



The role of FSC certified forest management in the conservation of Intact Forest Landscapes (IFLs) in the Brazilian Amazon

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In the history of mankind, at a time when species and habitats loss has reached a particularly high level, maintaining Intact Forest Landscapes is vital due to these forests' exceptional contributions to the protection of springs, biodiversity, forest carbon stocks, and other ecosystem services that deserve special conservation measures. IFLs presently cover 20% of Earth's terrestrial surface, and over 60% of those forests are located in three countries, including Brazil.

In 2014, during the Forest Stewardship Council (FSC) General Assembly, the approval of **Motion # 65** rendered the need for internalization of concerns about IFLs conservation within the forest certification system. Nevertheless, most countries, since then, were not able to adapt the forest certification standards to the needs foreseen in this motion, and the main countries embedding IFLs (such as Russia, Brazil, Canada, and the Congo Basin) did not properly conclude their discussion processes. Therefore, FSC published the **Advice Note # 65** to allow certified forest operations to be implemented in IFLs areas only in cases where greater impacts do not affect more than 20% of the total area, and where no IFL is reduced to less than 500 square kilometers. The Note also demands that 80% of all IFLs to be protected against logging - a measure that can cause great operational impact, possibly even in a way to halt the operation in some certified operations due to the lack of feasibility – in the worst possibility even preventing the conduction of responsible forest management in these areas.

Another critical moment in this discussion will take place in October 2017, during the next FSC General Assembly, when an answer -- even if a partial one -- must be given on this issue.

With the purpose of contributing to a qualified discussion on how reconcile IFL conservation and responsible forest management in tropical areas, this paper brings some issues that we believe to be relevant to technical aspects related to IFLs conservation in the Brazilian Amazon. We hope these recommendations may improve the participation of different actors involved with IFL issues in the FSC certification system in Brazil, as well as inspire the exchange of experiences and lessons learned with other affected countries participating in this debate.

IFLs worldwide and the legally protected areas in the Brazilian Amazon

The Intact Forest Landscapes (IFLs) are large blocks of forest remnants and other natural ecological systems significantly undisturbed by anthropogenic action – such as highway construction and the development of other economic activities. According to the global definition, IFLs must have a minimum area of 50,000 hectares and a minimum width of 10 kilometers¹. One of the IFLs' assumption is that a given forest fragment with those dimensions should be able to keep the native biodiversity in a way to provide a safe basis for species maintenance. Nonetheless, another reason to maintain IFLs is that they

¹ Source: <http://www.intactforests.org/>.



stockpile relevant features and perform important functions – such as the protection of springs, biodiversity, and forest carbon stocks – that justify special measures for their conservation.

IFLs cover around one fifth of the planet's surface, although over 60% of the IFLs area are located in three countries – Canada, Russia, and Brazil². That represents a great opportunity to use these forests through a more robust landscape planning, seeking biodiversity conservation. Nevertheless, only 35% of the global IFLs area fall into some IUCN³ category of protected areas -- representing 8.7% of the total global forest area.

Relatively good news is that the Brazilian Amazon – accounting for the vast majority of the IFLs areas in Brazil – presents one of the lowest historical rates of loss of these forests in the world, due to reasons explained below.

According to an assessment compiled by IMAFLORA, in 2000, there were approximately 246 million hectares of Intact Forest Landscapes in the Brazilian Amazon. This area was decreased by only 6% (15 million hectares) during the 13 following years and, in 2013, it totaled 231 million hectares. Pará was the Brazilian state with the greatest IFLs loss in that period, featuring a decrease of approximately 6 million hectares. Following, came Mato Grosso state, with around 3 million hectares of total loss, finally followed by Rondonia state, with 1.5 million hectares of loss. Such losses match the historical Amazon deforestation rates⁴. In other words, if deforestation associated to land use changes is truly the main cause of IFLs loss in the Brazilian Amazon, the main factors associated to these losses are the expansion of cattle ranching activities, agriculture for the production of commodities, land grabbing, and the real estate speculation.

Mostly, IFLs loss identified by IMAFLORA between 2000 and 2013 is associated to private properties. In fact, in this same period, around 23% of these losses were in such areas, and 17% of the losses were in unsettled public lands still without formal destination. The causes for this last phenomenon are frequently linked to land grabbing, according to a wide amount of evidence.

