



The Forests Dialogue

ENGAGE! EXPLORE! CHANGE!

Field-Dialogue on Tree Plantations in the Landscape (TPL) in Brazil

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Background Paper

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INTRODUCTION

Tree plantations currently provide a third of the world’s industrial wood, a proportion expected to increase significantly in coming decades. They also have potential to deliver environmental services and social benefits, such as combating climate change and implementing conservation efforts. However, many aspects of tree plantations have been and remain controversial, with concerns that associated environmental and social costs often outweigh economic and other benefits.

The TPL initiative explores the evolving state of issues related to tree plantations and planted forests within the larger landscape context through engaging key stakeholder groups at the international, national and local levels. The Forests Dialogue (TFD) launched the Tree Plantations in the Landscape (TPL) Initiative in September 2015 at the XIV World Forestry Congress in South Africa with the first field dialogue in Chile in 2016. The TPL Initiative in Brazil will build on TFD’s previous Intensively Managed Planted Forests (IMPF) meeting, held in 2008, which identified priority environmental and social measures.

Environmental measures included developing environmental zoning, promoting native species, restoring degraded areas, promoting conservation incentives, managing of the impacts of the IMPFs and strengthening of local environmental agencies. In the social front, participants identified the need for the following: recognition of indigenous peoples and local communities’ rights to land; Free, Prior and Informed Consent procedures; a social footprint; distribution of benefits; a more just tax reform; mitigation of negative social outcomes; and, identification of economic alternatives for communities.¹

According to KANOWSKI & MURRAY (2008), “TFD’s IMPF Dialogue process confirmed the relevance and the value of the principles enunciated by FAO for the Responsible Management of Planted Forests and emphasized that their interpretation must be differentiated according to local contexts and realities, and to scale of IMPF activities.”

1 <http://theforestdialogue.org/publication/tfd-review-intensively-managed-planted-forests>

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The Forests Dialogue

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See below the complete list of ‘critical importance’ factors to successful IMPF projects and practice and the four main recommendations from the IMPF meeting 2008.

Factors of “critical importance” to successful IMPF projects and practice:

- ➔ Good governance, to achieve socially-fair and environmentally beneficial outcomes from economically-driven IMPF investments;
- ➔ High levels of corporate social responsibility on the part of IMPF businesses, particularly – but not only - where governance is weak;
- ➔ Respect for the rights of indigenous and local communities, based on recognition of the principle of free, prior and informed consent for activities affecting these rights;
- ➔ Empowerment of the forest workforce, including small holders and outgrowers through:
 - Maximizing formal contracts and employment for workers engaged in regular” work;
 - Promotion of self-organization for small growers and contractors;
 - Honoring ILO core labor standards.
- ➔ Effective integrated land-use planning – to protect areas of high conservation and cultural values, to integrate IMPF with other land uses and enterprises, and to mitigate against climate change;
- ➔ Establishing and enabling dialogue and conflict resolution processes that address the interests and concerns of stakeholders, and promote mutually-beneficial partnerships;
- ➔ Exploring and implementing models of IMPF-based development which give effect to these principles, for example as articulated by FAO for Responsible Management of Planted Forests.

TFD IMPF DIALOGUE RECOMMENDATIONS

Recommendation 1 – National and sub-national governments should:

- ➔ Recognizes principles such as those enunciated by FAO for Responsible Management of Planted Forests;
- ➔ Implement integrated land-use planning processes addressing all land uses relevant to IMPF development; these processes should recognize and address the rights and interests of all relevant stakeholders.

Recommendation 2 – Institutions financing or underwriting IMPF investments should:

- ➔ Implement the Equator Principles, which are currently applied in only a minority of cases;
- ➔ Institute more effective due diligence for IMPF-related investments;
- ➔ Co-invest with governments to develop good governance structures and build capacity;
- ➔ Encourage the use of independent certification as a means to assess social and environmental performance of the investments they support.

Recommendation 3 – Businesses engaged in IMPF activities should:

- ➔ Be proactive in exercising their corporate social responsibilities, in particular to address gaps in government's capacity and processes;
- ➔ Responsible project planning;
- ➔ Appropriate land use planning, comprising:
 - A thorough assessment of ecosystem services associated with the project – for example, through undertaking a Corporate Ecosystem Services Review;
 - Land acquisition and management following the principle of FPIC, and with appropriate consultation with local communities and other stakeholders;
- ➔ Adopting a resource-prudent approach that matches investment in processing capacity to IMPF resource supply, rather than using it to leverage resource supply;
- ➔ Establishing effective stakeholder engagement and conflict resolution processes;
- ➔ Advocating for the necessary basic legal infrastructure for engagement with, and participation of indigenous peoples and local communities and IMPF-based labour.

Recommendation 4 – Governments, agencies, businesses and individuals engaged in IMPF activities should:

- ➔ Pursue models of IMPF-based development that share benefits and costs equitably. This means but is not limited to:
 - Restricting investments to those where social and environmental costs do not exceed benefits;
 - Accepting that some landowners, including those with traditional rights, may choose not to engage in IMPF activities;
 - Fostering partnerships between stakeholders that promote and enhance the sustainability – on each of economic, environmental and social terms - of IMPF projects;
 - Committing to sustainable forest management and its verification through credible certification schemes;

- Developing locally-appropriate resource supply and labour participation arrangements that respect relevant ILO core labour standards
- Building the capacity of local communities to benefit from IMPF activities on terms of their choice.

This dialogue meeting on Tree Plantations in the Landscape will be the first effort in a partnership with the New Generation Plantations (NGP) platform, launched ten years ago by WWF with the participation of many companies and government forest departments that manage plantations. NGP aims to identify and promote better practices for plantation design and management, learning and sharing experiences from around the world. Although they approach the issue from different perspectives and contexts, participants share a belief that as tree plantations grow over the coming decades they can – and must – bring real benefits to people and nature.

In order to complement and support existing processes in the sector, the TPL initiative has been developed to enhance discussions through field dialogues that address the TPL Initiative’s five key topic areas, listed below:

- ➔ Revisit issues raised in the IMPF dialogue in 2008, noting any resulting outcomes including changes by companies and new or remaining concerns;
- ➔ Identify the dialogue’s role to complement other international processes;
- ➔ Gather and share learnings and best practices from related processes;
- ➔ Catalyze and support regional and national level processes;
- ➔ Develop alliances, broaden reach and be implemented in collaboration with partners to avoid duplication.

THE BRAZILIAN CONTEXT ON FORESTRY AND TREE PLANTATIONS: A BRIEF RESUME

Brazil is one of the major forestry nations of Latin America and is the world’s largest producer of Eucalyptus-derived pulp. Global demand has ensured steady growth and profits in the Brazilian planted tree industry, which in 2015 represented 6% of the country’s Industrial GDP. This growth is reflected in an expansion of area under planted forest—Brazil had about 7.8 million hectares of planted trees in 2016, up from 5.6 million hectares in 2005. Currently, considering all the forestry sector, around 70% of tree plantations are certified. For pulp and paper purposes, this number is around 95%.

To meet growing demand in both domestic and emerging markets, Brazil aims to expand its forestry plantations to 15 million hectares by 2025, including 5.4 million hectares for pulp and paper production. Current or planned investment projects aimed to increasing plantations, expanding industrial plants and building new units are in the order of US\$ 11.5 billion from 2016 to 2020.

In 2014, Brazil was the world’s fourth largest pulp producer with 15 million tons, ranking only behind Canada, China and the United States. Brazil is the world’s ninth largest producer of paper (10.4 million

tons annually). Most of Brazil's pulp producers supply foreign markets, including significant and increasing exports to China. Currently, China is the second largest international market for Brazilian pulp after Europe, receiving 35 percent of Brazilian pulp exports and growing at a rate of 8% per year.

About the environmental positive impact, the 7.8 million hectares of tree plantations absorb 1.7 billion tons of CO₂eq from the atmosphere. In addition, forestry companies in Brazil own 5.6 million hectares of natural areas, such as Permanent Preservation Areas (APPs), Legal Reserves (RL) and Private Natural Heritage Reserves (RPPNs), representing an average stock of 2.5 billion tons of CO₂eq. and the protection of biodiversity and ecosystem services.

