

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/316287072>

REDD+ governance and indigenous peoples in Latin America: the case of Suru Carbon Project in the Brazilian Amazon Forest

Article · January 2016

DOI: 10.1504/LAJMSD.2016.083705

CITATIONS

0

READS

26

3 authors, including:



[Guineverre Alvarez](#)

6 PUBLICATIONS 0 CITATIONS

[SEE PROFILE](#)



[José Célio Silveira Andrade](#)

Universidade Federal da Bahia

83 PUBLICATIONS 172 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Inventário de emissões de gases de efeito estufa do estado da Bahia [View project](#)



Carbon Market [View project](#)

REDD+ governance and indigenous peoples in Latin America: the case of Suruí Carbon Project in the Brazilian Amazon Forest

Guineverre Alvarez, Maria Elfving and
Célio Andrade*

School of Management,
Federal University of Bahia,
Av. Reitor Miguel Calmon, s/n – Vale do Canela,
Salvador, Bahia, 40110-903, Brazil
Fax: +55(71)3283-7658
Email: guineverre2@hotmail.com
Email: maria.m.elfving@gmail.com
Email: jcelio.andrade@gmail.com
*Corresponding author

Abstract: REDD+ projects have gained prominence on the international agenda as an alternative to face climate change. An increasing number of initiatives are implemented around the world, especially in Latin America. In Brazil, REDD+ projects have been developed predominantly in the Amazon forest. There is a scarce number of researches regarding the involvement of local actors at REDD+ governance. In the case of indigenous lands it arouses particular interest when it comes to governance since it originates from distinct social value systems, sources of knowledge and symbolism. Thus, this article aims to analyse how organisations can work together to build and develop a REDD+ project involving indigenous people in Brazilian Amazon forest. By studying the case of Surui Forest Carbon Project it was found that organisations could play a key role in this scenario.

Keywords: sustainability; climate change; low carbon economy; REDD+; governance; indigenous peoples; Brazilian Amazon Forest.

Reference to this paper should be made as follows: Alvarez, G., Elfving, M. and Andrade, C. (2016) 'REDD+ governance and indigenous peoples in Latin America: the case of Suruí Carbon Project in the Brazilian Amazon Forest', *Latin American J. Management for Sustainable Development*, Vol. 3, No. 2, pp.133–146.

Biographical notes: Guineverre Alvarez is a Researcher at the Global Environmental Governance and Carbon Markets Research Group, at Federal University of Bahia (UFBA), Brazil. She holds a Master's in Regional Development and Environment from Santa Cruz State University (UESC), Brazil and a PhD in Management from UFBA, with internship at the Institute for the Advanced Studies of Sustainability, at United Nations University, Japan. Her fields of research are related with Reducing Emissions from Deforestation and Forest Degradation (REDD+), sustainable development co-benefits of forest carbon projects, global environmental governance, climate negotiations and multiple-use of forests, especially by indigenous peoples.

Maria Elfving holds a Master of Science in Peace and Development Studies from Linnaeus University, Sweden. Previous field research includes payment for environmental services in the Brazilian Amazon and Environmental Education in Northern Mozambique. Field experience from the Brazilian Amazon includes voluntary work with the Executive Secretariat of International Relations (SEARI), a department from the Secretariat of Planning and Economic Development of the State of Amazonas (SEPLAN), Brazil and with the NGO Kanindé – The Association of Ethno-Environmental Protection in the State of Rondônia, Brazil. Maria is currently collaborating, as a researcher, with the Global Environmental Governance and Carbon Market research group at UFBA.

Célio Andrade is Associate Professor at School of Management of Federal University of Bahia (UFBA) – Brazil. He coordinates the Global Environmental Governance and Carbon Market research group at UFBA. His research revolves around low carbon governance, especially with regard to integrative modes of analysis. An example is a recent and ongoing investigation of contributions to sustainable development associated with carbon market projects – including case studies in Brazil within six sectors: energy efficiency, reforestation, waste, fossil fuel replacement, swine and renewable energy. He has published widely in the fields of global environmental governance, low carbon economy, world carbon market, in particular in the areas of clean development mechanism (CDM) and reducing emissions from deforestation and forest degradation (REDD+).

This paper is a revised and expanded version of a paper entitled ‘Local governance and indigenous peoples in the Brazilian Amazon Forest: how can organizations work together to operate REDD+?’ presented at IX Research Workshop on Institutions and Organizations, São Paulo, Brazil, 13 October 2014.

1 Introduction

Evidence on climate change impacts are presented by Hansen et al. (2013) with their interlinked consequences of global warming. The land use, land use change and forestry (LULUCF) was responsible for 57.5% of Brazilian greenhouse gas (GHG) emissions in 2005 (MCTI et al., 2013). Road paving and growth of the agricultural economy led to rapid expansion of logging into previously inaccessible areas. This scenario has resulted in serious losses of the native forest and it has caused disturbances to the traditional communities in the Amazon River basin (Davidson et al., 2012). As a response to the need for action to be taken, the United Nations has taken the lead to develop legal instruments and promote international negotiations regarding forest conservation, biodiversity protection, and sustainable management of forests and enhancement of carbon stocks (Boyd et al., 2007). In the past years the discussion has given more and more focus to innovative ways how to compensate those who pursue efforts to reduce deforestation (Agrawal and Angelsen, 2009; Contreras-Hermosilla, 2011). As highlighted by Assies (2005), Colfer (2011) and Griffiths (2008) the role of indigenous peoples’ is of central importance for the maintenance of the standing forest.

