

Zero Deforestation and the future of Brazil

In recent years, Brazil and the world have suffered from climate change. Economic and social losses, related to the extreme climate events, are now frequent. The most obvious are those related to a lack of water for agriculture, human consumption and energy generation. These shortages could worsen in the future if Brazil continues to tolerate, even at low rates, the destruction of its forests. Establishing a goal for the complete and definitive end to deforestation and destruction of native vegetation in Brazil is a pressing concern if we want to maintain a climate that is minimally balanced for future generations.

The good news is that Brazil can achieve zero deforestation in less than a decade, without having to sacrifice agriculture and livestock production, which could be expanded in areas that are already deforested. By committing itself to quickly bringing deforestation down to zero, Brazil will be in a position to demand more action from other countries participating in the UN conference on climate change that will be held in December 2015 in Paris. At this conference it is expected that countries will make more ambitious and necessary commitments to reduce the risk of future climate catastrophes that could compromise the habitability of the planet.

Human activity is making the planet hotter and increasing climate risks. Scientists on the Intergovernmental Panel on Climate Change¹ (IPCC) state that between 1880 and 2012 average world temperatures rose by 0.85°C. It doesn't seem like much, but the increase has been enough to generate climate disasters like severe droughts, intense storms, historic flooding and enormous heat waves. Events of this type have almost tripled on a worldwide basis for the period 2010-2014, in relation to the first half of the 1980s².

Because of this, in December 2015, representatives from 196 countries will meet, in Paris, for the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21). It is a crucial moment for setting up a new agreement to reduce greenhouse gas emissions starting in 2020³. On the occasion, Brazil is expected to present its national proposal for fighting climate change, which already contains important results. Among them, the establishment of targets for reducing national emissions⁴, including a specific target for Amazon deforestation (80% below the average historic rate of 19,625 km² recorded between 1996 and 2005). To achieve it, in 2020 deforestation in the Amazon will have to be under 3,925 km². Unfortunately, this is still a high number and far from zero. For the Cerrado, the reduction target established was 54% in relation to the average for the period 2003-2008 (14,000 km²). Despite these advances, Brazil is still destroying a great deal of forest: around 5,000 km² per year on average for the last three years in the Amazon and 6,469 km² in the Cerrado in 2010 (last year with official data).

At COP21, Brazil should establish the goal to reduce deforestation to zero in less than a decade in all biomes, because it is necessary, feasible and advantageous. Deforestation, particularly in the Amazon, continues to be one of the main sources of greenhouse gas emissions in Brazil⁵. The effects of climate change, combined with the continued destruction of forests, could place agricultural and livestock production at risk. The Amazon forest acts as a huge pump that transfers water from the soil to the

¹ The IPCC unites thousands of scientists from around the world. It was created in 1988 by the World Meteorological Organization and the United Nations Environment Program, to review and evaluate scientific information on climate change and its impact. Available at: <https://www.ipcc.ch/organization/organization.shtml>.

²The Economist. 2015. Climate change. The Economist, pp.7–8. Available at: <http://www.economist.com/news/science-and-technology/21656133-climate-change>.

³ For more information on COP 21 go to: <http://www.cop21.gouv.fr/es>.

⁴ Targets available at National Policy on Climate Change (PNMC).

⁵ SEEG 2014. Available at: <http://seeg.eco.br/>

atmosphere⁶, which is then transported in the form of water vapor to other regions. A large part of the country benefits from this natural irrigation. Continued deforestation could compromise this environmental service.

By 2020 agricultural production could suffer annual losses on the order of R\$ 7.4 billion⁷, as a consequence of lower rainfall in different regions, especially the North and Midwest of Brazil.

In the Amazon, for example, rainfall could fall by 15%-20%⁸. This projection appears to be becoming a reality, at least in some regions of the Amazon, as a result of the drastic removal of forest in recent years. This is the case in the Xingu River basin. Between 2000 and 2010 the temperature of the region has risen by almost 4°C⁹ and droughts have worsened in recent years. Farmers are already reporting a fall in production and productivity. Basically, deforestation is eliminating the “sprinkler” service that the forest provides to agribusiness of the region.

The advance of deforestation combined with global warming will also affect the generation of hydroelectric power and supply of water to rural and urban communities.

The risk of this scenario can be minimized by interrupting deforestation in the Amazon and the destruction of other native biomes, especially the Cerrado. To reduce emissions rapidly, the goal should be zero deforestation and not zero illegal deforestation or even zero net deforestation. In the latter, the protection of native forests with high carbon stocks, biodiversity and water services could not be replaced by recently restored forests (which would take many years to accumulate carbon) or forest plantations.

