

Why India's ambitious ethanol plan is spurring food security fears

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India's ambitious plan to cut the use of fossil fuels by promoting ethanol derived from rice, corn and sugar is drawing criticism from some experts who warn the move could undermine food security in the world's second-most populous country.

In June, Prime Minister Narendra Modi's administration accelerated the nation's ethanol goal by five years, seeking to double production and to have gasoline 20% blended with the spirit by 2025. To help meet the target, the government is offering financial assistance to biofuel producers and faster environmental clearances. The plan is also resulting in the diversion of food grains meant for the poor to companies at subsidized rates.

Even as many developed countries debate limiting policy support for grain-based biofuels amid reports of food-price increases and greenhouse gas emissions from deforestation, India is seeing multifold benefits. The government argues that the new target will help the world's third-largest oil consumer save 300 billion rupees (\$4 billion) annually by cutting crude imports, reduce carbon emissions and boost farmers' incomes.

But critics say it's a self-goal for a country that's struggled for years to feed its poor. Though the Green Revolution helped boost farm yields and turn India into a net exporter of wheat and rice, it still ranks 94th on the [Global Hunger Index](#) 2020 comprising 107 nations. The Food and Agriculture Organization estimates that about 209 million Indians, or about 15% of its population, were undernourished between 2018 and 2020. The [coronavirus](#) pandemic is also pushing more people into poverty, dealing a blow to decades of progress.

"It will always be the poor who will be affected worse as a result of diverting precious food grains to alternative energy conversion," said ShanthuShantharam, who helped formulate the country's biotechnology regulations in the 1990s and now teaches agricultural biotech at the University of Maryland Eastern Shore. "As it is, the food security situation in the country is precarious."

The report that maps out the new ethanol blending target primarily focuses on food-based feedstocks, with the government saying the program is a "strategic requirement" in light of grain surpluses and wide availability of technologies. Yet the blueprint is a departure from the 2018 National Policy on Biofuels, which prioritized grasses and algae; cellulosic material such as bagasse, farm and forestry residue; and, items like straw from rice, wheat and corn.

"India has a real opportunity here to become a global leader in sustainable biofuels policy if it chooses to refocus on ethanol made from wastes," said Stephanie Searle, fuels program director at the International Council on Clean Transportation. "This would bring both strong climate and air quality benefits, since these wastes are currently often burned, contributing to smog."

Water Crisis

The new ethanol policy should ensure that it doesn't drive farmers toward water-intensive crops and create a water crisis in a country where its shortage is already acute, said Ramya Natarajan, an energy researcher at the Centre for Study of Science, Technology and Policy, a think tank in Bengaluru. Rice and sugar cane, along with wheat, consume about 80% of India's irrigation water.

"With our depleting groundwater resources, arable land constraints, erratic monsoons, and dropping crop yields due to climate change, food production must be prioritized over crops for fuel," Natarajan said.

A ton of corn can typically produce about 350 liters of ethanol, while a similar quantity of rice can yield about 450 liters of the spirit. For sugar cane, it's about 70 liters.

Even in the U.S., food-versus-fuel fights have flared intermittently. Some say the domestic fossil-fuel industry's embrace of climate-friendly fuels has diverted corn and soy meal used to bulk up chickens and hogs, and made them more expensive. For instance, demand for soy oil has pushed futures up about 80% in the past 12 months, while the fast-food industry has complained of paying more for everyday items such as mayonnaise.

These days, many developed countries are focusing more on electric vehicles to cut carbon emissions. The Biden administration's infrastructure proposal has set aside \$174 billion of investments in EVs, including subsidies, but relatively little for biofuels. India, which is also seeking to promote EVs, shouldn't focus on both policies at the same time as they aren't complementary, said Kushankur Dey, chairman of the Centre for Food and Agribusiness Management at the Indian Institute of Management, Lucknow.

The push for ethanol poses no threat to India's food security because the government has enough stockpiles of grains at warehouses of the state-run Food Corp. of India, said Sudhanshu Pandey, the top bureaucrat at the food ministry in New Delhi.

"The long-term planning of the government involves the creation of sufficient capacities so that half of the requirement of 20% blending is catered by grains, predominantly maize and the rest by sugar cane," Pandey said.

State reserves stood at 21.8 million tons of rice as of Sept. 1, against a requirement of 13.54 million tons, according to the food ministry. The blending plan would benefit corn and rice farmers, while addressing the issue of surplus, Pandey said.

Some critics are concerned that food grains meant for the impoverished are being sold to distilleries at prices cheaper than what states pay for their public distribution networks. Many ethanol producers are getting rice at 2,000 rupees per 100 kilograms (220 pounds), which compares with an estimated 4,300 rupees Food Corp. of India pays to stock up the grain.

"Competition between the distilleries and the public distribution system for subsidized food grains could have adverse consequences for the rural poor and expose them to enhanced risk of hunger," said Prabhu Pingali, professor of applied economics and director of the Tata-Cornell Institute for Agriculture and Nutrition at Cornell University.