TREE PLANTATIONS IN THE CENTRAL ATLANTIC FOREST CORRIDOR: A REGIONAL OVERVIEW

Similarly to what occurs on a planetary scale, the remaining forests and biodiversity are not evenly distributed along the Atlantic Forest. Some regions concentrate most of the remaining forests and endemic species – in other words – which only occur in that location. The Central Atlantic Forest Corridor (CCMA in its Portuguese acronym) is one such region and is therefore treated as a “hotspot within a hotspot”. That is, in the Atlantic Forest scale CCMA is deemed one of the highest priority regions to implement conservation and forest restoration actions.

Covering the regions of southern Bahia and all the state of Espírito Santo, CCMA has about 213,000 km² and includes marine (37%) and overland (63%) areas, extending over 1,200 km along the Atlantic coast of these two states. The overland portion is composed of more than 95% of privately owned lands, with the remainder occupied by federal, state and municipal protected areas, as well as indigenous and *quilombola* lands – protected areas legally declared to protect sites where descendants of enslaved Africans live.

This region, which covers 49 municipalities in Bahia and Espírito Santo states, is a home for one million people and concentrates the largest forest remnants of the Atlantic Rainforest in the northeast. Those fragments serve as habitats for many endangered species, most of them found solely in these region, making them critical for the protection of global biodiversity. Because of that, many protected areas located in the region, including national parks and a Private Natural Heritage Reserve owned by Veracel, have been recognized by UNESCO as Natural World Heritage Sites. The region's marine ecosystems are recognized for having the greatest marine biodiversity in the South Atlantic, with approximately 1,300 species on record.

On land, the landscape relief known as coastal plains (plateaus interspersed with valleys in forms of “U” and “V”) favors reconciling agricultural and forestry production along the flat areas and the protection of valleys through which streams and rivers flow. Due to the natural conditions of climate, relief and soil, this region is also considered one of the most productive places in the world for forestry and tree plantations.

Beyond those natural conditions, land availability at low opportunity costs and existing infrastructure have attracted pulp and paper companies to this region since the 1970s and 1980s. Currently, the region that we

will visit during the TPL meeting has tree plantations and pulp and paper plants of three large-scale producers. Fibria, Suzano and Veracel owned a total area of 919,000 hectares, being 591,000 hectares (64.3%) occupied with eucalyptus plantations and 328,000 hectares of other areas, most of them covered by native forest remnants in many stages. This region is one of the biggest areas of homogeneous tree plantations in the country and one that provides significant challenges – and opportunities – for sustainable expansion of the industry. In terms of jobs, the three companies generate 16,513 direct jobs in this region, between own and outsourced employees, including workers in pulp and paper mills and those working in the field (plantations and other areas).

AREA AND EMPLOYEES ON BAHIA AND ESPÍRITO SANTO UNITS	TOTAL AREA (HECTARES)	AREA OF TREE PLANTATIONS (HECTARES)	NUMBER OF EMPLOYEES (OWN AND OUTSOURCED)
FIBRIA	469.000	345.000	Industry: 1.823 Field: 6.729
SUZANO	270.000	162.000	~4.600
VERACEL	180.000	84.000	3.361
TOTAL	919.000	591.000	16.513

About 70% of wood supply comes from their corporate plantations. The remaining 30% comes from local forest producers who have entered the supply chain through an intensive and successful outgrower development program carried out by the companies. Outgrowers are key to the sustainable expansion of pulp and paper production in Brazil and are expected to provide 40 to 50 percent of pulp supply in the coming decade.

Currently, total annual production of pulp in this region is around 5 million tons. Fibria plants at Aracruz (Espírito Santo state) produces 2.2 million tons of pulp yearly, Suzano produces 1.7 million and Veracel produces 1.1 million per year. Outgrowers contribute between 1.25 and 1.5 million tons per year to this overall production.

These three companies export more than 80% of their pulp production, mostly to Europe and China. For the past two decades they have been working hard to enhance their performance on sustainability, in order to get and keep FSC certification. Although all of them have been successful in achieving certification for their own plantations, certifying the 30% of wood provided by outgrowers remains a major challenge.

In the current system, three out of four outgrowers have no opportunities or support to undertake the certification process. Six years ago, Veracel – a joint venture between Fibria and Stora Enso – made an investment to support certification of all of its outgrowers in its supply chain. Fibria and Suzano still face significant challenges in this arena.

Sustainable Forest Mosaics Initiative

Studies showing the effects of forestry on biodiversity are unfortunately scarce. The methodologies employed in such evaluations often do not follow a clear standard, making it hard to compare areas and groups of species and invalidating any attempt at integrated analysis.

Based on its responsibility to disseminate sustainable practices among its suppliers, Kimberly-Clark, the world's largest corporate pulp purchaser, accepted a proposal made by Conservation International. This project aimed to adopt a global-scale initiative to develop and test methodologies, procedures and practices that could lead to the creation of models to improve management and sustainability of forestry production.

This project called Sustainable Forest Mosaic Initiative (SFMI), has brought together the three companies in the region – Fibria, Suzano and Veracel – and some civil society organizations – Conservation International, IBIO and The Nature Conservancy – in order to establish a collaborative and innovative model of production, conservation and income generation.

SFMI proposes a single methodology for biodiversity assessment in areas belonging to different companies in southern Bahia and the north of Espírito Santo. Following the IMFS studies could lead to more precise and reliable analyses of the impact of forestry in that region.

CHALLENGES AND OPPORTUNITIES TO TPL APPROACH IN BRAZIL

To produce economically important fibers and natural resources in tropical regions and safeguard the livelihoods of communities while protecting ecosystems, is a complex and challenging task.

Addressing the theme of tree plantations in the landscape requires consideration of various environmental, social and economic factors and vectors. It is the combination of these factors and their correlation and interrelation in the landscapes that will determine the trend of sustainability or conflicts.

Following are some of the tree plantations positions, views, and factors that are crucial to their approach to the landscape scale.

The 'Green Desert' myth

The term 'green desert' was coined in Brazil at the end of the 60s and refers to the vast monoculture tree plantations which were designed for producing pulp and paper. At this time the term already alluded to the future consequences these plantations would have on the environment, including desertification, erosion, the elimination of biodiversity and human displacement (DESERTO VERDE 2011).

It is important to highlight that the first expansion cycle of forestry as a business took place during the military dictatorship. Under the pretense of expanding occupation in remote areas and increasing domestic production of raw materials, a fiscal incentive program was created to fund the creation of single-culture tree plantations, basically pinus and eucalyptus.

Since then, expansion of the agribusiness compound supported by large-scale exotic tree monoculture has been the subject of heavy criticism. Social movements, civil society organizations and a few Public Attorneys remain skeptic with regard to the activity's route to sustainability. In their minds certification of

these plantations is no more than a ‘*green washing*’ process, while venues for dialogue and alternative conflict resolution created in recent years - such as Brazilian Forests Dialogue and Southern Bahia Forests Forum – are no more than strategies to co-opt social and environmental leaderships.

United above all around the ‘Alert Against the Green Desert Network’, these organizations and leaderships continue to denounce social order impacts, such as the advance of single cultures and trees over indigenous, *quilombola* (descendants of enslaved Africans) and community territories. In addition to these, they also stress what they deem adverse consequences to the environment, such as reduced biodiversity and depletion of water bodies (Green Desert, 2011).

Below follow three paragraphs found in the booklet *Green Desert: The Impacts of Eucalyptus and Pinus Plantations in Brazil*, published in 2011 by the Repórter Brasil organization.

“One of the more controversial issues involving the activity regards environmental impacts created by eucalyptus and pinus plantations, in particular assessments that these exotic trees use large amounts of water and contribute to reduce the flow of rivers and streams. The business community defends the “planted forest” activity as environmentally correct and lists positive aspects, such as a high rate of carbon dioxide sequester and in particular restoration of areas degraded by pasture land. It also considers a myth accusation that eucalyptus needs large volumes of water and contributes in degrading water sources. On the other hand, a number of environmentalists and entities that defend the earth prefer to name plantations “green deserts” and sustain that monocultures cannot be considered “forests” owing to the little biodiversity within them.

Non-adequate plantation stewardship may contribute to erosion and loss of nutrients. Any large-scale single culture, whether vast pasture land, a soybean or a sugar-cane plantation contribute in eroding natural resources, such as soil, that are essential to preserve the integrity of water sources. It is not uncommon to find eucalyptus and pinus plantations in locations with a background of not heeding environmental legislation, in which damages have been building over decades of ill use of agricultural areas.