The Reducing Emissions from Deforestation and Degradation mechanism (hereafter: REDD+) is the mechanism created under the United Nations Framework Convention on Climate Change (hereafter: UN-FCCC) that seeks to function on global scale with the aim to establish rules for compensation to those who pursue efforts in forest protection (Cerbu et al., 2011). The goal of REDD+ indicated by the UN-FCCC is not merely the mitigation of climate change, but also the promotion of sustainable livelihoods of forest-dependent peoples (Bolin et al., 2012; Evans et al., 2014), especially what regards indigenous and local communities in their struggle to protect biodiversity and conservation of ecosystems services (Nabuurs et al., 2007). As such, the inclusion of local communities in REDD+ has been anticipated as one of the key factors for the success of these initiatives (Agrawal and Angelsen, 2009; Cenamo et al., 2010). The inclusion has been done by highlighting the 'local' as an arena of action and as a scale to tackle climate change in Latin America (Larson and Petkova, 2011; de Oliveira et al., 2013; Colfer, 2011).

In the past years the REDD+ mechanism suffered from lack of institutionalised definition and inadequacy when it comes to methodologies and implementation rules and regulations (Nery et al., 2013), but it was partially overcome in 2013 by the approval of the Warsaw Framework for REDD+, at Conference of Parties (COP) 19 (Alvarez, 2016). As such, the risks and possibilities with REDD+ are numerous, and important lessons are yet to be learned. For instance, if the REDD+ mechanisms are misused and improperly implemented, the risks for harmful results to indigenous peoples' traditional activities and biodiversity protection within the indigenous lands (ILs) in Latin American are high (ISA and Forest Trends, 2010; Santilli, 2010; Thompson et al., 2011; van Damm, 2011).

The Suruí Forest Carbon Project (SFCP) in the Brazilian Amazon Forest is the first REDD+ project developed by indigenous peoples in Brazil and the first in the world to receive certification in the voluntary carbon market (Verified Carbon Standards – VCS and Climate, Community and Biodiversity Standards – CCBS), and it is the first in the world to sell carbon credits under the voluntary carbon market (Escaquete et al., 2013; Muller, 2013). Moreover, SFCP has been described by scholars and practitioners as a fruitful and promising experience of REDD+, especially due to their governance structure, including several organisations (ISA and Forest Trends, 2010; Toni et al., 2011; Pavan and Cenamo, 2012; Vitel et al., 2013). Thus, our proposal, by looking at the experience of SFCP, is to answer the question: how can organisations work together to operate REDD+ projects in Latin America, especially in Brazilian Amazon IL?

Based on that, we intend to discuss the challenges and opportunities for organisations in local governance of REDD+ project in Brazilian ILs in order to contribute with alternatives for natural resource management for some of the 516 ILs occupying 12.5% of the Brazilian territory (IBGE, 2012).

Due to the nature of the topic, the next section of this article (Section 2) provides a context description about governance, REDD+, deforestation and GHG emissions in Brazil. The subsequent sections present the research methods (Section 3) and provide background information about the Suruí people and their REDD+ project for the voluntary carbon market, identifying the organisations involved in its implementation and development (Section 4). The results of the research are followed by discussion (Section 5) and some final remarks (Section 6).

2 Governance and REDD+

Several studies have highlighted the importance of governance in climate issues and the difficult task of managing public goods at global scales (e.g., Anderson and Zerriffi, 2012; Bernauer and Schaffer, 2010; Betsill and Bulkeley, 2006; Kissinger et al., 2012; Kanowski et al., 2011). Inadequate governance may lead to over-exploitation and degradation of natural resources, as stressed by Hardin (1968, seminal article). On the other hand, sustainable management may increase organisational capacity and cooperation between individuals and institutions as highlighted by Ostrom (1990, 1999).

Poor or weak forest governance is, many times, characterised by low levels of transparency, accountability and participation in decision making (Nadkarni, 2012). For this reason, lack of capacity and coordination in the management and administration of forests at times poses unexpected challenges. As a consequence, poor forest governance tend to hold high levels of corruption, unplanned and illegal conversion of forests and, last, but not least, conflicts over ownership and access rights to land (Brito et al., 2009; Contreras-Hermosilla, 2011; Evans et al., 2014). As opposed to weak governance, strong governance may increase and improve the effective implementation of development policies (IGES, 2013). It may also identify the drivers of deforestation (Gupta, 2012) and be associated with an efficient and effective management of natural resources (FAO, 2011).

Furthermore, it may empower human and financial capital; contributing to fair and equitable sharing of resources from the forest. Moreover, the establishment of an integrated network of citizens and organisations (public, private and third sector) in favour of reforestation, and decreasing deforestation may contribute to a change of understanding on the issues of biodiversity and anthropogenic interference. In other words, it may lead to democratisation of land management and climate change reduction, and it may generate both social and environmental synergies (Anderson and Zerriffi, 2012; Boyd et al., 2007; FAO, 2011; IGES, 2012).

Governance has been acknowledged by the use of different concepts, altering the emphasis on institutions, legitimacy and power (Rametsteiner, 2009). However, it can be understood as a series of ‘arrangements’ among various actors, using collaborative approaches to seek problem solving, based on the formulation of criteria and standards (Kooiman, 1993) or, in more general terms, governance is the process through which we collectively solve our problems and face the needs of our society (Osborne and Gaebler, 1992).

Forest governance, in turn, can be understood as the “many ways in which public and private actors...work together in order to create capacity to make and implement decisions about forest management at multiple spatial, temporal, and administrative scales” [Broekhoven et al., (2012), p.viii]. Although there are a variety of definitions in the literature, Brito et al. (2009) indicate points in common:

- 1 governance as a process in which it matters more how decisions are made rather than what these decisions actually are
- 2 the involvement of stakeholders and actors beyond governments and outside the forest sector

- 3 forest governance as something contextual, in which universal principles and concepts can be identified, but in which the circumstances of each initiative is going to determine the constraints and opportunities for achieving good governance.

