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Sustainable Forest Management in Community Use Protected Areas in the Amazon

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Abstract

The use of natural assets or resources by traditional peoples and communities have some common characteristics, due to specific ways of life, marked by intense symbiosis and relative harmony with the environment in which they live, developing techniques of low environmental impact, low articulation with the market, intense knowledge of the surrounding biodiversity and production method based on family labor. At present, the discussion about the use of these resources has acquired great relevance because of their excessive use. Driven by debate and mobilization around the importance of traditional peoples and communities in the management and protection of natural resources, the State promotes public policies that recognize and highlight the role of traditional communities in the right to exploit the forest, as well as in the protection of natural resources in general. In that regard, this paper has the purpose of presenting updated data on the potential for sustainable management in protected areas used by communities in the Amazon, to ensure the sustainable use of biodiversity and the maintenance of traditional peoples and populations that live in the Brazilian territory.

INTRODUCTION

The use of natural resources by traditional peoples and communities has some common characteristics based on specific modes of life,

marked by an intense symbiosis and relative harmony with the environment in which they live, developing techniques with low environmental impact, low articulation with the market, intense knowledge of the surrounding biodiversity and modes of production based on family labour

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(CAÑETE; VOYNER, 2010).

The debate regarding use of those resources has become highly relevant today, mainly because of their current degraded state due to overuse. That theory of excessive use of natural resources was discussed by Hardin (1968), when he presented his formulations regarding the tragedy of the commons and the questions related to individual rationalization as a counterpoint to collective rationalization, in using the common goods from nature. According to Hardin (1968), goods used in common, such as the atmosphere, rivers, parks and oceans are already doomed to being exhausted because of the common access to them by numerous actors, because of the lack of rules for their use.

Thus, among farmers, fishers and extractivists, who use resources by free access, there would be maximized use, and thus resource degradation. To avoid that threshold situation, Hardin (1968) then proposes privatizing resources or transforming common resources into public goods, where the right to regulation would belong to institutions managed by the State.

Other theoretical contributions since Hardin (1968) have enriched the debate on natural resources use and demonstrated alternatives for collective management of common goods, through drawing up rules to guarantee access for all. One example presented by Ostrom (1998), is based on the need for establishing rules and norms, created by institutions, which can inhibit exploitation or apply sanctions to individuals in the group, as a model for pre-established social behaviour.

Applying those reflections to the Amazon reality, one may affirm that the development policy adopted for using common natural goods has been fundamentally based on extraction until exhaustion and on transforming ecosystems into monocultures, to the detriment of rational use. This model has proved to be a failure, and must be re-imagined (LOUREIRO, 2012).

Driven by that debate, the State promotes several public policies that recognize and highlight the role of traditional communities in their right to use the forest and in protecting natural resources. A notable public policy was the creation and consolidation of Protected Areas in the Conservation Units (UCs) category, regulated by the National System of Conservation units (SNUC), to guarantee the sustainable use of biodiversity and maintaining traditional peoples and populations living in Brazilian territory (BRASIL, 2000).

However, the predominant models for development described by Loureiro (2012), have led to what McCay and Acheson (1987) have called the 'tragedy of community members', in

contrast with Hardin's premises (1968). In other words, the model imposed has resulted in expropriation of communal territories held by peasants as a result of the hegemony of large private properties, public property and major development projects.

With that in mind, this paper seeks to present updated data on the potential for sustainable management in protected areas used by communities in the Amazon, as a means of guaranteeing sustainable use of bioiversity and the livelihoods of traditional peoples and populations that live in Brazilian territory.

USE AND MANAGEMENT OF PROTECTED AREAS IN THE BRAZILIAN AMAZON

As a strategy for guaranteeing the sustainable use of biodiversity and maintenance of traditional peoples and communities, resulting from a historical process of struggle and claims, the Brazilian government was confronted with the need to organize the use and occupation of public forests throughout its extensive Amazon territory (Figure 1).

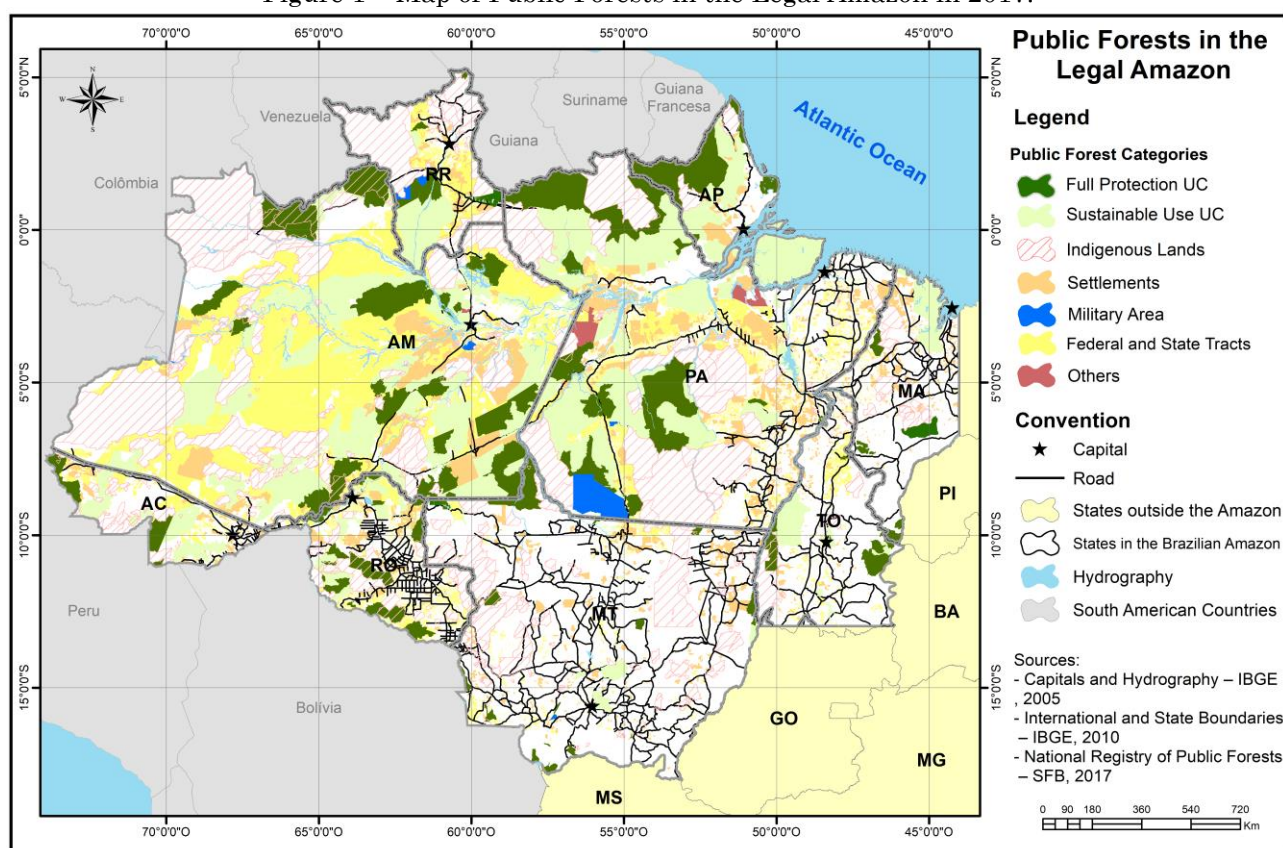
As of December 2018, there were 339 UCs in the Brazilian Amazon, totalling 1,286,927 km², which corresponds to 25.7% of that territory. Of that total, 220 are in the Sustainable Use category – where the objective is to harmonize nature conservation with sustainable use of common goods for generating income, balancing human presence in protected areas; and 119 are in the Full Protection category – where the primary objective is to maintain ecosystems without the changes caused by human interference, allowing only indirect use of their natural attributes (Table 1).

