On 16 October, United Nations World Food Day, more than 1,200 people from more than 60 countries gathered at the World Food Prize in Des Moines, IA, to celebrate the conclusion of the Norman Borlaug Centennial Year.

They attended the Laureate Award Ceremony in the magnificent Iowa State Capitol, where the World Food Prize was presented to Dr. Sanjaya Rajaram, a native of India who has spent most of his professional life in Mexico building on Borlaug’s legacy by developing hundreds of new varieties of wheat—which have increased world wheat production by more than 200 million tons (see page 22).

They also participated in the three-day Borlaug Dialogue international symposium, the theme of which was “The greatest challenge in human history: Can we sustainably feed the nine billion people who will be on our planet by the year 2050?” This theme was chosen because it was the central question that animated Borlaug’s professional life from the time he received the Nobel Peace Prize in 1970 until his death on 12 Sept. 2009.

When Borlaug created the World Food Prize in 1986, his goal was to establish an award that would be the equivalent of a Nobel Prize for food and agriculture, and that would recognize and inspire exceptional breakthrough achievements in increasing the quality, quantity, and availability of food in the world.

“...Norm’s dream was to bring the Green Revolution to Africa. His passion was for inspiring the next generation, and his last words were: ‘Take it to the farmer.’”

Borlaug saw, even then, that the ability to provide sufficient nutritious food for everyone on our planet would be the central challenge facing humanity well into the 21st-century. He was fond of saying that, over the past 5,000 years, the human race had cumulatively produced sufficient staple crops to feed almost all of the people who had lived on our planet. The problem was, he added, that we had to replicate all that was grown during those five millennia in the next 50 years.

Norm often spoke of the specter of population growth in terms of his home state of Iowa, where he was born on 25 Mar. 1914. He knew that when the Iowa territory was opened for settlement in 1830, the total population on earth was approximately 1 billion people. When he was born 84 years later, the earth’s population had increased to 1.7 billion. However, when he died in 2009, the population of our planet was approaching 7 billion, an increase of 5.3 billion people during the 95 years of his life, compared with just a 700 million increase in the 84 years before he was born. In 2046, when Iowa celebrates its bicentennial, the global population will surpass 9 billion.

Borlaug saw the crisis of global food production coming, and he despaired that international leaders did not recognize the urgency of this problem. At times, he even wondered whether the success of the Green Revolution that he had ignited perhaps caused governments to believe that the food problem was solved forever, causing them to drop their guard and cut back on essential research.

When Norm welcomed me to head up the World Food Prize in 1999, he told me that he often felt that he was a lone voice calling attention to this urgent need. And so, together he and I worked for more than a decade to build the World Food Prize annual events into an occasion that would bring attention to these issues. That effort has paid off.
The renowned economist Jeffrey Sachs said that some of “the key issues that were part of the United Nations Millennium Development Goals were first discussed at the World Food Prize.” Sir Gordon Conway, agricultural ecologist and former president of the Royal Geographical Society, has called our annual Borlaug Dialogue “the premier conference in the world on global agriculture,” as it brings together ministers of agriculture, CEOs, and the president of the World Bank with smallholder farmers from Africa, research scientists, and NGO leaders.

During the last months of his life, Norm took heart from the announcement of the principles that would undergird President Obama’s Feed the Future Initiative, which were first articulated by Secretary of State Hillary Clinton at the World Food Prize Laureate Announcement Ceremony at the State Department on 12 June 2009.

A few months later, Bill Gates gave his first-ever speech on global agriculture and bringing the Green Revolution to Africa at the Borlaug Dialogue symposium in Des Moines, just one month after Norm passed away. At the conclusion of his presentation, I told Mr. Gates that his initiative and call to action, which would be launched at the forum that Norm himself had created, gave Norm great hope for the future during the last months of his life.

This past year has seen events all around the world as part of the Centennial Observance of Norm’s birth, calling attention to the epic challenge we face. The centerpiece of the year was the unveiling of a statue of Norman Borlaug in the U.S. Capitol in Washington, DC, on 25 March—Norm’s birthday. The statue was placed by his home state of Iowa, reflecting his status as the state’s greatest hero and America’s greatest agricultural scientist.

A weeklong tribute to Norm was organized by CIMMYT in Obregon, Mexico (where a statue of Norm was erected by the local farmers), in addition to ceremonies at the University of Minnesota, where Norm obtained his PhD in plant pathology; the USDA, where he had his first job with the U.S. Forest Service; and the World Food Prize Hall of Laureates in Des Moines, the organization he created to be the Nobel Prize for food and agriculture.

Other Borlaug Centennial events during the year included a special Borlaug Global Rust Initiative celebration in Pakistan, the Sasakawa Africa Association commemoration in Uganda, a seminar in his honor at the M.S. Swaminathan Research Center in Chennai, India, and a conference in Karaj, Iran, organized by the Agricultural Biotechnology Institute of Iran.

Secretary of State John Kerry paid tribute to Norm in his opening address at the U.S.–Africa Summit in Washington, DC. In addition, I was pleased to be able to honor Norm in the keynote I delivered at the United Nations FAO World Food Day Commemoration in New York and in my remarks at the global meeting of the World Farmers’ Organization in Argentina.

I often tell people that Norm’s dream was to bring the Green Revolution to Africa. His passion was for inspiring the next generation, and his last words were: “Take it to the farmer.”

The World Food Prize, through its Borlaug Centennial Observance and our annual programs, endeavors to carry forward that legacy and to ensure that Norman Borlaug’s inspiration is with us as we confront the single greatest challenge in human history.

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There are two approaches for stacking genes within a plant’s genome: combining GM traits through traditional breeding (breeding stacks) and transformation with a multi-gene cassette (molecular stacks). The molecular stack method, which complements breeding stacks, presents several design challenges. It is not going to be easy, but that just makes our work more interesting!

What should be done by governing bodies, international organizations, funding agencies, and the scientific community to help feed the world in 2050? The single most important contribution that others can make is to provide accurate information about the food security challenge we are facing and the solutions that can meet the challenge. For too long, there has been misunderstanding and misinformation about modern agriculture technologies, especially GMOs.

This has led to a state of public confusion and unnecessary concern over what this process is and how safe it is. I find this very unfortunate because it did not need to happen.

We have spent far too much time trying to correct false impressions rather than focusing on all the benefits that these technologies can provide. Let us focus on their potential for the future. The world will become a hungry place in one more generation. We will need this wonderful technology to improve the seeds of the future.

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