Another interesting fact in the study carried out by IMAFLORA is that, in 2013, approximately 70% of the IFLs were in legally protected areas, formally divided in Brazil in two categories: Protected Areas (PAs) and Indigenous Territories (ITs). This fact leads us to believe that the best strategy for IFLs conservation is to find mechanisms ensuring that these areas are effectively conserved or, in other words, that the **National System of Protected Areas (SNUC, in the Portuguese acronym)** is fully implemented – considering issues such as the management effectiveness and consolidation, the development of economic activities that are compatible with traditional communities and indigenous peoples dwelling in these areas, and the presence of financial mechanisms funding the protection of those lands.

In 2017, AMAZON launched a new independent system focused on monitor deforestation in the Brazilian Amazon, called SAD⁵. The new assessment arising from this system are that, in spite of the good news associated to a general decrease of Amazon deforestation by 21% in comparison to the previous year, deforestation within Amazon PAs has also increased by 20% in the same period. That is the real threat in absolute figures to IFLs conservation in the Brazilian Amazon.

² Source: data from intactforests.org, consolidated by IMAFLORA.

³ Heino, M. et al. (2015).

⁴ Official Amazon deforestation data according to PRODES project. Consolidated by IMAFLORA.

⁵ See about the SAD system on the AMAZON page: <http://amazon.org.br/?s=sad>.



Is it possible to harmonize IFLs conservation with the development of a robust social and economic agenda?

The implementation and consolidation of a national and state systems of Protected Areas and Indigenous Territories is a key measure to effectively protect IFLs. A second essential measure is to make progress in unsettled public areas destination, since 17% of the IFLs losses between 2000 and 2013 happened on those areas. Thereupon, it is important to make progress in the improvement of the land use practices in these areas and in private lands aiming at IFLs conservation. Potential uses include the certified responsible management of forests for the production of goods and services.

According to WWF Network positioning launched in 2017, with regards to the recommendations for forest management in IFLs, within a global context⁶:

“In addition to legally protected and community conserved areas, WWF believes that responsible forest management, including commercial management, is a critical and cost-effective tool within larger-scale conservation strategies that can help keep forests standing and help maintain their ecological integrity. If we consider the overlap of IFLs with existing allocations for production forestry, credible forest certification can be a crucial tool to manage long term impacts on these forest areas, the biodiversity they support, and the people who depend on them. For WWF, FSC is currently the most credible certification scheme available at present, and it is the only certification scheme attempting to integrate IFL values into adapted management practices⁷”.

“Great gains have been made to protect and properly manage forests as a result of commitments to FSC certification, and these gains must be considered alongside the unique value of IFLs as we seek an IFL solution that provides net conservation benefit, judged at the landscape scale rather than for the individual sites. Forest stewardship, motivated by a commercial interest in maintaining wood supply, has a key role in maintaining the planet’s natural capital and protecting vulnerable forests from illegal and irresponsible logging, encroachment and conversion to farmland, particularly as demand for wood from these forests is projected to grow dramatically in the coming years”.

Going back to the study conducted by IMAFLORA, there are presently 12 FSC timber forest management certificates, totaling an approximate area of 1.4 million hectares. From this total, 94% refer to forest operations carried out by companies and 6% refer to forest management carried out by traditional communities. Ten per cent of the company timber management certificates are located in public lands -- federal and state level forest concession areas, totaling 246,500 hectares. If we consider the public forest certification potential, approximately 2.3 million hectares of national forests and 432,500 hectares of state forests (Pará state) may be the object of concession, totaling around 2.8 million hectares.

IMAFLORA analyzed 48 Forest Management Units (FMUs) of different sizes that were either FSC certified or at some stage of the FSC certification process. Figure 1 shows that in nearly 42% (20) of those FMUs there was great coverage of Intact Forest Landscapes (in 2013) in these areas, and the proportion was equal or higher to 80% of the total operation. If we were to go forward with the literal protection recommendation of 80% of the core areas from forest management activities, following the recommendation on **Advice Note 65**, this could actually make forest management operations to be

