



White Paper

Mechanisms for control and mitigation of deforestation in the Brazilian Amazon Biome

We present below, in a concise and summarized manner, recent advances and new tools related to more environmentally-friendly ranching and farming in Brazil as well as the role of the Brazilian Roundtable on Sustainable Livestock (GTPS) and its members in both tackling deforestation in the Brazilian Amazon Biome and increasing efficiency in cattle raising activities.

Introduction: GTPS's commitment

The Brazilian Roundtable on Sustainable Livestock (GTPS) was created in late 2007 and formally constituted in June 2009. It is composed of representatives from different segments that make up the beef value chain in Brazil. Members include industry representatives and related associations, ranchers and their associations, retailers, input suppliers, banks, civil society organizations, research centers and universities.

The GTPS's goal is to discuss and formulate, in a transparent fashion, the principles, standards and common practices to be adopted by the sector, which contribute to the development of sustainable, socially just, environmentally responsible and economically viable beef production. In this context, the involvement of all segments that make up the value chain, as well as civil society, is fundamental to achieve this goal.

The GTPS is committed to zero deforestation, subject to the creation of conditions and forms of economic compensation to make it feasible. This is critical considering that Brazilian legislation, the most restrictive in the world in forest terms, allows legal deforestation of up to 20% in the Amazon Biome for economic use, with the maintenance costs of the remaining 80% being under the responsibility of the property owner.

The GTPS believes that stricter deforestation control, increased livestock efficiency and financial incentives are essential to achieving the goal of zero deforestation. On these three fronts, Brazil already has tools and successful initiatives that are described in this document.

The GTPS and its members are strongly committed to transparency of information and are therefore available for further clarifications regarding the initiatives mentioned below, as well as for the exchange of information and experiences with stakeholders in other countries.

1. Deforestation control

Deforestation in the Brazilian Amazon Biome is the result of a dynamic of territorial occupation fostered by successive Brazilian governments in recent decades.

The relationship between deforestation and livestock occurs because ranching is one of the economic activities that best suits frontier regions. Deforestation, however, cannot be attributed to a single cause. Logging, mining, property speculation, lack of clear land titles, large infrastructure projects in the region, legal uncertainty and faulty governance contributed to the complex dynamics of deforestation in Northern Brazil.



Given the growing concerns about climate change and biodiversity conservation, both the public and the private sector have advanced regarding their deforestation control and monitoring mechanisms.

Below are some of these advances:

- a) Private-sector social and environmental monitoring. In 2009, the largest meatpacking companies in the country undertook to eradicate deforestation in their supply chains. In this context, they invested in a sophisticated satellite deforestation monitoring system of its suppliers. In addition, the soybean value chain also has a moratorium on deforestation in its supply chain and monitors this commitment in partnership with non-governmental organizations.
- b) Environment Regularization Program (*Programa de Regularização Ambiental - PRA*). This program, which still awaits federal approval, is a set of actions or initiatives to be undertaken by rural landowners and settlers in order to comply with environmental regulations.
- c) Rural Environmental Register (*Cadastro Ambiental Rural - CAR*). The CAR is an instrument, already in use in some states, that is now part of the newly-revised Forest Code. It is a register that allows geotagging via satellite image of the farms and their remaining and recoverable environmental assets. Jointly with deforestation data from INPE (National Institute for Space Research), the CAR forms an extremely robust system for command and control that allows fast (online) farm-by-farm identification of deforestation. All rural properties, regardless of their size, must adhere to the CAR within one year of the publishing of the regulations for the above-mentioned Environment Regularization Program. This deadline may be extended for one more year.
- d) Brazilian Forest Code (*Código Florestal*). The recent version of the Forest Code, approved in 2012, put an end to legal uncertainties by establishing clear rules of forest protection on farms. It is still the most restrictive and sophisticated forest legislation in the world. No other country outside of Brazil has a law that requires so much from farmers in terms of protection of green areas. The law requires the preservation of a vegetation reserve on private property, in different percentages depending on the region in Brazil and on the presence of slopes, bodies of water and springs, among other factors.
- e) Plan for Prevention and Control of Deforestation in the Amazon (*Plano de Prevenção e Controle do Desmatamento na Amazônia - PPCDAm*). Launched in 2004 by the Ministry of Environment, the Plan comprises 200 initiatives of territorial planning and mechanisms of enforcement and control to prevent deforestation.
- f) Deforestation monitoring. INPE, attached to the Ministry of Science and Technology, has developed the PRODES (Amazon Deforestation Calculation Program) and DETER (Real Time Deforestation Detection System) programs, which are highly advanced deforestation monitoring systems with reliable, public and accessible data aimed at guiding government inspections under the PPCDAm and also private-sector actions to combat deforestation. These tools also allow a view of the municipalities and regions where deforestation is accelerating or slowing down, thereby establishing priority risk areas for corrective actions.

