

# Committee responds to critique of gene engineering report

April 13 2017, by Fred Gould

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Credit: North Carolina State University

Providing blanket approval or condemnation of all genetically engineered (GE) crops oversimplifies a complex issue and ignores the continued need for scrutiny, risk assessment and debate among various stakeholders – including scientists, farmers and the general public.

That's the main message of a letter, "Elevating the Conversation About

GE Crops," published this week in *Nature Biotechnology*. It responds to a December 2016 critique of last May's U.S. National Academies of Sciences, Engineering, and Medicine [report](#) on [genetic engineering](#).

Fred Gould, William Neal Reynolds Professor of Agriculture at North Carolina State University and co-director of the university's Genetic Engineering and Society Center, chaired the National Academies committee responsible for the report, *Genetically Engineered Crops: Experiences and Prospects*, which aimed to "assess the evidence for purported negative effects of GE crops and their accompanying technologies" and to "assess the evidence for purported benefits of GE crops and their accompanying technologies." Gould is also the corresponding author of the letter, which represents the views of the 20-person committee that produced the report.

"It is not surprising that our detailed conclusions, which are often crop-, trait- and context-specific, do not sit well with those who want a universal thumbs-up or thumbs-down to GE crops," Gould said. "It is a nuanced report because the issue is not black and white. Maybe the greatest value of the report is pointing out that there is no straightforward answer."

The scathing critique, published in *Nature Biotechnology* late last year, called for blanket approval of GE crops and derided the report for a number of what it called "inaccuracies" and "omissions."

"This unwillingness to overtly back GE crops, and the report's efforts to give credence to alternative viewpoints – rather like the media's obsession with giving two sides of an argument equal play, irrespective of which view is supported by the evidence – is puzzling," the critique stated.

This specific critique is, in effect, an uninformed indictment of the

National Academies' process, Gould says.

He points to the letter's description of the painstaking way the report was produced.

"For the three report chapters concerning currently commercialized GE crops, our report includes over 900 references," the letter states. "Once our committee developed a full draft of the report, it was sent to 26 reviewers with diverse expertise and perspectives (these reviewers were anonymous to the committee until they were acknowledged in the final report). Each of the 918 comments and criticisms in the reviews had to be specifically addressed by the committee to the satisfaction of a National Academies' independent review board before the report could move forward for the Academies' approval. With all this input and review, this report clearly represented more than the opinions of the 20 committee members."

The critique also accused the report of paying too much attention to non-experts – the general public.

"Science is not democratic," the critique asserted. "The citizenry do not get to vote on whether a whale is a mammal or a fish, the temperature at which water boils, or whether the number 'pi' should be rounded off. There is no such public consultation with respect to the introduction of a new kind of flu vaccine or of new techniques of cardiovascular surgery."

Gould and the National Academies committee counter the criticism with a quote from a speech given in 1999 by former Agriculture Secretary Dan Glickman: "... with all that biotechnology has to offer, it is nothing if it's not accepted. This boils down to a matter of trust. Trust in the science behind the process, but particularly trust in the regulatory process that ensures thorough review – including complete and open public involvement."

"Secretary Glickman reminds us here that governing GE technology is more than just regulation," Gould said. "Public input is critical in order to build trust. We highlight this important advice in both the report's preface and the letter. It really gets to the heart of the issue."

Gould says that rather than simplistic approval or condemnation of GE crops, the report found that the social and economic effects of GE crops depended on whether the GE trait and the genetics of the cultivar it was put into matched the needs of the farmers and the farm environment.

The report also, in its discussion of regulating GE crops, concluded that it was not how a genetic change was made or even the amount of DNA that was altered that should be the focus of regulation. In the end, the report asserts, it is the plant characteristics that should be regulated. The committee concluded that these criteria applied as much to what are considered conventionally bred plants as to GE plants.

Gould adds that constituencies both for and against GE [crops](#) have weighed in on the report, making diametrically opposite claims about the report's findings. Some even suggested that there was no need for a report of this type.

"We welcome all public input into the report because these discussions are healthy and helpful," Gould said.

**More information:** Fred Gould et al. Elevating the conversation about GE crops, *Nature Biotechnology* (2017). [DOI: 10.1038/nbt.3841](https://doi.org/10.1038/nbt.3841)

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