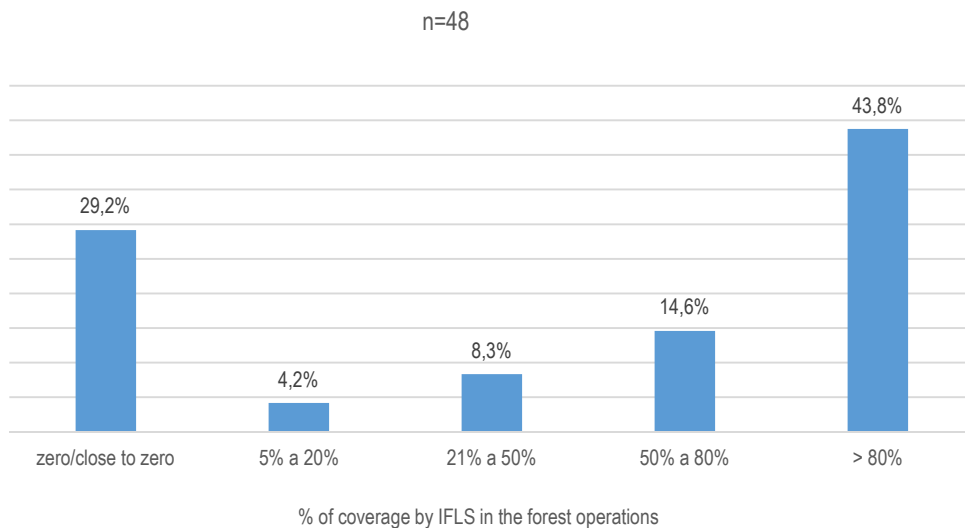
⁶ “The role of responsible forest management in Intact Forest Landscapes”. WWF. Access at http://wwf.panda.org/about_our_earth/deforestation/forest_sector_transformation/forest_certification/

⁷ “While other certification schemes are not taking action on adaptive IFL management, there is clear recognition within FSC and among its members that if the present status quo continues in these regions, IFLs will continue to be compromised by unsustainable logging”. Extracted from “The role of responsible forest management in intact forest landscapes”. WWF. p. 3.



unfeasible on those lands. According to the data in this study, the mean percentage cover of FMUs by IFLs is **62%**.

Figure 1. Existing overlaps among the Intact Forest Landscapes (IFLs) in certified Forest Management Units (FMUs) or in FMUs that are in the process of certification in the Brazilian Amazon, 2013. Source: WWF Brazil from data compiled by IMAFLORA, 2017.



Similar conclusions were obtained from IMAFLORA. In the study following, one of the key conclusions is that: *“we observe that, although there are FMUs that do not contain IFLs within their areas and, therefore, will not be impacted by the core zone recommendation, most of them will drastic decrease their manageable area. The 20% of the area that could be managed do not take into account local forest parameters, such as the site quality, the Permanent Preservation Areas (PPAs), and inaccessible areas. Therefore, the manageable area can be further reduced when including physical limitations and local features identified in activities such as boundary setting and forest inventory. This great decrease in the managed area of FSC certified operations, or of those in the process of certification, will render forest management financially unfeasible. There is a trend, therefore, towards a mass migration of Amazon timber companies to forest certification schemes that are less rigorous, or for those enterprises to simply give up certification”*.

In the following sections, based on the previously presented arguments and data, and under the light of the Brazilian experience in conservation, we will discuss our recommendations for IFLs management in the Amazon.

STEP 1 – Plan and engage local actors at a landscape level

Since Motion 65 was drawn up, we understand that the IFLs theme unfolds and that it originates from a previous debate on the existing protection of High Conservation Values (HCVs⁸) in FSC certified operations, particularly with regards to the values pertaining to the landscape scale, technically defined as High Conservation Value in category 2 (HCV 2⁹). The top concern is to conserve these landscapes from

⁸ High conservation value forests. See <https://www.hcvnetwork.org/>.

⁹ Defined as “landscape-level ecosystems and mosaics. Intact forest landscapes, large landscape-level ecosystems, and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance”. See <https://www.hcvnetwork.org/about-hcvf/what-are-high-conservation-value-forests>.



high impact and industrial anthropogenic actions, maintaining their ecological features and significant minimum size.

Considering these values and this need, the IFLs conservation planning, intended in Motion 65, should begin at a far larger landscape scope than the one represent by the FMU. In fact, what can be done at the forest management operation scale is to complement the effort that needs to start at the landscape planning. No doubt that this fact implies in a great previous investment to engage local actors and governments.

