

HLPE e-consultation. “Sustainable Forestry for food security and nutrition (FSN)”

Contribution of The Indústria Brasileira de Árvores (IBÁ: The Brazilian Tree Industry¹):

“The experience of Brazil in Sustainable Forestry practices for FSN, socio-economic and environmental renewal.”

6th of March, 2015

IBÁ welcomes the opportunity to provide inputs into the HLPE report. We submit here information and resources relevant to:

1. The role of forests and sustainable forestry for FSN;
2. Sustainable forests and forestry for FSN, in the environmental, economic and social dimensions, and;
3. Governance.

Practices established by the Ibá member companies over more than four decades provide a valuable repository of information on how sustainable forestry – with a specific focus on the role of plantation forestry – can contribute to social viability and ecosystem services and to improved food security and better nutrition.

1. Positive socio-economic and environmental impact of the Brazilian planted forest sector.

Since the 1980's to the present day, the cumulative experience of the Brazilian planted forest sector provides a comprehensive database of evidence from which the HLPE report could draw guidance on how to integrate sustainable plantation forestry with FSN objectives:

In Brazil, in the 1990's, the adoption of voluntary forest management standards² by plantation-based companies and Government measures to align the national development program with natural resource use efficiency, biodiversity conservation and social protection created a sustainability matrix within which to raise the intensity, efficiency and quality of forest fibre production.

All of this has been developed in harmony with International conventions and guidelines such as the Convention on Biological Diversity, the FAO Voluntary Guidelines for Responsible Management of Planted Forests and the CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the context of national food security.

Collectively, this has provided standards and governance systems to meet growing, shifting and diversifying demand, whilst controlling and managing potential environmental and social risks that plantations may pose. According to the living forest report from WWF³ tree plantations are an efficient

¹ <http://www.bracelpa.org.br/en/>

² The Forest Stewardship Council (FSC) and the Program for the Endorsement of Forest Certification (PEFC)

³ WWF – World Wildlife Fund (2013) Living Forest Report, Chapter 4, Gland. 33p.

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way to produce fibers and energy. Plantations globally occupy 7% of the total global forested area in the world and are responsible for 60% of the industrial roundwood. In Brazil, the planted trees industry represents 5,5% of the Industrial Gross Domestic Product (GDP) and responsible investments support a globally competitive industry that restores degraded lands, conserves biodiversity and supports rural livelihoods.

The experiences of the Brazilian plantation sector in internalizing the costs of ecosystem protection and social license to operate could provide invaluable guidance on what can be produced, by whom, where and how ("FSN of whom").

The following key features of the industry today show how sustainable forestry can positively contribute to social viability, the provision of environmental services and to improved food security and better nutrition:

- **Ecosystem restoration and biodiversity protection at multiple levels:** Plantations in Brazil are established on degraded land, providing the first level of sparing of natural ecosystems and reducing logging pressure on natural forests. For each hectare of forest planted by planted forest companies, an average of 0.5-0.7 hectares of natural forest is maintained and/or restored – establishing ecological corridors and mosaics on lands that were previously degraded. This represents a net positive gain of almost 3 million hectares of secondary forest and a significant contribution to ecosystem functions such as biodiversity preservation and carbon storage. The 7.6 million hectares of planted trees stock 1.67 billion tons of CO₂ from the atmosphere. Knowledge derived from long-term watershed management programs, and policies that prevent planting in riparian zones, in addition to government policies, guide land use planning and plantation management strategies;
- **Community support and smallholder integration:** Brazilian plantations-based companies have worked hard with local communities to collectively agree on best practices. These relationships are based on value sharing. For instance the outgrowers programs that integrate in the forestry industry chain roughly 13 thousand families in over 1000 municipalities in some of the poorest and most remote areas of the country. In 2013, IBÁ member-companies invested R\$ 150.5 million in social programs adding multiple values to the quality of life of 1.4 million people including education, health and food security and nutrition needs.
- **Smallholder certification:** Smallholder certification is a challenge because of cost and cultural values. In a joint effort between the private sector and WWF, FSC Brazil has recently launched a standard to certify smallholders, aiming to increase outgrowers and group certification. This provides outgrowers a price premium, making income per hectare four fold higher than ranching – the main rural activity in most of our regions. Ibá member companies work closely with the certification bodies to continuously upgrade forest management practices and transfer this knowledge to smallholders, including best management practices.
- **Integrated land use planning:** Today, 100% of the eucalyptus and pine cultivated for several uses including pulp and paper, panels and flooring, energy, among other, are produced from only 0.7% of all arable land, creating more than 4.5 million direct and indirect jobs and significantly reducing the pressure to bring natural forest areas into production. The forest sector has strongly participated in the development and implementation of policies and Programs of the Ministry of Agriculture and the Ministry of Environment, which aim to register all properties and their uses into a single database. Ibá is engaged in implementing a mechanism named CAR (Environmental Rural Registry), which will map all the rural properties in the country, contributing to identify environmental assets and liabilities and contribute to better landscape-based policies. Additionally, the integrated livestock