The dimensions of such plantations are also another very relevant factor. A study held by the University of São Paulo’s Escola Superior de Agricultura Luiz de Queiroz (ESALQ/USP) records that there are no significant impacts provided that these plantations cover not more than 20% of the area of a river micro-basin where they are located. The problem resides in the fact that eucalyptus plantations cover huge areas, and not rarely this limit is not heeded, which causes changes.”

In the following year the Brazilian Forests Dialogue published volume 4 of *Writings of the Dialogue*, with a special report on “Forestry and Biodiversity.” Below follow several excerpts from this publication:

“The first thing that needs to be cleared up is the notion that an area of planted forest is a “green desert” – as suggested in some journalistic articles. In summarizing the studies presented, we can say that eucalyptus forests show a reasonable level of biodiversity, although the wealth and abundance is normally less than is found in areas of natural vegetation. It is also important to note that the differences depend on the group that is being studied. More demanding groups will have more difficulty occupying such areas, while less demanding groups will find it easier. From this viewpoint, we can see that in a broader analysis, one should seek to understand the importance of the areas under silviculture within the overall landscape context. In other words, looking not at a comparison between native and planted forests, but at the size and arrangement of the neighboring forest fragments. Looking at the ecology of the landscape.

Among the academic papers and reports analyzed, one can see that the changes brought about by planted forests have an environmental impact. However, it is much less than has been portrayed in some journalistic and environmentalist texts, which have called these areas a “green desert”, given that, although not many native species appear to occupy the planted forests, they use these areas to move between the fragments of native forest. In this respect, management of the landscape is essential.

Through understanding of the concepts governing the landscape, we can work towards finding a balance between productivity and the conservation of biodiversity. To begin with, the more natural areas there are, the better the biodiversity will be preserved, as demonstrated for certain areas under silviculture using the ratio species area. One must also bear in mind that small areas may be unable to sustain native populations over the years, resulting in forests lacking in biodiversity.”

On the water issue, in 2010, in the first volume of the *Writings of the Dialogue*, Walter de Paula Lima, one of the greatest specialists in hydrology in the country, highlighted the following information, based on the article prepared by WHITEHEAD & BEADLE (2004):

“Within the eucalyptus myth, it is not hard to find allegations that it is a peculiar forest species in relation to water, capable of feats that have never been attributed to any other forest species. Analyzing the available results on physiological aspects, in terms of transpiration rate, stomal dynamics, leaf area, water use efficiency, interception losses and water balance, the authors are categorical in concluding that the eucalyptus is an absolutely normal forest species, which does not consume any more water per unit of produced biomass than any other forest species, and even demonstrates superior water use efficiency.”

In his final conclusions, this same author evidences the need to move away from myths and bank on scientific knowledge in order to find concrete solutions for the problems and real impacts in connection with tree plantations. And when mentioning the need to consider the landscape’s scale, it is made clear

that a solution for the water issue cannot be attributed solely to a productive area, but rather to all of society's activities which in one way or another cause an impact on the ability of ecosystems to provide services essential to human welfare.

“Understanding the hydrological effects of changes in land use and forest management practices is part of the quest for sustainable forest management. In this sense, the catchment area provides a fuller approach to the problem, emphasizing the need to analyze the distribution of incoming rainwater, both as “green water” flows, representing the losses to evapotranspiration, and the “blue water” flows, representing the concern over the perpetuation of catchment stream flows.

Applying this knowledge to the management of forest plantations represents a change in approach, from the conventional management of the stand to a more holistic ecosystem management, involving a strategic innovation that definitively incorporates water conservation within the management plan, thereby emphasizing the importance of maintaining the hydrological stability of the catchment areas, as well as the need to analyze the potential hydrological impacts at all scales of sustainability.

Society, in turn, must understand that the water crisis seems to be here to stay, not in the sense that water will run out some day, but because it may be about to become the cause of conflicts. This crisis is by no means simply the result of the expansion of forest plantations but is due to many alterations in the landscape caused by man. The solution depends not only on science, but on the involvement of the whole of society, which means that there must also be a cultural change, involving an evolution from a democracy based only on individual rights to a democracy embracing environmental responsibilities as well.”

“Dogmas, ideologies and pointless arguments are not part of the solution, but merely responsible for the false notion that forest plantations are necessarily harmful to water resources and for perpetuating the myth surrounding the eucalyptus. They can also lead to measures that often attack the symptoms, rather than the causes of water resource degradation”.

Walter de Paula Lima, *Writings of the Dialogue*, Vol. 1, 2010.

Shift in forestry: From ‘green desert’ to a benchmark on environmental legislation

As recorded in the preceding section, large-scale forestry as a business was introduced in Brazil during the military dictatorship. Assisted by generous fiscal and credit incentives in a political climate in which the environmental and social agenda was disregarded, and in many cases deemed to be ‘subversive’, the tree industry took hold over a trail of environmental degradation and disrespect for traditional and community rights.

As was very well pointed out by ADEODATO (2013), “*in the name of progress and of the ‘Brasil Grande’ concept, there were no restrictions against razing native forests, much less coexistence rules with the communities, which were relegated to the sidelines*”. One of the best examples of this pattern is the Aracruz pulp and paper mill (currently Fibria) in the state of Espírito Santo.

In a report to the Brazilian Forests Dialogue, Carlos Roxo, Fibria’s then director for Sustainability and Corporate Relations and former member of The Forests Dialogue steering committee, stated: “*‘The forestry industry was able to raise municipalities’ GDP but was unable to affect social indicators’*”. In his mind, in those times there was a lack of methodology and social science to tackle adequately these issues, in addition to corporate maturity and market pressure on these issues.

Changes started to take shape as of the second half of the 1990s. With the military dictatorship’s demise, a new Federal Constitution was made possible, which reserved an entire chapter to the environment and established a variety of safeguards and social rights, to a point whereby it became known as the “Citizen Constitution.” At this point a new legal framework began to take shape, including rules for environmental licensing that completely changed the *modus operandi* for installing mills and tree plantations – legislation on protected areas and buffer zones, and a Law on Environmental Crimes.

The clearest effect by this new scenario was the creation of departments specialized on environment and sustainability. Retaining new professionals began to require profiles with knowledge in interacting with social leaderships and expertise in the challenge of reconciling business, environmental and social demands. Existing staff members started to undergo specific training and guidance to deal with this new production and business environment.

This movement was not only seen in forest-based activities, but in practically every manufacturing segment. Nonetheless, following the FSC’s creation and international market pressure for adopting more robust social and environmental control instruments in the forest products industry, more so in the pulp and paper activity, this transformation was more evident, ample and structural.

Currently the Brazilian pulp and paper industry is considered an international benchmark in terms of sustainability and productive performance. With almost 100% of its production certified, companies in the business are known as examples in complying with the Forest Code and their willingness to contribute in the creation of qualified discussion venues and cross-institutional cooperation. The Brazilian Forests Dialogue and the Brazilian Coalition on Climate, Forests and Agriculture provide evidence of this commitment.

As practical examples of this change, we mention two cases in the region that we are about to visit during this TPL meeting. The first deals with the company Veracel and movements by rural workers struggling for land rights. It has to do with a project that transferred 16.5 thousand hectares of company areas to create rural settlements, and that provides resources and technical assistance for implementing sustainable production practices by the farming families that were settled. This action was started in 2012 and is a

partnership by the company with the National Colonization and Agrarian Reform Institute (INCRA), a federal agency in charge of settlements, with the Government of the state of Bahia and with six social movements involved in obtaining land rights. On the other hand, the social movements agreed to vacate other company areas that had been taken over previously, and not to occupy new areas.

The second iconic fact in this region was an agreement entered into by Fibria, the Federal Public Attorneys' Office and a number of indigenous communities in 2007. By means of a Conduct Settlement Agreement, the company acknowledged rights by Indians to their lands and returned 11.5 thousand hectares that it had occupied during its construction. This agreement put an end to years of court proceedings and included the return of highly productive eucalyptus plantations located practically beside the company's mill. A few years previously this proposal was deemed unacceptable by company executives.

In fact, these change proceedings have not been concluded yet. There are still unsolved conflicts and issues, in particular in the social field and regarding disputes over land. In the state of Espírito Santo there are currently two legal actions on *quilombola* territories, involving 15.7 thousand hectares and partly occupied by Fibria. In the surroundings of the Monte Pascoal and Descobrimento national parks, two lawsuits are outstanding on demarcation of indigenous lands likely to affect Suzano and Veracel areas, as well as areas of properties with outgrower contracts.

