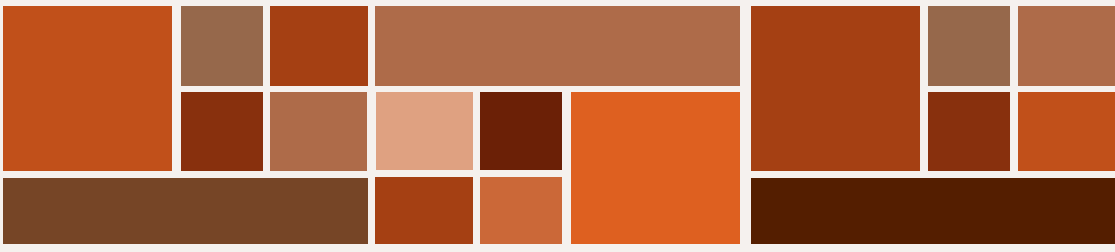


BIOFUELS





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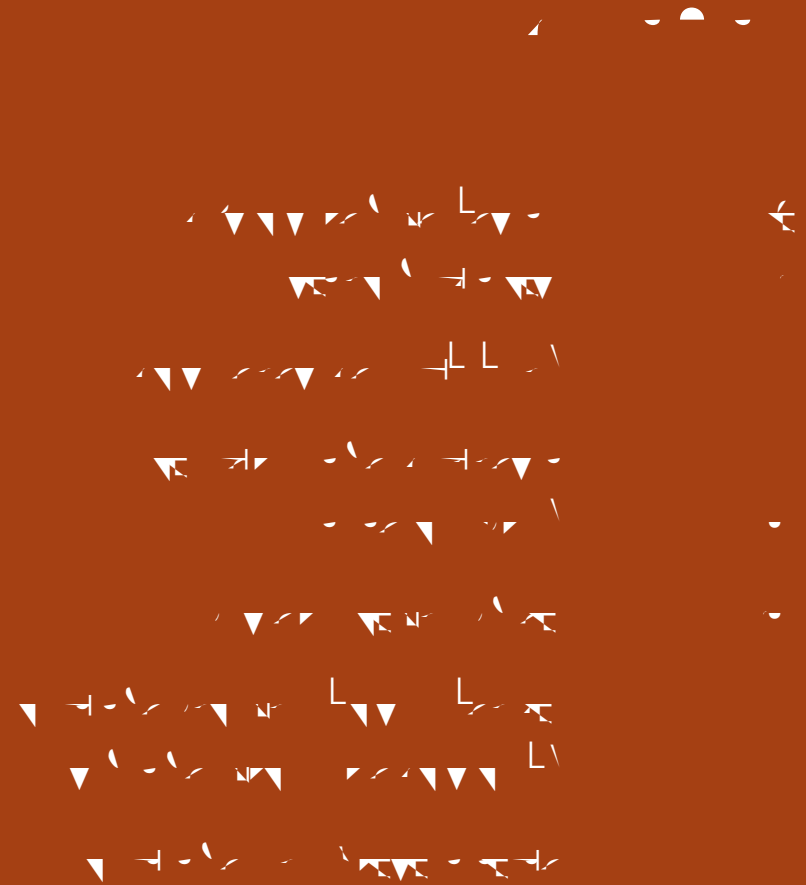
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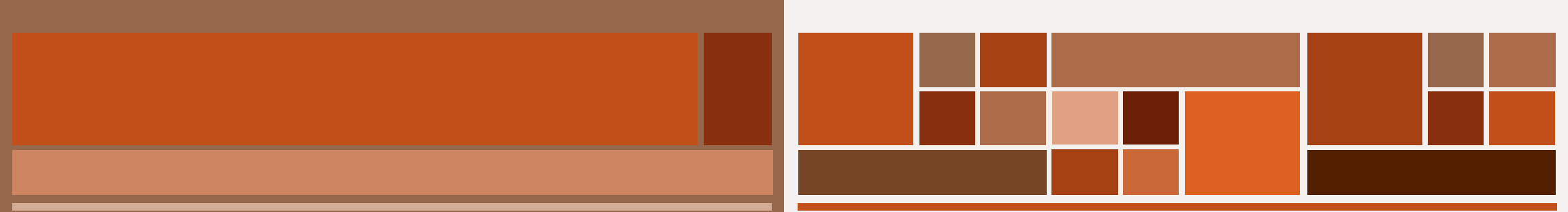
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- Program on America and the Global Economy (PAGE) and its
 - Global Energy Initiative together with the Brazil Institute, have held a series of conferences that have focused in whole or in part on various



