Local Incentive Structures and the Constitution of Community-Based Enterprises in the Forest

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Highlights

- CBFEs have an important role in balancing income generation and sustainable development objectives within local communities in CFMs
- Different dimensions influence the creation, viability and the role of CBFEs in the implementation of CFM aiming at sustainable development in the forest
- Factors related to the community, the CBFE and state support should be considered when envisioning the creation and following support of CBFEs

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Abstract

Departing from the inquiry if Community-Based Enterprises (CBEs) can support the implementation of Community Forest Management (CFM) approaches in sustainable use conservation units, the paper delves into Community-Based Forest Enterprises (CBFEs) in eight different Communities that agreed to be part of the Timber Small-Scale Sustainable Management Plan policy (SSSMP), in the Rio Negro Sustainable Development Reserve in the Brazilian Amazon. From the perspective of the communities, this article explores the factors that influence the creation of CBFEs, their viability, and their role in the implementation of CFM aiming at sustainable development in the forest in conjunction with the SSSMP policy. The analysis is based on the interviews, workshops and observation during fieldwork in the Reserve, resulting in three inductively deduced aggregate dimensions: community, CBFE and state. The findings suggest that these dimensions are interrelated, although they affect CBFEs differently regarding the conditions of possibility for their establishment in the first place. It is argued that considerable attention must be given to the community and their incentive structures where the CBFEs are located that directly inform the characteristics of the CBFEs themselves, as well as guide how CFM is implemented. The findings contribute to CBFE literature and CFM public policies in forest reserves. It broadens the discussion to explore the interdependent relationship that one has on the other and the benefits for livelihood and income generation of the peoples in conservation units in the Brazilian Amazon.

Keywords: *Community Forest Management; Community-Based Forest Enterprises; sustainable use conservation units; timber small scale sustainable management plans; Rio Negro Sustainable Development Reserve; Latin America; Brazil*

1. Introduction

In 2000 Brazil began managing the use and protection of the biological resources in the Amazon region through the creation of different types of conservation units or reserves. Extractive and sustainable development reserves were created in forest public lands and the communities formally acquired a concession of collective use of these lands. Thus, a variety of public and private, local, regional and international actors contributed to setting up Community Forest Management (CFM), where communities were using, managing and conserving the forest (Arts & de Koning, 2017). CFMs have been encouraged and implemented around the world, not only in developing countries but also in developed countries as an approach to achieve welfare for local communities and local livelihoods, forest conservation, sustainable forest development, while respecting and drawing upon local and customary traditions and social forest initiatives, and without compromising on long-term resource and development objectives (Dressler et al., 2010; Agrawal, 2001; Price & Butt, 2000; Poffenberger & McGean, 1996; Umans, 1993).

All these require the communities based in the reserves to play a decisive role as both environmental service providers and users of natural resources (Becker, 2009). Moreover, it requires communities to balance economic development with conservation, which can be challenging, especially if many stakeholders have a stake in it. What is evident is that, although in the CFMs it is expected that, by empowering the community, the tension between conservation and production interests can be reduced, as well as the conflict between local

communities and the state government (Baral, 2008; Poynter, 2005), this tension is still present if not increasing (Adhikari, Kingi, & Ganesh, 2014; Agrawal & Ostrom, 1999; Arnold, 2001; Baynes, Herbohn, Smith, Fisher, & Bray, 2015; Colchester, 2001). Therefore, most CFM studies have focused on understanding the effects of this 'imbalance' by looking at government policies (Adhikari et al., 2014; Arts & de Koning, 2017; Chettri, Krishna, & Singh, 2015; Ojha et al., 2016) and environmental impact (Ellis & Porter-Bolland, 2008; Pokharel, Neupane, Tiwari, & Köhl, 2015). However, little attention has been given to the social impact, particularly in the communities, to understand how the community is empowered, and more specifically how community entrepreneurial activities can support the implementation of CFMs in the conservation units or reserves.

These community entrepreneurial activities, known in the entrepreneurship literature as CBEs, are normally seen as a solution to balance economic and environmental objectives. They are a very particular type of business, which can be distinguished from private enterprise, because of the allegedly community-focused generation of benefits (Humphries et al. 2012). In the context of forest management, this collective model is known as Community-Based Forest Enterprises (CBFEs) and refers to the small-scale usage and commercialisation of wood and non-wood products. However, there is still a lack of understanding and empirical evidence on how these CBFEs are actually achieving the subsistence-conservation balance in the context of sustainable use conservation units or reserves. To address these gaps in the literature, this paper explores from the perspective of the communities, the factors that influence the creation and viability of CBFEs, to support the implementation of CFMs.

To support this aim, this paper focuses on one of the most recent public policies supporting CFM, the Timber Small Scale Sustainable Management Plan (SSSMP) (Plano de Manejo Florestal Sustentável de Pequena Escala de Madeira, SSSMP, in Portuguese), created

in 2011 and implemented for the first time in 2012 in the Rio Negro Sustainable Development Reserave, State of Amazonas, through the Programme Management to Conserve (PMC) (Manejar para Conservar, in Portuguese). The PMC was a partnership between a company from the civil construction sector, the NGO Sustainable Amazon Foundation (Fundação Amazonas Sustentável, FAS, in Portuguese) and the Reserve's Association to encourage the establishment of timber CBFEs in the communities of the Reserve. The article explores eight cases of communities of riverines that adhered to the PMC and formed eight CBFEs created or formalised under the timber SSSMP.

To analyse the cases and address the aim of this paper, we followed a multiple case study approach conducted in three phases: fieldwork held in the Rio Negro Reserve in August 2016, a workshop held in Manaus in February 2017, and second fieldwork of two weeks in the Rio Negro Reserve in March 2017. Thus, data was collected between 2016 and 2017 and the study refers exclusively to the events that evolved during this period. A total of 52 interviews were collected with 21 workshops participants and extensive field observations. The analysis is based on the themes that emerged from the interviews, workshops and observation leading to inductively deduced aggregate dimensions (Gioia, Corley, & Hamilton, 2013).

Departing from the SSSMP policy encouraging the creation of timber CBFEs linked to the associations of the communities, the paper offers two key contributions concerning the growing discussion on CBFEs' role to implement CFM. Firstly, drawing on our results, we propose three factors associated with the community, the CBFE and the state that should be considered when envisioning the models and legalisation of CBFEs. The elements associated directly with (1) the ***community*** are the level of mobility, generational and traditional practices, attitudes towards self vs collective work, and motivations towards formalisation. The elements related to (2) the ***CBFE*** are the presence of leaders and access to social and

economic networks. Lastly, the elements associated with (3) the ***state*** are the formalisation and the licensing processes of the conservation plans. Secondly, these factors allow us to make an important contribution to research and policy interested in how CFM programmes are addressing the challenge of balancing income generation and sustainable development objectives within local communities, as well as, the factors that impact the creation of CBFEs in the first place. This will be of great use for evaluation and decision-making from a policy perspective.

This paper is divided into two parts: the first briefly reviews the literature on CFMs and CBEs/CBFEs in order to establish the main theoretical assumption that the latter is a tool in the implementation of the former; the second part presents the research context and the empirical analysis supporting the conditions of possibility for the establishment of CBFEs in the first place based on the community perspective. It is outlined as follows: section 2 introduces Community Forest Management (CFM), and why micro level analysis is needed. Section 3 discusses the Community-Based Enterprises (CBEs) literature with particular focus on community entrepreneurial initiatives situated in the forest and their role in CFM approaches. In section 4 and 5, the article's methodology and context are described. Section 6 presents the analysis of empirical data and raises the key elements in the three dimensions that influence the communities' ability to establish CBFEs at the outset. Finally, in section 7, a closing discussion and the limitations of our research are presented.