Most UCs at both the federal and state levels are in the Sustainable Use category (63.5%), which reinforces the importance of thinking about strategies that guarantee the use and management of the natural resources in those territories by the traditional peoples and communities living in them.

However, the consolidation of social demands for environmental quality and citizens organizing to claim that quality as a right, has led most conservation specialists and some Non-Governmental Organizations (NGOs) to view the forests and its associated ecosystems as a central element for political claims. An example was the creation of the Extractive Reserves (Resex), which appeared in 1987, based on Administrative Ruling no 627, of 30 July 1987, regulated by the National Institute for Colonization and Land

Reform (Incra) (BRASIL, 1987).

Figure 1 – Map of Public Forests in the Legal Amazon in 2017.



Source: Org. by Katiuscia Miranda, 2018.

Table 1 – Numbers (absolute and percentage) for the amount of conservation units in the Brazilian Amazon by use category.

Categories of UCs	Qty	Area (km ²)	% of area in relation to total area of UCs	% of area in relation to total area of the Brazilian Amazon
Full Protection	119	469,420	36.5%	9.4%
Ecological Station (Esec)	26	120,333	9.4%	2.4%
Natural Monument (Monat)	3	327	0.0%	0.0%
State Park (PES)	43	71,033	5.5%	1.4%
National Park (Parna)	26	223,305	17.4%	4.4%
Wildlife Refuge (RVS)	5	1,107	0.1%	0.0%
Biological Reserve (Rebio)	16	53,315	4.1%	1.1%
Sustainable Use	220	817,507	63.5%	16.3%
Environmental Protection Area (Apa)	47	236,944	18.4%	4.7%
Area of Relevant Ecological Interest (Arie)	4	459	0.0%	0.0%
State Forest (FES)	19	132,588	10.3%	2.6%
Sustained Yield State Forest (FERS)	10	2,675	0.2%	0.1%
Extractive Forest (Florex)	1	10,550	0.8%	0.2%
National Forest (Flona)	34	170,777	13.3%	3.4%
Sustainable Development Reserve (RDS)	26	112,147	8.7%	2.2%
Wildlife Reserve (RFAU)	1	105	0.0%	0.0%
Extractive Reserve (Resex))	78	151,264	11.8%	3.0%
Overall Total	339	1,286,927	100.0%	25.7%

Source: Org. by authors using data from ISA (2018) and SFB (2018).

That process for setting up the Resex in the Amazon has been systematized by several authors (ALMEIDA, 2004; ALEGRETTI, 2008; CUNHA, 2010), and dates back to the 1980s, in the state of Acre, resulting from the struggles of rubbertappers through their representative organizations. According to Allegratti (2008), the Resex proposal was new and was not supported in Brazilian environmental and land title legislation. It became an important element in the strategy for reorganizing space and reducing conflicts.

Those territories were only recognized as UCs in 1990 through Decree no 98.897, of 30 January 1990, and only in 2000 were extractive reserves recognized as UCs within the Snuc (BRASIL, 1990; 2000). 'The Resex made it possible to meet community demands for access to land, guaranteeing that they could remain on it. They were the rubbertappers' "land reform" (SAWYER, 2011, p. 365).

A recent study for analysing and evaluating the management of UCs notes that the greatest challenge for biodiversity conservation in Brazil lies in administration, in including society in participatory and integrated management and in sustainable management of UCs (IBAMA; WWF, 2007). Thus, the debate over sustainable management of Biodiversity in UCs must be expanded, promoting greater integration between 'extractivist' practices based on collectively produced traditional knowledge and on family agriculture associated with physical and cultural reproduction for traditional peoples and communities. 'The synthesis between family agriculture and extraction can enable family production to remain in the countryside' (SAWYER, 2011, p.373).

It will be vital to strengthen strategic actions focusing on food security and sovereignty in those territories, as presented by Kanashiro (2014, p.423)

"the use and conservation of forests and their genetic resources, as well as their products and ecosystem services, [...], also contributes towards food security. That supports the growing vision of their multifunctionality, as already occurs with agriculture." (KANASHIRO, 2014, p.432)

MULTIPLE USE COMMUNITY AND FAMILY FOREST MANAGEMENT

Among the models for sustainable practices becoming increasingly relevant as alternatives for

conservation and for generating employment and income in the Amazon is the Community and Family Forest Management (initials in Portuguese - MFCF). It represents the diversity of modalities and management scales practiced in community forests by indigenous groups, riverbank inhabitants, rubbertappers, colonists and family agroextractivists in general, collectively and individually (AMARAL NETO, 2002).

That practice sets it apart from the other forest managements, since the protagonists of the action – the communities – 'depend directly on the forests and relate with those resources coming from different perspectives' (AMARAL; AMARAL NETO, 2005, p.15).

Sabogal et al (2008, p.42) affirm that it has only been since the 1980s that 'community forest management has come to be seen as a promising alternative for managing forest resources'. First implemented through programmes and projects developed by NGOs among communities, with funding from international cooperation, it was only halfway through the 1990s, with the increasing worldwide concern for thinking of strategies and programmes for reducing poverty, that governments began internalizing actions for technical, social and institutional strengthening with a view to increasing local capacities for MFCF.

In 1996, for example, the Federal Government established the National Programme for Strengthening Family Agriculture (PRONAF) as one of the main sources of credit for funding and investment for production (BRASIL, 1996). It is also during this period that 'the first attempts appear in the Amazon to formalize Sustainable Forest Management Plans (PMFS), through implementing pilot projects' (AMARAL NETO et al, 2008, p.233).