Conservation of forests is one of the cheapest ways¹⁰ to contribute to targets that IPCC scientists recommend on a worldwide basis: a reduction in global greenhouse gas emissions on the order of 40% to 70% by 2050, with 2010 as the base year.

For the various benefits provided by forests, the pursuit of zero deforestation is already a goal in various international agreements. In September 2014, 179 organizations, including governments, companies, movements and NGOs, signed the New York Declaration on Forests, which calls for the end of deforestation by 2030. More recently, the UN announced new Sustainable Development Goals, to be signed by countries in 2015, which establish the goal of ending deforestation by 2020¹¹. Moreover, eliminating deforestation is in line with the wish of the Brazilian people: over 1.4 million Brazilians have signed a petition in support of a bill that aims to end deforestation in Brazilian forests.

Fortunately, Brazil can achieve zero deforestation quickly. The country has all the elements and experience it needs to get there. Expanding the positive initiatives under

⁶Nobre AD, 2014, O Futuro Climático da Amazônia [The Future of the Amazon Climate], Relatório de Avaliação Científica. Sponsored by ARA, CCST-INPE, and INPA. São José dos Campos, Brasil, 42p. Available at: <http://www.ccst.inpe.br/wp-content/uploads/2014/10/Futuro-Climatico-da-Amazonia.pdf>

⁷Assad, E. et al. 2008. Aquecimento global e a nova geografia da produção agrícola no Brasil [Global warming and the new geography of agricultural production in Brazil].

Available at: http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/CLIMA_E_AGRICULTURA_BRASIL_300908_FINAL.pdf

⁸Marengo, J.; Nobre, C. A.; Salati, E.; Ambrizzi, T. 2007. Mudanças Climáticas Globais e Efeito sobre a Biodiversidade [Global climate change and the effect on biodiversity]. Sub-project: Caracterização do clima atual e definição das alterações climáticas para o território brasileiro ao longo do Século XXI [Characterization of current climate and determination of climate change in Brazil in the 21st century].

Technical

Summary. CPTECINPE, p.73. Ministério do Meio Ambiente.

⁹Brando, et al. 2014. *PNAS* 111:6347-6352.; Silvério, D.V. Alterações na estrutura e funcionamento de florestas transicionais da Amazônia associada à degradação florestal e transições de uso da terra [Changes in the structure and functioning of transitional forests of the Amazon associated with forest degradation and transitions in land use]. Tese de doutorado/UnB, 2015

¹⁰McKinsey & Company. 2009. Caminhos para uma economia de baixa emissão de carbono no Brasil [Paths to a low-carbon economy in Brazil]. Available at: http://www.mckinsey.com.br/sao_paulo/carbono.pdf

¹¹ United Nations. 2015. Transforming our World: The 2030 Agenda for Sustainable Development. Available at: http://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf

way and introducing innovative approaches designed to control deforestation, conserve forests and promote sustainable use of resources would be enough. Among the leading options for ending deforestation are:

1. **Increase agricultural production without deforestation.** To do so, increasing productivity on areas already deforested would be enough. For example, an increase of 50% in the productivity of cattle farming in the Amazon (from 1 to 1.5 head/ha) would be enough to meet demand until 2040 without having to destroy a single hectare of forest¹². Subsidized rural credit offered by the federal government could be the most important catalyst for this transformation. For the 2015-2016 harvest R\$ 212 billion will be made available, of which R\$ 187.7 billion is earmarked for the Harvest Plan and R\$ 24.1 billion for the National Program for Strengthening Family Farming. To accelerate the adoption of low-carbon agriculture (ABC), the government could establish targets for allocating rural credit to these programs in a decade, whereby each year 10% of all credit would be earmarked for the ABC Program. This transition would be supported by other measures, such as massive training for rural producers, students and professionals that work in the area, as has been done in other developing countries, in addition to compliance with environmental and land regularization.
2. **Increase effectiveness of fiscalization.** Brazil needs to expand the use of effective measures against deforestation like the seizure of assets associated with environmental crimes and fight against land grabbing, by punishing crimes with heavier sentences, such as associations for the crime, tax evasion and money laundering.
3. **Established new protection areas.** The federal and state governments, especially in the Amazon, still hold large areas of “unpurposed” public forests. There are around 80 million hectares¹³ at the mercy of land grabbers and illegal deforestation. Setting aside part of these forests for conservation and/or as indigenous lands and establishing extractivist reserves could substantially reduce deforestation and consequentially greenhouse gas emissions.
4. **Expansion and consolidation of private and public commitments to zero deforestation.** Companies and the government need to improve the effectiveness of agreements on zero deforestation. For example, the commercialization of illegally sourced cattle should be countered by inspecting the farms that provide the calves (indirect suppliers of the slaughterhouses) to the fattening farms. The Soy Moratorium, which helped to reduce deforestation in the Amazon, should be maintained in this biome and expanded in the Cerrado, where around 20% of new soybeans were planted on recently deforested areas.
5. **Use of tax regime in force to encourage conservation.** Clamping down on evasion of Rural Land Tax (ITR) would help to reduce speculative deforestation¹⁴. Due to flaws in the collection process, individuals who deforest for the purposes of speculation are able to maintain large areas unproductive and pay very little tax. In

