(4), 734–738.
- Lohmann, L. (2012). Financialization, commodification and carbon: The contradictions of neoliberal climate policy. *Socialist Register*, 48, 85–107.
- Luttrell, C., Loft, L., Gebara, M.F., Kweka, D., Brockhaus, M., Angelsen, A., & Sunderlin, W.D. (2013). Who should benefit from REDD+? Rationales and realities. *Ecology & Society*, 18(4), 52. <https://doi.org/10.5751/es-05834-180452>
- Martinez-Alier, J., Munda, G., & O'Neill, J. (1998). Weak comparability of values as a foundation of ecological economics. *Ecological Economics*, 26, 277–286. [https://doi.org/10.1016/s0921-8009\(97\)00120-1](https://doi.org/10.1016/s0921-8009(97)00120-1)
- McAfee, K., & Shapiro, E.N. (2010). Payment for ecosystem services in Mexico: Nature, neoliberalism, social movements and the state. *Annals of the Association of American Geographers*, 100 (3), 579–599. <https://doi.org/10.1080/00045601003794833>
- McDermott, C.L., Coad, L., Helfgott, A., & Schroeder, H. (2012). Operationalizing social safeguards in REDD+: Actors, interests and ideas. *Environmental Science & Policy*, 21, 63–72. <https://doi.org/10.1016/j.envsci.2012.02.007>
- Meyer, C. (1997). Public–nonprofit partnerships and North–South green finance. *Journal of Environment & Development* 6(2), 123–46.
- Mistry, J. (2009). Indigenous knowledges. In: R. Kitchin & N. Thrift (eds.). *International Encyclopedia of Human Geography*, 5, 371–376. <https://doi.org/10.1016/b978-008044910-4.00101-2>
- Mistry, J., & Berardi, A. (2016). Bridging Indigenous and Scientific Knowledge. *Science*, 352 (6291), 1274–1275. <https://doi.org/10.1126/science.aaf1160>
- Moye, M. (2002). *Innovative mechanisms to manage environmental expenditures in Africa, Asia and Latin America and the Caribbean (LAC)*. Draft background paper for discussion at session 3.2 of the OECD Global Forum on Sustainable Development: Conference on Financing the Environmental Dimension of Sustainable Development, 24–26 April. OECD.
- Nichter, M. (2008). NGOs, social capital, and the politics of the possible. In: *Global health: Why cultural perceptions, social representations, and biopolitics matter* (133–49). University of Arizona Press. <https://doi.org/10.2307/j.ctv131btjg.13>
- O'Faircheallaigh, C., & Corbett, T. (2005). Indigenous participation in environmental management of mining projects: The role of negotiated agreements. *Environmental Politics*, 14(5), 629–647. <https://doi.org/10.1080/09644010500257912>
- Oleas, R., & Barragan, L. (2003). *Environmental funds as a mechanism for conservation and sustainable development in Latin America and the Caribbean*. Accessed 1 January 2019. http://www.katoombagroup.org/documents/cds/redlac_2010/resources/8337.pdf
- Onuf, N. (2013). *Making sense, making worlds. Constructivism in social theory and international relations*. Routledge. <https://doi.org/10.4324/9780203096710>
- Osborne, T., & Shapiro-Garza, E. (2018). Embedding carbon markets: Complicating commodification of ecosystem services in Mexico's forests. *Annals of the American Association of Geographers*, 108(1), 88–105. <https://doi.org/10.1080/24694452.2017.1343657>
- Osborne, T., Bellante, L. & von Hedemann, N. (2014). *Indigenous peoples and REDD+: A critical perspective*. Indigenous People's Biocultural Climate Change Assessment Initiative. Accessed 1 January 2019. <https://pdfs.semanticscholar.org/38cf/f57cf41aff8700ec3d7b72dd2af39dbd4b11.pdf>
- Paiter Suruí. (2015). *Lideranças Suruí denunciam exploração ilegal de madeira em Rondônia. Povo Indígena Paiter Suruí*. Accessed 1 January 2019. <http://www.paiter.org/liderancas-surui-denunciam-exploracao-ilegal-de-madeira-em-rondonia/>
- Pereira, S. (2013). Indians on the network: Notes about Brazilian indigenous cyberactivism. *International Journal of Communication*, 7, 1864–1877.