It should be admitted that numerous advances in technological development in planting and stewardship activities, improvements in genetics and in harvesting tree plantations gave rise to productivity gains, with positive social and environmental effects, such as a reduction of demand for natural resources and land. Nonetheless, we cannot fail to record that in an activity vulnerable to fluctuations typical of commodities, in crisis situations and in a need to reduce investments, the agenda and social and environmental commitments are the first in line for cutbacks.

“To help in making important decisions, there is an extremely useful tool at our disposal; scientific knowledge. Making choices based on science can lead to measures that involve less physical effort and expenditure, while yielding more accurate results”.

Valladares-Padua & Chiaravalloti 2012

The National Law for Native Vegetation Protection ('The Forest Code')

Brazil's new Forest Code (Law no. 12,651) has been in force since 2012. This Code introduced new instruments that, once effectively implemented, allowed for better monitoring of land use which will be crucial in combatting deforestation and in ensuring environmental compliance, as well as in attaining Brazil's goals with respect to the reduction of greenhouse gas emissions. According to MACHADO & ANDERSON (2016), “*without the effective participation of decision-makers and supply chain actors, it is unlikely that the new Forest Code will be fully and effectively implemented*”.

The Forest Code's review by the Brazilian Congress led to a keen matching of forces, stressing the antagonism between scientists and environmentalists on the one hand and the more outdated and reactionary segments of Brazilian agribusiness, on the other. For the larger part of congressmen forming the 'rural contingent' the environmental protection legal framework is seen as a hindrance to the development of the country's agricultural and livestock activities. To this day, almost six years following enactment of the new law, which in many points dissatisfied both sides of the dispute, there are doubts and uncertainties as to its actual effects on the country's landscape.

The role of the Brazilian Forests Dialogue (BFD) should be noted, to which belongs the agribusiness segment that has concurred most with environmental legislation in this process. Following two years of intense discussions, a consensus was reached on 17 points deemed essential to protect the country's native vegetation. This document was undersigned by dozens of institutions and companies, including a good number that are not part of the BFD. Several of these aspects were covered by the new law, although some were subject to changes likely to affect their efficacy, as in the issue of protecting and restoring obligations of Permanent Preservation Areas (APPs).

In the landscape planning agenda, in addition to obligations in connection with forest protection and recovery (legal reserves and APPs), this law contained an innovative tool, which if actually put in place will be the mainstay for integrating efforts in creating sustainable landscapes. This instrument is the Environmental Rural Registry (CAR) a national georeferenced base in which all rural properties must be registered, showing their production and protection areas.

As pointed out by WWF-Brazil, "*registration is the basis for environmental legalizing of farms. The CAR's goal is to provide an integrated database with information on each property and its environmental situation that allows municipalities, states, and the federal government to control, monitor and identify environmental deficits, conduct environmental and economic planning, and combat deforestation*" (MACHADO & ANDERSON 2016). A good example of how the CAR may be employed as a landscape planning base is in effect in the Alto Vale do Itajaí region, in the state of Santa Catarina Based on cooperation efforts between local governments and civil society organizations, in particular APREVAMI, an ample native vegetation protection and recovery program is being nurtured. Besides demonstrating the practical feasibility of complying with the Forestry Code by small farmers, which the congressional rural contingent sustained as 'impossible', this action will be essential to mitigate impacts arising from extreme climate events (the region is one of the country's most vulnerable) and serve as a basis for an adaptation strategy based on ecosystems.

In the state of Espírito Santo, in 2011 the government started to implement the Reflorestar program through the State Secretary of the Environment. Its target is to recover 80 thousand hectares by the end of 2018, with priority for the environmental adequacy of rural properties and compliance with Forest Code conditions. The program's targets are contained in international (Challenge 20x20 and Bonn Challenge) and domestic (Atlantic Forest Restoration Pact and National Native Vegetation Recovery Plan) commitments.

Public and private sector actors should consider Forest Code compliance a first step towards responsible agricultural production, cattle ranching and forestry. The CAR will help landowners and holders to protect natural resources and improve planning of their production.

According to INCRA data, there are in Brazil 5.5 million rural properties. As we can visualize in the above figure, until December of last year 4.7 million properties were registered in the CAR, or 85% of the estimated total. In terms of registered area, however, data inserted in the CAR exceed by 9% the area deemed subject to registration by the Brazilian Forest Service (SFB). This discrepancy is due to the fact that the area subject to registration was estimated based on data from the 2006 Agricultural and Livestock Census and information from the SFB itself. The area inserted in the CAR is calculated based on information provided by the farmers themselves.

The CAR should contain georeferenced information such as location of the property, its borders as well as identification of Areas of Permanent Protection (APPs), Legal Reserves and Areas of Restricted Use. An APP is a protected area, covered by native vegetation or not, with the environmental function of preserving water resources, landscapes, geological stability and biodiversity, facilitate genetic flows of fauna and flora, protect the soil, and ensure human wellbeing. Examples of APPs are riparian areas, springs, hilltops, mountain slopes and mangroves. Legal Reserves are portions of land that must be set aside in a native habitat, depending on property size and location. Legal Reserves ensure sustainable economic use of natural resources, support conservation and provision of ecological processes and promote conservation of native fauna and flora. The size of a Legal Reserve depends on where the property is located.

Machado & Anderson, WWF-BRAZIL, 2016



Source: Brazilian Forest Service <http://www.florestal.gov.br/numeros-do-car>

Hold on: How not to fall into the trap of current environmental setbacks

Currently, there are many initiatives promoted by governments and legislative chambers in order to change many environmental laws and regulations. Behind a speech of operational flexibilization and reduction of bureaucracies, there are undeclared intentions to reduce socio-environmental safeguards and the legal framework for biodiversity protection. These initiatives put at risk many of the advances achieved over the last 30 years and go against Brazil's international commitments, especially the Paris Agreement.

The regression in environmental legislation has an enormous potential to affect the agenda of sustainable landscapes. In the specific case of forestry and tree plantations, environmental licensing rules, biome protection laws (especially Atlantic Forest) and the national protected area system are some of the critical points that will serve to test the commitment of companies in the sector.

As was done during discussions on the Forest Code, what is expected of the pulp and paper companies that participate in the Brazilian Forests Dialogue is a clear and well-founded position. It is imperative that the importance of environmental protection and social safeguards be strengthened, especially those that ensure sustainability of the sector, compliance with international commitments and certification standards.

Care must be taken not to fall into the trap of easy solutions. This care becomes even more relevant considering the current Brazilian political moment in which institutions are fragile and both government and parliamentarians lack the legitimacy to conduct such discussions.

Positioning on environmental licensing rules for agricultural activities may be this decisive test. The Lower House has been discussing the text for approval of the General Licensing Law since 2004. The Brazilian Forests Dialogue has been producing a document since 2016 to publicly disclose its positioning on specific angles that it deems essential in improving current legislation. Unfortunately, there has still been no agreement on this document's final wording, yet several aspects have already been defined.

- ➔ The Brazilian Forests Dialogue believes establishing the environmental licensing legal milestone should be subject to widespread discussion, with intense and effective participation by organized civil society, the academic community and the private sector, there being little space for high-lighting false dilemmas between production and preservation, between agriculture and biodiversity, between nature and society.
- ➔ The current licensing method is hardly efficient and effective in its key purpose, owing to the complexity and the number of different federal, state and municipal legislative instruments that regulate, often in a contrasting manner, activities in the use of land, biodiversity, the environment and related material in Brazil.
- ➔ The Brazilian Forests Dialogue does not intend to exempt licensing in unpopulated areas, but claims and believes that eliminating red tape, simplifying and qualifying the process is the best and most efficient manner to reconcile private investments with effective protection of biodiversity,

ecosystem services and essential social and environmental rights, in order to ensure prosperity and the welfare of our society.

- ➔ The Brazilian Forests Dialogue understands that the forestry activity conducted in duly legalized consolidated use areas with no environmental liabilities may waive licenses or approvals in accordance with the Law on Native Vegetation Protection (the ‘Forest Code’), which also applies to new plantations not resulting in conversion of natural areas.

THE “X-FACTOR”: LET’S TALK ABOUT ‘MONODESTINATION’ OF TREE PLANTATIONS AT LANDSCAPE LEVEL

In discussing the effect of tree plantations on the landscape, it is not enough to discuss management issues of tree plantations as a monoculture. The great concentration of areas destined to a specific product in a productive landscape represents a risk for any region, even more if this product is a commodity. In this context, the debate about how to reduce social and economic risks are necessary.