Amaral Neto et al. (2008) emphasize that the collective debates were important for leveraging a process of interinstitutional articulation, which drove an expansion of MFC initiatives in the Brazilian Amazon. At the beginning of the 2000s, because of pressures from civil society organizations, a series of public policy formulations began, such as processes for revising procedures for regulating MFCF activities with environmental control and enforcement agencies.

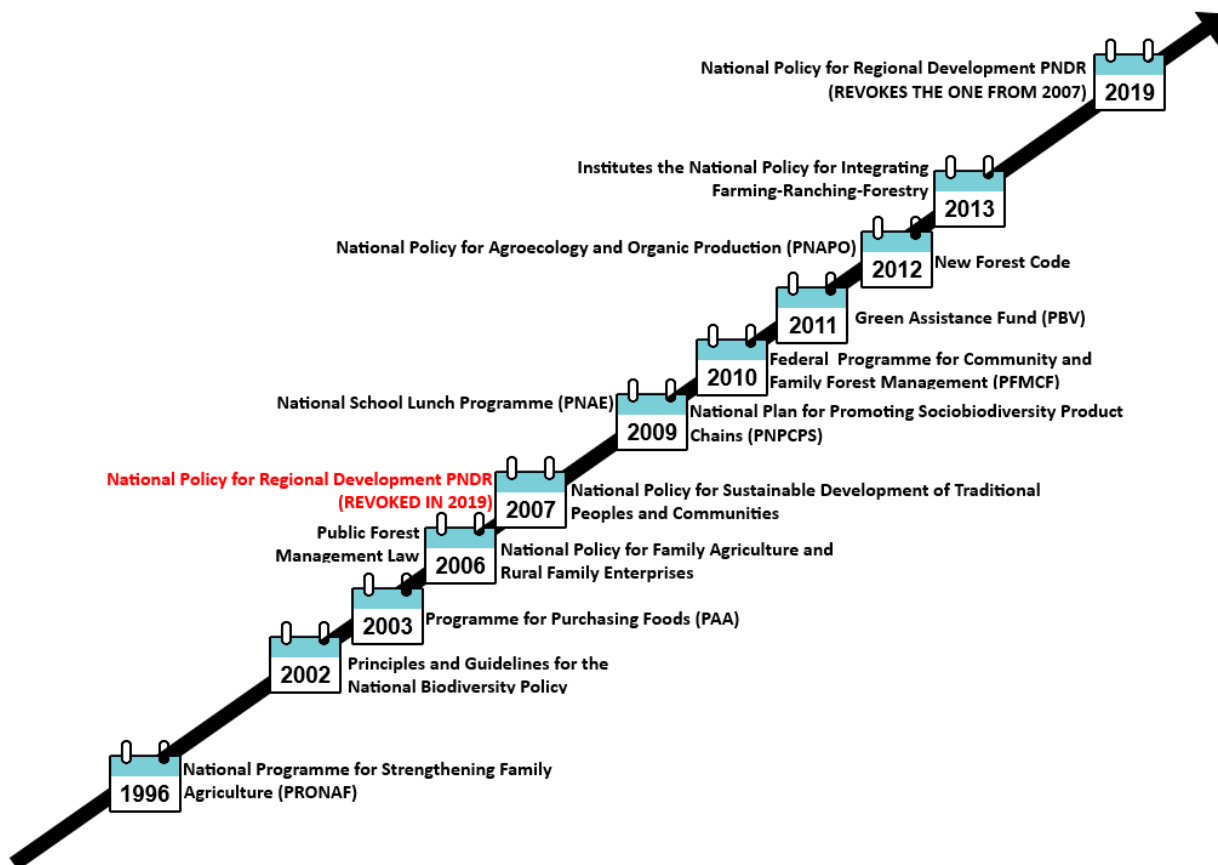
That articulation led to the signing of Decree no 6.874, of 05 June 2009, which created the Federal Community and Family Forest Management Programme (PFMCF), for the purpose of 'coordinating actions for managing and fostering sustainable forest management directed towards traditional peoples, communities and family farmers who make their living from

Brazilian forests' (BRASIL, 2009).

Despite the advance in creating the Programme and the policy and governance strategy it provided, its implementation has left

much to be desired. Since 2013, no policies have been established focusing on strengthening traditional peoples and communities (Figure 2).

Figure 2 – Timeline for legislation directed towards traditional peoples and communities in the Amazon.



Source: Org. by Katiuscia Miranda.

The scenario among peoples and communities involved in implementing MFCF was not worse because they themselves set up a vast network for interinstitutional articulation with NGOs and teaching and research institutions who were able to provide continuity for the support necessary for strengthening initiatives with funds coming from national and international cooperation.

POTENTIAL OF COMMUNITY AND FAMILY FOREST MANAGEMENT IN CONSERVATION UNITS IN THE BRAZILIAN AMAZON

Forest management is provided for in the Forest Code (Art. 15 of Law no. 4.771, of 15 September 1965), as a necessary instrument for economic use of primal forests in the Amazon basin and is regulated through Decree no. 5.975 of 30 November 2006 (BRASIL, 1965; 2006). It covers

administration of the forest to obtain economic, social and environmental benefits, while respecting the mechanisms for supporting the managed ecosystem, and cumulatively or alternatively considering the use of multiple timber species, and multiple non-timber products and by-products, as well as the use of other goods and services of a forest nature, as provided in Item VI of Art. 3º of Law no. 11.284, of 2 March 2006 (BRASIL, 2006).

Sustainable Use UCs are areas destined for community use, and timber can be extracted from them through sustainable forest management, as provided in Law no. 11.284, of 2 March 2006, which deals with management of public forests for sustainable production. As provided in article 4 of that Law, public forests may be designated for sustainable production through three models: creation of national, state and municipal forests, and their direct management; designation of public forests to local communities residing in those forests; and through forest concessions in

natural or planted public forests, covering forest management units in UCs in national, state or municipal forests (BRASIL, 2006).

The direct management model allows the public authority to perform management of public forests (specifically national, state or municipal-type UCs).

The model for designating public forests for local communities prevails over forest concessions, and is not onerous to the beneficiaries (meaning that it does not involve payments to the government for the use of resources). However, that designation does not provide for transferring the right of possession of public land to such communities; it happens through a Concession Contract for Real Use Rights signed between the community association and the public authority in areas in a Resex, RDS, Forest Settlement Project (PAF), Sustainable Development Project (PDS), Agroextractivist Settlement Project (PAE) or similar modalities in States and municipalities.

The third model is a forest concession, where a formal contract is established for management of forest products and services, between the government and a legal entity (previously selected by public tender), with payment being necessary for the forest products and services to be accessed by the concessionaire.