As initiated in the earlier discussion, minimum elements in this type of planning include:

1. A survey on what portions of the landscape, whether IFLs or not, have relevant ecological features, or can be truly classified as HCV2¹⁰. In Brazil, there are different specific studies focused on the identification of **priority areas for biodiversity conservation**¹¹, carried out by means of strict technical methodologies and wide consultation.
2. To carry out a survey on the conservation gaps in the relevant landscapes aiming the conservation of the identified HCVs. In other words, determine, through discussions with experts, whether, for instance, the different ecological features existing in a certain landscape are already sufficiently represented in the protected areas system. This would be an excellent measure to understand the conservation liabilities in the representativity of those features in a given region, before reaching the FMU.
3. Design a plan, as previously discussed, to ensure the consolidation and maintenance of this local system of legally protected areas, or for its expansion, in the case of ecosystems that are under-represented in a given landscape.

This wider strategy has more chances of ensuring the IFLs conservation in the Brazilian Amazon, and certainly to ensure the conservation of the most relevant IFLs for biodiversity conservation, whether due to its exceptional biological and/or even cultural relevance, or because their characteristics are still insufficiently protected in a given region.

The same principle applies, for instance, in the destination of a given public area for different activities, including forest management. By definition, protected areas for sustainable use, such as national forests and extractive reserves, may have a wide variety of uses, including company level forest management or community forest management. Usually, a relatively small percentage of these areas is assigned to forest management. For instance, in landscapes sheltering ecosystems that are under-represented in the local protected area systems, we may consider zoning local sustainable use public lands to assume a relatively greater proportion destined for biological preservation.

A relevant point that we want to bring in this paper is the relation between this discussion on IFLs protection at a landscape level and the role of FSC certified operations. From a pragmatic point of view, it should not be a expectation that the forest entrepreneurs fulfill a relevant role in the assignment of areas to different uses in the landscape where their operation are located, nor that they exert a leadership role in locally protecting IFLs that are under-represented in that particular region. The same thing is true for the

¹⁰ "It also should be recognized that IFLs do not always overlap with other HCVs. For instance, in some countries, IFLs are largely contained to difficult mountainous terrain, while the highest levels of biodiversity and habitats of conservation priority species are found in more fragmented lowland forests. WWF has observed cases when logging has already been conducted in the most biologically productive portions of IFL, while untouched areas are species-poor and have few clear HCV besides intactness". Extracted from "The role of responsible forest management in intact forest landscapes". WWF. p. 6.

¹¹ See <http://www.mma.gov.br/biodiversidade/projetos-sobre-a-biodiversidade/projeto-de-conserva%C3%A7%C3%A3o-e-utiliza%C3%A7%C3%A3o-sustent%C3%A1vel-da-diversidade-biol%C3%B3gica-brasileira-probio-i%C3%A1reas-priorit%C3%A1rias>.



forest certifier, since it would require an exceptional zoning knowledge of the landscape before being able to correctly assess the existing protection measures proper for a specific operation. An institutional solution may be the creation, through the FSC-Brazil governance spheres, of a **technical-scientific committee** in charge of developing a national recommendation for protection and local engagement measures aiming at IFLs conservation, following the example of what has historically been done in forest plantation certification - for instance, on the theme of chemical products derogation. This would enable wider participation, the engagement of the main relevant actors, and the creation of clearer rules for local application by forest certification auditors and managers.

STEP 2 – Improve harvesting planning and IFLs protection at the FMU level

Literal application of **Advice Note 65** may compromise the economic viability of present certified operations and/or the future development of forest operations interested in FSC certification. Therefore, we believe that present recommendations for the IFLs protection at the operation scale, such as the preservation of 80% of these areas in a core zone, are measures that might make unfeasible to continue with FSC certification in these areas.

In fact, we propose the continuity of managed forest operations in IFLs areas in the Brazilian Amazon together with a few precautionary measures which are described in the following sections of this document - without intending to find a direct link to the specific ecological features that should be protected in these areas. It is also very important to keep encouraging and demanding efficient and robust monitoring systems, especially regarding present and potential impacts within the IFLs, so that the effectiveness of the proposed measures is assessed over time.

At the FMU level, particularly in IFLs areas, the following measures are of vital importance. We strongly recommend that they are taken into account during the coming steps of the certification standard for natural forests development in the Brazilian Amazon.

