Book review: Jennifer Thompson's 'GM Crops and the Global Divide' offers lessons drawn from the history of the agricultural biotechnology revolution, for activists to CRISPR advocates

I've spent the last few weeks reading "GM Crops and the Global Divide," the new book by Jennifer Thomson, emeritus professor at the University of Cape Town. Though the original title was "GM Crops: The West versus the Rest," Thomson was prompted to change it after writing and thinking about the issue. She became convinced that just as the world cannot be neatly divided into two parts, one cannot neatly attribute the issue to the West and a certain "Rest." Still, she makes it clear that activists in the West are unduly influencing the issue in Africa and elsewhere.

Dr. Jennifer Thomson. Credit: ISAAA

It was especially enlightening to read Thomson's historical documentation and analysis of the genetically modified technology controversy. Never before has a new agricultural technology been so emotionally debated among stakeholders, she observes. I agree. The book opens with a history of how GM technology was first applied in medicine in the 1970s, before its subsequent application in agriculture. It then provides the background as to why GM technology is not as popular in Europe as America. Thomson details how GM crops are being made in Africa by Africans, discusses some of the economic and

environmental benefits and proceeds to bust myths. Thomson then draws attention to how the position of many Africans on GM crops is being influenced largely by what the West is saying.

The bottom line, as far as the subject of this book is concerned, is that if many organizations in “developed countries” express anti-GM sentiment, many countries in the “developing world” will take note. Perhaps one way to sum up the effects that the West is having on the Rest is that the wealthier “haves,” who do not need GM crops because they already have enough food, are preventing the “have nots,” who do need it, from accessing the technology it and improving their food security. For the West to prevent such farmers from even testing whether the improved seed will benefit their lives and consumers is morally concerning, she writes.

I completely agree with this analysis. But the more fundamental question for me is, why are so many anti GM groups in the West spewing so much anti-GM sentiment in Africa? Thomson talks about how a lot of them do this because they see GM as a threat to human health and biodiversity in Africa. But I think there is more to it than that. Anti-GM activism has become a full scale industry on its own that people and organizations in the West and Africa are reaping millions from. The organic industry, non–GMO branding projects and food sovereignty activism have become lucrative business ventures that today recruit highly paid professionals. So it will probably never matter that scientific evidence proves beyond doubt that GMOs will make a difference in Africa. The anti-GM sentiments from the West will always continue to flood our shores. We wish them well.

Truth and facts are sacred

Another interesting point Thomson makes about the low uptake of GM crops in Africa caught my attention. She questions why the controversy around GMOs continues despite its safety record in humans and animals for more than 25 years now. She answers the question with a reason offered by Marcel Kuntz of the National Institute of Agricultural Research (INRA) in France. Kuntz says “there is a postmodern assault on science in general, and GM crops in particular. Postmodern philosophy claims that there is no universal truth and that “each social or political group should have the right to the reality that best suits them.” Kuntz goes on to say: “The danger of a postmodern approach to science — that seeks to include all points of view as equally valid — is that it slows down or prevents much needed scientific research, even denying that science should have a role in such decisions.”

Drawing inference from how this is playing out in the world of politics as well, Fareed Zakaria of CNN describes it as a “post truth age.” In a speech at the 2017 WISE summit in Qatar, he bemoaned how people (who don’t like the truth) use alternative realities and alternate sets of facts to construct their own biases about what they want to believe. He, however, argues that there is always something called truth that can be achieved by hard work, evidence and analysis. And that truth is not simply the construction of alternate realities — each one equally valid, each one simply having its own space within ones politicaland cultural framework. No, two plus two equals four. That isn’t an opinion, that is fact, Zakaria argues. He warns that if truth is continually undermined, we will enter an “Alice in Wonderland” world whereeverything is possible, where black is white, up is down, where truth is falsehood, and as a result, noseries of events or facts can ever prove someone wrong or to have made a mistake. He says this is a pathto the decline of civilization. I have nothing more useful to add to this.

Fareed Zakaria’s special address at WISE 2017. Credit: WISE

Natural and social sciences deserve equal attention

Thomson argues in her book that the GM conversation should not be all about natural sciences like plant breeding and genetic modification, but social sciences, like economics and sociology. As climate activist Mark Lynas puts it, the debate on GMO safety is over. There is as much scientific consensus that GMOs are not unhealthy as there is on the existence of human-induced climate change. So, that is non-negotiable. But there are still issues about the socio–economic and cultural implications of the use of

GMOs that have not been explored to the fullest. Thomson makes an interesting point about this. Quoting Buhler and Kirshenbarum (2019), Thomson observes there is a need for food experts and health professionals to work with social scientists to understand ways in which different communities make decisions about food. She couldn't have said it any better. The role of social scientists in the broad conversation about GM crops cannot be more crucial now.

Why is history not repeating itself?

It was provocative to read that United Kingdom biotechnology company AstraZeneca developed a GM tomato in in the early 1990s. And because of the characteristics of the fruit, it was less expensive to produce than conventional tomato paste, resulting in the product being 20 percent cheaper. Between 1996 and 1999, 1.8 million cans, labelled clearly as genetically engineered, were sold in major supermarkets such as Sainsbury and Safeway UK. Sadly, due to adverse consumer reaction after extensive anti-GM campaign, the product was withdrawn. I found it quite interesting that today, AstraZeneca is using similar biotechnology tools to produce COVID-19 vaccines, and everyone is hailing them, rather than condemning them. Why is GM technology accepted in medicine but not agriculture? I still think it is because of the huge investments being made in the anti-GM industry. Nothing else would explain it any better.

Gene editing

Thomson dedicates quite a bit of attention to gene editing and offers some advice on how lessons from GMOs should shape how gene edited foods are managed. Gene editing has been praised as the new wonder that will revolutionize agriculture, industry, health and environmental protection, among others. In agriculture, promoters have made conscious efforts to project gene edited foods as different from GMOs and not unlike classical, traditional plant breeding. Quoting (Bain 2019), Thomson says this position assumes that if the public understands plant breeding, then they will automatically accept gene editing. This argument is clearly not true as traditional plant breeding does not require laboratory interventions, Thomson writes.

Admirable candor

Despite being a strong advocate of GM crops, Thomson admits in her book that there are aspects of GM that she finds problematic. For instance, monoculture is not sustainable and can be harmful to the environment and it will be better for consumers and farmers if GM crops were not in the hands of multinational companies only. This candor deserves to be encouraged. Typically, only sincere, bold and confident people whose analyses aren't tainted by personal interest would admit to facts that don't support their side of the argument. Jennifer Thomson deserves a pat on the back for this display of honesty.

Ultimately, Thomsom's book offers lessons for everybody — scientists, regulators, anti-GMO activists and gene editing promoters — as it brings the future to the present based on lessons from the past.

Joseph Opoku Gakpo is a 2016 Cornell Alliance for Science Global Leadership Fellow and contributes to the Multimedia Group Limited in Ghana, working with Joy FM, Joy News TV, and MyJoyOnline. He has a master's degree in communications studies from the University of Ghana and is a member of the Ghana Journalists Association. Find Joseph on Twitter @josephopoku1990

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