Regardless of the model adopted, sustainable forest management in UCs for timber processing must be implemented through drawing up a PMFS, regulated by Normative Instruction no.16, of 4 August 2011 (BRASIL, 2011), and following Reduced Impact Harvesting (EIR) techniques, which must be implemented in a manner integrated with silvicultural practices and sensitive to the need for growth and regeneration of the remaining trees. Those measures reduce the environmental damages caused during felling and increase the efficiency of the action and the financial return (SHULZE, GROGAN, VIDAL, 2008, p. 175) (Figure 3).

Figure 3 – Operational stages for Sustainable Forest Management.



Source: Org. by the authors, 2019.

The three models for designating public forests may be implemented in sustainable use UCs that currently occupy approximately 15.7%,

or 817,507 km² of the Brazilian Amazon (Table 2), with the largest share being in the APA category (29%) followed by Flona (21%) and Resex (19%).

Table 2 – Estimated amount of area (km²) with forest potential in sustainable use conservation units in the Brazilian Amazon.

Category	Area (km ²)			%	% of AL
	Total area	Forest concession	Local communities		
Apa	236,944.14	118,472.07	47,388.83	(50% - 20%)	4.5%
Arie	458.64	229.32	91.73	(50% - 20%)	0.0%
Fers	2,674.94	1,337.47	534.99	(50% - 20%)	0.1%
Fes	132,587.58	66,293.79	26,517.52	(50% - 20%)	2.5%
Flona	170,776.56	85,388.28	34,155.31	(50% - 20%)	3.3%
Florex	10,550.00	5,275.00	2,110.00	(50% - 20%)	0.2%
RDS	112,146.92		56,073.46	50%	2.1%
Resex	151,263.63		75,631.82	50%	2.9%
RFAU	104,63		52.32	50%	0.0%
TOTAL	817,507.04	276,995.93	242,555.96		15.7%

Source: Org. by authors using data from ISA (2019) and MMA (2019)

To calculate projections of the potential of areas for MFCF in UCs we will consider the models for designating public forests, and the norms provided in the forest code for protecting native vegetation in permanent preservation areas, legal reserve, restricted use and timber harvesting. From that, as shown in table 2, the following percentages will be adopted for the areas available or qualified for forest production: (i) 50% of the area of UCs in the Resex, RDS and Refau categories, directed towards community production; (ii) in the other categories of UCs, where onerous concessions for companies are allowed, the division will be 20% for community use and 50% for business use.

Thus, approximately 242,556 thousand km² of areas in sustainable use UCs in the Amazon would be eligible for community forest production. The remainder, about 276.996 thousand km², would be designated for management by businesses (Table 2).

To calculate the potential volume of timber to be harvested in those areas, the provisions in Normative Instruction no 5, of 11 December 2006, was considered which in article 5 of Chapter III establish that the maximum cutting intensities to be authorized by the appropriate environmental agency will be 30 m³/ha for the Full PMFS with an initial cutting cycle of 35 years and 0 m³/ha for the Low Intensity PMFS with an initial cutting cycle of 10 years (BRASIL, 2006).

In that case, although the PMFS carried out

in sustainable use UCs in the Amazon are normally implemented in the Full category, meaning with the use of heavy equipment, because of technical and organizational limitations, they do not achieve the predicted maximum cutting intensity.

In that sense, we adopt an average yield of 10m³/ha in a cutting cycle of 30 years, which would generate an estimated production of 24 million cubic meters of logwood/year coming from community public forests. Considering that the annual production of logwood for Brazil in 2017 was approximately 12 million m³ of logwood, according to consolidated data from the Brazilian Institute for Geography and Statistics (IBGE, 2017) the potential volume produced in community forest areas would meet the production demand.

However, that potential has so far been little used. According to information from ICMBio (2020), there are 15 MFCF initiatives being implemented in the sustainable use UCs, which together total an area of approximately 268.10 km² of managed forests, responsible for supplying 590,948 m³ of legalized logwood to the market from 2005 to 2020 (Table 3).

Those initiatives are in eight UCs in the states of Pará, Amazonas and Acre, which together total 46,999 km², around 6% of the total area of sustainable use UCs in the Amazon (Figure 4).

Table 3 – Numbers of Area (km²) and Volume (m³) of sustainable forest management plans in conservation units in the Brazilian Amazon from 2005 to 2020