- 1) To give special attention to the forest management planning. It happens in two phases. Firstly, during the property zoning, known as **macroplanning**¹², it is particularly important to prioritize choices that could lead to the lesser possible impact over IFLs, regarding the selection of areas where forest management will be carried out, the areas that will not be harvested (in the form of reserves, for instance), as well as the infrastructure planning. For this action to be well succeeded, it would be exceptionally important to keep a wider and precise database of the landscape around the operation area, in comparison to the geographical bases that are traditionally used when forest harvesting is the sole object. This would possibly include the landscape conservation areas network, in order to enable efforts for the creation of large corridors (see below). It is vital that the FSC-Brazil standards development committee take these issues into account in the ongoing discussions.
- 2) The second phase of the planning is carried out at the level of the specific areas to be harvested in a given year, and that is why it is called **microplanning**. It is in this phase that the managers survey the forest resources that can be punctually explored and protected in this annual harvest

¹² Macroplanning is important to reveal where the annual production areas (UPAs in the Portuguese acronym) will be, which areas will be conserved, and where to build roads and other necessary infrastructure for the removal of the forests products. Some basic macroplanning routines may include the selection of areas that are fit for forest management, the quantification of the forest management potential, the assessment of the economic viability of the venture, the size and establishment of the annual production areas, the determination and scaling of infrastructure, and the quantification and the need for human resources, among others.



- area, and this is done systematically, through the forest inventory. It is also in this phase that a field team would carry out a careful survey of the permanent preservation areas along the existing water courses, a routine that was gradually replaced by the use of remote technology. Within the IFLs context, microplanning routines deserve special attention, as well as the qualification and training of the teams in charge of this work in the field fronts.
- 3) Allocate the absolute reserve (5% of the FMU according to the present FSC certification standards for Amazon natural forests) in the most efficient way - not just to represent forests that are subject to harvest for purposes of future comparison, as the original intention in creating these areas, but also making them comply with issues such as increasing the connectivity of eventual reserve areas and permanent preservation areas. The absolute reserve should be faced as a component of the **network of conservation areas**. **Taking into account the landscape scale, the macroplanning** should attempt to connect not just the reserves within the operation, but also to connect them to external areas, such as protected areas, indigenous territories, and even other reserves within private lands.
 - 4) At the beginning of the macroplanning, special attention should be given to the **allocation of permanent harvesting infrastructure** in the FMU. A first assumption is to avoid allocating roads that provide permanent access to the interior of the management area while going across IFLs. In the case of the main roads, this recommendation is not always possible to follow in practice, since many areas have already been acquired with the main roads already allocated. Nevertheless, it is possible to carry out a plan to prevent that a secondary category of roads, such as the access roads, to go across the minimum possible number of IFLs, and providing only secondary/temporary roads within them. These secondary roads will be mandatorily closed after the logging period. This measure, as well as the choice of the eventual crossing points on the wide access roads, having the IFLs as priority in the internal impact monitoring routines of the forest management operation, are essential to prevent the degradation of these forests.

Assuming that it may be prohibitive to restrain the harvesting of IFLs in the Brazilian Amazon to areas outside the core zone (80% of IFLs), it is vital to increase the investment in planning in order to maintain the environmental values associated to these areas in the long run. We therefore suggest that, rather than a core zone, the effective protection of a portion of the IFLs to be done at the FMU level through a **conservation areas network**. In practice, this network could be composed of Permanent Preservation Areas (PPAs) along the riparian zones, the absolute reserve (presently 5% of the FMU), and additional protection areas, when necessary, in order to compose a minimum protection percentage. At this point, **we advocate in favor of making this minimum proportion to be in a level not below 30% of the FMU**, because it is a good intermediary point between the practices that are already adopted by the FSC certified forest operations in the Amazon and the greater interest of protecting IFLs. This idea still deserves a more in-depth discussion with the standard development committee in charge of developing the standards and other FSC system stakeholders, in order to ensure its viability and potential support.

STEP 3 – Improve the harvesting implementation and monitoring, and minimize its impacts

A first important thought on this item refers to the **need to ensure the continuous improvement of the forest management guidelines, together with reduced impact logging in accordance to new technical and scientific progress**. Based on the authors' experience, this is actually the main recommendation for the IFLs protection outside the protected areas system assigned to maintain biodiversity over large traits of land. Nevertheless, several facts have gone against this recommendation. During the past decades, we have observed the depletion not just of the official structure for rural and forest technical assistance, but also of a few centers of excellence in the dissemination of forest management practices. In this last category, the highlight goes to the **Institute of Tropical Forest – IFT**



(Instituto Floresta Tropical)¹³. In past years, IFT has faced financial sustainability problems due to the decrease of public and private interest on high quality technical forest management implementation.

