SOMAI

• ALERTA INDÍGENA •

SYSTEM FOR OBSERVATION AND MONITORING OF THE INDIGENOUS AMAZON

The System for Observation and Monitoring of the Indigenous Amazon (SOMAI) is an online digital platform developed by IPAM. Its main objective is to provide data that strengthens the role of indigenous territories and populations of the Brazilian Amazon for the maintenance of regional and global climate balance. The SOMAI provides scientific information compiled to inform the planning of climate change adaptation actions by indigenous peoples, strengthening territorial and environmental management of Indigenous Lands (ILs) in the region.

Figure 1. Indigenous Lands in the Brazilian Amazon and accumulated deforestation until 2013 (in red). Data: INPE and Funai, 2013. Map: IPAM, 2014.

Vulnerabilities

The Brazilian Amazon forest is home of 450 thousand indigenous peoples (from 173 different ethnic groups)[1], covering an area of 110 million ha (> 400 territories)[2]. It is the source of a wide range of environmental services, and holds ≅55 billion tons of carbon in the forest, which, if disrupted, could significantly worsen global climate change.

The indigenous lands have been acting as main barriers to deforestation (Figure 1). Projections of deforestation for 2050, even in a scenario of high governance, demonstrate the important role played by ILs for the maintenance of forest carbon stock, and consequently, for global climate change mitigation (Figure 2). As well as, future climate projections indicate an average temperature increase in ILs between 1,6°C and 2,5°C over the coming decades even in an emissions mitigation scenario, having major effect on reduced game and fisheries and directly impacting their food security.

Figure 2. Projection of carbon stocks for 2050 in a scenario of an active government engaged in reducing deforestation. Darker colors indicate higher biomass density. Data: Baccini et al, 2012. Map: IPAM, 2014.

How SOMAI works

SOMAI is divided in three main modules developed to demonstrate the main climatic and an-

[1] Carneiro Filho, A. & Souza, O.B. Atlas de pressões e ameaças às Terras Indígenas na Amazônia brasileira. São Paulo: Instituto Socioambiental, 2009.

[2] RAISG, 2012.

thropogenic threats affecting indigenous territories in the Amazon. In the first module, one can access historical changes in climate variables such as temperature, rainfall, drought and the historical evolution of deforestation, forest fires, construction of roads and hydroelectric dams. The second module encompasses the main future climatic threats to indigenous lands such as predicted changes in precipitation, temperature, drought and their impact on biodiversity. The third module demonstrate the current and future threats to indigenous lands due to human generated direct impacts such as deforestation, fires, mining, proximity to roads and hydroelectric dams. These modules also present general statistics information about each layer as graphs and tables. In addition, besides these main modules, SOMAI brings tools to facilitate the access of information for each indigenous lands, and to perform map algebra indicating through the use of a threats calculator the indigenous lands under higher threats according to the user selected variable. Finally the tool brings a series of supporting layers that can be used to provide better reference and context and to facilitate understanding on the main threats that are faced by the indigenous peoples in the region.

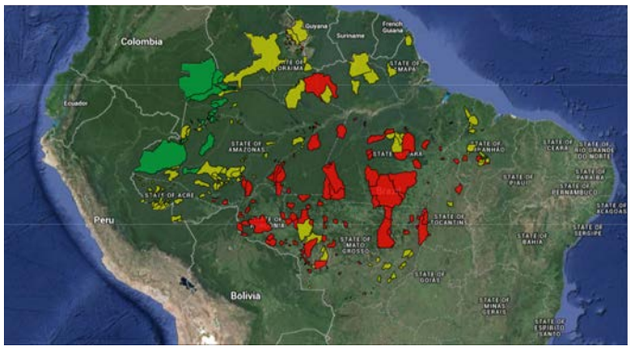

Figure 3. Classification of Indigenous Lands according to temperature increase trends for 2050 in a no-mitigation scenario. Darker colors refer to higher temperature increase trends. Data: IPCC, 2013. Map: IPAM, 2014.

Recommendations

In the context of climate and anthropogenic threats, the development of policies and programs for the protection and management of Indigenous Lands in the Brazilian Amazon, and elsewhere, is the most powerful action to be put into practice. Thus, it is recommended to:

Expand and accelerate the process of identification, demarcation and homologation of Indigenous Lands, recognizing such action as crucial to maintaining low deforestation rates and its associated carbon emissions strategy, as well as for the physical and cultural survival of indigenous peoples.

Consolidate the National Policy for Territorial and Environmental Management of Indigenous Lands - PNGATI[3] - in Brazil with a view to promote sustainable indigenous development in synergy with climate change mitigation and adaptation efforts.

Support the elaboration of public policies and programs for indigenous lands adaptation and their populations with data on future climate change, thereby reducing the negative impacts over these populations.

Develop an ongoing program for empowerment and participation of indigenous peoples on climate change-related issues as a key element for them to support their own proposals to tackle the coming changes. To that effect, it is also important to raise awareness among public managers and decision makers in government spheres.

[3] Decree Nº 7.747, of June 5th 2012 – Institutes the National Policy for Territorial and Environmental Management of Indigenous Lands–PNGATI.