Governance mechanism, which includes organisations and local communities in REDD+, has been seen as one of the key factors for the success of these initiatives in order to address global climate change (Agrawal and Angelsen, 2009). Following Angelsen et al. (2009, p.2), REDD+ can be considered a “generic term (umbrella term) for local, national and global actions to reduce emissions from deforestation and forest degradation and increase carbon stocks of forests in developing countries”. In theory, the structure is a financial mechanism that can turn the protection of standing forests into something economically attractive, which is a chance to compete with the economic interests that currently pose risks to environment protection and forests (Kissinger et al., 2012). As argued by Larson and Petkova (2011) and Hodgdon et al. (2012), when discussing the governance of REDD+ projects in Latin America, they may present an important opportunity for ‘bottom-up’ design; these diverse models of ‘learning by doing’ could significantly shape the global agenda and inform national policy development on the realities and needs of the field.

Notwithstanding, REDD+ may be a true challenge to existing forms of governance in terms of risks and negative impacts on local communities. In other words, the potential positive impact of REDD+ may be impaired or limited if the peculiarities inherent to the local scene are not considered in decision making and project design.

3 Methods

This article is based upon qualitative methods to which an interpretative epistemological approach has been applied. As the research topic is context dependent the use of a case study was considered ideal for data collection and knowledge generation (Hudson and Ozanne, 1988).

Primary data was collected during field visits, during which observation and participation in two large meetings at the Educational Centre of the Suruí people was carried out. The field visits led to data collection of informal talks to representatives of the Suruí population, both men and women from different age groups, and representatives of different organisations involved in the project development. The conversational method has been addressed by Feuerstein as ‘plain talk’ and it was used in order to achieve an increased understanding of the context, the people and the developmental situation of the target population (Mikkelsen, 2005). A field diary, recordings and digital camera were used for documentation and collection of data. Evidences of simple observation in field, pictures, comments, meetings and talks with community and other stakeholders were registered.

Although the project is still understudied by scholars, secondary data was obtained from published papers and documents about the SFCP – especially the project design document (PDD) for VCS and CCB standards – and other supplementary documents annexed into the validation and verification of the carbon project under the voluntary carbon market. The literature also supported the life and perception of indigenous communities in the southern Amazon region. Hence, understanding the context, tradition and the social organisation of the Suruí people has been crucial for the realisation of this

research and for the expansion of knowledge on Suruí's well-being and other organisations (Cosmo da Silva, 2012; Almeida Silva et al, 2013; Suruí et al., 2008; Suruí, 2013). Methodological guidelines regarding the study of indigenous communities were achieved by assessing multilevel literature on the topic of indigenous peoples, ethical considerations and indigenous research methodologies (Kovach, 2009; Ermine et al., 2004; Heikkilä and Fondahl, 2012; Tahuwai-Smith, 1999). As a complement, the results of this study were sent to specialists in the thematic area and people who know the Suruí project for comments and criticisms.

4 The Suruí people and their REDD+ project for the voluntary carbon market

In the international arena, about 65% of global GHG mitigation potential pertains to the forest sector in the tropics (Nabuurs et al., 2007). In Brazil – a country which houses 61% of the largest rainforest in the world – LULUCF emissions were decreased from 57.5% in 2005 to 22.4% of Brazilian GHG emissions in 2010 (MCTI et al., 2013).

Through the National Policy on Climate Change, the Brazilian Government intends to voluntarily reduce between 36.1% and 38.9% of GHG emissions in relation to future projections for 2020 (Brazil, 2009), to reach zero illegal deforestation (Pavan and Cenamo, 2012), which can be achieved by the creation and maintenance of protected areas (Nery et al., 2013; Soares-Filho et al., 2010), and also to encourage the development of REDD+ projects.

On 28 September 2015, Brazil submitted its Intended Nationally Determined Contribution (INDC), with a target to reduce net GHG emissions, including LULUCF, by 37% below 2005 levels by 2025. In addition, it mentioned an “indicative contribution” to reduce emissions by 43% below 2005 levels (incl. LULUCF) by 2030. In December 2015, this commitment was reaffirmed by the Brazilian government at COP 21 in Paris (Brazil, 2015).

Brazil has about 516 ILs occupying 12.5% of the national territory, with a significant concentration in the Legal Amazon region (IBGE, 2012). The territory of the Suruí people (IL Sete de Setembro) is situated in the southern part of the Amazon region, within the arc of deforestation. It is located between the states of Rondônia and Mato Grosso, covering an area of 2,481 km².

The Suruí people were first (officially) contacted in 1969. The following years were marked by foreign invasions and decline of the indigenous population due to diseases and murders (Suruí et al., 2008). Half of the indigenous population of 5,000 individuals had died from diseases brought in by colonisers five years after the first contact (Vitel et al., 2013; Suruí et al., 2008). A decade later, they were only 250 individuals (Suruí, 2013) and currently they are about 1,200 (IBGE, 2012), living in 25 villages.

Their social organisation is based on a clan system. It is a patrilineal kinship organisation, which is the basis of the governance system of political organisation and system of kinship and marriage of indigenous peoples. Traditionally nomads, the Suruí live and use the natural resources in the region close to their villages, especially by gathering fruits, hunting and fishing (Suruí, 2013). They have started developing some economically productive activities and receive “financial aid from the federal government... representing 33% of the income earned by the population” [IDESAM, (2011), p.21].