2. Community Forest Management (CFM)

Since the mid-1990's attempts to implement Community Forest Management (CFM), involving several households or communities, have increased in the world and Brazil has followed the same trend. CFM involves management and conservation of forests by communities and their management is often practised in various degrees of collaboration with

state forest agencies, donor organisations, knowledge institutions and/or companies with different scales of authority (Arts & de Koning, 2017; Wakiyama, 2004). Experiences of CFMs have emerged in countries such as Bolivia, Ecuador, Guatemala, India, Indonesia, Mexico, Nepal, Nicaragua, Peru, Philippines, among others (Handy et al., 2011; Sommerville & MacElwee,2011; Seixas & Berket, 2010; Antinori & Bray,2005; Peredo & Chrisman, 2004; Wakiyama, 2004; Andersson, 2003; FAO, 2001).

CFM enhances sustainable management practices in sustainable use conservation units through a co-management approach, jointly between governments and resource users in these units, aimed at the twin objective of sustainable resource management and poverty alleviation (Wunder 2001). Nevertheless, balancing different interests and making income generation compatible with development objectives that go beyond environmental conservation has proven difficult. In fact, studies have shown that the ambiguities between the dual objectives of environmental protection and social justice, which can be met simultaneously, in practice, do show a trade-off in favour of conservation interests (Charnley & Poe, 2007; Zarin, Kainer, Putz, Schmink, & Jacobson, 2003). Moreover, there is a conflict of interests amongst stakeholders and different strategies of engagement within the reserves (Wakiyama, 2004. The establishment of a CFM programme is a dynamic process and political in nature. Lund (2015) points towards the paradoxes of participation in forest management, in which the promotion of community participation rather sustains domination by forest administrators or private enterprises and has not resulted in adequate social outcomes. The assumption that community control and management will automatically result in the sustainable management of forests and ecosystem services is mistaken. There are different dispositions, readiness and willingness to assume control guided by the local populations' motivations and capacity. Thus, an understanding of what is attached at the micro level of the communities, how these stakeholders are organised, and how interests are

accordingly negotiated in these settings (Barrow et al., 2002, p. 86; 138) should contribute to determining local incentive structures to encourage sustainable resource use and commitment to conservation units.

Typically, the commercial exploration of natural resources often follows particular social and environmental ideology (Larson 2003). Indeed, commercial resources users regularly ignore boundaries and have little incentives to manage resource sustainability (Barrow et al., 2002, p. 97). Interestingly, CFMs have promoted the development of entrepreneurial capacities of communities and small businesses – denominated Community-Based Forest Enterprises (CBFEs) and interaction with the market (Donovan & Stoian, 2003). As stated by de Koning et al. (2011) there is a need to understand how and why people adopt, adapt or reject newly introduced CFM rules and regulations. This is also true in the case of the CBFEs (Pacheco, Ibarra, Cronkleton, & Amaral, 2008). The models of enterprises fomented by the public policy and sustainable standards create new practices impacting subsistence activities embedded in the communities' local culture.

Yet, the widening gap between the written government policies and the community practice (Guiang, Esguerra, & Bacalla, 2011) needs to be addressed. At the micro level, there is a need to ratify that historical and economic dynamics actively shaped the reserves which are embedded in a system of reciprocity within and between families (Eloy et al. 2015). Economic activities within Sustainable Development and Extractive Reserves are an extension of family activities. Although strongly affected by the implementation of public policies and private sector interventions, families in the community are decisive to the success of establishing CBFEs and applying the CFM approach (Limeira and Pinheiro 2015). Understanding the conditions that influence the existence of CBFEs helps with CFM programme implementation, as well as, articulating the twin objective of ecological stability and social justice. This knowledge will help to enhance the community-based initiatives as

alternatives against the establishment of a large-scale forest based industry within a national development paradigm of earlier times.

3. Community-Based Enterprises (CBEs) and Community-Based Forest Enterprises (CBFEs)

Community entrepreneurial initiatives are considered in the entrepreneurship literature as Community-Based Enterprises (CBEs), where ‘a community acting corporately as both entrepreneur and enterprise in pursuit of the common good‘ (Peredo & Chrisman, 2006, p. 310). As entrepreneurs, the members of the community participate collaboratively as owners, managers and employees to identify and address a market opportunity aiming to protect and preserve their standards, social structures and way of life through their economic activity (Dana & Light, 2011). At the same time, the community ideally ensures the fair distribution of economic and social advantages amongst members (Ratten & Welpe, 2011). By coming together, the community entrepreneurs have a ‘symbiotic relationship’, where different people and organisations are mutually dependent (Dana, Etemad, & Wright, 2008; Ratten & Welpe, 2011) and, in theory, are oriented towards the broader community rather than personal profit, focusing on economic viability and the creation of social value for the community in the long term (Handy et al., 2011; Johnstone & Lionais, 2004; Peredo & Chrisman, 2006).

This requires CBEs to address three strategic goals simultaneously, social, economic and political (Dana & Light, 2011; Gray, Duncan, Kirkwood, & Walton, 2014; Handy et al., 2011; Somerville & McElwee, 2011). The social objectives are related to the activities that add value to the community; the economic objectives are associated with the creation of assets and the generation of income, and the political objectives are the activities where the community is mobilised as citizens advocating to governments (Somerville & McElwee,

2011). Balancing these three objectives, however, adds further challenges to the establishment and sustainability of CBEs, as it requires a trade-off between self-interest with community interest (Gray et al., 2014; Hall, Daneke, & Lenox, 2010; Mair & Martí, 2006; Van de Ven, Sapienza, & Villanueva, 2007). Another important challenge of CBEs is its embeddedness in the existing societal arrangements, cultural values and macro-environmental conditions of the community (Handy et al., 2011). As Peredo and Chrisman (2006) argued, a crucial factor in CBE's creation and long-term viability is their connection with the local culture and tradition. Ultimately, CBEs have a social foundation and aim to contribute to both local economic and social development (Peredo & Chrisman, 2006), particularly where endemic poverty in rural areas is at stake (Handy et al., 2011).

In the context of CFM and conservation units, CBEs are often termed 'community forestry enterprises', 'community forest enterprises' or 'community-managed/based forest enterprises' (CBFEs), and are considered a response to international efforts to protect natural tropical forests from deforestation and degradation, to reduce poverty and inequality in rural areas, and to provide more relevant and just development support to communities (Charnley & Poe, 2007; Ojha et al., 2016; Pandit, Albano, & Kumar, 2009; Sanchez Badini, Hajjar, & Kozak, 2018; Tomaselli, Timko, & Kozak, 2012). Del Gatto et al. (2018), in a FAO publication on small-scale forest enterprises in Latin America, define these as "individuals and forest smallholders involved in the production and/or processing and commercialization of forest products (e.g. timber, non-wood forest products (p. 6)". Antinori & Bray (2011) argue that community forest enterprises are "historically rare birds, particularly those based on a common property natural resource (and) represent a possible third way of economic development between direct public regulation and control of natural resource exploitation and conventional privatization" because the establishment of collective control of forests by

community of individuals directly benefits the local areas, while public regulation and profit-oriented incentives are still present (p. 2-5).