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and forestry program of the Ministry of Agriculture through EMBRAPA is targeting 70 million hectares of land for integrating productivity enhancing approaches in agriculture and forestry. This program provides a working model and vast repository of quantitative data to explore the relation between combined agro-forestry practices and FSN.

- **Better breeding for minimizing land use:** Breeding for better performing tree varieties has provided a series of incremental improvements in yield, doubling plantation productivity since the 1970's (currently about 40 m³/hectare/year). This has meant that the amount of land required to feed a 1M-ton yr⁻¹ pulp mill has gone down from 171,500 to 73,500 hectares. If 1970's productivity levels were in practice today, the eucalyptus plantation base of Brazil would be 9.9, rather than 5.1 million hectares. Clonal development and breeding provides continuous improvement in quality and supply whilst maintaining genetic diversity. Plantation-based companies use thousands of different clones in breeding programs that provide a robust genetic base on which to provide for yield improvement, fibre quality and resilience. Those data based on eucalyptus production to be illustrative. Pine statistics and yields have followed the same trends due to conventional genetic breeding.
- **Direct benefits for food security and nutrition:** Besides the environmental services, jobs and income generated by forest plantations, food is also provided by plantations including honey. Brazil is the 11th largest producer of honey in the world and one of the main drivers of the increase of 77% in honey production in Brazil from 2010-2011 was, in great part, the partnerships established between honey producers with eucalyptus plantation companies. Additionally some mushrooms are cultivated exclusively using eucalyptus timber, for instance shiitake which is a rich source of proteins. Additionally, agroforestry systems are ways to combine tree production with agriculture or cattle ranching for food production. These systems present several benefits to the agriculture and cattle and also to farmers, as source of food but also fuel for energy and cook. These systems have been highly encouraged on the out growers programs of the plantation-based companies.

We believe that the Brazilian planted forestry model provides a repository of information for the HLPE to build a comprehensive understanding of the challenges and opportunities of future global expansion of plantations. Because of the diversity of agro-ecological conditions and social contexts within which Iba companies operate around Brazil, and the time over which information has been compiled, a wealth of best practices exists to guide initiatives to scale up and replicate this model elsewhere in the world.

2. Future prospects for sustainable forestry management (SFM) practices and their impact on FSN – sustainable intensification.

The WWF Living Forest Report⁴ projects that wood harvesting could triple by 2050 to approximately 10 billion m³. It is estimated that this will require an extra 250 million hectares of plantations. If this demand is to be met without disrupting the four dimensions of FSN, what is needed are step changes in the efficiency of production and how operations are integrated with other land uses and users. In particular, given that much of the predicted expansion will involve smallholders and family farmers, attention must be paid to how present production models can be adopted by these producers. In

⁴ All reports available at: http://www.panda.org/what_we_do/how_we_work/conservation/forests/publications/living_forests_report

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addition, we know that to achieve greater intensification of productivity, existing performance standards, designed to manage *linear incremental* change will not suffice. With limited scope for sustainable throughput of resources, ensuring wellbeing within planetary boundaries will require enhanced resource use efficiency, whilst meeting growing, diversifying and shifting demand. This can only be achieved through innovation at all levels. The development of appropriate technologies and standards will be an essential pre-requisite for ensuring that intensification of existing practices for agro-forestry commodity production is sustainable and inclusive.

The HLPE report is therefore timely and pre-competitive allowing a detailed examination of how innovations can be designed, implemented and governed to meet productivity challenges. To meet this, Ibá member companies are focussing on four critical aspects of this transition towards sustainable intensification of production:

- **Innovation in integrated land use planning:** Advanced zoning and land-management approaches are needed that are based on the latest imaging technologies and cross-sectoral dialogue to reduce the tensions between the different categories of direct and indirect land uses and users. This process should integrate the concepts of High Conservation Values (HCV), Free Prior and Informed Consent (FPIC), IFLs (Intact Forest Landscapes) and Social License to Operate;
- **Scientific and Technological Innovation (STI):** to yield better breeding technologies, including biotechnologies to further enhance productivity, and to provide resilience against future environmental shocks and stresses (including climate change, pests and disease proliferation);
- **Innovation in multistakeholder engagement:** to share experiences, promote transparency, alleviate concerns, establish best practices and provide policy input;
- **Innovation in governance:** to ensure that measures to enhance productivity and resource –use efficiency are aligned with social and environmental objectives down to the local level.

