



INTERNATIONAL  
INSTITUTE FOR  
SUSTAINABILITY



TRADE, DEVELOPMENT &  
THE ENVIRONMENT HUB

## Context for WORKSHOP

### Agricultural commodities production and trade scenarios outcomes on land use change and biodiversity in Brazil

According to Food and Agriculture Organization (FAO)<sup>1</sup>, about 80% of deforestation in the Amazon region is due to livestock activity. The lack of indirect suppliers monitoring allows contamination of the supply chain with animals coming from areas under embargo or illegally deforested.

The demand for land is also partly driven by speculative land acquisition and land grabbing processes as indicated by the forestland prices that contain expectations about converting forest land to agricultural or pasture<sup>2</sup>. Making the land more attractive by the forest conversion, they sell the land to be used for commodities production at a much increased price<sup>3</sup>.

According to the Brazilian Institute of Geography and Statistics (IBGE), the Brazilian harvest of grains should hit another record in 2021, the third in a row, adding up to 260.5 million tonnes, an increase of 2.5% over last year's record. Brazil was the world's largest soybean producer in the harvest that ends in 2020, taking back from the United States the position of the world's largest soybean producer, and it is in addition to being the world's largest soy exporter<sup>4</sup>.

In the same time, Brazilian biogeographical regions have lost natural areas and registered an increase in the number of flora and fauna species threatened with extinction. The data show that about 500 thousand km<sup>2</sup> of natural coverage were lost between 2000 and 2018, due to pasture and accelerated agriculture expansion. As a consequence, Brazil had 3,299 species of animals and plants threatened with extinction. The Atlantic Forest was the biome with the most threatened species. Then comes the Cerrado, with 1,061 threatened species (data from national Environmental-Economic Accounting)<sup>5</sup>.

According to Vasconcelos et al. (2020)<sup>6</sup>, it is estimated that, between 2012 and 2017, over a quarter of the total deforestation in Mato Grosso, the largest grain producing state in Brazil, took place on soybean farms – mostly illegally given the lack of licenses. It is already estimated that 81% of the soy grown on farms where illegal deforestation took place in Mato Grosso was exported in 2018, and 46% of this was shipped to China – Brazil's biggest export market. The European Union is the second most exposed export market for soy from farms with illegal deforestation. It is estimated that around 14% of that soy was shipped to the European Union. Considering the total soybean used in European Union, it is estimated that in 2017 only 22% was responsibly sourced and just 13% was deforestation-free.

It is also estimated that 2% of properties in the Amazon and Cerrado are responsible for 62% of all potentially illegal deforestation and that roughly 20% of soy exports and at least 17% of beef exports from both biogeographical regions to the EU may be contaminated with illegal deforestation<sup>7</sup>.

In this context, the foreign market has increasingly demanded that commodities imported from Brazil be free from illegal deforestation and consequently from biodiversity loss. Besides this, there is a growing debate about how to encourage farmers to conserve natural areas beyond the legal requirements of Native Vegetation Protection Law (LPVN).

According to World Trade Organization (WTO)<sup>8</sup>, international trade has a central role in achieving sustainable development. The issues related to responsible consumption and production, together with maintaining

<sup>1</sup> FAO. 2016. State of the World's Forests 2016. Forests and agriculture: land-use challenges and opportunities. Rome.

<sup>2</sup> Miranda, J et al., 2019. Environ. Res. Lett. Land speculation and conservation policy leakage in Brazil. Available in: <https://iopscience.iop.org/article/10.1088/1748-9326/ab003a/pdf>

<sup>3</sup> Zalles, V. et al. Near doubling of Brazil's intensive row crop area since 2000. Proceedings of the National Academy of Sciences. Jan 2019, 116 (2) 428-435; DOI: 10.1073/pnas.1810301115.

<sup>4</sup> IBGE data.

<sup>5</sup> IBGE data.

<sup>6</sup> Vasconcelos, A. et al. (2020) Illegal deforestation and Brazilian soy exports: the case of Mato Grosso. Available at: <https://www.icv.org.br/website/wp-content/uploads/2020/06/traseissuebrief4-en.pdf>

<sup>7</sup> Rajão et al. The rotten apples of Brazil's agribusiness. Science 369 (6501), 246-248. DOI: 10.1126/science.aba6646.

<sup>8</sup> WTO, 2018. Mainstreaming trade to attain the Sustainable Development Goals. Geneva: Switzerland.

biodiversity and nature's contributions for people (ecosystem services), can be particularly important when looking at international trade flows for soybeans and other commodities.