Thus, CBFEs encapsulate a particular understanding of business rationale linked to its social foundation. Numerous studies have provided empirical evidence of how some of these enterprises are profitable (Humphries et al., 2012; Medina & Pokorny, 2008), reduce poverty (Hajjar, McGrath, Kozak, & Innes, 2011; Kalonga & Kulindwa, 2017; Macqueen, 2013; Orozco-Quintero & Davidson-Hunt, 2009), and manage sustainably the commons (Bray, 2010). Surprisingly, there is a paucity of research linking CBEs in the entrepreneurship literature with the current understanding of CBFEs. This literature can provide significant insights and different perspectives towards understanding the creation and viability of CBFEs in the implementation of CFMs. Moreover, even though CBFEs and CBEs have received increased recognition as being part of contemporary society in addressing social problems, such as poverty reduction (Cieślik, 2016; Ratten & Welpe, 2011), there is still a lack of understanding of what are the internal conditions at the community level that can influence the origin of CBFEs to being with. Presenting the communities' perspective to understand the conditions of possibility at the origin of a CBFE is crucial to succeeding in any further considerations about CFM and sustainable resource use.

4. Research context: History of the Rio Negro Reserve and the Case of Timber Small-Scale Sustainable Management Plans policy

The low Rio Negro region is located in the state of the Amazon, Brazil. In the past, the region was known for logging and construction of ferry wood boats that supplied the demand of the basin of the Rio Negro river and also purchasers in Manaus. In 2008, this area was converted in a state conversation unit, the Rio Negro Sustainable Development Reserve, located in the state of the Amazonas covering areas of the municipalities of Manacapuru, Iranduba and

Novo Airão. With an area of 103.086 hectares or 1.030 square kilometres, it encompasses 19 communities with approximately 600 families. Currently, the Rio Negro Sustainable Development Reserve is known for its tourist potential, due to the high number of lakes, beaches and biodiversity richness of its endemic fauna pertained to the rivers Negro and Solimões. The residents of the Rio Negro Reserve are 'riverines' included in the Traditional Peoples category, defined in the Decree 6.404/2007 that regulates the National Policy on Sustainable Development and Traditional Peoples in Brazil. The National System of Conservation Units (Sistema Nacional de Unidades de Conservação, in Portuguese, SNUC) created in 1999 by the Law 9.985 and officially launched in 2000, has opened the way for convergence of interests in the framework of sustainable development, including the riverines or "caboclos" residents in the perimeter of the new demarcated areas.

In Brazil, the extractivist and sustainable development reserves are in the category of conservation units of sustainable use, as the Rio Negro Reserve. CFMs are encouraged in these areas and are mostly focused on timber. In these reserves, the state owns the land, but some of the property rights are transferred to the local communities collectively through a contract of concession of the right of use (CCRU) signed by the Association of the Reserve or "mother association" and the state environmental agency (Viegas, 2014). In the CCRU the contracting parties must comply with the obligations to adopt sustainable management practices and conservation of the forest. Besides, a reserve management plan should be created and approved by the local authority. Built on a broad participatory methodology it includes representatives of the communities, NGOs and other stakeholders with an interest in the area (companies and environmental funds).

A local NGO usually assumes a mediating role of concluding what has been negotiated amongst the stakeholders from private and public sectors, contributing with technicians from diverse fields and creating a standard format for the content deliberated by all participating

parties. These councils may be of a consultative or deliberative purpose functioning as spaces for the communities and civil society involvement (Fernandes, 2013, p.19). The programmes and policies that were discussed within the community in the Rio Negro Sustainable Development Reserve are described in Table 1, indicating the different stakeholders involved in each programme.

Table 1: Development and Conservation Policies in the Rio Negro Sustainable Development Reserve

Name	**Type**	**Year**	**Description / Purpose**	**Stakeholders (order of importance)**
Family Forest Scholarship (Programa Bolsa Floresta- PBF in Portuguese)	Regional Programme (Amazonas State)	2007	Payment programme for environmental services to the residents. With the support of donors and the Amazon Fund (Fundo Amazônia, in Portuguese) of the Brazilian Development Bank (BNDES), the PBF is focused on deforestation reduction and reward of local people for environmental service provision, as well as, their willingness to live within and protecting the forest	Amazonas State FAS
Community and Familiar Sustainable Management Programme (CFSMP) (Manejo Florestal Comunitário e Familiar Madeireiro in Portuguese)	National programme (Brazil)	2009	Provides the general principles for community and familiar sustainable management programmes	The Ministry of the Environment
Sustainable Small Scale Management Plan (SSSMP)	Regional Policy (Amazonas State)	2011	Regulates small scale timber activities in the State of the Amazonas and creates the small scale management plans' steps to get the license to operate and to sell the wood	Amazonas State Agencies NGO FAS
Management to Conserve (*Manejar para Conservar* in Portuguese)	Programme (Sustainable Development Reserves State of the Amazonas)	2011	Provides assistance to formalisation and financial education to timber CBEs in 11 communities the Rio Negro Sustainable Development Reserve	NGO FAS Companies Donors (international and national) IDAM – State of Amazonas Rural Agency

In the Amazonas state, 67% of the timber producers are small-scale, where by law the land size is 500 hectares maximum (Rezende & Amaral, 2007). Nevertheless, timber smallholder producers correspond only to 9% of the total wood production (Idesam, 2017).

Therefore, the larger producers are responsible for almost the totality of the timber production in the region.

Formerly, the low Rio Negro area was known for high exploitation of illegal logging including endangered wood species and lack of institutional support. Efforts to the implementation of the CFM public policy, such as the Sustainable Small-Scale Sustainable Management Plan (SSSMP) (see Table 1) on timber activities was seen as a means to tackle not only poverty in the reserves but to potentially address these negative externalities of uncontrolled resource use.

The timber SSSMP was created in 2011 and implemented for the first time in 2012 in the Rio Negro Sustainable Development Reserve, state of Amazonas, through the programme Management to Conserve (Manejar para Conservar, in Portuguese). The programme was a partnership between a company from the civil construction sector, the NGO Sustainable Amazon Foundation (Fundação Amazonas Sustentável, FAS, in Portuguese) and the Reserve's Association to encourage the establishment of timber CBFEs in the communities of the Reserve. After consulting all the 19 communities living in the Reserve, 11 agreed to demarcate sustainable management plans under the SSSMP and to set up CBFEs (see Figure 1).