2.1. Innovation in integrated land use planning:

Land use planning implies crop-livestock-forestry integration as a precondition for innovation in agriculture, silviculture and conservation. New forms of partnerships between different land users – forestry, agriculture, ranching, local communities, and indigenous and traditional peoples – are required if both communities and companies can benefit. By doing so, the introduction of forest components into integrated crop-livestock systems could improve carbon stock, conserve resources and nutrient cycles, diversify revenues and reduce risks. *Examples from the Brazilian planted forestry landscape mosaic model suggest that this is possible.* More information can be found at: <http://www.dialogoflorestal.org.br/download.php?codigoArquivo=314>. In addition, there is a wealth of mapping resources available – including forest and landscape restoration opportunities, (see World Resources Institute, WRI: <http://www.wri.org/resources/maps>) to enable zoning and land-use planning as well as monitoring long term land-use changes. The Global Landscapes Forum (GLF: www.landscapes.org) also provides a comprehensive framework of dialogue on appropriate landscape-level actions (see http://www.landscapes.org/wp-content/uploads/2014/12/2014-GLF-Outcome-Statement_web.pdf). Multi-stakeholder dialogue is an integral part of this process, and there are established platforms within which this is already happening – providing valuable insights into what is possible and acceptable (see 2.3. below).

2.2. Scientific and Technological Innovation (STI):

To meet increasing and shifting demand for food, fuels and fibre sustainable intensification of agro-forestry commodity production is required. In practical terms this will require step changes in

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productivity and process efficiency and an expansion of the quality, scope and scale of products and services. *An important aspect for consideration within the HLPE report will be how to integrate a future **bioeconomy** into agro-forestry operations – in particular to consider the potential for future high value forest biomass products – such as bio-plastics, bio-chemicals and specialty fibres.*

Improved process efficiency and scope of products means an increased dependence on Scientific and Technological Innovation (STI). However, an increased dependence on STI raises concerns for many, in particular, how can smallholders have access to STI, and how can they access markets to truly reap its benefits? If the only way to achieve resource use efficiency is to produce more from less through an intensification of existing practices, and if the route to intensification is through an increased dependence on STI, then two questions emerge:

- How can appropriate frameworks for governance of the development and deployment of new technologies be established that guide R&D in the right direction and ensure that products reach those who need them the most?
- How can these be implemented at a local level?

The fundamental challenge and opportunity of our time is therefore to develop leadership in the formulation of a framework that will master STI for forestry in transformative ways.

There is a distinct opportunity for the HLPE report to map out the best pathway for establishing this leadership.

Within this, the *physical challenge* is to develop and deploy the science and technology for the sustainable intensification of forest commodity production. The *social challenge* will be to ensure that technology reaches those who need it the most.

This framework for STI development and deployment is highly compatible with the key messages regarding innovation for smallholders and family farmers that emerged from the “State of Food and Agriculture” (FAO, 2014):

Family farms must be supported “*to innovate in ways that emphasize sustainable intensification of production and improve their livelihoods*”. The FAO proposes that sustainable intensification can be achieved through a “*cohesive multi-stakeholder innovation system to develop new technologies and practices suited to their needs and local conditions or through overcoming barriers and constraints to the adaptation and adoption of existing technologies and practices and access to relevant markets*”.

Towards fulfilling this challenge, the experience to date in the Brazilian planted forest sector is that conventional breeding programs and clonal propagation technologies can contribute significantly to meeting productivity challenges. *Ibá member companies that engage smallholders in their outgrower programs (that represent roughly 17% of all forested area and shall grow) already share their most advanced and high yielding breeding material.* However, the need to be more efficient and the risk of pest and disease outbreaks will escalate with the onset of climate change. All enabling solutions for improving productivity and resource-use efficiency will be required, including precision forestry, advanced breeding technologies, and biotechnology, including genetic modification (GM) technologies. *The HLPE report provides a timely opportunity to assess the present state of our knowledge on STI solutions for enhancing productivity. Within this, an important aspect for consideration will be best practice in technology transfer*

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to fully engage smallholders in present and future innovation cycles and integrates them meaningfully into supply chains.

Because of the diversity of views on which options for STI must be addressed, meaningful, objective dialogue (2.3. below) and Governance (3. Below) are intimately linked to any consideration of STI.