In as much as stewardship of tree plantations has been enhanced and that environmental impacts are minimized, attention will be required for other aspects of equal or greater impacts than the vast extensions of tree monoculture in the landscape. One of the most relevant advances in reducing environmental impacts by vast extensions of tree plantations lies in the adoption of forestry mosaics. In this method, exotic species monoculture sections are interspersed in the landscape scale with the remaining native ecosystem or areas under restoration. This system allows a local biodiversity genetic flow and contributes to maintain ecosystem services provided by natural environments. Similarly, it potentializes ecosystem services created by the tree plantations themselves, especially shelter, habitat and corridor.

Plantations that follow established principles of New Generation Plantations avoid wall-to-wall planting for timber or pulp production and are managed as part of a larger forest management unit. This makes it possible to incorporate ecosystem functions, natural habitats and socio-cultural components. Even intensively managed plantations within these areas tend to provide greater environmental and social benefits than agricultural and pasture land – including carbon sequestration, air and water purification, erosion control, habitat for species and recreational opportunities – these benefits are amplified when plantations are managed as part of a larger forest landscape and in balance with other ecosystems and land uses.

The Central Atlantic Forest Corridor, in particular the overland portion located between the Doce river in Espírito Santo and the Jequitinhonha in Bahia, is considered one of the world’s best regions for forest products. In addition to being traditionally covered by an exuberant tropical forest, the combination of climate, soil and relief favors implementing forest-based productive activities in areas that were converted into other uses.

Under no circumstances will it seem reasonable to suppose that this innate potential for forest plantations should be employed for pulp production only. On the contrary, in the case of a commodity with large

international market price variations, it seems evident that from a strategic viewpoint and bearing in mind the region's sustainable development, this would be a high-risk proposal.

In accordance with data on independent forest coverage and soil use monitoring by Southern Bahia Forests Forum, we may estimate that there are in this region at least 700 thousand hectares of low-productivity extensive pasture land, with not over one head per hectare. A regional development program intended to foster diversified forest production could set an eye on these pasture lands, which provide a low opportunity cost and high environmental costs - in particular a loss of soil fertility due to erosion, silting of streams, rivers and reservoirs, and damages to springs.

It is known that Brazil, though the only country in the world that adopted the name of a tree, is still not a country known for its forest products. However, if we consider rural producers with outgrower agreements with pulp and paper companies located in the country, we have a contingent of roughly three thousand persons who at least know what it is to plant trees. These producers and part of the pasture land that they own, most of which degraded, should be priority targets of an action to encourage forest product diversification in the region.

Nonetheless, the larger challenge is not production in itself, despite the huge knowledge gap on forestry and tropical species. After all, if we refer to diversifying intentions or use of the harvested timber, we do not need to necessarily refer to diversifying plantations. This is also important but may be obtained by growing native species, as in the case of Symbiosis Investimentos from Porto Seguro, which now owns 800 hectares of native tree plantations managed to produce hardwoods, as well as with the use of other eucalyptus species more adequate for purposes other than producing pulp.

The greatest challenge, in accordance with forest producers that have had experiences with timber marketing for other purposes, is the absence of reliable purchasers and logistics for harvesting and pre-processing. Although there is an active furniture industry in Linhares in the state of Espírito Santo and regional demand for timber in civil construction, which tends to grow as the country recovers its economic stability, the sale of timber to these purchasers is still risky.

Outgrower agreements allow producers to sell as much as 3% of timber to other purchasers. Hence, a program intended to diversify the use of regional forest products should bear in mind this volume as a basis to explore structuring new supply chains. It should be considered that, at least in the case of Veracel's outgrowers, this timber bears the FSC and Cerflor stamp, i.e. it may be employed in special market niches that value and pay for this differential.

ASPEX, the association of Veracel's outgrowers, is interested in exploring new opportunities for timber in addition to pulp, but so far this has been an untapped market for outgrowers in the region due to many barriers and risks. Local sawmills provide none of the upfront payments and other forms of management and logistical support that outgrowers receive from Veracel, which means that additional support is

necessary. The risks also mean that – while promising high returns – timber will not compete with pulp as the core business for the region’s outgrowers.

Restoration also provides an innovative opportunity for addressing the economic vulnerability of outgrowers in the current forestry system. Over the past decade, many outgrowers have been vulnerable to shifts in demand and pricing for pulp, which threaten to put many of them out of business and disrupt the overall supply chain. Diversifying forestry activities in areas that are off-limits for eucalyptus production will play a critical role in assisting outgrowers to access new market niches, giving them greater overall financial stability, while maintaining production of eucalyptus pulp as their core business. Diversification will also help strengthen the social criteria for FSC certification.

With good management, plantations can also benefit the people living around them. At the very least, they can provide jobs and income and help fund local infrastructure, often in remote areas where economic opportunities are few. Plantations that follow FSC principles and criteria help to clarify land rights, uphold rights of indigenous peoples and maintain or enhance the social and economic well-being of forest workers and local communities. When companies that manage plantations truly engage local communities they can be channels for inclusive green development: numerous examples exist of companies helping to create and support local enterprises and increase local food production.

MULTI-STAKEHOLDER’S INITIATIVES AS KEY FACTORS FOR TPL APPROACH

The challenge of implementing healthy and sustainable landscapes, where the production of food and raw materials is reconciled with the protection of nature and ecosystem services, as well as to respect and enforce the rights of native peoples and traditional communities, cannot do without mechanisms and suitable venues for dialogue, governance and collaboration.

Active and proactive engagement of diverse segments of society through forums where there are effective opportunities for participation in social and community leaderships, is a requirement for the landscape approach. In this way, this section will describe some of the current MSIs in Brazil and how they can serve as suitable tools for this purpose.

The Brazilian Forests Dialogue

The Brazilian Forests Dialogue (BFD) is an independent initiative that facilitates interaction between representatives from forest-based companies and socio-environmental organizations. Inspired by The Forests Dialogue, it was launched in 2005 and aims to develop a common vision and agenda between these sectors, to promote effective actions associated to forests production. The common vision includes widening the scale of efforts for ecosystem conservation and restoration, generating benefits for Dialogue participants and society in general. The BFD seeks to:

- ➔ Maintain and consolidate a space for proactive dialogue between the non-profit sector and the forest-based companies;

- ➔ Generate tangible large-scale field results for conservation of natural resources;
- ➔ Contribute to the improvement and quality of human life through better relations between society and natural resources;
- ➔ Propose and influence adoption of public policies that promote protection and sustainability of natural resources.

Currently, there are approximately 360 participants in the Brazilian Forests Dialogue and its governance includes a National Forum, a Coordination Board and an Executive Secretariat. BFD also includes seven regional forums, of which the Southern Bahia Forests Forum is one of those.

Brazilian Coalition on Climate, Forests and Agriculture

Launched in December 2014, the Brazilian Coalition on Climate, Forests and Agriculture is an initiative formed by business associations, companies, civil society, organizations and individuals interested in contributing to the advancement and cooperation in Brazil's agenda. The Brazilian Forest Dialogue was one of the responsible parties for initial institutional articulations to put together such diverse stakeholders.

The agendas that are to be advanced are those of protection, conservation and sustainable use of forests, sustainable agriculture, and the agenda for mitigation and adaptation to climate change in Brazil and worldwide.

The coalition has a Board formed by the following organizations, whose function is to help with processes: CEBDS; The Brazilian Forests Dialogue; Instituto Ethos; Climate Observatory. Membership of the coalition is open to all, as the intention by this coalition is broad participation in Brazilian society with contributions from all. Until January 2018, there were 131 members among private companies and civil society organizations.

In addition to Fibria, Suzano and Veracel, the following companies in the forestry activity are also members of the Coalition: Amata; Cenibra; Eldorado Brasil Florestal; Eucatex; Grupo Plantar; Klabin; Melhoramentos Florestal; Precious Woods Holding; as well as IBÁ (Brazilian Tree Industries), an organization that embraces every forest-based company active in the country, and FSC Brazil.

In order to get together such different players, many of whom with little or no experience in participating in actions with multiple players and interests, the Coalition is still undergoing a stage of intense discussions and few agreements. Nonetheless, it produced a document that influenced commitments assumed by Brazil at the COP 21 (Climate Agreement), and only in 2017 published a series of opinions on a number of topics, by means of its work groups.