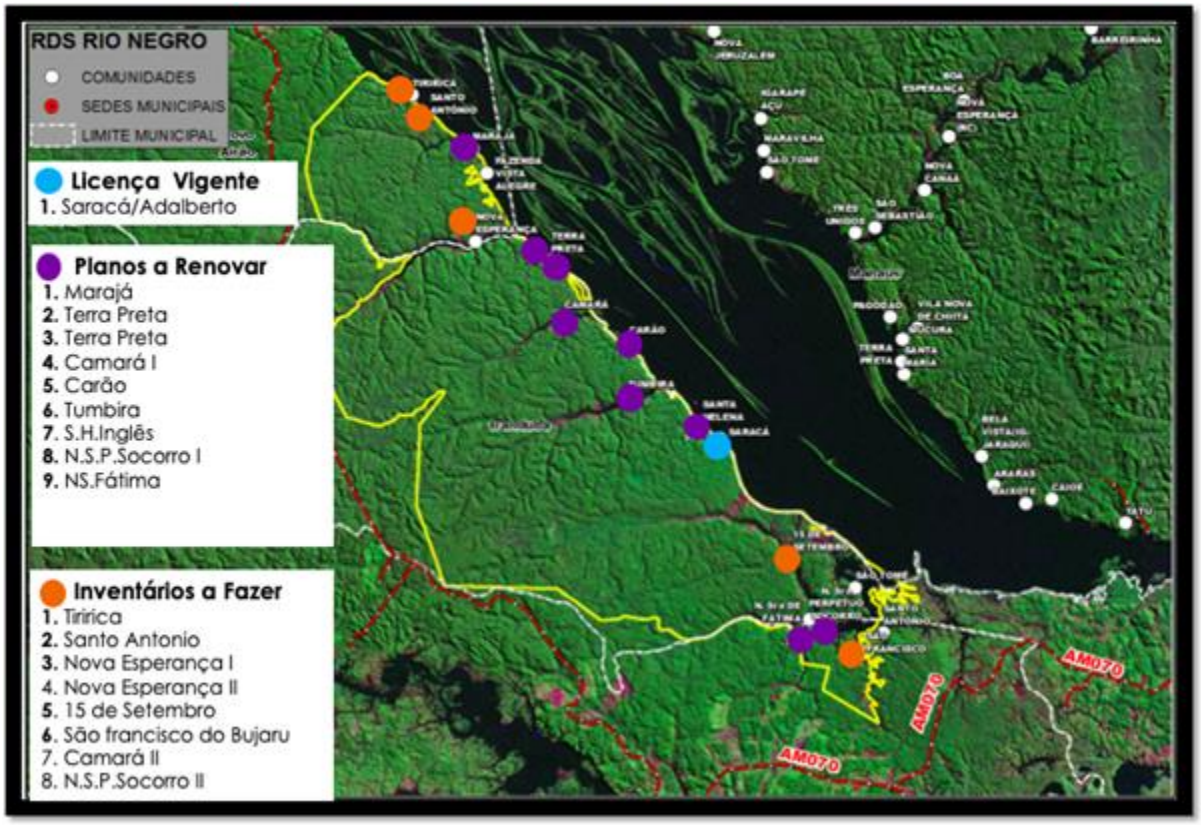

Figure 1: Communities in the Rio Negro Reserve that adhered to the Program Management to Conserve. Source: FAS Workshop: Inclusive Business and the riverines in the RDS Rio negro, 2017.

Since 2012, FAS administers the Management to Conserve programme assisting timber entrepreneurs in the 11 communities in the Rio Negro Sustainable Development Reserve to create formal CBFEs. To be part of a timber SSSMP, the community must choose a piece of land in the reserve, which is called timber management plan. The area where the timber management plan is set up is decided within the communities and then approved in the Deliberative Council based on the management plan of the reserve. The plans are usually 8 or 10 miles distant from residential areas. For a small-scale plan, there is a limit of 20 hectares a year to cut. The small-scale management plan is of low impact, the scale of production must be reduced, and the activity is considered an alternative income for the families in the reserve. Usually, the CBFEs adhering to the programme must attend capacity building and

preparatory meetings, provided by the NGO (Farias, Koury, & Vianna, 2016). The CBFEs depend on the NGO and the local authorities to comply with licensing, digital certification procedures and to find buyers for the product due to isolation.

In the SSSMP, the state designs the guidelines for legalisation and good practices in small-scale timber production. By the law, the Management Plans are demarcated with the leaders of the community, an inventory of the trees is created by the rural local agency, the NGO FAS, and community leaders. The "owner of the management plan" is selected, who, normally, is the president of the community association to guarantee that the plan will be explored collectively by the families who decided to "go to the plan" or make part of the CBFE. The whole process of adhering to the SSSMP, formalising the community association, electing the "owner of the plan", getting the license and selling the wood involves all families in the community, but the level of acquaintance of CBFEs models and local incentives structures may vary, affecting the level of implementation of a CFM.

5. Methodology

We followed a multiple case study approach, which permitted the analysis of contextual conditions. These conditions are important in studying organisations such as CBFEs and the conditions that influence their constitution to begin with. To provide further validation to our findings and to explore the complexity of factors associated with local incentive structures, we used different data collection methods, including workshops, semi-structured interviews and participant observation (Patton, 2001; Yin, 2013).

The data was collected in three phases. First, fieldwork was held in the Rio Negro Reserve in the state of the Amazonas during one week in August 2016. In this phase wood collectors were interviewed aiming an in-depth analysis of the Management to Conserve programme. The fieldwork resulted in a report with an analysis of public policies and legal

framework, funded by the Institute of Entrepreneurial Citizenship (*Instituto de Cidadania Empresarial – ICE,* in Portuguese). As presented in the research context, the Management to Conserve programme was implemented in 11 communities in the Rio Negro Reserve. We visited eight of these communities and interviewed 30 residents, covering almost the totality of the communities involved with the project. The interviews were conducted in groups with the presence of a local leader. All participants had the chance to express freely their opinions in regard to the project pointing out the challenges to local CBEs and individual wood extractors to commit with the Management to Conserve programme standards. Formalisation was the focus of the discussions, especially the obstacles for local entrepreneurs and community leaders to commit to the legislation and sustainable management practices. We decided to live in one of the communities for 5 days and visit the others, due to its strategic location alongside the Rio Negro river. This supported our participant observation.

The second phase included a workshop held in Manaus in February 2017 aiming to understand the diverse models of engagement of CBFEs in multinational supply chains in the scope of the research 'Inclusion and formalisation of Amazonian informal entrepreneurs into MNC value chains - mechanisms, partnerships and impacts', supported by the British Academy, Newton Fund Advanced Scholarships. The local NGO Amazonas Sustainable Foundation facilitated the workshop with members of reserve communities, other local NGOs, academics, government departments and small business support groups. A total of 21 people participated in the one-day workshop (8 hours)in rich and open discussions. The areas discussed in the workshop included amendments in the law of societies in order to adequate to models of CBFEs; tax expenses to encourage the inclusion of CBFEs in MNC's supply chains, business models, organic and other certification schemes, incubators of forest products, partnerships with NGOs and universities among other important themes. This workshop allowed us to obtain an overview of the research phenomenon from different

stakeholders' angles. Moreover, the multiple sources of data used in this study are advantageous as they help 'reconstructing the unfolding of individual and collective action patterns leading up to relatively unique events' (Burgelman, 2011, p. 594).

Finally, the third phase comprised the second fieldwork of two weeks in the Rio Negro Reserve in March 2017, still with the support of the Newton Fund Advanced Scholarships. There were 27 in-depth interviews and participant observations collected in eight communities within the Reserve[1]. The eight communities, with whom we stood in contact and interviewed, reflect the diversity across the 19 communities located across the Reserve - although only 11 were part of the SSSMP - to include communities of different sizes, group identities, and locations. Interviews included owners of timber management plans under the SSSMP, CBFEs composed predominantly of furniture makers and small-scale wood extractors. By living in one of the community groups for seven days we also collected observational data on the dynamic and activities occurring in various communities. These were supported in extensive field notes and included meetings in the CBFEs, with NGOs, the municipal rural extension agency and community members. The questions and topics discussed were related to their current experience in the CBFE with licensing of the plans, formalisation, business models of inclusive businesses, partnerships with companies, implementation of sustainability standards, certification schemes, and youth engagement, among other issues.

The workshop and interviews were conducted in Portuguese by the main author and, in some instances. The interviews were transcribed in Portuguese and then translated to English, which was reviewed by the main author to check accuracy. In some instances, a translator was used for interview transcription.

[1] Community of Fátima, Community of Tiririca, Community of Perpétuo Socorro, Community of Camará, Community of Igarapeassú, Community of the Ingles, Community of Marajá, Community of Saracá.