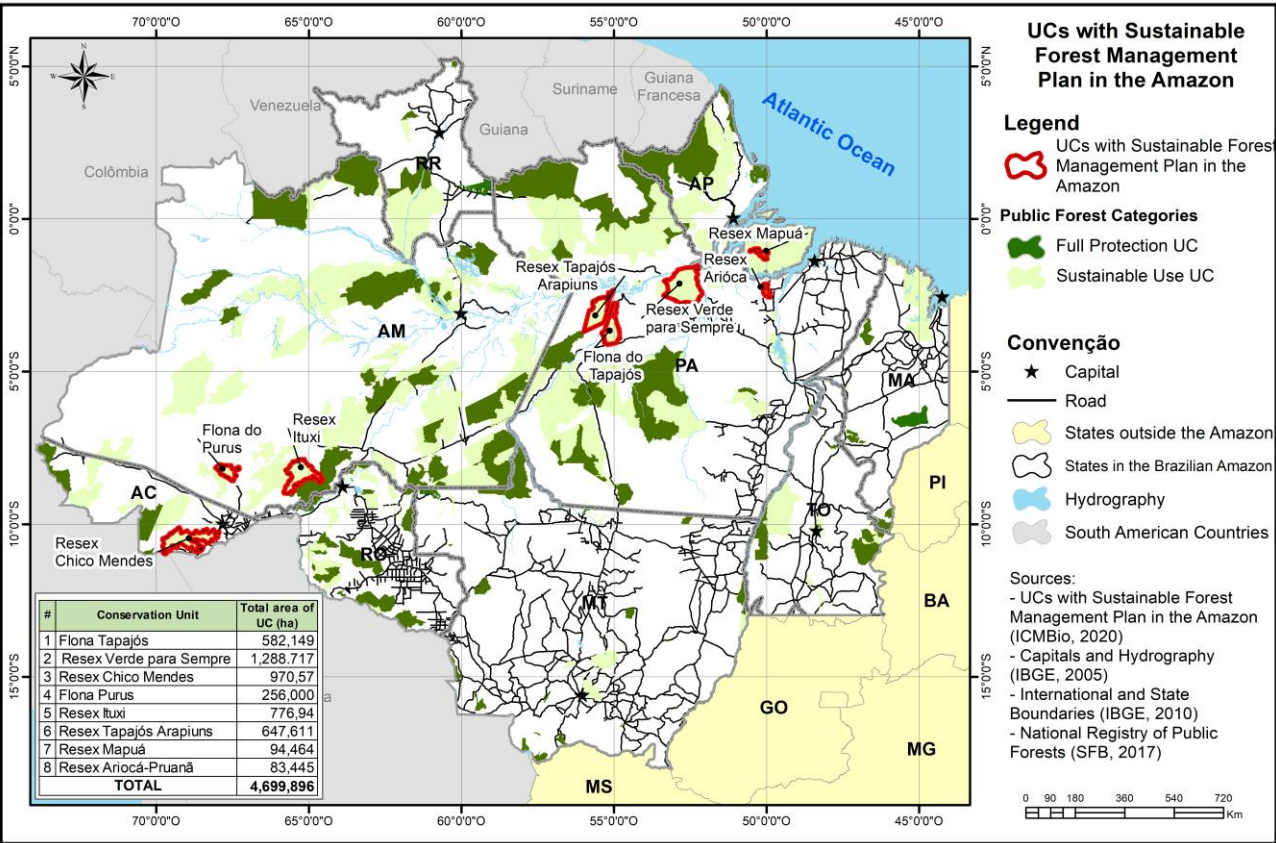
State	UC	Area UC (km ²)	Holding institution	Total area authorized (km ²)	Total volume authorized (m ³)
Pará	1. Flona Tapajós	5,821	Mixed Cooperative of Flona Tapajós	133.01	338,001
	2. Resex Tapajós Arapiuns	6,476	Mixed Agroextractive Cooperative of Rio Inambú	24.83	61,400
	3. Resex Mapuá	945	Agroextractive Cooperative of Rios Mapuá e Aramã	2.70	2,659
	4. Resex Arioca-Pruanã	834	Residents' Association of Extractive Reserve Arioca Pruanã	-	-
			Mixed Agroextractive Cooperative Nossa Senhora do Perpétuo Socorro do Rio Arimum	16.70	37,082
			Sustainable Development Association of Agroextractive Producers in Comunidade Itapéua	14.77	28,645
	5. Resex Verde para Sempre	12,887	Association for Agroextractive Development of Baixo Acari	1.41	2,640
			Community Agroextractive Association of Rio Curuminim	4.14	8,330
			Community Association of São Benedito do Ynumbi	1.95	3,241
			Community Association Deus Proverá	6.95	13,320
			Community Association of Comunidade Belém de Porto de Moz	7.99	13,459
Amazonas			Association of Community of Ipanela	-	-
	6. Resex Ituxi	7,769	Association of Agroextractive Producers of Assembleia de Deus do Rio Ituxi.	17.36	41,603
	7. Flona Purus	2,560	Mixed Agroextractive Cooperative of Mapiá and Médio Purus	2.66	2,177
Acre	8. Resex Chico Mendes	9,706	Residents' Association of Resex Chico Mendes in Xapuri.	33.62	38,392
TOTALS		46,999		268.10	590,948

Source: Org. by Katiúscia Miranda using data from [ICMBio, 2020](#).

Figure 5 presents the history of the annual supply of logwood coming from the PMFSs in the eight UCs over the last 15 years. The first management plan for a UC was approved in 2005 in the Flona Tapajós, making an area of 1 km² available for that year and a volume of

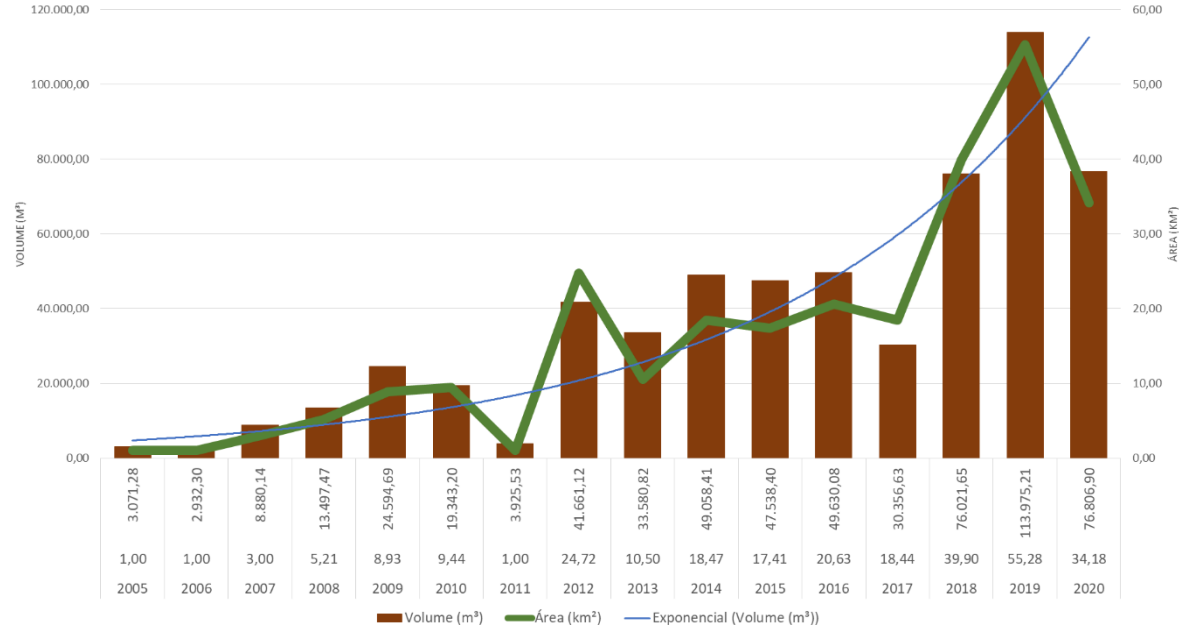
approximately 3 thousand m³ of managed logwood. For 2019 and 2020, the area approved for authorized forest management in sustainable use UCs in the Amazon totals 89.46 km² and an approximate volume of 190,782.12 m³ of managed logwood ([ICMBio, 2020](#)).

Figure 4 – Conservation units with sustainable forest management plans carried out by communities in the Brazilian Amazon.



Source: Org. by Katiuscia Miranda, 2020.

Figure 5 – Annual supply of timber (m³) and Area (km²) of community sustainable forest management plans in conservation units in the Amazon.



Source: ICMBio, 2020.

Only 2.5% of the potential production of 24.2 million cubic meters presented in Table 2 are being produced sustainably by the UCs. Those

data also show that of the 220 sustainable use UCs found in the Amazon, only eight have initiatives for licensed timber management,

meaning that the government and local organizations need to invest more efforts in leveraging and increasing protagonism by the communities in the forest economy and in the management and use of forest timber resources in those territories.

As for MFCF for non-timber products, it is of great importance for traditional peoples and communities, contributing towards occupying labour, distributing income and increasing food security.

