

Socioeconomic impacts due to enlarging the use of sugarcane straw in the Brazilian Economy

Topic: Sustainable production and consumption I

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Brazil is the World leader in sugarcane production; this industry has a very important role in the Brazilian economy, considering both sugar and energy (ethanol and bioelectricity) production. From the last decade, pressures in terms of increasing the sustainability of the sector has resulted in growing the practice of mechanized green sugarcane harvesting eliminating the burning of the sugarcane straw. In this context, straw has been available for improving agronomic characteristics of the soil, as well as to be used as a raw material to increase surplus of bioelectricity or ethanol production – this one taking into account the possibility of the adoption of second generation technologies. The better use of straw depends on integrated analysis on the agricultural and industrial technologies choices in the sugarcane industry, because the trade-off between its interest (more straw used at a mill implies less straw available in the field). This study aims to quantify and analyze the socioeconomic impacts due to the use of sugarcane straw, considering different scenarios of combined technologies in agricultural area as well as industrial phase. For this purpose, a mixed based technology and interregional input-output model was developed and applied to accomplish this target. The model contemplates the most important sugarcane regions in Brazil; the scenarios evaluated include first and second generation technologies, as well as using or not sugarcane straw. The socioeconomic variables analyzed are the level of production (output), jobs creation, income distribution, gross domestic product (disaggregated at regional level) and the possibility of subsidizing a technology looking for improving the complete use of sugarcane biomass as a renewable source of energy.