The analysis of the cases was conducted using NVivo software and followed the thematic analysis procedure proposed by Gioia, Corley, and Hamilton (2013). The main author began the analysis with an open exploratory coding to identify within the three phases where relevant topics to our study were discussed. This resulted in 15 first order and eight second-order codes, which came directly from the data and included codes such as 'level of mobility', 'presence of leaders' and 'formalisation process'. We made analytical notes to record emerging patterns, identifying possible relationships and time frames (Richards, 2014). We paid attention to how members of the CBFEs and the community described their experiences within the CBFE. Based on the analysis of the codes we identified three dimensions that are related and affect CBFEs differently with regards to the probability of community members adhering to a CBFE at the outset. The outcomes of this thematic analysis and our interpretations were then discussed and agreed among the authors, relating the findings with theory and developing the categorisation of the codes (Corley & Gioia, 2011; Gioia et al., 2013). Figure 1 presents our thematic data structure and the Appendix exhibits representative quotes of the key dimensions.

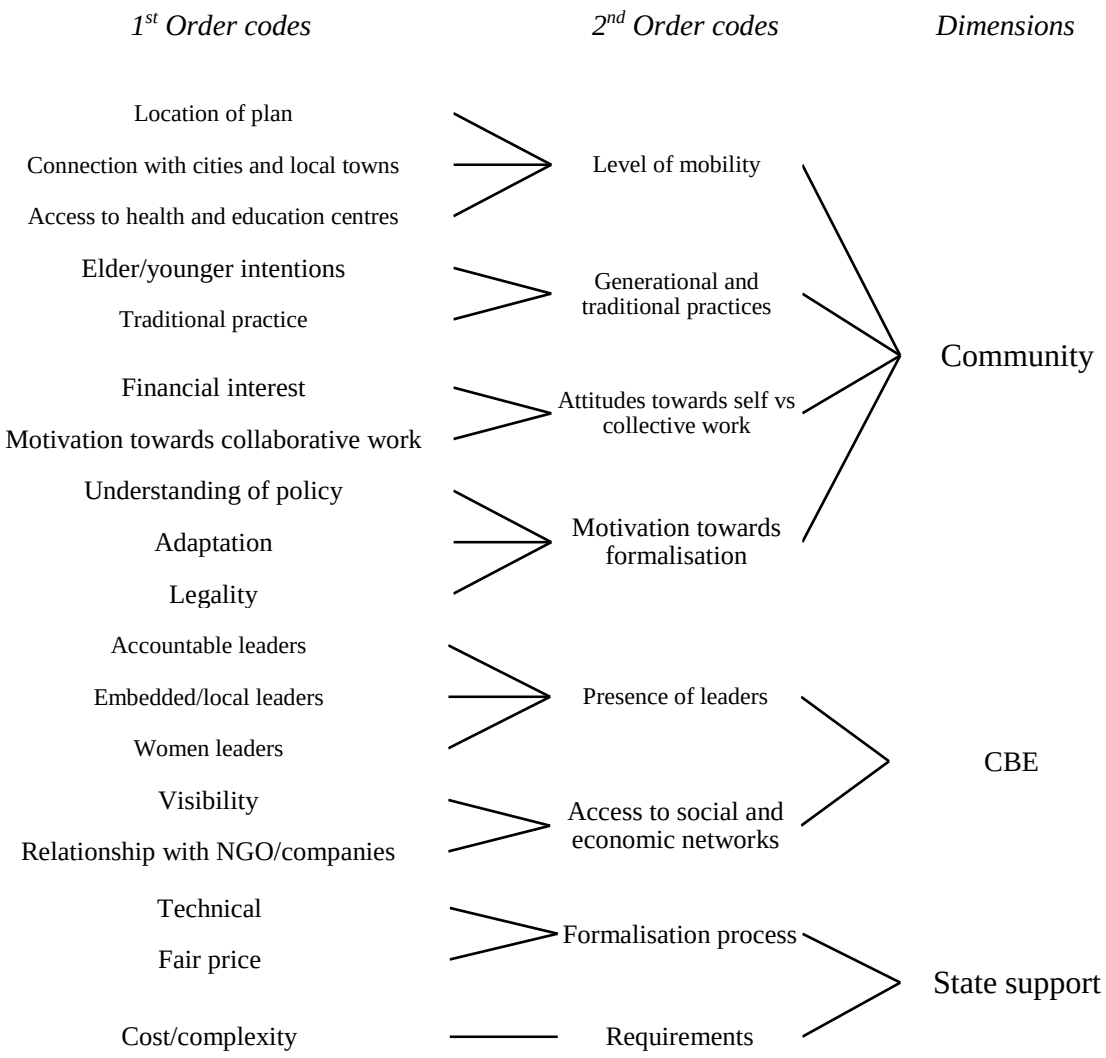

Figure 2. Thematic data structure

6. Findings and Discussion

As illustrated in Figure 1, three dimensions were distinguished in the data analysis on CBFEs' setting, models and influence in supporting CFMs. These dimensions, composed of a set of codes, will be analysed individually in the following sections.

6.1 Factors associated with the community

During the field trips to the Rio Negro Reserve, it was evident the relevance of the the micro level implications to the set up of the timber management plans and CBFEs, pointing out to

the urgency in considering them and the local aspects on CFM policies. The most evident factor for the peoples living in conservation units in the Amazon basin was their ***level of mobility***.

Some of these communities are very far from the state capital, isolated and immersed in the middle of the forest with limited access to health, education and energy. In the words of a CBFE leader in the Community of Igarapeassú: "we don't have any health service station; we should attend it in the next town if there is a need". Also, a woman, president of a CBFE in the Community of Marajá, one of the most isolated communities in the reserve said: "children need to get a boat to school", adding that the boat sometimes does not show up. Migration and mobility have long been integral to the livelihood patterns and political strategies of rural indigenous populations in Latin America (Adams et al., 2004; Alexiades, 2009) and difficulties to access basic necessities encouraged mobility. However, isolation is still very common. It affects not only communities' livelihood but also their entrepreneurial activities. For instance, to register the plan and formalise a CBFE it is necessary to travel to the neighbouring towns and to Manaus (the capital). Public transportation lasts four hours on average to the capital and often local authority is not there to attend the ones in the neighbouring towns who need access to information. Another example is the case of a timber management plan far from families' houses, where wood extraction depends on access to boats as well as climate conditions (i.e. rainy seasons). The president of the association of the Community of Fátima emphasised, for instance, that the plan in his community "is six hours by boat and you cannot access it during the dry season".

Another important factor referred to in most of the community interviews was the ***generational and traditional practices***. New rules and standards that came with the timber SSSMP policy and the Management to Conserve project had a huge impact on the social and cultural traditions of the communities studied, where extraction of wood was practised for a

long time. For some people in the communities, these new standards, such as the use of security equipment, new methods of cutting involving the size of the truck, species, volume and formalisation, were considered good, as an owner of a plan, the leader in the Community of Tiririca stressed:

> *"The way of cutting is different, (...) but we have more safety procedures and that's nice (...) If we could work only extracting in the forest it would be much better, but we depend on papers to find purchasers"*

Contrastingly, during the field trips the difficulties for the elders 'velhos' to overcome new rules and sustainable management standards with the creation of the reserve were observed. The elders came from a period when there were no rules or standards than the ones that were transmitted by other inhabitants or from their own experience with local biodiversity. The creation of the reserve and conservation laws impacted the lives of these householders, resulting in them quitting the activity. In the words of the leader of the Community of Saracá: "when we went to the capital to sell the wood and were caught by inspectors, we were (…) treated as criminals". This was confirmed by the woman president of the association of the Community of Marajá: "There is a case of an old man who gave up working with wood after more than 30 years and went to Manaus. He doesn't want to follow the rules and use the (security) equipment". This relates to the phenomenon found in rural societies, where the concept of self-employment is conventionally linked with agricultural activities. Thus, new entrepreneurial activities and the introduction of new standards require changing people's motivation to engage in economic reform (Spilling, 1991).

