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Opportunity Costs of Deforestation in Mato Grosso State, Brazil

VIVIAN MAC-KNIGHT, ANA LUIZA MEIRELES, CARLOS EDUARDO FRICKMANN YOUNG

Universidade Federal Do Rio de Janeiro, Brazil

Abstract

The Amazon Forest possesses a biodiversity of incalculable worth, sheltering hundreds of indigenous populations and regulating national and global climate. Even though deforestation has been decreasing in the last couple of years it is still above a tolerable level. Mato Grosso is the biggest soybean producer among the Amazonian states, which is why the agricultural frontier is rapidly expanding into the rainforest. A system of environmental services payment can be a good complement of existing command and control mechanisms to slow down deforestation.

The general objective of this work is to estimate the opportunity cost of land in strategic regions under the highest pressure. The specific objective is to analyse the abatement cost per ton of carbon emitted by deforestation from soybean production, and to identify potential beneficiaries of the services provided by the forest.

Data utilised in this work was made available by local institutions. According to national accounts the value added by farming is 10.7%. Based on this it is possible to estimate the cost of opportunity of the land in Mato Grosso. To calculate emissions and the abatement cost per ton of carbon from soybean production, the deforestation is initially estimated. Once the deforestation, emissions and land profitability are known, the abatement cost of emitted carbon is estimated.

The expected result is to confirm the economic viability of projects for environmental service payments to preserve the Amazonian forest. Additionally, it is expected that the abatement cost of carbon emitted by soybean production is equal or less the price of carbon on the international markets. This way, there will be a variety of national or global solutions to stop deforestation in the Amazonian.

Keywords: Brazil, deforestation, opportunity costs