Traditional communities, indigenous peoples and many colonists in settlements are already aware of the potential (and make effective use) of the resources the forest provides. Their use involves minimal impact on the environment when appropriately managed. Melo, Almeida and Dantas (2011, p.7) note that:

[...]. Therefore, allying traditional knowledge with scientific know-how in learning about non-timber products [...] will contribute towards economic growth, maintenance of cultural values, forest conservation, and, finally, towards integrating these dimensions into a balanced process (MELO, ALMEIDA and DANTAS, 2011, p.7).

To carry out that activity, a set of rules and practices for use has been agreed upon to safeguard sustainable management principles, and is formalized through 'Sustainable Use Plans for Natural Resources and Territories' of local communities – a broad category that covers all the instruments for land planning and use formally recognized by the current regulatory framework (management agreements, use plans, management plans, etc).

Given that most of those agreements and activities do not involve obligatory environmental licencing, it is even more complicated to find consolidated and systematized information on the potential for producing those products.

Normative Instruction no 05, from 11 December 2006, in its chapter on the PMFS for non-timber forest products, made up of one article and one paragraph, specifies that those products to not require a transport authorization, but

require only that the proprietor annually inform the environmental agency of the activities carried out (species, products and quantities). The other requirement is for producers to register in the Federal Technical Registry (BRASIL, 2006).

Data consolidated by ICMBio (2019), mapped 62 initiatives by community enterprises that develop actions for using products of sociobiodiversity UCs located in 33 UCs of the Brazilian Amazon. The states with the largest number of initiatives catalogued are Pará, with 29 and Amazonas with 15 organizations (Figure 6). Of those, 87% are from associations and 13% from cooperatives responsible for managing collective projects for managing forest products such as *Euterpe oleracea* (Açaí), *Bertholletia excelsa* (Brazil Nut), *Attalea speciosa* (Babassu), *Theobroma cacao* (Cocoa), Fishing, Handicrafts, Vegetable Oils and others.

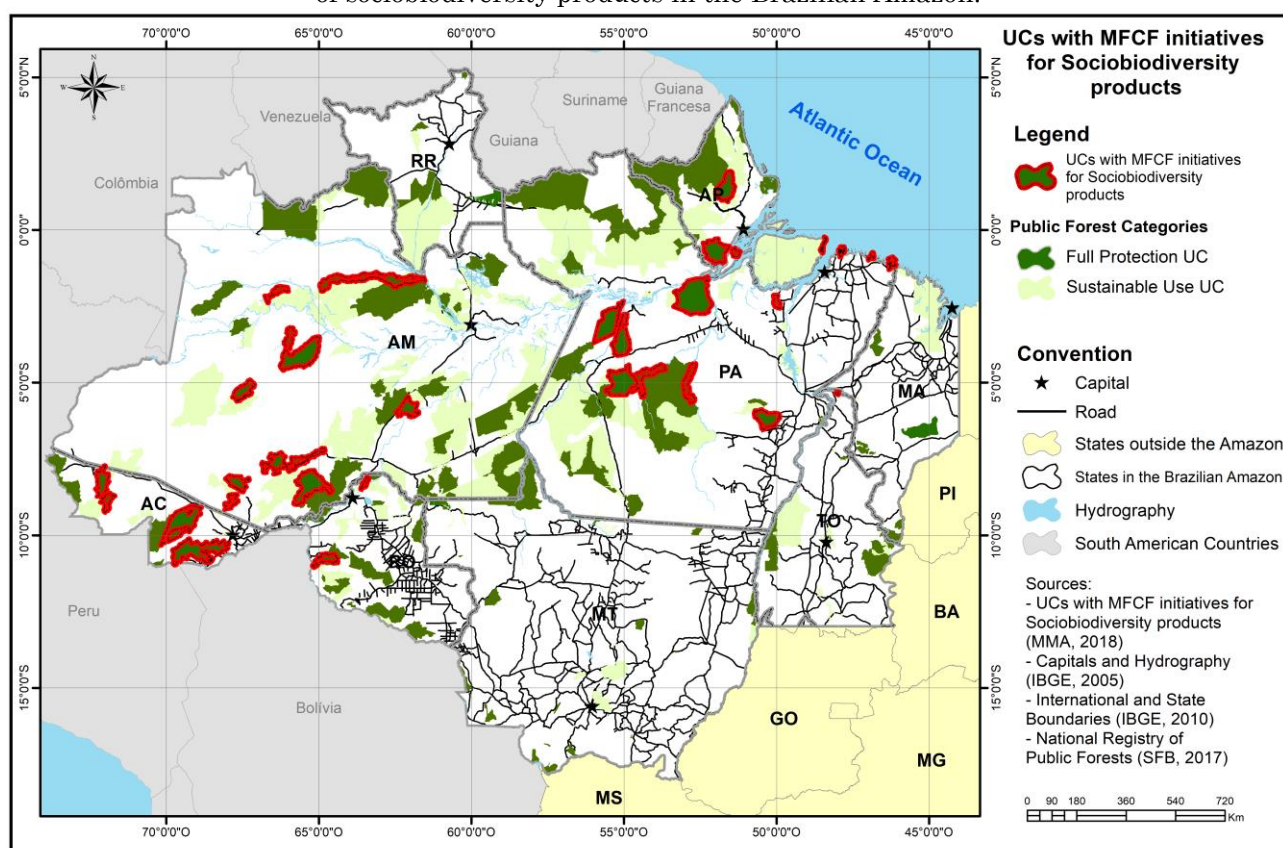
The non-timber MFCF implemented by those 62 initiatives, benefit 12,691 families through alternatives for sustainable income generation. (Table 4).

CONCLUSIONS

Over the years, the evolution of debates over sustainability has informed economic development models for societies. In the Amazon, two central issues have set the agenda for those discussions: protagonism by traditional peoples, communities and family farmers in natural resource management – assuring or improving their wellbeing in their own territories – and contribution towards forest conservation that will assure the continued provision of environmental services essential for the world's population.

However, the current Brazilian political scenario is unfavourable towards maintaining and following those more sustainable models, based on environmental benefits and improving the quality of life for local populations. On the other hand, that external threat may provide an opportunity for reaffirming community rights in building legitimacy for arrangements for managing their territories.

Figure 6 – Map of conservation units with the initiatives for community and family forest management of sociobiodiversity products in the Brazilian Amazon.



Source: Org. Katiúscia Miranda, 2019.

Table 4 – Number of initiatives and of families involved in community and family forest management of non-timber products in conservation units in the Amazon.