Ibá member companies have pioneered efforts to improve fibre yield through better breeding and some of them are already integrating advanced breeding methodologies, including biotechnology into their research programs as part of efforts to further enhance resource use efficiency and meet productivity challenges. Companies also have experience in a range of processes towards a knowledge-based bioeconomy.

2.3. Innovation in multistakeholder dialogue:

In response to recognition that there is a heightened urgency to finding practical solutions to the major global challenges associated with natural resource use efficiency, there has been a marked increase in cooperative dialogue. The inclusive nature of the Rio+20 process and the ensuing Post-2015 and SDG agenda highlight the convening power of the UN system in this process of global dialogue.

Ibá strongly welcomes the fact that the HLPE has been convened under the CFS with its proven model of private sector and civil society engagement.

The forestry sector has seen the emergence of several pioneering initiatives that establish convergence - particularly between the private sector and civil society - to use collective reasoning in the debate and design of solutions for meeting the extraordinary challenges facing forests and forestry. *Ibá member companies - alongside FAO Forestry - are active participants in a number of these international platforms for dialogue on best practice and multistakeholder engagement.*

The HLPE can draw on the vast amount of information and understanding that has arisen from the mutual recognition of shared responsibilities and that can be sourced from these international platforms.

These include:

- **The Forests Dialogue** ([www. http://theforestdialogue.org](http://theforestdialogue.org)) a platform that “contributes to sustainable land and resource use, the conservation and sustainable management of forests, and improved livelihoods by helping people engage and explore difficult issues, find collaborative solutions, and make positive changes. The mission is to build constructive dialogue processes among all key stakeholders, based on mutual trust, enhanced understanding and commitment to change. Dialogues are designed to build relationships and to spur collaborative action on the highest priority issues facing the world’s forests;
- **The New Generation Plantations Platform** ([www. http://newgenerationplantations.org](http://newgenerationplantations.org)), that brings together companies, government forest agencies and civil society from around the world to explore, share and promote better ways of planning and managing plantations, and;
- **The Forest Solutions Group of the World Business Council for Sustainable Development** ([www http://www.wbcsd.org/work-program/sector-projects/sustainable-forest-products-industry.aspx](http://www.wbcsd.org/work-program/sector-projects/sustainable-forest-products-industry.aspx)).
- **FSC and PEFC**, which are also multistakeholder platforms to define standards and policies to guide SFM certification.

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In Brazil and globally, Ibá member companies are actively involved in multistakeholder dialogue to establish processes for developing and implementing policy and standards for plantation management. Although a great deal remains to be achieved, some findings of significance are:

- deep rooted ideological conflict can be overcome when leadership on performance standards and cooperation on actions impact common objectives;
- a sympathetic approach to ecosystems, local communities and small forest owners can be a viable business strategy – without passing on the costs to consumers;
- mechanisms to distribute and share the benefits of research (improvements via conventional breeding) into plantation productivity with smallholders can be a win-win situation for business and communities.

3. Governance:

In the future, plantations of exotic and native species will increase in their importance worldwide, and especially in tropical and sub-tropical regions, as providers of goods and services while mitigating the pressure on natural forests. Considerations for the integration of well-placed and well-managed plantations in resilient landscapes will therefore have an immense impact on future prospects for food security and nutrition, species conservation, the preservation of planetary boundaries, climate change mitigation and adaptation and poverty alleviation. The importance of “social forestry” must therefore be pre-eminent in these considerations since it is in tropical and sub-tropical regions that these concerns are most acute.

A comprehensive governance framework to orchestrate this challenge and opportunity is therefore vital.

The HLPE report on Sustainable Forestry for Food Security and Nutrition provides an opportunity for the development of an inclusive framework that sets new targets for plantation management that will feed the supply chains of the future and a framework of governance for sustainable intensification of forest management practices from the perspectives of smallholder inclusion and FSN.

Future standards for sustainable forestry must be designed to manage the complexity of *systemic transformational* changes with a governance framework for the highly disruptive process of further intensification, that provides social safeguards, provides effective stewardship and that stimulates preferential procurement and increased consumer awareness.

Future Governance frameworks must be designed to manage this complexity so that the real opportunities presented by a future forest-biomass-based bioeconomy are within reach of all. This means a special focus on the governance of STI because a bioeconomy will be innovation driven and technology rich. This in turn invokes special emphasis on access to innovation by smallholders and their access to the markets of the future. As outlined in 2.2. above, a central question to be addressed in the context of governance is:

- How can appropriate frameworks for governance of the development and deployment of new technologies be established that guide R&D in the right direction and ensure that products reach those who need them the most?
- How can these be implemented at a local level?

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