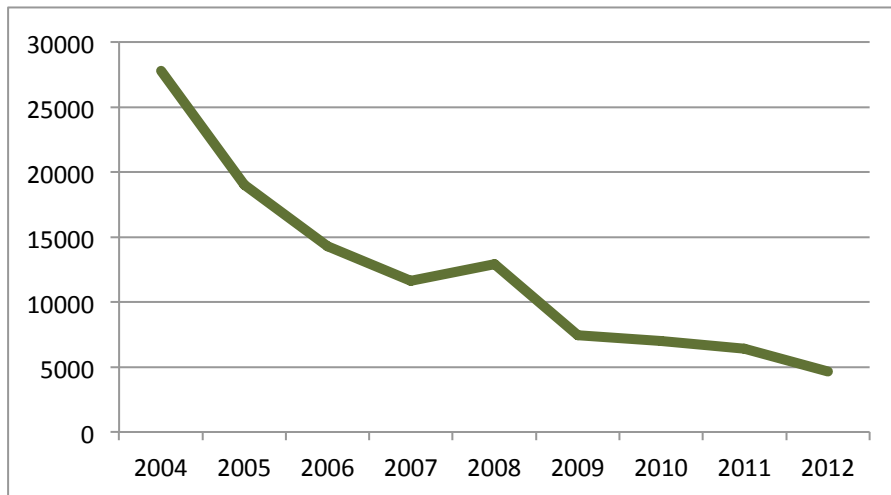


- g) List of areas embargoed by IBAMA (Brazil's Federal Environmental Protection Agency): An IBAMA embargo is an administrative penalty and/or administrative precautionary measure aimed at fostering environmental recovery, especially in degraded areas. The list of embargoed areas is public, published and updated daily by IBAMA, and is an important tool in combating illegal logging. It is an integral part of documents consulted for the approval of loans to ranchers and farmers in these areas. With the aim of expanding the list, the private sector created a working group jointly with IBAMA, which resulted a list of 44,000 individuals and firms across the country. Another important achievement of this working group was the possibility of issuing an Environmental Clearance Certificate linked to an individual's taxpayer's ID number.
- h) Territorial Intelligence Center (Núcleo de Inteligência Territorial - NIT). The Secretariat of Strategic Affairs, attached to the office of the President of Brazil, (SAE/PR) and the Ministry of Agriculture, Livestock and Supply (MAPA) launched in October 2012 the Territorial Intelligence Center. The goal of the partnership is to evaluate policies for agribusiness in Brazil from the country's survey data. The know-how generated by the Center will enable the development of strategies to optimize the use of the soil, allowing better focus of public policies, risk reduction and better allocation of rural credit. The information will be available from the Agriculture Observation and Monitoring System (SomaBrasil), a tool developed by Embrapa.
- i) Green Municipalities Program (Programa Municípios Verdes - PMV). In 2011, the State of Pará launched an ambitious project aimed at municipalities in collaboration with public, private and non-governmental organizations to end devastation in the Amazon and serve as a model to achieve zero deforestation. The program helps participating municipalities in registering the properties via the Rural Environmental Register (CAR) and offers initiatives on environmental regulation, land titles, deforestation mitigation and agriculture intensification, among other fronts.
- j) Agreements with the Federal Prosecutor Ministry (Ministério Público Federal - MPF). The largest beef exporters in Brazil signed agreements with Federal Prosecutors whereby the companies committed to not buy cattle from illegally deforested areas and areas protected by law (indigenous lands and preservation areas). Recently, the Brazilian Association of Supermarkets (Abrás) also signed an agreement with Federal Prosecutors undertaking to mobilize its members throughout the country to adopt practices that support the reduction of deforestation and recovery of deforested areas in the Amazon Biome.