There is no doubt that during discussions to implement sustainable landscapes, similar actions of a regional scale are necessary. Planning and building large-scale sustainable landscapes will only be possible following dialogue and interaction among the different agents that interact in the landscape.

Atlantic Forest Restoration Pact

Launched in 2009, the Atlantic Forest Restoration Pact is an ambitious multi-stakeholder's initiative formed by civil society organizations, private companies, governments, and research institutions. With more than 260 members, the Pact has one of the most ambitious ecological restoration targets in the world: To catalyze restoration of 15 million hectares by 2050. Its strategy includes promoting biodiversity conservation and creation of jobs and incomes for local communities through the restoration supply chain. Target priority areas are key to provide ecosystem services for millions of Brazilian as well as Forest Code compliance. The Pact is part of the Bonn Challenge, committed to restore more than 1 million hectares by 2020.

The three companies active in this territory - Fibria, Suzano and Veracel - are founders of the Pact and have had representatives in its Board of Coordination. Furthermore, they have supported field research and monitoring of productive forest restoration experiments. They develop direct restoration actions on their lands, in order to comply with the Forest Code as well as on additional areas, in compliance with technical implementation and maintenance guidelines and the monitoring protocol provided by the Pact.

Amazon Restoration Alliance

It is a multi-stakeholder's initiative to enhance effectiveness and amplify the scale of forest restoration in the Brazilian Amazon biome. Their mission is to encourage integration between different actions and cooperation the multiple agents committed and interested in the Amazon Region's forest restoration. The agreed-on goal by the members is to enable technical, political, business and social conditions that give rise to field actions, directly and indirectly contributing to restore at least 5 million hectares by 2030.

Although this action is not directly related to the territory visited in the "Tree Plantation in the Landscape" meeting, it is worthwhile stressing two points. First, the fact that Suzano Pulp and Paper, one of the three major company active in the region, is also the owner of a pulp mill and of tree plantations in the state of Maranhão, in the Amazon Region's southeast. Second, the fact that the Amazon Region's Restoration Alliance is about to publish a *position paper*, describing the major challenges and best opportunities for the restoration agenda in that biome. There is no doubt that a part of these concepts, criteria and guidelines for priority in restoration areas in the landscape scale will be useful for enhancing this kind of analysis in this territory.

TEN YEARS LATER: HOW ARE THE ISSUES IDENTIFIED AS CRITICAL AT THE 2008 MEETING?

In 2008 The Forest Dialogue held a meeting in Espírito Santo and Bahia on Intensively Managed Planted Forests (IMPF), which identified priority environmental and social measures.

Three years before, in 2005, the first dialogue forum was created in this same region by environmentalists and the country's pulp and paper companies. Having begun as an independent action by the Brazilian

Forests Dialogue, also with its first meeting in 2005, Southern Bahia Forests Forum served as inspiration in the creation of local forums in regions with a greater concentration of forest activities.

In general, the issues brought up by the TFD meeting in 2008 do not differ greatly from the priorities facing the Forum in the course of its first decade. This being the case, the 10-year balance published by the forum may be taken as a sample of what progressed and of what still awaits to move forward in the tree plantation productive chain.

The table below reflects the key issues brought up by dialogue participants on Intensively Managed Planted Forests in 2008:

ENVIRONMENTAL MEASURES	SOCIAL MEASURES
Developing environmental zoning	Social footprint
Promoting native species	Distribution of benefits
Restoring degraded areas	Fairer tax reform
Promoting conservation incentives	Mitigation of negative social outcomes
Managing impacts by the IMPFs	Economic alternatives for communities
Strengthening local environmental agencies	

The strategy that the Forum adopted to formalize common commitments pieced together by their participants were the ‘agreements’. During its first ten years of activities between 2005 and 2015, ten agreements were prepared. Though there was never a commitment to approve one agreement per year, this average has been achieved.

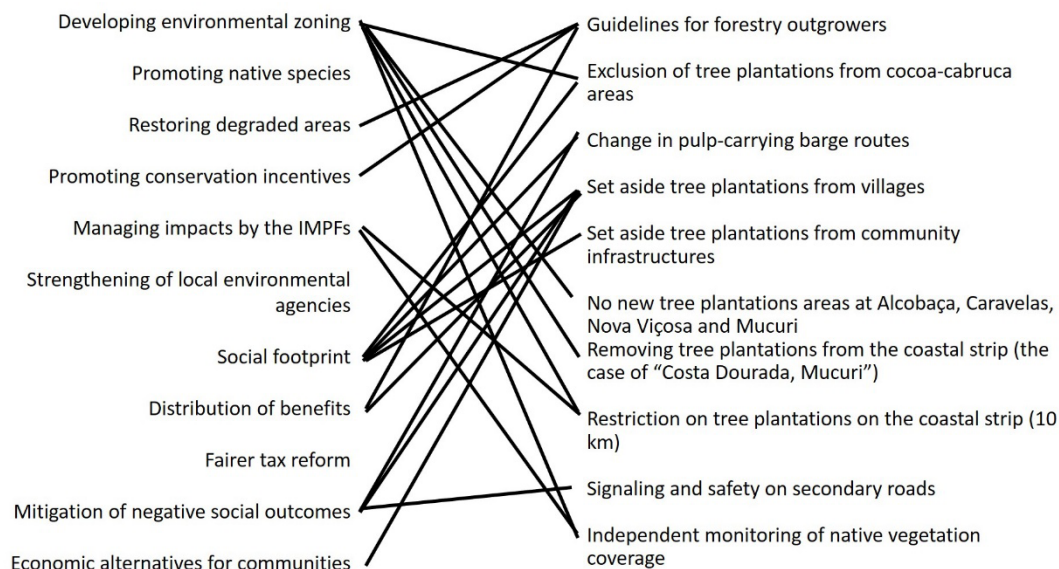
This is probably due to demands by civil society on the one hand, which were restrained for a long time and with no qualified venues for submission, and on the other hand due to changes in corporate positions, more open for discussions and a participative quest for solutions.

It is important to record that these agreements are not legally binding. This means that the companies are not compelled to comply with them. Although some of the agreements repeat long established legal guidelines, the fact that they expand restrictions or include additional items in the legal requirements reinforce their non-mandatory nature.

Perhaps this is the chief reason why the pace and efficiency of practical implementation of the agreements arrived at to date are subject to a number of criticisms by Southern Bahia Forests Forum participants. To date, only one of the ten mentioned agreements was fully implemented. Most were partially implemented and continue are moving slowly. Some are standing still, waiting for more intense claims from civil society or are under review.

The diagram that follows reflects the relation of each of the agreements pieced together by Southern Bahia Forests Forum with the issues pointed out as priorities by participants of the 2008 IMPF meeting. Please

note that all ten agreements are related to at least two issues defined as priority. On the other hand, three issues listed in the IMPF were not dealt with by any Forum agreement.



An examination of the above figure reflects three issues that are shown as priorities by the IMPF meeting and were not addressed by the Forum - promoting native species, strengthening local environmental agencies and a fairer tax reform. These are topics that go beyond the authority of companies and of civil society, the Forum participants. This is probably why they were not specifically dealt with in any agreement.

Nonetheless, there is a potential in two of these for company to contribute as catalyzers or facilitators. In the case of promoting diversification of forestry by encouraging tropical species cultures, including those that produce hardwoods, pulp and paper companies may contribute more based on sharing expertise accrued by its research and development personnel. Technologies originally developed for homogeneous plantations could be successfully applied in tropical forestry actions.

Fibria and Suzano own experimental areas in a partnership with the Atlantic Forest Restoration Pact, where different models of productive restoration are being tested, with mixed eucalyptus and native species cultures. The idea is to create and disseminate knowledge on different restoration models for application by rural landowners with liabilities in vegetation coverage in their Legal Reserve areas.

The subject “strengthening local environmental agencies” deserved attention at the Southern Bahia Forests Forum at different moments, yet with no ensuing specific agreements. The focus are municipal environmental and agriculture secretaries that lack qualified personnel and adequate management instruments to exercise their planning, management, command and use of soil control attributions. Although support actions have occurred for training of municipal technicians with some support in equipment, there is no record of a more robust strategy in this regard.