¹²Strassburg et al., 2014 “When Enough Should Be Enough: Improving the Use of Current Agricultural Lands Could Meet Production Demands and Spare Natural Habitats in Brazil.” *Global Environmental Change* 28 (0): 84–97 . Available at: <http://www.sciencedirect.com/science/article/pii/S0959378014001046>

¹³Azevedo-Ramos et al. (being prepared); Azevedo-Ramos et al. <http://www.ipam.org.br/download/livro/Florestas-Nativas-de-Producao-Brasileiras/612>.

¹⁴Appy, B. 2015. O Imposto Territorial Rural como forma de induzir boas práticas ambientais [Rural Land Tax as a way of inducing good environmental practices]. IPAM, Brasília, DF. e Silva, D., & Barreto, P. 2014. O potencial do Imposto Territorial Rural contra o desmatamento especulativo na Amazônia [The potential of Rural Land Tax against speculative deforestation in the Amazon] (p. 48). Belém: Imazon.

the Amazon, in 2012 there were 10 million hectares of unproductive pasture¹⁵. If the tax were collected correctly, it would generate billions of reais, an important source of funds to maintain protected areas and to increase the productivity of agriculture and livestock farming, including training and rural extension, especially for small producers.

6. *Financial incentives for conservation.* Governments and companies should use financial incentives to eliminate deforestation and increase the productivity of agriculture and livestock farming. Companies that have announced commitments to purchase only deforestation-free products need to go beyond restrictions and support farmers in adopting the best practices. Furthermore, the new Forest Code authorizes the creation of restoration and conservation incentives, which can be established through various mechanisms (like the CRA – Environmental Reserve Quota). Government should allocate resources to these incentives and overcome pressure¹⁶ to postpone implementation of CAR (Rural Environment Registry) which is the first step to enforcing the new Code.

Lessons and recommendations above show the potential of Brazil in going beyond the reduction targets for deforestation in the Amazon and in other biomes already established in the National Policy on Climate Change.

By committing to the ambitious targets before the UN Climate Convention, Brazil will reinforce its environmental leadership and will be able to negotiate in a way that will prompt other large emitters to also adopt targets that are sufficient to prevent climate catastrophes. A weak global agreement will mean an increase in emissions, with serious consequences for Brazil and growing climate risks for all.

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Signatories

Comitê de Coordenação do Observatório do Clima
 Greenpeace Brasil
 Fundação Grupo Boticário
 Instituto Centro de Vida (ICV)
 Instituto de Manejo e Certificação Florestal e Agrícola (Imaflora)
 Instituto de Pesquisa Ambiental da Amazônia (Ipam)
 Instituto do Homem e Meio Ambiente da Amazônia (Imazon)
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 Sociedade de Pesquisa em Vida Selvagem (SPVS)
 The Nature Conservancy (TNC) - Brasil
 Uma Gota no Oceano
 WWF-Brasil

[Document open to new signatories]

¹⁵INPE, 2012, Projeto Terra Class – Mapeamento do Uso e Cobertura da Terra na Amazônia Legal Brasileira [Mapping of the Use and Coverage of Land in the Legal Amazon of Brazil]. Presentation available at: http://www.inpe.br/noticias/arquivos/pdf/TerraClass_2012.pdf
¹⁶ In September 2015, a Senate committee approved the postponement of registration of properties in CAR to May 2018. Available at: <http://br.reuters.com/article/domesticNews/idBRKCN0R31Y320150903>