These instruments are very sophisticated in comparison with other countries and they have led to successive drops in deforestation rates:

Annual deforestation rates in the Legal Amazon region, in km²



Source: PRODES/National Institute for Space Research

Other public initiatives can be listed as part of sustainable development policies, including:

- *Arco Verde* Operation
- *Cidadania Xingu* Operation
- *Mais Alimentos* (More Food) Program
- *Mais Ambiente* (More Environment) Program
- *Terra Legal* (Legal Land) Program
- *Prevfogo*
- *Brasil Sem Miséria* (Brazil without Misery) Plan
- *MT Legal* (Legal Mato Grosso) Program

Several GTPS members are also involved in their own initiatives and partnerships with public agencies to combat deforestation and encourage better livestock production practices, environmental regularization of rural properties and social and environmental certification. There is also a collective effort to improve all the above-mentioned mechanisms and programs.

2. Increase in livestock efficiency

According to Embrapa (Source: G.B.Martha Jr et al, *Agricultural Systems*, v.110, p.173-177, 2012), a breakdown of the livestock production growth factors between 1950 and 2006 shows that productivity gains accounted for 79% while the expansion of grazing area explained less than 21% of this increase. During this period, these productivity gains created a significant land-saving effect.

Between 1996 and 2006, the expansion in pasture areas in Northern Brazil, which includes seven states (Acre, Amapá, Amazonas, Pará, Rondônia, Roraima and Tocantins), accounted for less than 6% of production growth. Productivity gains in the region promoted a land-saving effect of 73 million hectares. Thus increasing productivity and efficiency is fundamental to reducing deforestation in Brazil.



A side effect of productivity gains can be observed in calculations using the historical series of DIEESE (a labor union-funded statistics institute) related to the city of São Paulo. In June 2010, the price of beef, measured in real terms, was about 30% of that paid by consumers in November 1973. In forty years, the price drop not only made this high nutritional-value food accessible to the poorest, but also eased inflationary pressures and, due to the income effect of demand especially among the needy in the low-income population, spurred other economic sectors.

The accelerated growth in livestock production in recent years was perhaps pressured mainly by the market: with narrower margins, producers are forced to intensify their activities. However, the efficiency gains are uneven, since they depend on ranchers' ability to access technology and credit. Many ranchers have never had and still do not have access to either. The result is degradation of pastures and low productivity, with the consequent pressure to expand into new areas.

We present below some initiatives that contribute to boosting productivity in Brazil:

a) Low-Carbon Agriculture (Agricultura de Baixo Carbono - ABC) Plan. This is one of the government's sectorial plans for mitigation and adaptation to climate change as part of the National Policy on Climate Change (*Plano Nacional de Mudanças Climáticas - PNMC*), launched after Brazil's voluntary commitment at the COP15. Among the objectives for agriculture are incentives for:

- Recovery of Degraded Pastures;
- Crop-Livestock-Forest (iLPF) and Agroforestry Systems (AFS) Integration;
- No-Till Farming System (SPD);
- Biological Nitrogen Fixation (BNF)
- Planted Forests
- Treatment of Animal Waste

The plan calls for recovering at least 15 million hectares of degraded pastures. In this light, the government launched the ABC farm loan program to finance low-carbon technologies. Available funding under ABC totaled R\$2 billion in 2010 and R\$3.15 billion in 2011, at interest of 5.5% a year. The program aims to finance a total of R\$197 billion in low-carbon agriculture by 2020.

b) Research and Development. In its 40 years of history, Embrapa (the government agricultural research institute) has been responsible for the development of pioneering technology for agriculture and livestock in tropical areas that is the most advanced in the world. As a result, Brazil, formerly a food importer, became one of the world's largest food exporters.

c) Investments in Genetics. 80% of the Brazilian herd has zebu blood. After nearly a hundred years of selection, Brazil today has the best zebu genetics pool in the world.

d) Biomes Project. The Biomes Project is the result of a partnership between the Brazilian Confederation of Agriculture and Livestock (CNA) and Embrapa. It aims to enable technical and scientific solutions for protection and sustainable use of rural areas in different biomes, through the implementation of a national research network.

