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Biotechnology and Climate Volatility: The Debate We Must Have

By Kenneth M. Quinn

On June 19, it was my privilege to stand on the stage with Secretary of State John Kerry in the Benjamin Franklin Reception Room at the State Department in Washington, D.C. and announce that Marc Van Montagu of Belgium and Mary-Dell Chilton and Robert Fraley of the United States will share the 2013 World Food Prize for founding and developing modern agricultural biotechnology.

In awarding the World Food Prize to three scientists who discovered the methods that permit the breeding of genetically enhanced crops, I understood we would receive criticism and become immersed in controversy from those strongly opposed to such crops. Nonetheless, we never wavered in our belief that it was important to go forward with this decision for two reasons:

- First, to be true to the precepts about who should receive our Prize, established by our founder, the late Nobel Peace Prize laureate Dr. Norman E. Borlaug; and
- Second, to engender the debate we must have about whether it would be possible to feed all of the people on our planet without biotechnology and genetically modified crops, especially given the dramatic challenges farmers may face from climate volatility.

Our Laureate Selection Committee, which was chaired by Dr. Borlaug until his death in 2009, and is now headed by Dr. M.S. Swaminathan of India, one of the most revered and respected agricultural scientists in the world, chose our recipients based on two broad criteria:

- First, that the individual has made an exceptional breakthrough achievement, something not previously accomplished; and
- Second, that the individual's accomplishment resulted in a demonstrable positive impact on the quality, quantity or availability of food in the world, affecting significant numbers of people

genetically enhanced crops on over 170 million hectares with improved yields, resistance to insects and disease, and the ability to tolerate extreme variations in climate. Over 90 percent of these farmers are resource-poor individuals in developing countries.

One of the most significant demonstrations of that impact came during the drought last summer in the United States. The corn harvest in the American Midwest was on average 40 bushels per acre higher than that which was previously attained in the face of an even more harsh heat wave. That increase occurred because of the drought-tolerant seeds that had been developed using the tools of modern biotechnology. When that increased per acre yield is multiplied by the 95 million acres of corn planted in the U.S., the total is an extraordinary increase in the quantity of food available.

Despite these statistics, there is considerable opposition to such crops and other agricultural products produced using biotechnology and genetic modification.

At the same time, as two Iowans have pointed out, the implications of climate volatility on agricultural productivity have become increasingly ominous. A recent address by U.S. Agriculture Secretary Tom Vilsack outlined the potential impact on U.S. farmers. The reports of the World Bank, under new president Dr. Jim Yong Kim, have highlighted the potential agricultural devastation that could be caused by saltwater intrusion from rising seas and harsh droughts, which will disproportionally fall on the poorest and those least able to cope.

Climate volatility is a game changer for farmers from Iowa to India, which impels us to address this fundamental question:

If smallholder farmers, so many of them from poor rural areas, are to thrive in the face of these climatic challenges, can we afford to rule out, as critics suggest, using biotechnology and genetically modified crops to assist them?

The World Food Prize believes it is essential to have this debate, and to this end we have entitled our Borlaug Dialogue international symposium, which will take place October 16-18, "The Next Borlaug Century: Biotechnology, Sustainability and Climate Volatility."

Dr. Borlaug, the man who is credited with saving a billion people from starvation during the Green Revolution, and who is said to have "saved more lives than any other person who has ever lived," believed biotechnology could reduce hunger and human suffering. That view deserves to be treated with respect, even by those who vehemently disagree with him and our committee's decision on our 2013 laureates.

To honor Dr. Borlaug, whose 100th birthday will be commemorated in 2014, let us begin a year-long rational, informed discussion about whether the international community can afford to exclude the use of biotechnology and crops with genetically enhanced traits as we confront what is likely the single greatest

I extend an invitation to all who are concerned about these issues to join us in Des Moines on World Food Day (October 16) for this essential conversation.

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