Easing ethanol mandate could have cut corn prices during drought

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By relaxing a federal ethanol mandate, the U.S. Environmental Protection Agency could have counteracted the impact of the 2012 drought on corn prices, a new study by University of Nebraska-Lincoln agricultural economists concludes.

The study provides a guidepost for action by federal policymakers in the event of future drought, said co-author Azzeddine Azzam, a UNL agricultural economist.

He said climatologists for NASA and Cornell University recently predicted that a large portion of the United States could face a megadrought, possibly lasting decades. Meanwhile, the Renewable Fuel Standard mandate for ethanol production is to increase to 36 billion gallons by 2022, nearly double its current levels.

"We're not telling policymakers whether or not to waive the ethanol mandate," he said. "But we believe the question of to waive or not waive is going to be asked if such a megadrought occurs. Our research contribution is to provide one method to estimate what portion of the mandate could be waived to offset the effect of drought."

During the 2012 drought, which affected about 75 percent of the Corn Belt, corn prices shot up 33 percent to an average of $6.89 per bushel. The situation sparked a national debate about the consequences of using corn to make fuel.

Governors and some members of Congress urged the EPA to ease the Renewable Fuel Standard, requiring increased production of ethanol, a biofuel commonly produced from corn. The leaders argued that the mandate exacerbated the corn shortage and, in turn, increased costs for food producers. The EPA declined the request, concluding that the mandate had little or no impact on corn, food and fuel prices.

Azzam and fellow researchers Matthew C. Stockton and Sunil P. Dhoubhadel of UNL's West Central Research and Extension Center at North Platte took a closer look at the question. In an article published in the Journal of Agricultural and Applied Economics, the authors conclude that the drought's impact on corn prices could have been "fully negated" by reducing the Renewable Fuel Standard by 23 percent that year. That would have translated to a 13.7 percent reduction in ethanol consumption.

It's a mistake to couch the debate as a question of food vs. fuel, Azzam said. Relatively little corn in the United States is used for direct human consumption. Close to 40 percent is used for livestock feed. So higher corn prices do translate to higher feed costs and higher beef prices, and ultimately to higher food prices.

The study shows the ethanol mandate's impact on seven different markets: beef, pork, poultry, corn, soybeans, distillers' grain and ethanol.

"There are many sectors that compete for corn," Azzam said. "When there's drought, there's going to be discussions of who should get the corn."

Other researchers' previous work resulted in mixed findings about whether easing the mandate would have moderated corn prices, but did not address by how much the mandate would have to be waived to offset the increase in corn prices in a drought. Many ethanol plants shut down

production in 2012 because of high corn prices. Blenders used credits issued for excess production in past years to meet the 2012 mandate.

Azzam and his team appear to be the first to estimate the mandate waiver required to offset the impact of drought on corn prices and also to factor in the credits.

The UNL team found that the corn and meat markets suffered most from the drought, with beef also suffering from reduced pasture and higher feed costs. The drought, which, according to the authors' estimates, reduced rainfall across the Corn Belt by 32 percent below normal, accounted for an 8.32 percent increase in the price of corn. Reducing that year's 13.6 billion gallon ethanol requirement by 23 percent, to about 10.5 billion gallons, would have offset the portion of the price increase attributable to drought but may not have made a significant difference in the market price of beef.

Azzam said the study is not a forecasting tool—it is a policy analysis tool that allows simulation of the impact of an assortment of shocks on the U.S grain and meat markets.

Provided by University of Nebraska-Lincoln