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## Abstract

The production of ethanol from sugarcane in Brazil has reached 27 billion liters – 27% of the world's total biofuel engenderment. The remaining ethanol production is from corn in the United States, wheat and sugar beet in the European Union, and cassava in Vietnam and Thailand. The Environmental Protection Agency of the United States considers ethanol from sugarcane in Brazil an advanced biofuel, since it reduces CO2 emissions by more than 89% compared to gasoline. In fact, more than 100 countries have adopted mandates for mixtures of biofuels in gasoline/diesel. According to the International Renewable Energy Agency (2016), among the different bioethanol sources, sugarcane ethanol is currently the most cost-effective commercial biofuel and has the highest energy balance of all commercial bioethanol options. However, questions about the sustainability of sugarcane ethanol production, such as land use conflicts, competition with food production, water consumption, quality of jobs, and others, have been raised. The authors present in this chapter, based on the Brazilian experience, evidence of the highly positive environmental, social, and economic sustainability of ethanol production from sugarcane, as well as perspectives for other sugarcane ethanol-producing countries.