Furthermore, the resistance in adopting and adapting to the introduction of new entrepreneurial activities and standards within agricultural practices that follow a long tradition, is the rupture between generations. Carrying heavy logs and sleeping in the forest,

which the elders were used to doing, for the youngest is considered ‘hard work’. As one youngest of the Community of Igarapeassú expressed:

> *“I would prefer to drive the tractor or having my own business than to go to the forest and carry logs. This is heavy work and the money does not compensate. I keep on doing (it) because there are no jobs in the area. I don’t want to go to Manaus (migrate)”*

However, most interviewees recognised that there is much space for the youngest to work with legal procedures and registers of CBFEs, which depend on the internet and may require higher levels of education: “there are many youngest with intelligence to work in this community with papers, selling and registers” (CBFE leader in the Community of Marajá). With easy transit in the world of smartphones and computers, the youngest in the communities are considered the ones who are expected to gradually manage formalisation processes. It was observed that they have a better understanding of the meaning of sustainable development and contrary to the elders, they see a future in conservation activities.

Even though typically CBFEs tend to be experienced in collective management of a forest resource by the local population, community forestry can equally involve activities on an individual or on an individual household basis. Arnold (2001) recognised that “in practice, the various forms of community forestry coexist and are often linked” (p. 38). These different practices were observed in the studied communities, where different ***attitudes towards self vs collective work*** influence the CBFEs work and their role in sustainable resource use.

In the Rio Negro Sustainable Development Reserve, the state required programme beneficiaries to work collectively as a precondition of support through the creation of CBFEs.

This state top-down intervention gives priority to the generation of benefits for the community and not for an individual entrepreneur. Therefore, support from private companies, NGOs and the state/local authorities presuppose the formalisation of a CBFE and an association of the community.

This collective approach was evident in communities such as the Ingles, which was able to set up a wood CBFE working collectively and in the benefit of the community. The interviews in the community were conducted with a group of men and a woman where community interest prevailed over self-interest. The leader proudly explained they go to the forest in a group of men who raised their hands when asked who would like to be part of the CBFE during a community meeting. Similarly, it was highlighted that collective work in the forest allowed them to pay back loans, taken to add value to the product turning logs into planks, for example. Thus, the resulting impact of the CBFE is targeted at the broader community rather than at personal profit, focusing on the long-term economic viability and the creation of social value for the community (Handy et al., 2011; Johnstone & Lionais, 2004; Peredo & Chrisman, 2006). However, the interviews in the eight communities showed that although collective work is part of the culture and tradition in the reserve, creating a CBFE linked to the association of the community was not understood by many local stakeholders. Families are the relevant social unit in the communities and working collectively means family work for the majority. Added to that, the monthly payments required for the association, as well as a lack of information on the importance of being a member resulted in divergence regarding its importance. A number of interviewees reported that they used to pay the association and stopped because benefits were not clear. Moreover, the president of the association of the Community of Fátima called attention to his responsibility for the CBFE's result towards the donors, company and NGO. He complained that families do not cooperate with him.

The understanding of collective work varies depending on the community and, even, on the families in the same community. For instance, the interviews with a father and a son, and with a woman part of the same family in the Community of Socorro, confirmed the existence of different views from self and collective work in the same family. At the same time as the father said "FAS (NGO) teaches us daily that we must get profit from our work and do it collectively with the community and to the benefit of the community". The son said he would ask FAS for support for his for-profit timber enterprise, because, in his view, while contracting workers in the area the community is benefitting. Conversely, the woman in the same family said she does not see any benefits for the community from the small-scale wood plans programme.

Lastly, a factor in the community that influenced the establishment of CBFEs at the outset was their understanding and ***motivation towards formalisation***. Many of the interviewed in the communities reported situations when they were sanctioned for illegality during official inspections. Conversely, there are circumstances in which they were not able to comply with the law, for instance, because of state inefficiency and lack of human resources to attend local demands for licensing. Despite the inclusion of sustainable use in the Brazilian conservation units' law, such as the extractive reserve and the sustainable development reserve, in the view of the people in the forest, environmental protection should not be detrimental to income generation. As expressed by a woman in the Community of Acajatuba:

> *"I do not believe in those conservation policies, it is unfair, the majority is poor and after the reserve, things got worse, they (men) can't do what they used to. They need to survive (...) they (state agents) come to forbid, but they do not give the solution for you to live"*

In contrast, a CBFE leader in the Community of Igarapeassú reminded the decision of the presidents of the communities' associations in one of the meetings to support the CFM, when it was agreed "with the 19 communities in the reserve that we (they) are not going to sell to people out of the reserve, only if it is wood from the plan and legal".

Overall, it can be concluded that important conditions are embedded and linked directly with the communities and their decision to adhere to CBFE models. Our findings concurred with CBE literature which suggested that the success of an income generation programme, including fostering CBFEs, is largely based on reliance on available local skills and raw materials (Meccheri & Pelloni, 2006), protection of cultural values (Handy et al., 2011; Stabinsky & Brush, 1996), their strong connection with the local culture and tradition (Peredo & Chrisman, 2006; Valchovska & Watts, 2016), and their ability to maintain these cultural traditions (Dana & Light, 2011). Moreover, our findings confirm studies that suggested that CFM works best when it can align itself with socially embedded logics that predates the CFM initiative (Arts, Behagel, Van Bommel, de Koning, & Turnhout, 2012; Arts & de Koning, 2017), such as those embedded in the community. Thus, CBFEs embedded in activities traditionally developed in the reserve show more ability to devolve the right over natural resources to locals generating income and protecting the forest.

Additionally, our findings recognised the importance of mobility for these communities as an important factor that also influences other elements, such as cultural and generational aspects. For instance, Gramajo (2008) called attention to the level of education and cultural aspects, both influencing the mind and acceptance of new standards and rules. Due to mobility, there are already the youngest (women and men) who attended universities in the capital and came back as teachers at public schools in the reserve. They are expected to be the ones with potential to lead the CBFEs in the future.

Regarding attitudes towards self vs collective work, it was evident that different entrepreneurial models are present in the reserve and in its communities, not only those following the CBFE model required by stakeholders and this has an impact on how CBFEs can support CFM. This concurs with the understanding of CBEs provided by Somerville and McElwee (2011), who recognised that "a community can be a social base for a range of enterprises of different kinds, including ones that are not CBEs" (p. 321). However, the findings from our study provide new insights into the reasons why a range of different forest enterprise models resulted in the communities.

Firstly, even though CBE literature suggests that within communities there are social practices and strong family ties that can foster civility, sociability and intimacy, which encourage collaborative behaviour and entrepreneurship (Ratten & Welpe, 2011), it was demonstrated that not always these ties resulted in successful CBFEs. Although there was evidence of collaborative behaviour and strong family ties, the lack of information and the perception of a 'top-down' approach discouraged community members to join the CBFE, and subsequently, affected the viability of the CBFE. Secondly, our findings concur literature that recognises the challenges for these organisations in balancing not only their social, economic and political objectives but also the self-interested and the community interest (Gray et al., 2014; Hall et al., 2010; Mair & Martí, 2006; Van de Ven et al., 2007). For some people in the communities, economic survival and poverty alleviation were the main drivers, leaving the community interest aside or simply not wanting to be part of the decision-making apparatus.