Demarcation of IL has contributed to a halting of the ongoing deforestation (Toni et al., 2011; Soares-Filho et al., 2010; Nepstad et al., 2006). In IL Sete de Setembro, like other ILs in Brazil, the pressure for exploitation of resources is high (Santilli, 2010). As stressed by Cosmo da Silva (2012), it is closely related with business interests of farmers, miners and loggers. The economic value of the wood often contributes to the creation of social conflicts among the indigenous, often turning them against one another. This context, being inherent to the capitalist pattern, has negatively affected the culture and collective traditions originally designed by the Suruí People (Cosmo da Silva, 2012; Vitel et al., 2013). Moreover, new habits derived from the contact with non-indigenous (such as a diet based on manufactured products and the use of new technologies) have created an internal pressure that has forced the indigenous to obtain income through the illegal sale of timber or forest conversion to pasture and coffee plantations (Vitel et al., 2013; IDESAM, 2011).

The SFCP (a REDD+ project) was implemented in 2009 after two years of negotiations among clans, socio-environmental NGOs and governmental organisations. It was originated as a spontaneous demand of the indigenous community to realise the economic infeasibility of the dynamics of land use and natural resources developed by them. The project is integrated into the 50-year plan of Suruí people (being it an ethno-environmental management plan, built and managed by the indigenous themselves). The 50-year plan consists of a strategic financial alternative and means for the conservation of their forests and preservation of their traditional ways of life (ACT Brasil, 2010). The SFCP and the interlinked 50-Year Plan are efforts to prevent deforestation of 13,575.3 hectares of forest by the year 2038 (and avoiding the emission of 7,258,352.3 tCO₂e) (IDESAM, 2011). It has also been shown to be a tool for protection of the territory (Suruí et al., 2010).

The project has four main themes:

- 1 forest and environment protection (supporting the monitoring, surveillance and training of the Suruí people to defend their territory)
- 2 food security and sustainable production (organising the possibilities for sustainable economic use of natural resources within the IL)
- 3 institutional development and strengthening (contributing to the autonomy of the Suruí people, regarding the management of their land through institutional strengthening of their organisations)
- 4 implementation of the financial mechanism – the Suruí Fund, which integrates different types of conservation finance, including carbon REDD+ incentives under the voluntary carbon market mechanism (Vitel et al., 2013; IDESAM 2011).

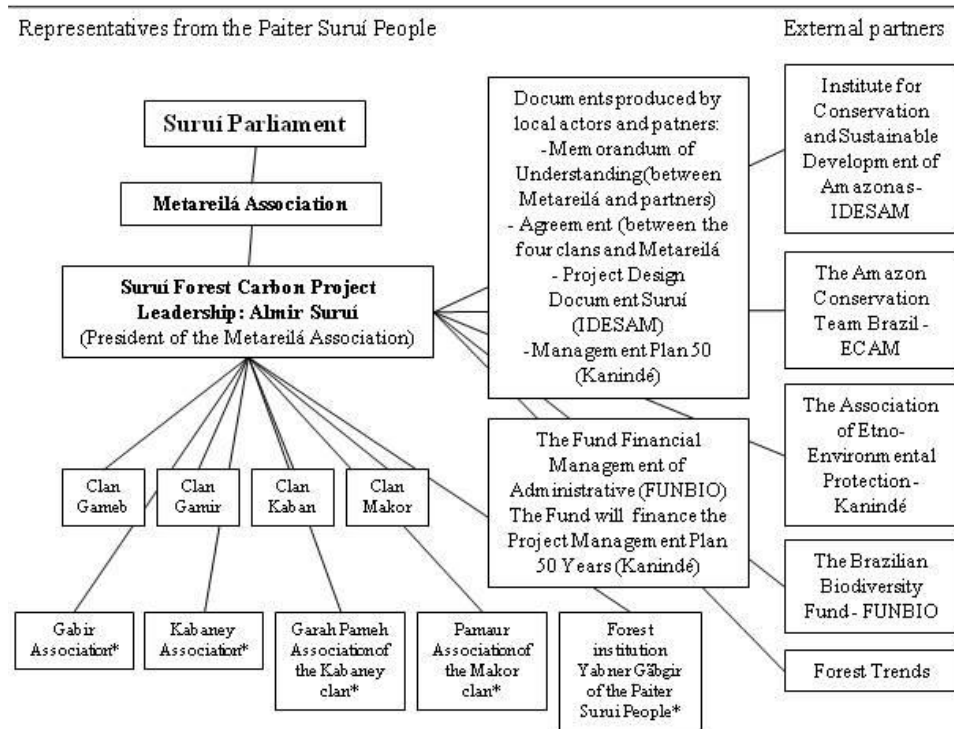
The creation of the SFCP motivated “more active participation of the government in discussions on REDD+ and catalyzed the process of discussion and construction of related policies currently in progress” [Pavan and Cenamo, (2012), p.19].

Thus, to better understand and explore the scenario studied and also to reach the central question proposed for discussion, it is important to answer the following questions: which are the organisations involved in the SFCP? What are their roles? How do they participate in the decision-making process? The next section will explore these issues.

5 Results and discussion

The governance structure of the SFCP holds a set of external partners and internal actors. An overview of the project structure can be found in Figure 1.

Figure 1 Overview of the actors involved in the SFCP



Note: *Associations of the Suruí people.

Source: Developed by the authors based on the PDD of SFCP (IDESAM, 2011)

The associations and the forestry institution of the Suruí people are internal entities providing technical skills ‘on the ground’ (like support the implementation of the economic systems, support the identification of alternatives to address health problems) and they are given pronounced functions in the project (IDESAM, 2011). Thus, the Metareilá Association of the Suruí Indigenous People, founded in 1989, is the SFCP proponent and it works to defend and preserve the cultural and territorial heritage of the Suruí people (ACT Brasil, 2010).

The external organisations involved in the SFCP (the majority being environmental and socio-environmental NGOs) are collaborators and their roles are to provide technical skills (like development of legal documents, management plans, ethno-zoning, monitoring of biodiversity, etc.) and their functions are clearly provided in the project description (based on the memorandum of understanding from 2009).