The exception would be the action by Veracel, which sponsored the preparation of Atlantic Forest preservation and recovery municipal plans for nine of the ten municipalities in its coverage area. These plans were inspired by that for Porto Seguro, prepared with the support of Conservation International and of Germany's Ministry of the Environment, and as an innovation brought the concept of adapting to climate changes based on ecosystems. This allowed inserting a "climatic lens" in the planning of actions to protect and restore native forests in the territory's scale.

On mapping critical areas for maintenance of essential ecosystem services to mitigate and adapt to the effects of climate change, these ten plans together form a basic tool for the formation of sustainable landscapes. The current challenge is mobilizing the financial, technological and human resources needed to materialize these plans. In 2017 a workshop was held to devise the integrated implementation of these plans. Please note that the Southern Bahia Forests Forum was reported as one of the governance instances for follow-up of these actions.

In connection with the ten agreements arrived at among by forum participants, it may be said that five of them have shown a high degree of compliance and implementation. Below follow results and challenges with regard to implementing these agreements.

Exclusion of tree plantations from cocoa-cabruca areas

Exclusion of forestry from areas planted with cocoa-*cabruca* vegetation - which in practice means not to plant, not to encourage planting eucalyptus and not to purchase timber from areas covered by *cabruca* vegetation (a traditional agroforestry system whereby cocoa is cropped under the canopy of Atlantic Forest remnants) until 1993 - is one of these. Since February 2009 when this agreement was approved, there are no records of reports on eucalyptus plantations for pulp in replacement of *cabruca* vegetation areas.

Monitoring the vegetation coverage

The vegetation coverage's participative and independent monitoring in the region is another of the agreements implemented. With the use of satellite images for the last 20 years it was possible to detect changes in the use of soil over this period. In addition to creating and providing an updated database on the use of soil in the entire region - an essential tool for sustainable landscape planning - this monitoring has served, among other purposes, to confirm compliance with the agreement on *cabruca* vegetation.

This monitoring initially covered only 10 municipalities in which Veracel is active, on its own land as well as that of outgrowers. Subsequently as a result of the agreement entered into at the Southern Bahia Forests Forum, it was extended to all of the state of Bahia's far south, including areas covered by Fibria and Suzano, totaling 2.3 million hectares. Specifically, in the case of Veracel's coverage area, a 12-thousand hectares increase was recorded between 2007 and 2013 in the native forest coverage, most of which resulting from natural regeneration. Of this sum, almost 80% are located in company properties or in farms with outgrower contracts. Surely the fact that the company employs only plateaus for tree planting,

leaving low-lying fields, mostly used previously as pasture land and protected from cattle and from fire, gave rise to this regeneration rate.

This database and the results of analyses undertaken are available online in the IBIO spatial intelligence platform (www.igeo.org.br/map). The data and images may be accessed and freely employed by government institutions, researchers and civil society organizations, whether for checking their own monitoring or for planning Atlantic Forest protection and restoration actions. These data were essential in preparing Atlantic Forest municipal plans, and in 2017 served to counter the information that the region held the national deforestation record in the biome.

This episode deserves a separate paragraph. Every two years Fundação SOS Mata Atlântica, one of the country's outstanding civil society institutions, discloses the Atlas of Atlantic Forest Remnants in a partnership with the National Space Research Institute (INPE). When publishing the outcome for the 2015-2016 period, the south of Bahia, more specifically the municipalities of Belmonte and Porto Seguro were pointed out as those that had lost most forest coverage in the entire biome. Statements to the press expressed a direct correlation between this record loss of native forest coverage and pressure to expand eucalyptus plantations for pulp production.

The news had the effect of a 'bomb' among Forests Forum participants, as monitoring data performed, of a much more accurate scale than that adopted by SOS Mata Atlântica, had not detected this deforestation. With the deforestation borders in hand provided by SOS, professionals from the Forum's participating institutions and companies took to the field and found that the areas labeled as 'deforested' had lost their vegetation due to fires.

Please note that the 2015-2016 period recorded the longest and most intense drought in the region, the chief environmental impact being spreading of fires that affected thousands of hectares of native ecosystems. In most of cases there were no signs that the burned areas were being prepared for conversion in use, or any relation with implementing new eucalyptus plantations. Much to the contrary: A good portion had already shown signs of natural regeneration and for all legal effects will continue to be considered as Atlantic Forest, immune to suppression and legally restricted from conversion into alternative uses.

Change in pulp-carrying barge routes

The agreement resulted in changing routes of barges that carry pulp from the Veracel sea terminal in Belmonte (Bahia), to Portocel in Aracruz (Espírito Santo), from where it is exported, may be deemed as concluded. The use of barges to replace highway transportation is in itself a huge advance in environmental terms, with an expressive decline in greenhouse gas emissions per tonne of timber carried. This also represents increased safety on highways, in particular the north-south Highway BR-101, which is not duplicated on this stretch. Each barge replaced 384 tractor-trailers on the road.

However, barge traffic represented a risk for subsistence fishermen, especially those from Corumbau Marine Extractive Reserve, and to humpback whales that migrate from the south to the Abrolhos region

during the reproduction season. The Southern Bahia Forests Forum concerned itself for over one year with this subject as required by the fishing Corumbau community, and the outcome was an ample agreement to lengthen the route, at first from eight to 10 and then to 20 nautical miles, to avoid the protected area. In addition to this longer route, Veracel put in place a monitoring system for humpback whales along the route, and is assisting in installing a communications system between fishermen's colonies and associations in the territory.

Signaling and safety on secondary roads

Signaling the roads that connect the BR-101 to coastal communities and tourist villages was another social requirement appropriately addressed by the Forum. The drastic change in the landscape arising from eucalyptus plantations, worsened by their inconsistency - the landscape varies in accordance with tree planting-development-harvesting cycles - has made access by inhabitants and mainly tourists uncertain and unsafe. This factor had already started to impact tourist activities in these venues, as the region is not well served by cell telephone service coverage, which could be an alternative for guiding car drivers.

The agreement concluded in 2013 is being successfully implemented since then and includes road signs for guidance, retreat by plantations from the roadside and widening of main roads. A measure not included in the agreement, but possibly adopted, is planning harvesting activities on these roads for periods that do not coincide with greater tourist flows. This action will reduce risks arising from increased activities by machinery and heavy vehicles and a larger number of private cars.

Restriction on planting on the coastal strip

The last agreement actually implemented was the one extended to Fibria and Suzano in 2013, a restriction that had been applicable to Veracel since 1998, as a condition for its environmental licensing. Under this agreement all three companies were bound not to plant, not foster and not purchase wood originating from areas less than 10 km from the coastal strip in the municipalities of Porto Seguro, Santa Cruz Cabrália and Belmonte. Though there has been at least one report of non-compliance with this agreement, it may be said that its implementation to date has been satisfactory.

A sample of how difficult and challenging it can be to make an agreement come true, is the case of the retreat of existing eucalyptus plantations from less than 300 meters from the high-tide line or from the edges of cliffs. Besides being one of the most difficult agreements to conclude - it took over three years of discussions - to date, six years following its publication, very little was achieved in the field and currently there is a claim for reviewing by Fibria and Suzano, both of which affected by the measure.

The issues that prevented this agreement's success may provide clues to the challenges in implementing sustainable landscapes, the first plots that retreated, i.e. owned by one of the companies had their timber harvested and were not replanted, were overrun in order to build homes and even small private businesses. The original proposal was to restore critical areas for corridors and cliff protection, and occupation by social,

educational and community projects on plots with this specific characteristic. Currently, there is a Forum's task-force analyzing the circumstances and redefining the retreat strategy and occupation of such areas.

Guidelines for forestry outgrowers

This was the first agreement devised by the Southern Bahia Forests Forum and served as a decisive test, not only as a discussion venue, but also as an instance to arrive at and agree on solutions to the chief social and environmental problems resulting from tree planting in the region. The preparation process took almost two years of intense discussions among participants, and was concluded only in late 2006.

This agreement arose over a period in which companies in the industry were starting to change their posture with regard to outgrowers. From a previous attitude similar to Pilate - "*responsibility for inspecting compliance with environmental laws is the government's, not ours*", I once heard from a director at that time of one of the companies - to active and pro-active behavior, requiring and encouraging compliance with legislation.

The best example is undoubtedly Veracel, which currently has 100% of its more than 100 outgrowers with dual certification (FSC and Cerflor). During its certification process launched in 2011, Veracel worked closely with ASPEX, the association of outgrower farmers supplying pulp for its mill, and 2Trees, a local consulting firm that has provided detailed operational, technical and administrative support services to help outgrower farmers comply with the certification requirements.

