

\$83 trillion in savings — Misguided attacks by ‘organic fundamentalists’ distort the revolutionary advancements of the Green Revolution

A recent study quantifies some of the previously undocumented benefits of the Green Revolution. The results are nothing short of stunning.

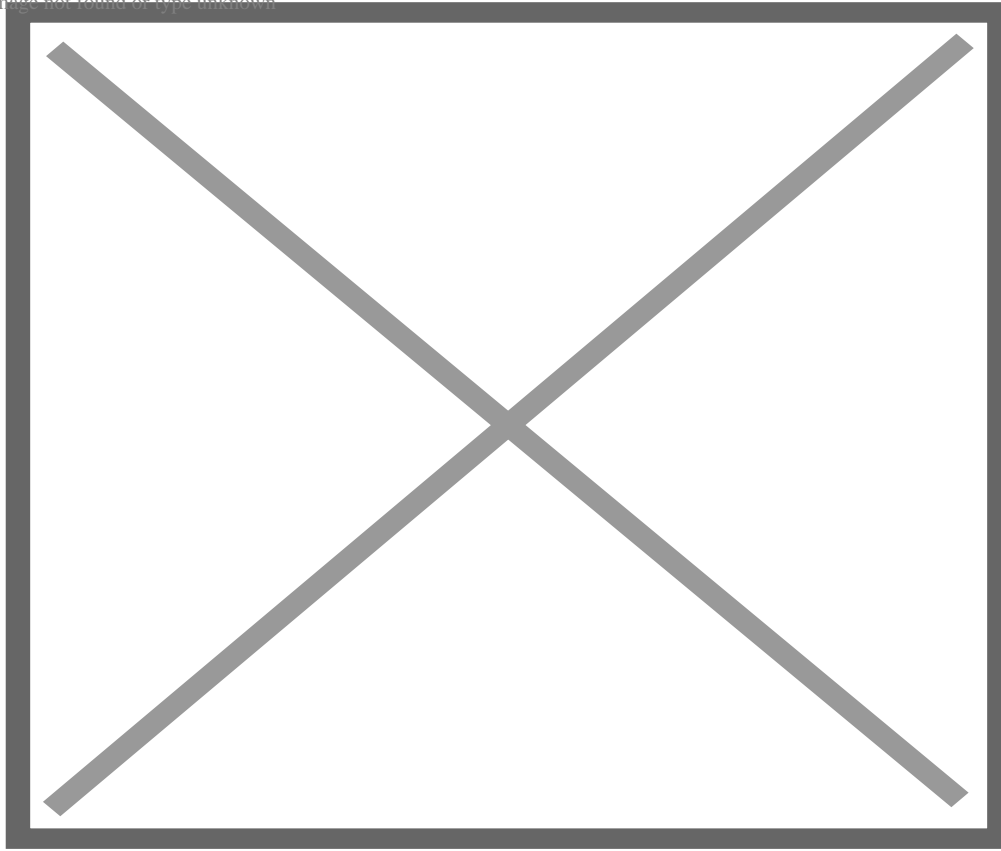
Despite a massive increase in population growth and a shrinking amount of arable farmland, food production absolutely exploded beginning in the middle of the 20th century. We owe that progress to major improvements in agriculture, especially innovations in crop breeding, work that was led by a plant pathologist named Norman Borlaug, [often called](#) “the father of the Green Revolution.” According to the University of Minnesota’s College of Food, Agricultural, and [Natural Resource Sciences](#):

Norman Borlaug was famous for his decades-long, science-based international agriculture improvement and educational efforts. His Mexican group’s work spearheaded ‘The Green Revolution.’ ... Borlaug and his colleagues, using their ‘miracle Mexican wheats’, bent the arc of history. Their wheats and policies prevented what would have been a disastrous epoch in human history ... Their efforts saved many lives and averted massive social and political upheaval. They brought prosperity to areas of the world heretofore considered hopeless.

We live in a silly world, so some critics have accused Borlaug and his colleagues of [facilitating](#) “an urbanization in which we become more and more divorced from the sources of our food.” That probably plays well to Whole Foods shoppers who’ve never experienced food insecurity, but researchers continue to document the Green Revolution’s positive effects.

Consider the results of this August 2021 paper published in the [Journal of Political Economy](#). [1] The study found that the high-yielding crop varieties (HYVs) developed during the Green Revolution increased production by more than 40 percent between 1965 and 2010. Higher yields increased income and, because wealthier people [tend to have](#) fewer children, reduced population growth.

Image not found or type unknown



Wheat yields have been improving over time. Credit: FAO

Fertility declines can carry [their own drawbacks](#), but they are undoubtedly positive in this context: a 10-year delay in the Green Revolution would have cut gross domestic product per capita (in 2010 numbers) by 17 percent while 223 million more people would have joined the developing-world population. “The cumulative GDP loss over 45 years would have been **US \$83 trillion**,” the authors wrote, “corresponding to approximately one year of current global GDP.” [My emphasis]

Contrary to activists who worry that industrial farming is [destroying the planet](#), it’s well known that technological improvements tend to reduce the expansion of land use for agriculture, yielding important environmental benefits. The Green Revolution was the textbook example of this phenomenon in action. According to the study:

Our paper also sheds light on a concern, often expressed in the literature, that agricultural productivity improvements would pull additional land into agriculture at the expense of forests and other environmentally valuable land uses. We find evidence to the contrary: in keeping with the “Borlaug hypothesis,” the Green Revolution tended to reduce the amount of land devoted to agriculture.

Another equally significant aspect of the Green Revolution was that it spurred continued adoption of

higher-yielding crop varieties past the 1960s and 70s. In fact, the rate of adoption “has increased by as much in the 2000s as in the four preceding decades,” the study authors concluded. This is important because agriculture is still the major employer in many developing countries. Technological improvements in farming therefore enable the poorest people to significantly improve their living standards.

While not covered in this paper, other research has shown that even some developed countries have suffered significant economic consequences by denying their farmers access to enhanced crop varieties. The UK is a perfect example. Britain's moratorium on transgenic crop cultivation has [cost the country](#) hundreds of millions of dollars. And all because of unsubstantiated fears about the dangers of “GMOs.”

The point, as always, is that technological innovation generally makes the world healthier and wealthier. With that as our guiding principle, we can eliminate a lot of unnecessary suffering.

Notes:

[1] My thanks to [economist Alex Tabarrok](#) for bringing our attention to this paper.

Cameron J. English is the director of bio-sciences at the [American Council on Science and Health](#). Visit [his website](#) and follow ACSH on Twitter [@ACSHorg](#)

A version of this article was originally posted at [American Council of Science and Health](#) and has been reposted with permission. Find on American Council of Science and Health on Twitter [@ACSHorg](#)