According to the PDD, these external organisations are:

- 1 the Kanindé Ethno-Environmental Defense Association, a non-profit organisation founded in 1992 as a civil society organization of public interest, which coordinates the activities of food security and income generation, biodiversity monitoring and socioeconomic benefits
- 2 Institute for the Conservation and Sustainable Development of Amazonas (IDESAM), a non-profit NGO, founded in 2004, responsible for technical coordination in the construction of the baseline and preparation of PDD scenario, as well as its validation and verification in the VCS and CCB standards, also acting as an adviser and technical and policy coordination related to REDD+ to the SFCP
- 3 Amazon Conservation Team (ACT Brasil), another civil society organization of public interest created in 2002, to develop the territorial protection plan, environmental monitoring, and carbon stocks (remote sensing)
- 4 Brazilian Biodiversity Fund (FUNBIO), a civil non-profit association, which started its operation in 1996, responsible for the management of financial resources generated by the SFCP and other income activities within the management plan
- 5 Forest Trends, an international non-profit organization created, in 1998, to support the formulation and implementation of the SFCP and the fundraising and selling of carbon credits generated by this project.

Even though the Brazilian indigenous peoples are held under tutelage of the governmental National Indian Foundation (FUNAI), they hold the autonomous rights to build their own project and implement it. FUNAI does not necessarily need to take part in the governance of the project (Sales et al., 2010), but it should have formal knowledge of the direction and initiative proposals.

A memorandum of understanding was created and signed by these organisations, explicitly describing their responsibilities and expectations with the Suruí REDD+ project, representing an essential requirement for project design as well as for the certification under the voluntary carbon market (Suruí et al., 2010).

In general, the political organisation of Amazonian indigenous peoples relies on the principle of political, economic and ritual autonomy of villages (ACT Brasil, 2010). This produces different constellations of processes of decision making among the tribes. At Suruí parliament, the participation model is based on representatives of all clans. Created in 2010, it is an instance of debate and democratic representation of the Suruí people in their decisions, claims, implementation of internal policies and interface with government policies.

In general, decisions in the SFCP are taken internally and collectively, after consultation and discussion with the Suruí people. At these meetings (sometimes held as an assembly), the partner organisations are called to dialogue and work together to build alternatives and solutions that enable the desires, skills and abilities of those involved. Then, the most qualified and capable organisations are identified to implement the proposed activities. The leaders and people involved in the coordination and direction of the Project are also dedicated to finding new partnerships to strengthen and broaden their options and goals.

Internally, to achieve the full participation of the Suruí population in SFCP, a prior informed consent fieldwork was conducted in order to make the community understand the whole process of the carbon project (ACT Brasil, 2010). However, low participation of women in political decisions is a cultural characteristic of the people (IDESAM, 2011), and not all communities and associations of Suruí support the initiative (Suruí, 2013).

The high cost of implementing a REDD+ project and the requirements for certification in the voluntary carbon market often prevents the emergence of these initiatives. The external actors ('experts') help the SFCP with technical, administrative, legal and monitoring support, besides fundraising. As stressed by Kooiman (1993), governance is understood as a continuous process of interaction between social groups and public and private organisations with the interaction as a critical success factor for the implementation of a project. As an endogenous initiative (initiated by the community and conducted by it), the SFCP has a non-centralised identity model of governance, which reflects the characteristics and traditions of the indigenous population that made the request. The composition of multicultural arrangements, which entails different world views (differing ontological and epistemological perspectives), and interests is one of the difficulties of implementing a system of governance in REDD+ on indigenous lands. The SFCP has a structure that respects and combines elements of indigenous traditions and culture with the national society. Although this local system of governance had a pre-existing design, it has been significantly expanded and strengthened.

A concern of the leaders of the project to formalise partnerships with non-indigenous can be observed. The importance of defining the role of each actor in the process may avoid (or at least minimise) the emergence of divergent interests, conflicting mandates, and also facilitate the resolution of potential conflicts. More important than defining roles, it is necessary to expand the number of stakeholders involved. In this sense, although the multi-actor PFCS structure is clear and diverse, the historic clash between the agricultural (and industrial) sector and the indigenous peoples in the Brazilian Amazon provides a great challenge for governance and sustainability of the project. For REDD+, a profound engagement is essential since these agents represent drivers of deforestation.

Finally, the SFCP recently sold carbon credits to a large Brazilian cosmetic company, which has its corporate image strongly associated with sustainability and preservation of natural resources. This operation has gained worldwide recognition and it seems a good way to bring the private sector into the arena to face climate change. As highlighted by Andrade and de Oliveira (2015), collaborations with business actors can deliver results at the local level, such as bringing technology, investment, or organisational and managerial skills. For REDD+ projects, it seems ideal that these partnerships involve local community capacity building, incorporating local and traditional knowledge and experience.

6 Final comments and next steps

A REDD+ project should incorporate a community's traditional, natural resource management and their knowledge. For IDESAM (2011), Suruí Indigenous Association's capacity to provide coordination for community readiness and project preparation and implementation was key to these REDD+ initiative. More research is needed to identify

the role of the local deforestation agents (such as agribusiness and logging industry) in REDD+ projects in order to engage them. Naturally, more research is also needed concerning the SFCP and the medium and long-term consequences and results urging from activities initiated by indigenous peoples.

The assessment of the results of SFCP and the lessons learned from Suruí's experience are crucial to encourage other indigenous peoples to develop REDD+ projects, which harmonising needs and local identities with national and international policy efforts to face climate change from the forestry sector. Finally, regarding forest governance, there are still few studies dedicated to understanding how the private sector and civil society affect progress towards improved management of forest resources (Gregersen et al., 2005). Further research in the topic may contribute to the international REDD+ architecture, particularly in relation to governance, participatory management and institutional arrangements.