The Mercosur and the European Union Free Trade Agreements (FTA) was signed, after more than 20 years of discussions. However, the treaty should take time to enter effect. European countries are increasingly demanding guarantees and safeguards against deforestation. Asian countries absorb about 80% of global soybean export<sup>9</sup>. The COFCO International, the largest food processor in China and one of the largest buyers of agricultural commodities in the world, can require the traceability of all soy produced in Brazil, to avoid the acquisition of products resulting from illegally deforested areas, starting in 2023<sup>10</sup>. Additionally, Biden's election brings the expectation that the United States will align itself with Europe in terms of the environment policies.

In this context, one of the main challenges for agricultural sustainability is how to increase production without causing further biodiversity loss. The land use change without sustainable planning and causing large deforestation can bring several consequences for Brazil's environmental standing and damaging repercussions for its agribusiness sector and market access.

The effective implementation of a policy mix for sustainability transitions – such as Low Carbon Agriculture Plan (ABC Plan), National Native Vegetation Recovery Plan (Planaveg), monitoring programme such Mapbiomas, PRODES, etc., as well as the LPVN, Soy Moratorium, voluntary commitments, certification such as “Brazil Agro – Good for Nature”<sup>11</sup> and biodiversity-related concerns in FTA – has potential to reconcile the agricultural production, the remaining vegetation conservation and restoration of critical habitat for endangered species<sup>12</sup>. It may generate a robust reduction of illegal and legal deforestation, accompanied by real changes in the ecosystem's functions and their ability to provide nature's contribution for people.

An example of an environmental initiative could be the large adoption of land sparing strategies in key supply chains, increasing the sustainable productivity and economic incentives to compensate the private landowners with a surplus of native vegetation beyond the LPVN requirements.

In this scenario, the Trade Hub project – the United Kingdom Research and Innovation Global Challenges Research Fund (UKRI GCRF) Trade, Development and the Environment Hub – is working with over 50 partner organizations from 15 different countries, with the objectives of make sustainable trade a positive force in the world by focusing on the impact of the trade of specific goods and seeking solutions to these impacts.

Within the Trade Hub scope, the International Institute for Sustainability (IIS)<sup>13</sup> is analyzing the land use and biodiversity outcomes of agricultural commodity production and international trade scenarios. The goal of IIS research is to contribute to this debate through the use of spatially explicit economic-environmental modeling on land use, exploring different measures for the effective implementation of national policies, combined with different solutions for implementing safeguards in trade agreements.

As part of this research, the IIS will hold a workshop in early February 2021 to discuss the main policies, including its current and potential conditions, that can impact the agricultural commodities production and trade. The IIS workshop goal is to identify the main international trade agreements, initiatives, processes, as well as, the public and private policies that act, or can act, in conjunction with sustainability and biodiversity conservation in Brazil. The focus is to involve a group of experts to discuss the main factors and measures that can influence the alternative land use scenarios and policy makers.

Based on this identification, the objective is to formulate the possible scenarios from which the impacts on the production of commodities, the change in land use and biodiversity will be studied. The results, in turn, will be disseminated via policy brief, articles and database. It is expected that the research can contribute to policies and initiatives in direction to optimize the balance between biodiversity costs and benefits for people, in terms of prosperity and economic development.

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<sup>9</sup> De Maria, M. et al. (2020). Global Soybean Trade. The Geopolitics of a Bean. UK Research and Innovation Global Challenges Research Fund (UKRI GCRF) Trade, Development and the Environment Hub.

<sup>10</sup> <https://climainfo.org.br/2020/07/06/contra-desmatamento-multinacional-chinesa-quer-rastrear-soja-comprada-do-brasil/>

<sup>11</sup> Created by the Ministry of Agriculture, Livestock and Supply (MAPA).

<sup>12</sup> Strassburg, B. et al. 2017. Moment of truth for the Cerrado hotspot. *Nature Ecology & Evolution* 1, 0099 (2017) | DOI: 10.1038/s41559-017-0099. Available in: [https://www.iis-rio.org/wp-content/uploads/2019/10/Moment\\_of\\_truth\\_for\\_the\\_Cerrado\\_Hotspot\\_1.pdf](https://www.iis-rio.org/wp-content/uploads/2019/10/Moment_of_truth_for_the_Cerrado_Hotspot_1.pdf).

<sup>13</sup> The International Institute for Sustainability is an independent think-and-do-tank focused on understanding the relationship between human society and the environment. Its main objective is to promote sustainable land use, in particular biodiversity conservation, ecosystem service provisioning, sustainable soil management, climate change mitigation and adaptation, and the socioeconomic development of actors involved in these processes. For more information, visit: [www.iis-rio.org](http://www.iis-rio.org)