6.2 Factors associated with the Community-Based Forest Enterprise

Two elements associated directly with the CBFE, its participation/access to social and economic networks and its leadership, were identified as prevailing over CBFEs role to implement CFM programmes.

Firstly, as indicated in the mobility section, difficulties to access basic necessities encouraged mobility, fostering local residents and CBFEs to integrate with ***social and economic networks***. Mobility and increasing interactions with urban areas extended rural social and economic networks to incorporate local towns and regional cities (Eloy, Brondizio, & Do Pateo, 2015). The existence of a CBFE is strongly conditioned to access to these networks. For instance, when a CBFE starts negotiations to find buyers their representatives need to visit towns and meet with potential buyers before exploring the area of the wood management plan. The owners of the plans – who are already part of a network with NGOs and companies – recognise that CBFEs' economic viability relies on a social-economic network and mobility. In the words of two CBFE leaders in the Camará and Socorro Communities, if it would not be for the FAS (NGO) they would not find purchasers.

> *"FAS brought us a list of purchasers in the neighbourhood. Sometimes they (FAS) organise round tables with purchasers in the towns of Manacapuru and Iranduba."*

FAS acquainted with the construction company partner in the Management to Conserve programme, to foster local wood CBFEs, by introducing one ferry and one small tractor for collective use. This impacted significantly the role of the CBFE in the conservation unit , as a leader in the Community of Marajá shared:

> *"I think the company was very important because they gave us the tractor. FAS (NGO) and IDAM (Instituto de Desenvolvimento Agropecuário do Estado do Amazonas or the state agricultural extension agency) helped us since the beginning with the plan."*

Among the eight communities visited, mobility and the existence of a social network had a direct impact on finding buyers, negotiating and selling timber to sawmills. Thus, these

CBFEs were having visibility and accessibility to all the different players as members of the same set of networks, which make for strong social capital and efficient transactions (Frederking, 2004; Ostrom, 1994; Pretty & Ward, 2001; Somerville & McElwee, 2011).

Secondly, it was evident during the interviews and fieldwork that those CBFEs with local men or women accountable for the implementation of public top-down interventions in the reserve, assuming the ***leadership*** of a CBFE, contributed significantly to SSSMP programme implementation and benefits to the community. In addition, the leader's embeddedness in the community and in the activities developed by the CBFE was a crucial condition for the viability of the forest enterprise. For example, the Community of the Ingles elected a fisherman as leader of a wood CBFE but despite the fisherman owning a respected position within the community, he could not perform the role and almost caused the expiration of the plan's timeframe to explore the wood. Change was inevitable, and a wood extractor was elected assuming leadership of the CBFE. Moreover, in part of the communities in the Rio Negro Reserve women worried about the future of their sons and family. They assumed the role of leaders of men groups, encouraging them to be part of the CBFE and organising and taking care of the accounting timber activities. These women were normally perceived as more organised and able to save money.

In a nutshell, an important factor for CBFEs identified in the cases, such as non-access to social and economic networks could have an opposite effect. Parry, Amaral and Peres (2010) argue that mobility and the existence of social and economic networks may contribute to rural migration, especially in areas of deficient health and education services, which was the case of the studied CBFEs. In this perspective, environmental policies play a role in reducing rights over resources, threatening devolution, instead of encouraging people to stay in the reserve (Filho, 2009). Therefore, it is the deeper understanding and consideration of all

factors, including those related to the community and state support that need to be considered when designing CFM policies.

Regarding leadership, as was found in previous studies, CBFE leaders need to provide the necessary impetus and expertise in the area to implement the enterprise, and therefore drive community support and engagement towards the CBFE's objectives (Valchovska & Watts, 2016). This is consonant with part of the CBE literature that identified how typically there is a key individual from the community who plays a crucial role in the creation of a CBE (Handy et al., 2011; Valchovska & Watts, 2016). This person assumes a local and moral leadership position to persuade people to join the CBE. However, this can present a challenge as it depends on the ability of specific human capital within each community (Shackleton et al., 2002). Contrastingly, community development programmes are hard to replicate because of the need to have a local charismatic leader (Handy et al., 2011).

Additionally, the important role of women as CBFE leaders resembles previous studies, such as the microcredit programmes of the Grameen Bank or the Women in Business Development Incorporated (WIBDI) programme in Samoa, where women were directly targeted because the impacts on households and on poverty reduction were greater (Rahman, 1999). Moreover, women were helpful in avoiding local political structures, which can constrain entrepreneurial initiatives (Gray et al., 2014). Although, it is recognised that women have achieved some success in terms of empowerment over resource access in the Amazon region, some programmes to support CFM may create or exacerbate inequalities focusing on groups of male producers affecting women's social role (Schmink, 2004; Zarin et al., 2003).

6.3 Factors associated with state support

Lastly, as was identified in previous CFM studies, state support is a key success factor in any CFM encouraging CBFEs by improving their external governance, their ability to navigate

complex administrative procedures and planning requirements (Baynes et al., 2015). This support is provided only when a CBFE is formally created. This ***formalisation*** can provide access to regulated markets for products, finance and training. However, due to a scarce number of public servants in remote areas, deadlines for certifications are not respected affecting CBFEs and the community's activities for livelihood. Several owners of plans reported that they were waiting for local authorities to renew their licenses to explore the timber plans after a successful extractive season. Long delays in the licensing processes have a direct impact on traditional activities for livelihood in the communities. As a leader in the Community of the Ingles expressed "I'm afraid it will get ready (license) when it is time for fishing (….) if there is fish we need to go fishing".

Additionally, in the case of timber management plans, online registers, environmental licenses, labour obligations, social security taxes and obligation to inform local authority on volume and species of trees inventoried in the plan, are seen, by the majority, as a challenge to overcome. Many complained about the ***disproportion of requirements*** for small scale CBFEs: "The bureaucracy to obtain the licenses is the worst part", in the opinion of the leader of a wood CBFE, "if it were to only explore the wood, (it) would be much easier". This was observed in CFM studies in Mexico where the sector was over regulated as some requirements were appropriate but others confusing, expensive and redundant. This resulted in the decline of timber production in the case of the Mexican reserves over the last decade (Hodgdon, Hayward, & Samayoa, 2013).

Besides, there is disappointment with prices or profit margins, which discourage legality in the reserves. Many affirmed they sell at the same price as the 'illegals', complaining that their product should have an aggregate value because of the environmental service they provide with the protection of the forest. When asked who the illegals were, it was said they were in the communities but did not see benefits in formalising.

Compliance with all requirements does not consider that forest conservation depends on the presence of communities in the reserve. "Bureaucratic institutions [also] need to be more flexible in their treatment of informal practices, so that more people can take shelter under the rule of law" (Hart, 2005, p. 13).

These factors associated with state support affect CBFEs obtaining the licenses to explore the sustainable management plans and to what extent these keep them relatively under state control and with a strong reliance on donor grants and technical assistance (Pacheco et al., 2008). As Arnold (2001) noted, there is a risk that much of what has been emerging in practice in CFM has taken the form of joint management between government and local user communities, rather than devolution of responsibility solely to the latter.

