

Futurist Stewart Brand is betting on biotech

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Genetically modified foods will power the next green revolution, says futurist Stewart Brand.

Picture a parent roaming the supermarket aisles in 2050, scanning labels carefully for the all-important words “genetically modified ingredients”—to make sure everything that goes into the shopping cart is guaranteed to be GMO.



Stewart Brand

“They won’t accept any of that dangerous organic stuff because that was bred traditionally and no one knows what’s in there, and it probably wasn’t irradiated on the way to the market, so pathogens are still on there,” says futurist Stewart Brand, president of **The Long Now Foundation** and

publisher of the 1970s counterculture bible for a self-sustainable lifestyle, the Whole Earth Catalog. “Flips like that do occur,” he says.

While Brand may offer up his futuristic scenario with tongue slightly in cheek, he is serious about his belief that technology is key to finding the solutions our hungry planet will need. He is a preacher of the power of biotech. It’s a perspective that’s a world away from his roots as a pioneer in the late 1960s and early 1970s environmentalist movement in California, when he fully supported the hippie philosophy of heading back to the land.

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— Stewart Brand

“The world has changed significantly since the early to mid-‘70s, but the environmental movement has not changed,” says Brand. “We were supposed to look down on tech solutions to environmental problems. We were supposed to solve all of our environmental problems through better behavior. And look down on corporations, and anything purporting to be good that came from a corporation should be regarded with suspicion, a viewpoint which stands to this day, and is based on nothing.”

Brand intentionally chooses strong words. He believes advances in agriculture will eventually result in healthier, more nutritious foods and more efficient food production on less farmland, which would lead to the return of great swaths of wildlife corridors—just some of the ideas he lays out in his **2010 book**, “Whole Earth Discipline: Why Dense Cities, Nuclear Power, Transgenic Crops, Restored Wildlands, and Geoengineering Are Necessary.”

But for now, the idea of feeding a planet that is about to reach peak population, well after it has reached **peak farmland**, is a scenario that has many still wringing their hands.

“One of the reasons that 2050 keeps coming up is that it’s the point at which every serious demographer knows that we’ll probably reach peak human population,” says Brand. After that, he says, the world’s population will begin decreasing thanks to the global phenomenon of diminishing population rates. In countries like Italy, Spain, Germany, Russia, Japan and Singapore, for example, people are having far fewer children than they did decades ago.

“Now is probably the scary time when we project those imagined fears out to 2050,” says Brand. “There’s a lot more population coming, but there are fewer [additional people being born] every decade,” he says.

Better living through biotechnology

Brand says he is optimistic about the future of food because we’re on the cusp of a second green revolution—one in which we’ll be able to harness a powerful and revolutionary tool: biotechnology. Brand predicts biotech will be at the heart of great advances in sectors ranging from medicine to human nutrition to conservation.

“We’ve got 10,000 years of breeding experience. We’ve got 80 to 90 years of hybridization experience,” he says. Add to that the genetic manipulation experience that scientists continue to accumulate, Brand says, and he foresees a world of low-cost medically and nutritionally sound foods that are available to everyone.

How will this play out in practice? Brand says it might mean adding omega-3 fatty acids to soybeans for heart health. Or achieving a better understanding of the bacteria that live in our guts, which may play a role in health issues like obesity and immune system disorders. Perhaps using genetic modification to create hypoallergenic peanuts, or to improve the nutritional content of essential cereal crops like rice—a topic that Brand feels passionately about.

“This is particularly important in the developing world where you have some centuries-deep chronic problems, like lack of vitamin A precursors in rice, which was solved 10 to 15 years ago with Golden Rice,” he says. “And the fact that that rice is not readily available to anyone who wants it throughout the rice-growing regions of the world is regarded by some as a crime against humanity, perpetuated by Greenpeace and other organizations who had a mistaken notion somehow of the wickedness of Golden Rice. It’s disgraceful.”

Transparency encourages trust

Brand says he would be delighted to personally practice what he preaches in his embrace of technology, admitting he would eagerly devour a **lab-grown** rib-eye steak. There’s also a place for innovative options like **Soylent**, a new nutritional drink made from vitamins and minerals that is designed to take the place of traditional food, he says, and he has even placed an order so he can taste it.

“One of the things I particularly like about this phenomenon is that the people who started Soylent are ... encouraging a lot of tinkering by amateurs and semiprofessionals screwing around with the formula,” he says, by hosting and providing online forums for these conversations. “Could you imagine Coke putting their formula out on the Web?”

Brand says this kind of transparency and openness encourages consumers to trust technology, and he compares it to the work he's doing with his Long Now Foundation's **Revive & Restore** initiative. Revive & Restore's goal is to rescue endangered species that have genetic problems, like the black-footed ferret, and to bring back extinct species such as the passenger pigeon by acting as a hub for a variety of global efforts.

"We can be completely transparent. There's no trade secrets. No patents. There's just a whole lot of important research to be done," he says. "But organizations like Soylent are exploring ways to be commercial and be transparent."

At 75 years old, Brand says that as he looks back, he realizes it's important to put fear of the future in perspective. "The lessons learned from 'back to the land' not working out, and the commune not working out because civilization didn't crash after all, were largely lost," he says. "I distinctly remember that decade after decade, the world was going to end because of the Y2K problem, overpopulation ... ," he says. "It has not played out, and hasn't played out most of the time because of technological solutions.

"The glass is three-quarters full, and has been for quite awhile," he adds.

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