References

- ACT Brasil (2010) *Free, Prior and Informed Consent Suruí Carbon Project*, Metareilá Associação do Povo Indígena Suruí, ACT Brasil, Brasília.
- Agrawal, A. and Angelsen, A. (2009) 'Using community forest management to achieve REDD+ goals', *Realising REDD+: National Strategy and Policy Options*, No. 1, No. 1, pp.201–212.
- Almeida Silva, A, Maretto, L.C., de Medeiros, A.F., Cardozo, I.B., Suruí, A.N. and Floriani, N. (2013) 'Ritual mapimái: criação do mundo dos Paiter Suruí', *Espacio Regional. Revista de Estudios Sociales*, Vol. 10, No. 2, pp.13–32.
- Alvarez, G. (2016) *Challenges for REDD+ Implementation in Brazil: Analysis of Threats and Opportunities, Strengths and Weaknesses*, Thesis (PhD in Management) – Center for Graduate Studies in Management, School of Management, Federal University of Bahia, Salvador, Brazil.
- Anderson, E.K. and Zerriffi, H. (2012) 'Seeing the trees for the carbon: agroforestry for development and carbon mitigation', *Climatic Change*, Vol. 115, No. 3, pp.741–757.
- Andrade, J.C.S. and de Oliveira, J.A.P. (2015) 'The role of the private sector in global climate and energy governance', *Journal of Business Ethics*, Vol. 130, No. 2, pp.375–387.
- Angelsen, A., Brockhaus, M., Kanninen, M., Sills, E., Sunderlin, W.D. and Wertz-Kanounnikoff, S. (Eds.) (2009) *Realising REDD+: National Strategy and Policy Options*, CIFOR, Bogor, Indonesia.
- Assies, W. (2005) 'Two steps forward, one step back – indigenous people and movements', in Weller, M. and Wolff, S. (Eds.): *Autonomy, Self-Governance and Conflict Resolution: Innovative Approaches to Institutional Design in Divided Societies*, Routledge, New York.
- Bernauer, T. and Schaffer, L. (2010) *Climate Change Governance*, Working Paper 60, Center for Comparative and International Studies, Zurich.
- Betsill, M.M. and Bulkeley, H. (2006) 'Cities and the multilevel governance of global climate change', *Global Governance*, Vol. 12, No. 2, pp.141–159.
- Bolin, A., Mustalahti, I., Boyd, E. and Paavola, J. (2012) 'Can REDD+ reconcile local priorities and needs with global mitigation benefits? Lessons from Angai Forest, Tanzania', *Ecology and Society*, Vol. 1, No. 17, pp.1–12.
- Boyd, E., May, P., Chang, M. and Veiga, F.C. (2007). 'Exploring socioeconomic impacts of forest based mitigation projects: lessons from Brazil and Bolivia', *Environmental Science & Policy*, Vol. 10, No. 5, pp.419–433.
- Brazil (2009) *Law N° 12.187*, 29 December 2009, National Institute for Climate Change Politics (PNMC), Brasília, Brazil.

- Brazil (2015) *Intended Nationally Determined Contribution towards Achieving the Objective of the United Nations Framework Convention on Climate Change – INDC* [online] <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Brazil/1/BRAZIL%20iNDC%20english%20FINAL.pdf> (accessed 1 October 2016).
- Brazilian Institute of Geography and Statistics (IBGE) (2012) *Censo demográfico 2010. Características gerais dos indígenas – resultados do universo*, Ministry of Planning, Budget and Management, Rio de Janeiro, Brazil.
- Brito, B., Davis, C., Daviet, F., Micol, L., Nakhooda, S. and Thuault, A. (2009) *The Governance of Forest Toolkit: A Draft Framework of Indicators for Assessing Governance of the Forest Sector*, The Governance of Forest Initiative [online] <http://www.wri.org/gfi> (accessed 2 March 2015).
- Broekhoven, G., Savenije, H. and von Scheliha, S. (Eds.) (2012) *Moving Forward with Forest Governance*, Tropenbos International, Wageningen, Netherlands.
- Cenamo, M.C., Pavan, M.N., Barros, A.C. and Carvalho, F. (2010) *Guia sobre Projetos REDD+ na América Latina*, Manaus, Brasil.
- Cerbu, G.A., Swallow, B.M. and Thompson, D.Y. (2011) 'Locating REDD: a global survey and analysis of REDD readiness and demonstration activities', *Environmental Science & Policy*, Vol. 2, No. 14, pp. 168–180.
- Colfer, C.J.P. (2011) 'Marginalized forest peoples' perceptions of the legitimacy of governance: an exploration', *World Development*, Vol. 39, No. 12, pp.2147–2164.
- Contreras-Hermosilla, A. (2011) 'People, governance and forests – the stumbling blocks in forest governance reforms in Latin America', *Forests*, Vol. 2, No. 1, pp.168–199.
- Cosmo da Silva, N.T. (2012) *A Interface entre o Desenvolvimento na Amazônia e as Comunidades Indígenas: Uma análise dos Diferentes Processos Vivenciados pelos Paiteer Suruí*, Master thesis in Agricultural Extension Graduate Programme, Universidade Federal de Viçosa, Minas Gerais, Brazil.
- Davidson, E.A., Araújo, A.C., Artaxo, P., Balch, J.K., Foster Brown I., Bustamante, M.M.C., Coe, M.T., Defries, R.S., Keller, M., Longo, M., Mungler, J.W., Schroeder, W., Soares-Filho, B.S., Souza, C.M. and Wofsy, S.C. (2012) 'The Amazon basin in transition', *Nature*, Vol. 481, No. 7381, pp.321–328.
- de Oliveira, J.P., Cadman, T., Ma, H. O., Maraseni, T., Koli, A., Jadhav, Y. D. and Prabowo, D. (2013) *Governing the Forests: An Institutional Analysis of REDD+ and Community-Based Forest Management in Asia*, International Tropical Timber Organization (ITTO) and the United Nations University Institute of Advanced Studies (UNU-IAS), Yokohama, Japan.
- Ermine, W., Sinclair, R. and Jeffery, B. (2004) *The Ethics of Research Involving Indigenous Peoples: Report of the Indigenous Peoples' Health Research Centre to the Interagency Advisory Panel on Research Ethics (PRE)*, Indigenous Peoples' Health Research Centre, Saskatoon, Canada.
- Escaquete, D., Brazil, B., Santos, E. and West, T. (2013) *Metareilá VCS, Verification Assessment Report for: Suruí Forest Carbon Project in Terra Indígena Sete de Setembro, Rondônia, Brazil*, Rainforest Alliance, Washington, USA.
- Evans, K., Murphy, L. and Jong, W. (2014) 'Global versus local narratives of REDD: a case study from Peru's Amazon', *Environmental Science & Policy*, Vol. 35, No. 1, pp.98–108.
- Food and Agriculture Organization of the United Nations (FAO) (2011) *Profor – The Program on Forests. Framework for Assessing and Monitoring Forest Governance*, Rome, Italy.
- Gregersen, H.M., Contreras-Hermosilla, A.W. and Phillips, L. (2005) 'Forest governance in federal systems – an overview of experiences and implications of decentralization', in Colfer, C.J.P. and Capristano, D. (Eds.): *The Politics of Decentralization? Forests, People and Power* Chapter 1, pp.13–31, The Earthscan, 331pp.
- Griffiths, T. (2008) *Seeing REDD? Forests, Climate Change Mitigation and the Rights of Indigenous Peoples*, Update for Poznan (UNFCCC COP 14), Forest Peoples Programme, UK.