- Piketty, T. (2014). *Capital in the Twenty-First Century*. Harvard University Press.
- Rifkin, S.B. (2014). *Examining the links between community participation and health outcomes: A review of the literature*. Health Policy Plan. Colorado School of Public Health. <https://doi.org/10.1093/heapol/czu076>
- Rival, L. (2012). *Sustainable development through policy integration in Latin America: A comparative approach*. UNRISD Occasional Paper Seven: Social dimensions of Green Economy and Sustainable Development. <https://doi.org/10.1057/dev.2011.111>
- Sampaio, M.S.B. (2006). *A contribuição dos fundos públicos para o financiamento ambiental: O caso do FNMA*. Master dissertation. Centro de Desenvolvimento Sustentável, Universidade de Brasília.
- Savaresi, A. (2013). REDD+ and human rights: Addressing synergies between international regimes. *Ecology and Society*, 18 (3). <https://doi.org/10.5751/es-05549-180305>
- Schellnhuber, H.J., Kokott, J., Beese, F.O., Fraedrich, K., Klemmer, P., Kruse-Graumann, L., Neumann, C., Renn, O., Schulze, E.D., Tilzer, M., Velsing, P., & Zimmermann, H. (2001). *World in transition: Conservation and sustainable use of the biosphere*. German Advisory Council on Global Change.
- Scott, J. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. Yale University Press. <https://doi.org/10.2307/j.ctvxkn7ds>
- Shankland, A. & Hasenclever, L. (2011). Regulation of REDD+ in Brazil: Beyond the war of the worlds? *IDS Bulletin* 42(3), 80–88. <https://doi.org/10.1111/j.1759-5436.2011.00225.x>
- Sheng, J., Zhou, W., & de Sherbinin, A. (2018). Uncertainty in estimates, incentives, and emission reductions in REDD+ projects. *International Journal of Environmental Research and Public Health*, 15(7), 1544. <https://doi.org/10.3390/ijerph15071544>
- Sullivan, S. (2014). *The natural capital myth; Or will accounting save the world? Preliminary thoughts on nature, finance and values*. LCSV Working Paper 3. The Leverhulme Centre for the Study of Value School of Environment, Education and Development. The University of Manchester.
- Sullivan, S. (2017). On ‘natural capital’, ‘fairy tales’ and ideology. *Development and Change*, 48(2), 397–423. <https://doi.org/10.1111/dech.12293>
- Telles do Valle, R., & Yamada, E. (2010). A legal opinion on the ownership of carbon credits generated by forest activities on indigenous lands in Brazil. In: R. Telles do Valle (ed). *Avoided deforestation (REDD) and indigenous peoples: Experiences, challenges and opportunities in the Amazon context*. Instituto Socioambiental, Forest Trends.
- The Guardian. (2018). *Amazon at risk from Bolsonaro's grim attack on the environment*. Accessed 1 January 2019. <https://www.theguardian.com/environment/2018/oct/09/brazils-bolsonaro-would-unleash-a-war-on-the-environment>
- United Nations. (1945). *Charter of the United Nations and Statute of International Court of Justice*. Accessed 1 January 2019. <https://treaties.un.org/doc/publication/ctc/uncharter.pdf>
- Viatori, M. (2007). Zápara leaders and identity construction in Ecuador: The complexities of indigenous self-representation. *Journal of Latin American & Caribbean Anthropology*, 12(1), 104–133. <https://doi.org/10.1525/jlat.2007.12.1.104>
- Wapner, P. (2010). *Living through the end of nature: The future of American environmentalism*. MIT Press.
- Weller, M. (2009). Settling self-determination conflicts: Recent developments. *European Journal of International Law*, 20(1), 111–165. <https://doi.org/10.1093/ejil/chn078>
- Wilson, A.C. (2004). Reclaiming our humanity: Decolonization and the recovery of indigenous knowledge. In: D.A. Mihesuah & A.C. Wilson (eds.) *Indigenizing the academy*. Transforming scholarship and empowering communities. University of Nebraska Press.
- Winer, M., Murphy, H., & Ludwick, H. (2012). *Payment for ecosystem services markets on aboriginal land in Cape York Peninsula: Potential and constraints*. Occasional Paper No. 6, Social Dimensions of Green Economy and Sustainable Development. UNRISD.

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