With nations looking more and more to other, non-traditional sources of energy, the Program on America and the Global Economy (PAGE), the Brazil Institute, and the Global Energy Initiative (GEI) sponsored a comprehensive assessment of the current state of one of those possible sources: biofuels. As moderator **Kent Hughes**, Director of PAGE and GEI, pointed out, biofuels are of considerable importance as they “involve our innovation system... and have implications for food security, for the environment, and energy security.”

On the first panel, “Biofuels: The Current State of Play,” **C. Ford Runge** and **Robbin S. Johnson** of the University of Minnesota commented upon M ommsoH()-38(i)

Johnson also did not shy away from mentioning the environmental problems associated with corn-based ethanol production. He specifically highlighted the nitrogen runoff in the Gulf of Mexico, nitrous oxide emissions from fertilizer, and the extra burden placed on water resources. Moreover,

Joel Velasco, UNICA's Chief Representative for North America, described the state of biofuels in Brazil, highlighting sugarcane's role as a sustainable solution for bioenergy and its prospects for the international market. Velasco opened his remarks by introducing UNICA, the Brazilian Sugarcane Industry Association, which includes 120 producers and is responsible for 60 percent of both ethanol and sugar production in Brazil. He stated that, "sugarcane is Brazil's number one source of renewable energy, and 600 million tons of CO₂ emissions have been avoided thanks to the use of ethanol." Velasco went on to point out that Brazil does not only extract sugar and ethanol from sugarcane; further refinement yields electricity, bioplastics, and hydrocarbons.



Source: UNICA; Ministry of Mines and Energy
BEN (2008); "Historical carbon budget of the
Brazilian ethanol program" in *Energy Policy*,
Volume 37, Issue 11

Furthermore, according to Velasco, satellite mapping has shown that sugarcane can be produced on 160 million more acres of Brazil's land, and given the yield and efficiency gains of the economies of scale associated with sugarcane production, Velasco argued that ethanol prices will continue to drop. Moreover, UNICA has also "urged the federal government to prohibit sugarcane cultivation in sensitive biomes such as the Amazon forest and Pantanal wetlands and on native vegetation (e.g., cerrado and grasslands)."