e) Novilho Precoce (Early Yearling) Program. The state of Mato Grosso do Sul's Early Yearling program is a tax break aimed at encouraging cattle raising in a shorter period. The program awards a financial incentive for processing cattle at an early stage, a practice that calls for improvements in genetics, pastures, health, labor and overall management. With a successful 20-year track record, the program has benefitted government, industry, retailers and ranchers.



f) There are several other private initiatives aimed at increasing efficiency in livestock production, including:

- *Acrimat em ação* (Acrimat in action)
- Meatpackers' Promoting Teams (Marfrig, JBS, Minerva, BRF)
- Organic Beef in Pantanal (WWF, ABPO, Embrapa Pantanal)
- Green Livestock Project (Dow, TNC, Imazon, Fundo Vale, labor union and municipality of Paragominas)
- Early Yearling /Origin Guarantee Project (Carrefour, ASNP)
- Pro-Genetics (ABCZ)
- Good Agricultural Practices Program (EMBRAPA)
- ICV, Moore Foundation, municipality of Alta Floresta, Embrapa and JBS Partnership
- São Félix do Xingu (Walmart, TNC, Marfrig, Rural Producers Union)
- Program of Monitoring and Incentives to Improve Herd Quality and Productivity in Pará (Green Municipalities Program, GTPS, SafeTrace, EPL, BlueCorp, JBS, Marfrig, Imazon, MPF, Fundo Vale, Rural Labor Unions)
- *Mais Inovação* (More Innovation - Famasul)
- CCS – Aliança da Terra's Registry of Social and Environmental Commitment
- Social and environmental certification – Launch of the first certified beef in the Brazilian market (Imaflora, Grupo JD, Carrefour, Marfrig)
- Environmental compliance by small-scale farmers São Felix do Xingu, (Imaflora, Fundo Vale, NWF)

Brazil has both technology and credit. The challenge remains to democratize access to these tools in order to enable a more widespread and effective the transformation of livestock.

The GTPS's discussions led the development of a comprehensive proposal for training extensive cattle raisers and disseminating results through demonstration units located in strategic regions. It is a proven methodology successfully tested in other sectors in Brazil that can effectively transform livestock in these regions. The GTPS is also developing its own indicators to gauge this transformation, which involves a broad and participatory discussion. This project has been submitted to the Netherlands-based Farmer Support Programme (FSP) for fundraising.

Brazil has developed a robust governance system to monitor and control deforestation in the Amazon Biome, which contributed to the dramatic decline in deforestation in recent years. In order to overcome the challenge of raising livestock productivity and efficiency and recovering degraded areas, it is necessary to overcome at least three major challenges on three fronts: financial (funding for recovering degraded pastures), technological and rural extension. There is still much to be done and this requires foreign help.



References

Brazilian Forestry Code:

<http://www.canaldoprodutor.com.br/codigoflorestal>

http://www.planalto.gov.br/ccivil_03/ Ato2011-2014/2012/Lei/L12651.htm

http://www.planalto.gov.br/ccivil_03/ Ato2011-2014/2012/Lei/L12727.htm

PPCDAm:

<http://www.mma.gov.br/florestas/control-e-preven%C3%A7%C3%A3o-do-desmatamento/plano-de-a%C3%A7%C3%A3o-para-amaz%C3%B4nia-ppcdam>

IBAMA:

<http://www.ibama.gov.br/>

http://siscom.ibama.gov.br/geo_sicafi/

INPE:

<http://www.inpe.br/>

<http://www.obt.inpe.br/prodes/index.php>

<http://www.obt.inpe.br/deter/>

NIT:

<http://www.sae.gov.br/site/?p=13702>

Municípios Verdes (Green Municipalities):

<http://municipiosverdes.com.br/>

<http://www.sema.pa.gov.br/interna.php?idconteudocoluna=6317>

ABC Plan:

<http://www.agricultura.gov.br/desenvolvimento-sustentavel/plano-abc>

Embrapa:

<http://www.embrapa.br/>

Biomass Project

<http://www.projetobiomas.com.br/>

Novilho Precoce (Young Bull) Project

<http://www.novilhoms.com.br/institucional/legislacao>

<http://www.seprotur.ms.gov.br/index.php?inside=1&tp=3&show=998>

GTPS

<http://www.pecuariasustentavel.org.br/>