7. Conclusions and implications

The purpose of this research was to study, from the perspective of the communities, the factors that affect the creation and maintenance of CBFEs in the forest to support the implementation of CFM programmes such as the SSSMP policy in the State of the Amazonas. We addressed the impact of the SSSMP policy on timber economic activities already in place which generated eight community-based forest enterprises in the Rio Negro Reserve. The analysis of our findings, encompassing the period of 2016 and 2017, revealed that people's experiences and positions varied significantly within the same communities resulting in a range of different enterprise models in the communities. Topics such as the importance of the conservation policy, CBFE, association of the community's role, top-down interventions and formalisation, resulted in the first and second- order codes presented in Figure 1, which then were grouped in three dimensions: community, CBFE and state support. We defend in this article that these three dimensions and the respective codes composing them should be considered when envisioning the creation and following support of CBFEs as

tools to sustainable development and resource use in reserves. Drawing upon these findings, the paper offers two key contributions concerning the growing discussion on CBFEs' role and CFMs programmes.

Firstly, we propose three dimensions associated with the community, the CBFE and the state that should be considered when envisioning the creation and following support of CFM. As was identified in our study, it is crucial that all elements of each dimension are taken into consideration. Agreeing with Arnold (2001), the combination of certain dimensions may result in a form of joint management between government and local user communities, resulting in partial devolution over the natural resources to the residents. Thus, from a policy perspective, *de facto* devolution depends on the government, donors and economic development organisations to foster the identification and training of future community entrepreneurship leaders involving the youngest and creating space to the elders in capacity building groups valuing traditional knowledge. Moreover, intrinsic characteristics of each community, such as their level of mobility, traditional practices, and peoples' attitudes towards self vs collective work and formalisation processes must be considered as well.

Secondly, the dimensions allow us to make an important contribution to research and policy interested in how CFM programmes not only support the biodiversity and environmental side of sustainable development but also how these programmes are addressing the challenges of balancing income generation and development objectives within local communities. Most community-based forest management schemes have been primarily designed to conserve the natural resource base. Harvesting from the forests has been quite restricted and mainly directed at subsistence (Sierra, 1999). It is increasingly acknowledged that the conservationist paradigm that focuses only on protected areas in the absence of humans is doomed unless the needs and behaviour of people with interests in resources in and around these areas are addressed (Schmink, 2004). Thus, the implementation of the SSSMP

Brazilian public policy in the Rio Negro Reserve, as an example of CFM on timber, can certainly be seen as a contribution to the exploration of local incentive structures and community dynamics, which hypothetically provides a solution in the promotion of small businesses vis-à-vis sustainable practices in conservation units. Thus, the findings obtained together with the dimensions proposed will be of use for evaluation and decision-making from a policy perspective. It enables a more relevant and applicable policy on CFM, impacting other forestry products and reserves, and setting the basis for the development of support mechanisms to CBFE stakeholders.

This research has limitations to consider. Firstly, our unit of analysis was CBFEs in eight communities, and not the individuals within the CFM reserves. Further study on the individual, to eventually be explored by anthropologists and sociologists, could provide further knowledge on CBFEs internal dynamics and their role in CFM. The individuals in the reserves have different ethnical origins, the communities have different histories and the regions they migrated from are diverse. Historically, academia has shown major interest and studied more intensively native indigenous peoples, "indios" than the riverine or ‘caboclos‘ in the conservation units of sustainable use. Understanding who is this man or woman living in the forest that ran away from big droughts in the northeast or was attracted by public migration policies in the past boosts the adequacy of current public policies oriented towards development and environmental protection.

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Appendix. Representative quotes of key dimensions

Dimensions	2nd order codes	1st order codes	Quotes from interviews
Community	**Level of mobility**	**Location**	'But there are many problems, to sell is not difficult but to transport is very difficult. When is dry (season) like now is impossible, because we can't go by boat to the area of the plan (…) there are some areas better to work with wood than others. Here is not easy. The good logs are very far you need to walk 3 km' (CBE leader at Community of Tiririca). 'I guess they (beverage multinational company) gave up buying because it's too far' (CBE leaders at Community Tumbira).
		Connection with cities and local towns	'I live here since 1970's moved twice to Iranduba and Manaus to work, but mostly here (…) Sometimes, latter or earlier, if we need to go to Manaus or other towns to sell and do other things we should wake up before 6' (CBE leader at Community of Perpetue Socorro)
		Access to health and education centres	'We don't have any health service station; we should attend it in the next town if there is a need' (CBE leader at Community of Igarapeassu).
	Generational and traditional practices	**Elder/younger intentions**	'The old men were the ones that used to work with the wood and are not so interested in the activity anymore' (CBE leader at Community of Tiririca). 'Young people don't want to do the heavy work they want more technology in the field.. We believe sustainable development is the future we want to do things right to be the firsts' (CBE leader at Community of Perpetue Socorro).
		Traditional practices	'The way of cutting is different, we need to go with the equipment, clothes, boots, but it is good, and not so difficult for the ones who were used to work with wood before, we have more safety procedures and that's nice' (CBE leader at community of Tiririca). 'My husband worked with wood before the reserve .. They (men) were very angry because of the change in the way they worked with timber (…) He doesn't want to follow the rules, he was sad' (CBE leader at Community of Marajá).
	Attitudes towards self vs collective work	**Financial interest**	'I'm afraid it will get ready when is time for fishing. We are very strong in fishing, so if there is fish we need to go fishing first (…) But wood gives us more money!' (CBE leader at Community of Ingles).
		Motivation towards collaborative work	'The majority in the community is disappointed with collective work (...) it is much responsibility to the president of the community's association' (CBE leader at Community of Perpetue Socorro).
	Motivations towards formalisation	**Understanding of policy / Adaptation / Legality**	'(Aunt) I don't believe in those conservation policies' '(Son) (working with wood) It was always very hard work. I helped my father and grandfather since I was a child, 12 years old (…) we still work very hard, waking up early everyday' '(Aunt) being illegal was too risky. I told my husband to stop' (family of CBE leader at Community of Perpetue Socorro).

Community-based Enterprise (CBE)	**Presence of leaders**	**Accountable leaders**	'I am happy to lead my community and be the owner of the plan (…) You have to run after the things you wish, but most of the people just wai (t…) I do not wait for anything I want.They (men in the community) insisted I should get the leadership' (CBE leader at Community of Marajá. 'We need to walk on our own legs , because this will stop someday (…) we are the leaders of the community if we don't give the orders nobody will do' (CBE leader at Community of Perpetue Socorro).
		Embedded/local leaders	'Now it will be different (....), I will organize the ones that will like to go to the plan and they will sign a document to guarantee accountability for losses, because it is not right that the President (association) stays with all the responsibility if they don't deliver' (CBE leader at Community of Fatima).
	Access to social and economic networks	**Visibility**	'I was invited to the school of samba parade in Manaus to represent the (traditional populations) at the carnival in Manaus. I accepted it is important to give visibility to our people in the capital! (…) I expose a lot of the products at home in the community because tourist's trail exit is here close to the house' (CBE leaders at Community Tumbira).
		Relationship with NGO/companies	'FAS brought us a list of purchasers in the neighbourhood (...) it was not difficult to sell the wood' (CBE leader at Community of Camara).
State support	**Formalisation process**	**Technical**	'The state didn't give the technical support to men and women in the field. The communities, because of lack of assistance and support, didn't explore the areas, and many licences expired' (CBE leader at Community of Fatima).
		Fair price	'But we are still disappointed because I know they sell at the same price of the illegals (…) wood from small - scale plans should have more value, because they are legal and extracted using good practices' (CBE leader at Community of Tiririca).
	Requirements	**Cost/complexity**	'In the beginning there were many requirements, like publishing the licenses, paying taxes, which means costs and much work to the owners of the plans and associations to come to Manaus and pay for them' (CBE leader at Community of Fatima).