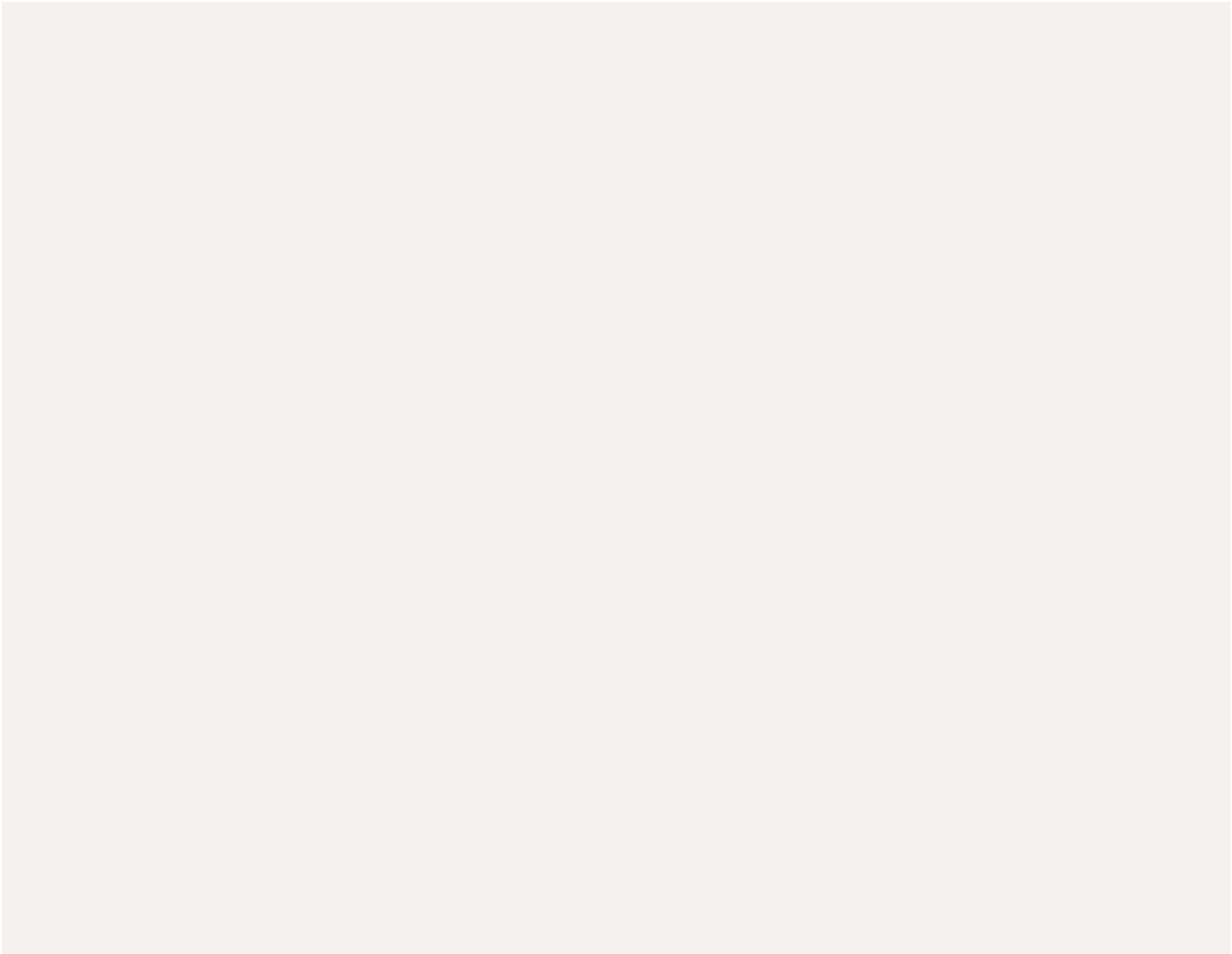
In addition, Velasco highlighted the unique complementary relationship between sugarcane production and hydroenergy in Brazil. Essentially, during the dry season (April-November), sugarcane biomass has the potential to save 4 percent of reservoir stocks for every 1,000 megawatts of bioelectricity generated.