The main difficulties for Veracel's outgrowers in fulfilling the FSC requirements is related to the documentation of their lands, controls on internal production processes, compliance with Brazil's Forest Code, compliance with FSC's social criteria and the lack of business culture among the outgrowers for external audit process. It must be emphasized that most of the landowners historically ran their farms informally without any medium- and long-term planning tools and without effective controls over production systems. Thus, it was necessary to offer them intensive and ongoing assistance, not only for specific areas of production that needed to be transformed, but also to support the step-by-step process for achieving the transformation.

The certification process has delivered numerous benefits for Veracel's outgrowers. Primary benefits include the transfer of technical expertise and technology, local employment opportunities (80 direct jobs and more than 600 indirect jobs), and training programs for laborers employed on the tree farms. The certification process has also catalyzed numerous social investments and programs, including an environmental education and outreach program that has covered 2,000 local youth; development of local waste management systems (trash collection and recycling); infrastructure improvements including new roads, installation of septic tanks and potable drinking water systems and physical repairs/maintenance of farm facilities and houses.

Because of these tangible benefits, ASPEX has decided to make certification a requirement for all new members in the association. Now, nearly five years after the first group obtained certification, Veracel, ASPEX and 2Trees still maintain a close working relationship to support the outgrowers within the network.

Fibria and Suzano still face significant challenges in this arena. In the Abrólhos region, none of Fibria's 1,700 outgrowers and only 153 of Suzano's 800 outgrowers are certified, for a total potential target population of 2,347 uncertified outgrowers. These uncertified outgrowers manage a total potential target area of 92,000 hectares of eucalyptus production. This provides a wide margin to increase certification among outgrowers and thus improve the sustainability of the productive chain in one of Brazil's largest pulp and paper producing regions.

Though outgrower contracts have a clause that provide for creating mechanisms that encourage forestry certification for outgrowers, certification in itself is not an obligation. Yet the requirement for compliance with environmental legislation by outgrowers, in particular the Forest Code - with protection or restoration of Legal Reserves and Permanent Preservation Areas - was the minimum existing expectation when the agreement was prepared.

Although officially there is no direct correlation between the low compliance level with this agreement by Fibria and Suzano and the Arboretum Program, it is natural to assume that this program arose from the hesitation by these companies in putting in place the agreement entered into within the Forum. The fact is that in December 2011, i.e. exactly five years after entering into the agreement, the State of Bahia Public Attorneys' Office, through the Teixeira de Freitas Regional Environmental Public Prosecutor entered into a Conduct Settlement Agreement (TAC) with Fibria and Suzano.

From then on, this program has been encouraging actions that make feasible forest protection and restoration in the region's critical areas, with a special focus on the environmental adequacy of properties included in the companies' outgrower programs. As a member of the Atlantic Forest Restoration Pact, Arboretum has among its goals the disclosure of expertise on the production of native species seeds and seedlings, broadcasting methods and technologies to restore areas that are adequate to the region, and creating income for rural communities, in conjunction with activities in the restoration productive chain.

Achievements related to New Generation Plantations

Ten years ago, WWF launched the New Generation Plantations (NGP) platform, with the participation of a number of companies and government forest departments that manage plantations. The idea was to identify and promote better practices for plantation design and management, learning and sharing experiences from around the world. Although they approach the issue from different perspectives and contexts, participants share a belief that as tree plantations grow over the coming decades they can – and must – bring real benefits to people and nature.

NGP participants manage 11 million hectares, of which 45% dedicated to plantations. The rest is made up of conserved and restored forests and other natural ecosystems, along with grazing land, small-scale farming and infrastructure.

The last decade has brought considerable progress as [NGP study tours](#) have witnessed first-hand, with examples of conflicts with indigenous communities, with conservationists, with cattle ranchers, that have

been resolved into opportunities for cooperation. The [NGP eBook](#) (NGP 2017) gives an overview of progress made over the last 10 years under NGP Participants experiences.

The Rainforest restoration in Brazil's Atlantic forest is one of these cases, in which NGP participants Fibria, Suzano and Veracel all have plantations within the Atlantic forest biome, managing more than 2 million hectares of land between them. Around half of this area is planted with eucalyptus, almost all of it on former grazing land that had become heavily degraded. The rest is set aside for conservation. And it is here that the Atlantic forest is making a comeback.

Of course, there is still plenty of room for improvement. It is essential that companies, NGOs, governments, researchers and civil society continue to discuss, share, learn, plan and work together to enhance the contribution plantations make to the landscape, society and the economy. According to Luis Neves, from New Generation Plantation, *“the ‘Tree Plantations in the Landscape Dialogue’ is an opportunity to work toward the next generation of plantations to meet the sustainability challenges of tomorrow”*.

SUMMARY POINTS

The TPL Brazil dialogue will provide a venue to address, within a specific Brazilian context, the five key priority topics identified during the TPL Initiative Scoping Dialogue. Below, these five key priority topics and some questions proposed on that:

1. Plantation forests in the context of the global sustainable development agenda

- How could tree plantations contribute to the implementation of international targets related to biodiversity (Aichi Targets) and climate change (Paris Agreement)?
- Considering national targets for restoration and reforestation, how should tree plantations be accounted for? Can monoculture tree plantations and the restoration of native ecosystems be equated and counted together to achieve the goals assumed by Brazil?
- What are the main challenges for the inclusion of tree plantations in the global poverty reduction agenda? How can these challenges be addressed in Brazil, in general, and in this region?

2. The design and implantation of planted forests and forests restoration initiatives under a landscape approach

- Considering that 11 municipalities in the region have plans for the conservation and recovery of the Atlantic Forest - 10 in Bahia and one in Espírito Santo, on the border with Bahia - how could companies and their partners contribute to implementing the actions envisaged in these plans?
- How to expand the scale of productive restoration (planting of native species matching ecological and economic purposes) in the territory?
- How to strengthen the relationship between the Brazilian Forests Dialogue/Southern Bahia

Forests Forum and the Atlantic Forest Restoration Pact, in order to increase the scale and the efficiency of the restoration initiatives and projects in the region?

3. Approaches to enable good governance and inclusive development

- A workshop on the Southern Bahia Forests Forum, held at the end of last year, pointed out a set of strengths and weaknesses about the effectiveness of this governance body. How to address them adequately, aiming at strengthening and renewing the role of the Forum?
- Considering that there are many instances for territorial governance in the region - Forests Forum, river basin committees, intermunicipal consortia, network of protected area managers, Mosaic Council of Protected Areas, etc. - how to generate synergy and cooperation among them, to amplify the capacity of planning and action in the scale of the landscape?
- How to attract other agents that interfere in the regional landscape, especially those related to productive activities with low degree of organization and representation, such as cattle raising and sugar cane producers?

4. Identifying key externalities, from the perspective of different stakeholders, associated with the development and management of plantation forests

- What are the current main negative externalities from tree plantations in this region? How should they be considered from the perspective of sustainable landscapes?
- What are the current main positive externalities from tree plantations in this region? How can they be strengthened from the perspective of sustainable landscapes?

5. The diversification of the forms and species composition of tree plantation, the sustainability of plantation forestry systems, efforts to combat climate change and to amplify conservation, access to and use of new technologies

- What would be the step-by-step for the diversification of the forest-based production chain in the region?
- How to reinforce the role of native forests, tree plantations, and ecological and productive forest restoration in the existing municipal plans for conservation and restoration of the Atlantic Forest - elaborated applying the concept of ecosystem-based adaptation?
- What are the main requests for innovation, both in terms of forestry and social technologies, to enable the implementation of sustainable landscapes in this region?

6. Plantation forests in the context of the global sustainable development agenda

- How could tree plantations contribute to the implementation of international targets related to biodiversity (Aichi Targets) and climate change (Paris Agreement)?
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accounted for? Can monoculture tree plantations and the restoration of native ecosystems be equated and counted together to achieve the goals assumed by Brazil?

- What are the main challenges for the inclusion of tree plantations in the global poverty reduction agenda? How can these challenges be addressed in Brazil, in general, and in this region?

7. The design and implantation of planted forests and forests restoration initiatives under a landscape approach

- Considering that 11 municipalities in the region have plans for the conservation and recovery of the Atlantic Forest - 10 in Bahia and one in Espírito Santo, on the border with Bahia - how could companies and their partners contribute to implementing the actions envisaged in these plans?
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