- Gupta, J. (2012) 'Glocal forest and REDD+ governance: win-win or lose-lose?', *Current Opinion in Environmental Sustainability*, Vol. 4, No. 6, pp.620–627.
- Hansen, J., Kharecha, P., Sato, M., Masson-Delmotte, V., Ackerman, F., Beerling, D., Hearty, P., Hoegh-Guldberg, O., Hsu, S., Parmesan, C., Rockstrom, J., Rohling, J., Sachs, J., Smith, P., Steffen, K., van Susteren, L., von Schuckermann, K. and Zachos, J. (2013) 'Assessing 'Dangerous Climate Change': required reduction of carbon emissions to protect young people, future generations and nature', *PLOS ONE*, Vol. 8, No. 12, pp.1–20, doi:10.1371/journal.pone.0081648, electronic.
- Hardin, G. (1968) 'The tragedy of the commons', *Science*, Vol. 162, No. 3859, pp.1243–1248.
- Heikkilä, K. and Fondahl, G. (2012) 'Co-managed research: non-indigenous thoughts on an Indigenous toponym project in northern British Columbia', *Journal of Cultural Geography*, Vol. 29, No. 1, pp.61–86.
- Hodgdon, B.D., Hayward, J. and Samayoa, O. (2012) 'The GuateCarbon initiative and REDD+ readiness in Guatemala', *ETFRN News*, p.53 [online] <http://www.etfrn.org/file.php/79/4.4.b.hodgdon-j.hayward-o.samayoa.pdf> (accessed 19 March 2015).
- Hudson, L.A. and Ozanne, J.L. (1988) 'Alternative ways of seeking knowledge in consumer research', *Journal of Consumer Research*, Vol. 14, No. 4, pp.508–521.
- Institute for Conservation and Sustainable Development of Amazonas (IDESAM) (2011) *Project Description: Suruí Forest Carbon Project*, Manaus, Brazil.
- Institute for Global Environment Strategies (IGES) (2013) *The Role of Governance Post-2015*, IGES discussion paper, Japan.
- Institute for Global Environmental Strategies (IGES) (2012) Quality-of-governance standards for carbon emissions trading: developing REDD+ governance through a multi-stage, multi-level, and multi-stakeholder approach. IGES Discussion Paper. Japan.
- Instituto Socioambiental (ISA) and Forest Trends (2010) *Desmatamento Evitado (REDD) e Povos Indígenas: experiências, desafios e oportunidades nos contextos amazônicos*, Brasília, Brazil.
- Kanowski, P.J., McDermott, C.L. and Cashore, B.W. (2011) 'Implementing REDD+: lessons from analysis of forest governance', *Environmental Science & Policy*, Vol. 14, No. 2, pp.111–117.
- Kissinger, G., Herold, M. and de Sy, V. (2012) *Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers*, Lexeme Consulting, Vancouver, Canada.
- Kooiman, J. (1993) *Modern Governance: New Government-Society Interactions*, Sage, London.
- Kovach, M.E. (2009) *Indigenous Methodologies: Characteristics, Conversations, and Contexts*, University of Toronto Press, Toronto, Ontario.
- Larson, M.A. and Petkova, E. (2011) 'An introduction to forest governance, people and REDD+ in Latin America: obstacles and opportunities', *Forests*, Vol. 2, No. 1, pp.86–111.
- Mikkelsen, B. (2005) *Methods for Development Work and Research*, SAGE Publications, London.
- Ministry of Science, Technology and Innovation (MCTI), Secretariat of Policies and Programs for Research and Development (SEPED) and General Coordination on Global Climate Change (CGMC), Brazil (2013) *Estimativas anuais de emissões de gases de efeito estufa no Brasil*, Brasília, Brazil.
- Muller, F.B. (2013) *Povo Païter Suruí vende primeiros créditos de carbono por desmatamento evitado em terras indígenas*, Instituto Carbono Brasil [online] http://www.institutocarbonobrasil.org.br/redd/_noticia=735097 (accessed 16 September 2015).
- Nabuurs, G.J., Masera O., Andrasko, K., Benitez-Ponce, P., Boer, R., Dutschke, M., Elsiddig, E., Ford-Robertson, J., Frumhoff, P., Karjalainen, T., Krankina, O., Kurz, W.A., Matsumoto, M., Oyhantcabal, W., Ravindranath, N.H., Sanz Sanchez, M.J. and Zhang, X. (2007) 'Forestry', in Metz, B., Davidson, O.R., Bosch, P.R., Dave, R. and Meyer, L.A. (Eds.) *Climate Change 2007: Mitigation of Climate Change*, Contribution of Working Group III to the Fourth Assessment Report of the IPCC, pp.541–584, Cambridge University Press, Cambridge, UK and New York, NY, USA.