State	UCs	No. of Organizations	No. families
AC	Flona of Macauã, Resex Cazumbá Iracema, Resex Chico Mendes, Resex Alto Tarauacá, Resex Riozinho da Liberdade	10	1.109
AM	Flona of Tefé, Flona of Purus, Resex Arapixi, Resex Auatí-Paraná, Resex Baixo Juruá, Resex Lago do Capanã Grande, Resex Médio Purus, Resex Ituxi, Resex Médio Juruá, Resex Rio Unini	15	2.797
AP	Flona of Amapá, Resex Rio Cajari	3	273
PA	Flona of Tapajós, Flona de Carajás, RDS Itatupã, Baquiá, Resex Arioca Pruanã, Marine Resex Gurupi-Piriá, Marine Resex Soure, Marine Resex Tracuateua, Marine Resex Mãe Grande de Curuçá, Resex Rio Iriri, Resex Rio Xingu, Resex Riozinho do Anfrísio, Resex Tapajós Arapiuns, Resex Verde Para Sempre	29	7.816
RO	Resex Lago do Cuniã, Resex Rio Ouro Preto	4	466
TO	Resex Extremo Norte in the State of Tocantins	1	230
TOTAL		62	12.691

Source: Org. by the authors, using data from ICMBio, 2019.

In that regard, communities that develop multiple use MFCFs seek exactly to work in this unfavourable scenario, through economic improvements for their families, guaranteeing better living conditions and food security, and strengthening their organizations for defending

their territories. This is made easier because the relations established by those traditional peoples and communities with the forest are of complete belonging and integration.

These MFCF initiatives have multiplied in the region, and, in order to operate according to

the market logic, they take the form of community forest enterprises – cooperatives or associations – responsible for managing and implementing production projects. However, especially with forest timber management – those activities end up being the focus of disputes with large companies, because of the importance of timber for the market and the concentration of the potential for production in community forest areas. Approximately 60% of forest areas available for sustainable forest management in the Amazon are in community public forest areas (SFB, 2018).

It is therefore the Brazilian government's responsibility to guarantee the effectiveness of public policies that promote MFC, especially community public forests areas such as sustainable use UCs. Instead of that, inside the agency responsible for managing those UCs, one may find hotbeds or resistance to that management modality. In the classic work by Diegues (1993) the concepts of 'unspoiled nature' are the fruits of an idealised image of ecosystemic self-regulation, consolidating a preservationist bias that has a strong influence on ICMBio technicians and precluding the use of community territories for timber forest management.

The same assumption is valid for management of non-timber products. However, because of concerns and worldwide commitments assumed by the government for fighting hunger and poverty, in the specific case of food group products, advances in the regulatory framework have been greater and have allowed the formulation of a set of public policies, such as those that regulate and guide access to the institutional market. Despite the risks presented by the Brazilian political scenario, reinforcing those practices for use and marketing in the local-regional context may boost sustainable models for managing community territories through strong protagonism by rural communities. Besides the environmental dimension, diversification as the praxis of traditional peoples and communities strengthens the social reproduction of those groups that live in UCs in the Amazon.

REFERENCES

- ALLEGRETTI, M. H. A construção social de políticas públicas. Chico Mendes e o movimento dos seringueiros. **Desenvolvimento e Meio Ambiente**, nº 18, p.39-59, jul./dez. 2008. Editora UFPR. <https://doi.org/10.5380/dma.v18i0.13423>
- ALMEIDA, M. B. W. Direitos à floresta e ambientalismo: seringueiros e suas lutas. São Paulo: **Revista Brasileira de Ciências Sociais**. Vol. 19, Nº 55. 2004. <https://doi.org/10.1590/S0102-69092004000200003>
- AMARAL NETO, M.; AMARAL, P.; MIRANDA, K.; ARMSTRONG, G. A expansão do Manejo Florestal Comunitário na Amazônia brasileira: oportunidades e limites. In: BENSUSAN, Nurit; ARMSTRONG, Gordon (Org). **O manejo da paisagem e a paisagem do manejo**. Brasília: Instituto Internacional de Educação do Brasil - IEB. 2008. p.231 a 245.
- AMARAL, M. **Manejo Florestal Comunitário na Amazônia Brasileira**: Análise da participação e valorização de saberes de grupos locais na implementação de três projetos pilotos. 2002.Dissertação (Mestrado em Agriculturas Familiares). Núcleo de Estudos Integrados Sobre Agricultura Familiar. Universidade Federal do Pará – UFPA, 2002.
- AMARAL, P.; AMARAL NETO, M. **Manejo Florestal Comunitário**: processos e aprendizagens na Amazônia Brasileira e na América Latina. Belém: IEB-IMAZON, 2005.
- BENSUSAN, N. Diversidade e Unidade: Um dilema constante. In: BENSUSAN. Nurit; PRATES, A. P. (ORG). **A Diversidade cabe na unidade?: áreas protegidas no Brasil**. Brasília: IEB, 2014. p. 30 – 81.
- BRASIL. **Lei nº 4.771, de 15 de setembro de 1965**. Institui o novo Código Florestal.
- BRASIL. **Portaria nº 627, de 30 de julho de 1987**. Cria a modalidade de Projeto de Assentamento Extrativista e dá outras providências.
- BRASIL. **Decreto no 98.897, de 30 de janeiro de 1990**. Dispõe sobre as reservas extrativistas e dá outras providências.
- BRASIL. **Decreto nº 1.946, de 28 de junho de 1996**. Cria o Programa Nacional de Fortalecimento da Agricultura Familiar - PRONAF, e dá outras providências.
- BRASIL. **Decreto nº 5.975 de 30 de novembro de 2006**. Regulamenta os arts. 12, parte final, 15, 16, 19, 20 e 21 da Lei no 4.771, de 15 de setembro de 1965, o art. 4o, inciso III, da Lei no 6.938, de 31 de agosto de 1981, o art. 2o da Lei no 10.650, de 16 de abril de 2003, altera e acrescenta dispositivos aos Decretos nos 3.179, de 21 de setembro de 1999, e 3.420, de 20 de abril de 2000, e dá outras providências.
- BRASIL. **Lei nº9.985, de 18 de julho de 2000**. Regulamenta o Art. 225, §1º, incisos I, II, III e VII da Constituição Federal, institui o Sistema Nacional de Unidades de Conservação da Natureza (SNUC) e dá outras providências.
- BRASIL. **Lei nº 11.284, de 2 de março de 2006**.

