Land use, climate change and forest management in the Amazon

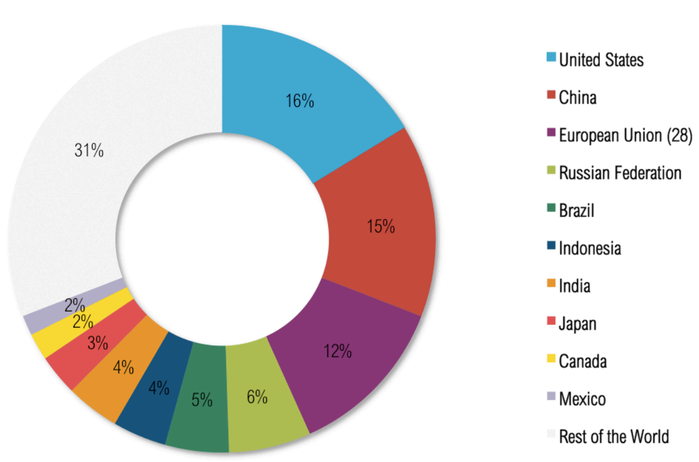
- Latin America is responsible for 9% of GHG emissions in the world (ECLAC, 2014). The land use change sector, including deforestation, is one of the main responsible for emissions in the region.
- The Amazon is the biggest tropical forest in the world, and it is shared by 9 countries (Bolivia, Brazil, Colombia, Ecuador, Guyana, French Guyana, Peru, Suriname and Venezuela). Brazil holds about 60% of it (more than 4 million km^2) (Figure 1).

Source: RFU, 2007

Figure 1. Comparison between Brazilian Amazon and European countries

- There is a huge pressure for conversion of the forests in the Amazon, especially to consolidate illegal land tenure (land grabbing) and to increase pasture area. Pastures occupy 65% of deforested area in the Brazilian Amazon. Directly conversion to agriculture (soy, corn, etc.) represents 6% (TerraClass, 2014)
- The deforestation rates reached a pick in early 2000's, with more than 27,000 km^2/year. The main technique to put forests down is fire (Figure 2).
- Around 20% of the forest cover in the Brazilian Amazon was lost. With that, Brazil became the 5th bigger GHG's emitter in the world considering the 1990-2011 period (Figure 3)

Figure 2. Amazon Forest Burning

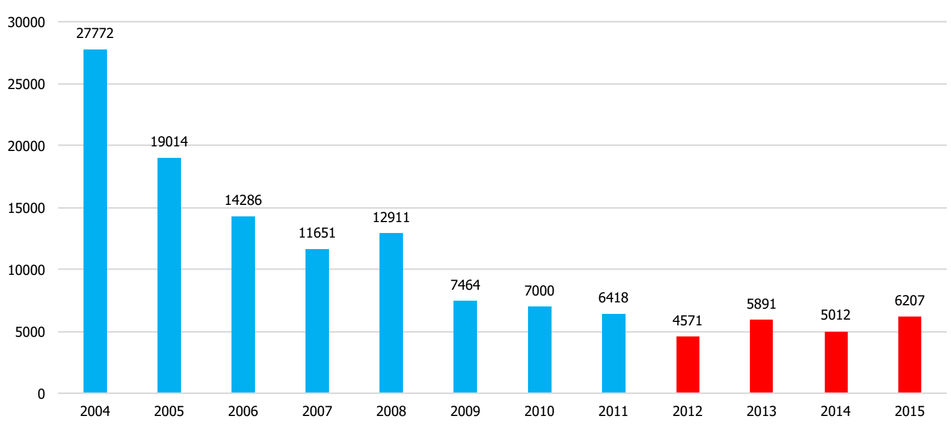


WRI, 2016

Figure 3. Cumulative GHG emissions 1990-2011

- Brazilian government stepped in and created the Action Plan to Control Deforestation in the Amazon (PPCDAm) in 2004. The Plan is organized in three axes: (i) land use planning and land tenure, (ii) monitoring and controlling deforestation, and (iii) fostering sustainable activities.
- The private sector and civil society also engaged sectorial pacts, like the Soy Moratorium and the "beef agreements" signed among Federal Public Prosecutor's Offices, meatpacking companies and NGOs.
- The deforestation rates decreased by 75% since 2004 (Figure 4).

Figure 4. Deforestation rates in the Amazon from 2004 to 2015 (INPE, 2016)



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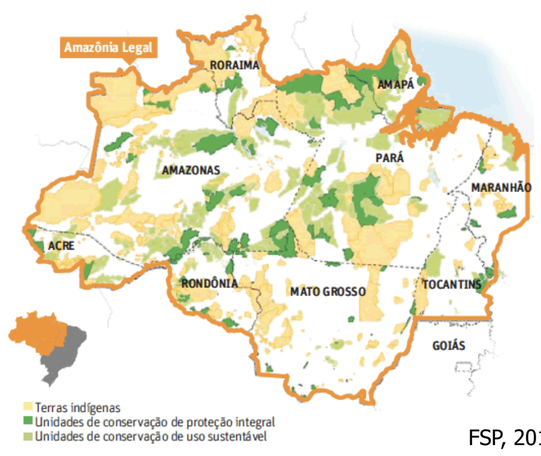
Areas of expertise: environmental public policies, social benefits and conditional cash transfer programs, land use and land cover change, rural development, forest management.

Current projects/issues: review of the Action Plans to Control Deforestation (Amazon and *Cerrado*), expansion of the Amazon Fund (US$ 1 bi), publications about the effects of social benefits and CCTs over land use in the Amazon.

Future projects: South-South cooperation for reducing deforestation in tropical forests, improving monitoring and control systems, forest management, and forest governance for promoting restoration. Integrated solutions for tropical forests.

Instruments for improving forest management in the Amazon

- Monitoring and control systems (PRODES, DETER-B, SICAR, SINAFLOR).
- Integrated operations (inter-agencies and inter-states).
- Creation of protected areas (1,5 million km^2 in conservation units and 1,1 mi km^2 in indigenous lands) (Figure 5).
- Constraints to credit (access to public and private loans conditioned to environmental compliance).
- Amazon Fund (US$ 1 billion applied in projects to foster sustainable development and improve forest management in the Amazon and other tropical forests).
- Supply chain pacts (Soy Moratorium, beef agreements, Consumer Goods Forum).
- Dismantling organized crime (destroying illegal equipment and camps, arresting the "bigwigs").



FSP, 2016

Figure 5. Protected areas in the Brazilian Amazon

Challenges and opportunities ahead

- Stabilization of deforestation rates (2012-2015). The target of National Policy for Climate Change is 3,925 km^2/year.
- Land tenure in the Brazilian Amazon. There are still 550,000 km^2 of non-designated lands. Major source of conflicts.
- Tackle forest degradation. Command-and-control initiatives were effective for halting clear-cutting in big areas, but there is still much illegal logging under the forest cover.
- Promote forest restoration. New Forest Code demands around 200,000 km^2 of forest recuperation by private properties (Soares-Filho et al., 2014). Brazil's INDC for COP-21 establishes the recovery of 120,000 km^2 by 2030.

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