- Nadkarni, M. (2012) 'Tackling forestry corruption in Asia-Pacific', in Broekhoven, G., Savenije, G. and von Scheliha, S. (Eds.): *Moving Forward with Forest Governance*, European Tropical Forest Research Network – ETFRN, Tropenbos International, Wageningen, Netherlands.
- Nepstad, D., Schwartzman, S., Bamberger, B., Santilli, M., Ray, D., Schlesinger, P., Lefebvre, P., Alencar, A., Prinz, E., Fiske, G. and Rolla, A. (2006). 'Inhibition of Amazon deforestation and fire by parks and indigenous lands', *Conservation Biology*, Vol. 20, No. 1, pp.65–73.
- Nery, D., Christovam, M., Mesquita, I., Splendore, J., Stella, O. and Moutinho, P. (2013) *Indigenous Peoples and the Reducing Emissions from Deforestation and Forest Degradation (REDD+) mechanism in the Brazilian Amazon: Subsidies to the Discussion of Benefits Sharing*, Instituto de Pesquisa Ambiental da Amazônia, Brasília, DF.
- Osborne, D. and Gaebler, T. (1992) *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*, Massachusetts, Addison-Wesley, 405pp.
- Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press, UK.
- Ostrom, E. (1999) *Self-governance and Forest Resources*, Occasional Paper N. 20, Center for International Forestry Research (CIFOR) Bogor, Indonesia.
- Pavan, M.N. and Cenamo, M.C. (2012) *REDD+ nos estados da Amazônia: mapeamento de iniciativas e desafios para integração com a estratégia brasileira*, 2nd ed., Instituto de Conservação e Desenvolvimento Sustentável do Amazonas IDESAM, Manaus, Brazil.
- Rametsteiner, E. (2009) 'Governance concepts and their application in forest policy from global to local levels', *Small-Scale Forestry*, Vol. 8, No. 2, pp.143–158.
- Sales, R., Otsubo-Kwan, V. and Vidal, F.P. (2010) *Legal Aspects of the Surui Carbon Project. In Avoided Deforestation (REDD) and Indigenous Peoples: Experiences, Challenges and Opportunities in the Amazon Context*, pp.125–132, Instituto Socioambiental and Forest Trends, Brasília, Brazil.
- Santilli, M. (2010) 'Indigenous lands and the climate crisis', *Avoided Deforestation (REDD) and Indigenous Peoples: Experiences, Challenges and Opportunities in the Amazon context*, Instituto Socioambiental and Forest Trends. Brasília, Brazil.
- Soares-Filho, B., Moutinho, P., Nepstad, D., Anderson, A., Rodrigues, H., Garcia, R., Dietzsch, L., Merry, F., Bowman, M., Hissa, L., Silvestrini, R. and Maretti, C. (2010) 'Role of Brazilian Amazon protected areas in climate change mitigation', *Proceedings of the National Academy of Sciences of United States of America* 107, pp.10821–10826.
- Suruí, A.N., Maranhão, A.C.K., Pilla, E., Vale Jr., I.C., Bandeira-Cardozo, I., Ávila, T., Giglio, R.C., van Roosmalen, V., Olander, J.F., Borges, B., Surui, A.N. (2010) 'The Surui project: building indigenous peoples' capacity for informed engagement with REDD finance', *Avoided Deforestation (REDD) and Indigenous Peoples: Experiences, Challenges and Opportunities in the Amazon Context*, Instituto Socioambiental and Forest Trends, Brasília, Brazil.
- Suruí, C. (2013) *Reflorestamento da Terra Indígena Sete de Setembro: uma mudança da percepção e da conduta do povo Paiter Suruí de Rondônia?*, Master dissertation in Sustainable Development, Universidade de Brasília, DF.
- Tahuwai-Smith, L. (1999) *Decolonizing methodologies, research and indigenous peoples*, Zed Books Ltd, London.
- Thompson, M.C., Baruah, M. and Carr, E.R. (2011) 'Seeing REDD+ as a project of environmental governance', *Environmental Science & Policy*, Vol. 14, No. 2, pp.100–110.
- Toni, F., Ferreira, I.A. and Ferreira, I.N. (2011) 'Adapting to emerging institutions: REDD+ projects in the territories of the Suruí and Cinta-Larga indigenous peoples', *ICARUS II Conference in Climate Vulnerability and Adaptation*, University of Michigan, USA.
- van Damm, C. (2011) 'Indigenous territories and REDD in Latin America: opportunity or threat?', *Forests*, Vol. 2, No. 1, pp.394–414.
- Vitel, C.S.M.N., Carrero, G.C., Cenamo, M.C., Leroy, M., Graça, P.M.L.A. and Fearnside, P.M. (2013) 'Land-use change modeling in a Brazil indigenous reserve: construction of a reference scenario for the Suruí Redd Project', *Human Ecology*, Vol. 41, pp.807–826.