- Casa Civil da Presidência da República. Dispõe sobre a gestão de florestas públicas para a produção sustentável; institui, na estrutura do Ministério do Meio Ambiente, o Serviço Florestal Brasileiro - SFB; cria o Fundo Nacional de Desenvolvimento Florestal - FNDF; altera as Leis nºs 10.683, de 28 de maio de 2003, 5.868, de 12 de dezembro de 1972, 9.605, de 12 de fevereiro de 1998, 4.771, de 15 de setembro de 1965, 6.938, de 31 de agosto de 1981, e 6.015, de 31 de dezembro de 1973; e dá outras providências.
- BRASIL. **Decreto nº 6.874, de 5 de junho de 2009**. Institui, no âmbito dos Ministérios do Meio Ambiente e do Desenvolvimento Agrário, o Programa Federal de Manejo Florestal Comunitário e Familiar - PMCF, e dá outras providências.
- BRASIL. **Instrução Normativa nº 16, de 04 de agosto de 2011**. Regula, no âmbito do Instituto Chico Mendes, as diretrizes e os procedimentos administrativos para a aprovação do Plano de Manejo Florestal Sustentável (PMFS) comunitário para exploração de recursos madeireiros no interior de Reserva Extrativista, Reserva de Desenvolvimento Sustentável e FLONA.
- BRASIL. **Decreto nº 9.760, de 11 de abril de 2019**. Altera o Decreto nº 6.514, de 22 de julho de 2008, que dispõe sobre as infrações e sanções administrativas ao meio ambiente e estabelece o processo administrativo federal para apuração destas infrações.
- CAÑETE, T. M.; VOYNER, C. R. **Populações Tradicionais Amazônicas**: revisando conceitos. In: V Encontro da Associação Nacional de Pós-Graduação e Pesquisa em Ambiente e Sociedade (ANPPAS), 2010, Florianópolis. Disponível em: <<http://www.anppas.org.br/encontro5/cd/artigos/GT10-29-1009-20100904055930.pdf>> Acesso em: 18 fevereiro, 2019.
- CUNHA, C. C. **Reservas extrativistas: institucionalização e implementação no Estado brasileiro dos anos 1990**. 2010. 308 f. Tese (Doutorado em Psicossociologia de Comunidades e Ecologia Social). Instituto de Psicologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2010.
- DIEGUES, C. Populações tradicionais em unidades de conservação: o mito da natureza intocada. In: VIEIRA, P. F. e MAIMON, D. (org.) **As Ciências Sociais e a Questão Ambiental**: rumo à interdisciplinaridade. APED e UFPA, 1993, 298 p.
- EID, F. **Economia solidária, desenvolvimento organizacional e cooperativismo rural**. 2012. Disponível em <http://www.aedmoodle.ufpa.br/pluginfile.php?file=/107240/mod_book/chapter/1980/eixo_2_diversidade_cultural_e_desenvolvimento/periodo_2/ECONOMIA_SOLIDARIA_Farid.pdf>.
- Acesso em: 10 janeiro, 2018.
- GELUDA, L.; SERRÃO, M.; LEMOS, R. Desafios para a sustentabilidade financeira das Unidades de Conservação no Brasil. In: BENSUSAN. Nurit; PRATES. A. P. (Org). **A Diversidade cabe na unidade?: áreas protegidas no Brasil**. Brasília: IEB, 2014.
- HARDIN, G. 1968. "The Tragedy of the Commons". **Science**. 162:1243-1248. <<https://doi.org/10.1126/science.162.3859.1243>>
- IBAMA e WWF-Brasil. **Efetividade de Gestão das Unidades de Conservação Federais do Brasil**. 2007.
- IBGE. **Portal Brasil em Síntese**. 2017. Disponível em <<https://cidades.ibge.gov.br/brasil/pa>> Acesso em: 15 março, 2018.
- ICMBIO. Catálogo de Produtos da Sociobiodiversidade do Brasil, 2019. Disponível em <https://www.icmbio.gov.br/portal/images/stories/comunicacao/publicacoes/publicacoes-diversas/catalogo_de_produtos_da_sociobiodiversidade_do_brasil.pdf>. Acesso em: 02 de novembro de 2019.
- ICMBIO. Dados de produção autorização florestal em Unidades de Conservação Federal. Brasília: ICMBio, 2020.
- ISA. **Unidades de Conservação do Brasil**, 2019. Disponível em <<https://uc.socioambiental.org/>> Acesso em: 10 julho, 2019.
- KANASHIRO, M. **O manejo florestal e a promoção da gestão dos recursos florestais em áreas de uso comunitário e familiar na Amazônia**. Cadernos de Ciência & Tecnologia, Brasília, v. 31, n. 2, p. 421-427, 2014.
- LOUREIRO, V. R. **Amazônia no Século XXI**: Novas formas de desenvolvimento. Revista Direito GV, São Paulo 8(2), p. 527-552. Jul-Dez 2012. <<https://doi.org/10.1590/S1808-24322012000200006>>
- MCCAY, B. M.; e ACHESON, J.M. eds. The Question of the Commons: The Culture and Ecology of Communal Resources. Tucson: University of Arizona Press, 1987, xvi + 439 pp. **American Journal of Agricultural Economics**, Volume 70, Issue 4, November 1988, pg 974-975. <<https://doi.org/10.2307/1241959>>.
- MELO, M.; ALMEIDA, E.; DANTAS, J. **Boas práticas de manejo e extração de óleo vegetal de andiroba**. IBAMA. 2011.

- MMA. Área Protegidas. 2019. Disponível em <<https://www.mma.gov.br/areas-protetidas.html>>. Acesso em: 10 julho, 2019.
- OSTROM, E. **A behavioural approach to the rational-choice theory of collective action**. American Political Science. Review 92: p. 1-22. 1998. <https://doi.org/10.2307/2585925>
- SABOGAL, C; JONG, W.; POKORNY, B.; LOUMAN, B. **Manejo forestal comunitário em América Latina**. Experiências, lecciones aprendidas y retos para el futuro. Bogor, Indonésia. Centro para la investigación Forestal (CIFOR), 2008.
- SAWYER, D. Unidades de Conservação, uso sustentável e funções socioecossistêmicas na Amazônia e no Brasil. In: SAUER, S; ALMEIDA, W. (org.) **Terras e Territórios na Amazônia: Demandas, Desafios e Perspectivas**. Brasília: Editora Universidade de Brasília, 2011.
- SFB. **Cadastro Nacional de Florestas Públicas**, 2018. Disponível em <<http://www.florestal.gov.br/>> Acesso em: 10 julho, 2018.
- SHULZE, M.; GROGAN, J.; VIDAL, E. O manejo Florestal como estratégia de conservação e desenvolvimento socioeconômica na Amazônia: quanto separa os sistemas de exploração madeireira atuais do conceito de manejo florestal sustentável?. In: BENSUSAN, Nurit; ARMSTRONG, Gordon (Org). **O manejo da paisagem e a paisagem do manejo**. Brasília: Instituto Internacional de Educação do Brasil - IEB. 2008. p.231 a 245.