Secondly, starting with the **conservation areas network** created in the FSC certified forest operations – in favor of which we previously advocated – they should cover at least 30% of IFLs in their regions of occurrence, in order to ensure the use of robust protection procedures (road closure, hunting and fishing control, etc.), as well as monitoring procedures, to allow for a long term follow up of the development of these areas in comparison with the explored IFLs. The creation of the **previously mentioned technical-scientific committee** could provide great support to the efforts of providing minimum guidelines for this monitoring and protection in the different regions for the implementation of such principles.

A third measure is to adapt local harvesting standards within the IFLs, in order to prevent possible negative impacts on these areas. As previously discussed, the first recommendation in this issue is the location and frequency of use of the harvesting roads. Other infrastructure items may follow a similar logic. For example, depending on local logistic conditions, it would not be impossible to suggest minimizing the area of log decks - for instance, by loading the logs harvested shortly after the harvest when it is being done within the IFLs. This could be beneficial to ensure a smaller area of IFLs impacted by harvesting.

Another measure that seems to make great sense for the harvesting of IFLs is facilitating forest recovery as much as possible following the harvesting. This would be possible when carefully assessing the harvesting intensity, and mainly through the selection of some measures such as, for instance, setting a **maximum cutting diameter for harvesting**. Some experimental data, collected in Western Amazon and that underwent a preliminary analysis by the ESALQ/LASTROP lab, show that restricting the maximum diameter to 200 centimeters could greatly preserve the forest canopy and speed up the cutting cycle. Although this measure is not applicable to every case, it should at least be seriously considered in the certified forest operations harvesting IFLs.

Another measure aiming at maintaining the diversity of the species that are managed in IFLs, for those species that proved to have a low volumetric recovery (as, for instance, the case of *Handroathus impetiginosus*¹⁴) due to its low growth, would be the **recommendation of post-harvest silvicultural treatments such as enrichment planting**. This is already required for the management of species such as the Brazilian mahogany (*Swietenia macrophylla*). Another interesting measure, in the case of these low-growing species, is to allow the harvest only of the recovered volume in each cutting cycle. Thereby, the population of the species would not be reduced in the subsequent harvesting seasons.

Final considerations and the continuity of the debate on this topic

This article presents some practical recommendations that may be able to reconcile the FSC certified forest management with the protection of existing IFLs in the Brazilian Amazon.

The debate on the Intact Forest Landscapes (IFLs) creates a new opportunity to discuss the protection of the main natural forests on Earth and the necessary measures to preserve their values – both in ecological and social-cultural terms.

¹³ See <http://ift.org.br/>.

¹⁴ Schulze M, Grogan J, Uhl C, et al. (2008). "Evaluating ipê (*Tabebuia*, Bignoniaceae) logging in Amazonia: Sustainable management or catalyst for forest degradation?". *Biol Conservation*. **141**: 2071–2085.



For regions such as the Brazilian Amazon, ensuring the effective protection and consolidation of the Protected Areas and Indigenous Territories system is the best possible action to ensure the IFLs preservation. Without effective measures to this end, the main drivers of loss of these areas -- such as the expansion of agriculture and cattle ranching -- will continue to extinguish the IFLs. As mentioned beforehand, in bit more than one decade, between 2000 and 2013, around 6% of IFLs ceased to exist in the Brazilian Amazon.

From the landscape scale and public planning to the scale of single operations, and in terms of IFLs management and protection, FSC is the most robust forest management scheme on Earth and it is totally prepared to embrace the theme.

We believe that these recommendations can enable the effective protection of IFLs as well as maintain the interest of forest entrepreneurs in the certification of their areas, and keeping them certified, in the Brazilian Amazon, without any great additional loss of competitiveness.

We understand that harmonizing both goals in the same solution requires the practice of intense negotiation of interests, both in the case of the Brazilian Amazon and of other regions sheltering great IFLs forests.

At the time of writing of this paper, a small number of motion proposals on this theme were already under discussion to be presented in the FSC General Assembly in October 2017. Most of them depicted precisely the need to assess the impacts of implementing the protection of IFLs in the certification systems of the main countries that embed those forests -- a principle that we strongly endorse at this time. It is particularly necessary, from now on, to have greater convergence on this topic and further engagement of different actors - a spirit that we hope to have encouraged with this paper.