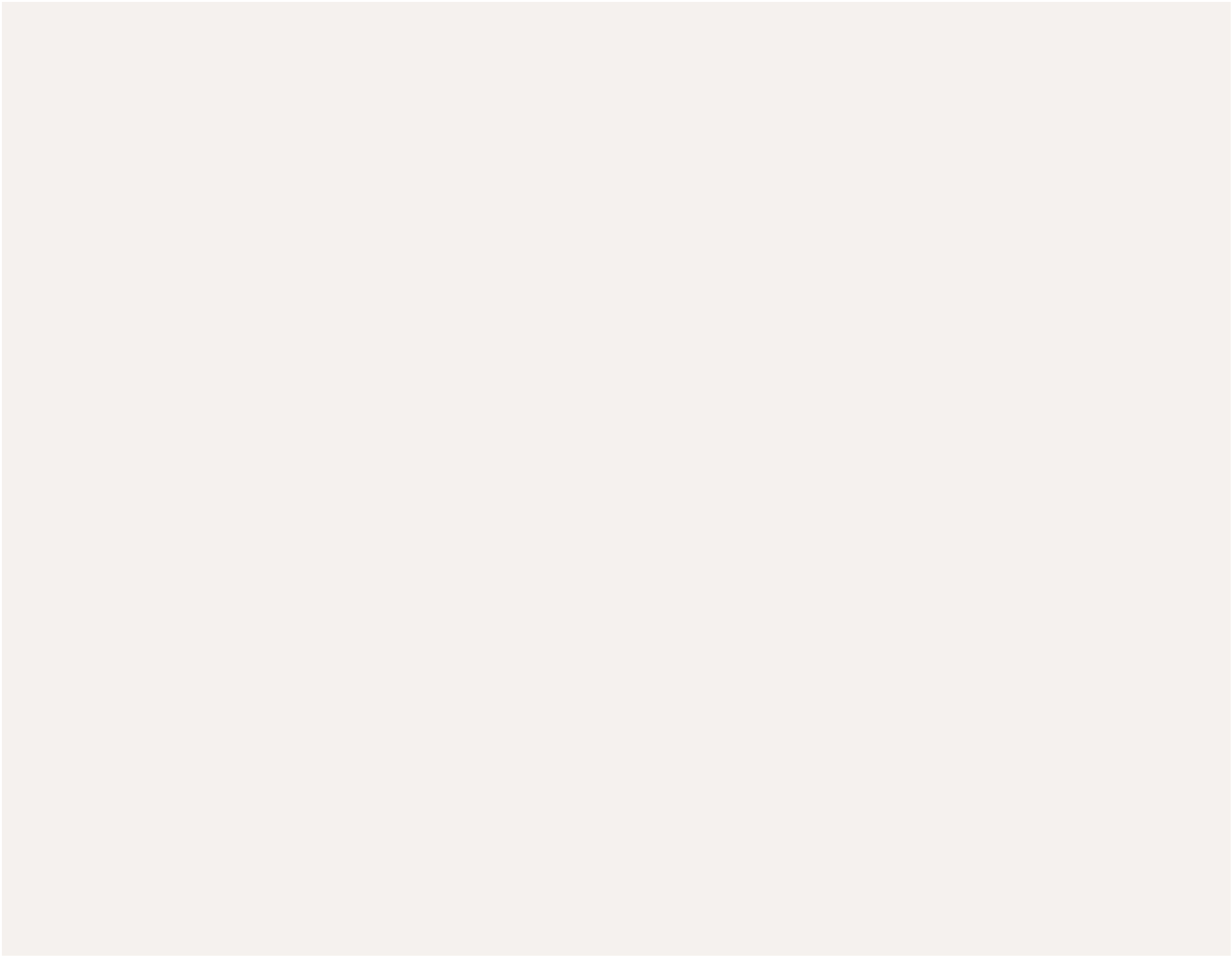
However, Velasco was quick to admit that Brazil is a specific country with particular endowments and production efficiencies that other countries, like the United States may not have. Nevertheless, he stressed that "sugarcane is not only a Brazilian story" but a global one, and identified four principles for a "viable biofuels value chain: feedstock performance, technology neutrality, sustainability, and open competition." Velasco emphasized that there are one hundred countries that have the ability to produce biofuels and could potentially compliment the mere 20 oil producers providing fossil fuels today.

Alexandros Petersen, a Senior Fellow at the Atlantic Council, rounded out the discussion by describing the viewpoint of the European Union. The European Commission has outlined seven overarching goals for biofuels development. Petersen listed these seven strategic policy areas found in *A E.U. Strategic Policy Framework for Biofuels*: "stimulate demand for biofuels, ensure their environmental benefits, develop the production and distribution of biofuels, expand feedstock supplies, enhance trade

INTRODUCTION

Biofuels policy in the United States remains controversial and much-





- (4) in a re-consideration of environmental pollution problems, biofuels will emerge as a major contributor to pollution through nitrogen run-off, as a threat to biodiversity through pressure on land conversion and water scarcity and as a worrisome contributor to nitrous oxide emissions (which are 296 times more forcing as a greenhouse gas than carbon);
- (5) in an assessment of long-term solutions, biofuels will look less attractive because of the need for a costly separate distribution system to avoid problems from water solubility;
- (6) as more comes to be understood about “next generation” biofuels, corn-based ethanol will come to seem more like a barrier than a bridge, given likely differences in location, processing technologies and feedstocks for the

the use of feedstocks for the production of ethanol. The use of feedstocks for the production of ethanol is a complex issue that involves a number of factors, including the availability of land, water, and labor, as well as the environmental impact of the production process. The use of feedstocks for the production of ethanol is a complex issue that involves a number of factors, including the availability of land, water, and labor, as well as the environmental impact of the production process.

¹Donner, S.D. and C.J. Kucharik. 2008. "Corn-based ethanol production compromises goal of reducing nitrogen export by the Mississippi River." Proceedings of the National Academy of Sciences of the United States of America. Vol. 15, No. 11, March 18.

²Koplow, Doug. 2009. "A Boon to Bad Biofuels: Federal Tax Credits and Mandates Underwrite Environmental Damage at Taxpayers

Expenditures." *Environmental Health Perspectives* 117(10):1303-1308. doi:10.1289/ehp.117101303

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