

Why the Future Is Organic

By Richard A. Levins

(Keynote Address at Minnesota Organic Conference, January 9, 2016)

On November 21, 2001, my wife Jane and I were among the 2,000 or so folks at a downtown Minneapolis hotel who welcomed Nelson Mandela to an NAACP meeting with a standing ovation. Of course, I don't remember the exact date. I had to look it up. And while I was doing so, I came upon this little tidbit from a news account of the event: "There is one question put to me on several occasions since my arrival here," Mandela said. "I would like to preempt any one of you from asking me this question." There was a pause, then a burst of laughter when he said: "The question is, 'What do you think of the American presidential elections?'"

Some things never change, it seems. While I don't remember everything about that wonderful evening, there is one thing I will never forget. As I looked around at the sea of people, whites in the minority, I thought back to the days when I was growing up in the rural South during school desegregation. I imagined someone back then asking me: "Dick, when you are much older, which of these two things is more likely: (A) Living north of the Mason Dixon Line and sitting at an NAACP banquet, or (B) Living on the planet Jupiter and owning a very cool ray gun?" I would surely have answered Jupiter, because at least I had seen depictions of such things in the Grade-B science fiction movies that our family took in on Friday nights at the Star Light Drive-In Theater. I had no frame of reference whatsoever for the night with Mr. Mandela. I had on several occasions seen Ku Klux Klan members walking my home town streets in full dress regalia, but had never seen a white person and a black person eat at the same table.

I bring this up because I am having a similar feeling today. I started my career in farm management in August of 1973. If you would have told me then that I would be giving the keynote speech at an organic conference in Minnesota in my dotage, I would have again thought it impossible. Beyond impossible. Yet here I am. Here I am among friends and mentors. Here I am among wonderful farmers and those who do so much to support them. Here I am with the good folks at the Minnesota Department of Agriculture, the organization supporting my attendance here. I can't thank you enough for the opportunity you have given me.

There is not much in my early years as a farm management specialist that would foretell a speech with the title "The Future Is Organic." My first assignment in Extension Farm Management was in a field station in southwest Florida, about 160 miles from the main campus. Believe me, that place was about as far away from organic farming as a person can get. Double- and triple-cropping vegetables and ornamental plants on an industrial scale in a hot, humid climate on soil better described as playground sand was not for the faint of heart. Spray rigs cruised through fields on a daily basis from the time plants emerged to the last legal date to spray before harvest. Strawberries and vegetables were planted over black plastic mulch in soil blasted with fumigants. We were in transition from DDT-style pesticides to those with quicker knock down but shorter half-lives. I can attest to the knock down power from watching birds and rabbits venture into recently-treated fields. As for the half-life of the new chemicals, I hoped it was short, but really didn't give it that much thought.

On more than one occasion, I was part of an Extension road show in which I would talk about the economic side of pesticide use. Following that, a crusty old entomologist would address the safety issue in a most straightforward way—he would eat a teaspoonful of something out of a pesticide can and then ask the audience point blank, "If this stuff is poison, how come I am still alive?" To be honest, I still don't know the answer to his question.

I knew next to nothing about organic farming, but somehow thought it might be interesting to learn something about it. So I called the Rodale Institute and asked if they would give me a tour. Much to my surprise, I soon enough found myself on the Rodale research farm in Pennsylvania and having lunch with none other than Bob Rodale himself. I ate things I had never heard of and saw farming practices I would not see again for decades. What a great day! Apparently unaffected by anything I had seen, I quickly got back to the serious work of doing what I had been hired to do.

As my reputation grew, I found myself serving as a state-wide specialist on the main campus in Gainesville. There, I got to know the ins and outs of agriculture in a state known for Big Agriculture. I knew sugar cane. I

knew limes and avocados. I knew cattle. I knew dairy. I knew oranges. And I personally set up the computer-based record system for the Lieutenant Governor's cattle operation in north Florida. Not bad for a kid from Plant City, if I do say so myself.

It dawned on me just how much I had fallen in love with agriculture during the big freeze of 1984. I was outside of Lakeland and stopped at a massive grove early one morning. All of the oranges, days away from harvest, had fallen into the middles. In the stillness, I could hear the occasional popping sound the bark of an orange tree makes when a freeze is too much for it. The trees were dying and, as I suspected would happen, were going to be replanted to houses instead of trees. Who said guys only cry when their dogs die?

It was also during those years that I somehow talked my wife into moving to Starkville, Mississippi, so I could get my PhD. This was no easy task. My New-York-born spouse had given me no reason whatsoever to think she would be fond of cockroaches. Nor did she appear to have much good to say about rednecks, even though she had for some obscure reason deigned to marry one. To say that Jane didn't like Mississippi doesn't come close to capturing her sentiments. I, on the other hand, thought it was great.

I was a cotton specialist and spent my research time out in the Delta working on huge plantations of deep-sand cotton. I was there to watch the mechanical harvester change everything. I struggled to roll up my windows as spray planes flew over my car. In the evenings my major professor drank his whisky while I tried to see back 100 years or more through the fields. It wasn't that much of a stretch. I sometimes say I am still the best cotton specialist in all of Minnesota. So far, no one has challenged me.

In the mid-1980's, I was a farm management specialist at the University of Maryland. Things got complicated there. Most of the farms in Maryland, you see, were much smaller than anything I had seen in Florida or the Delta. This led to several problems for me, the most memorable of which happened on a visit to a dairy farm. An ambitious county agent wanted to be among the first to show off the New Guy and took me to visit a dairy farm a few counties north of the main campus. I found myself standing with the agent and farmer and looking at a herd of 50 fine looking milk cows out on pasture.

Before I finish the story, let me take a moment to tell you that the last dairy farm I had been on before I moved to Maryland had 15,000 cows.

Back to the story. The farmer asked me, "Dr. Levins, what do you think about those cows there?" I had no idea what to say, but after some thought came up with the bright idea that the cows must have been quarantined from the main herd for some reason. I said, "Well, sir, that's about the best looking sick herd I've ever seen. Where do you keep your milking cows?" The agent almost fainted, hustled me back to his truck, and never invited me back again.

There were more such incidents which will go untold here. The fact that not all of agriculture was plantation style was now sinking in. The words "family farm" entered my vocabulary, and the farm financial crisis of those days drove home the way unpredictable events in the financial world could be devastating. I was a farm financial counselor of last resort. If you have never had the experience of spending a bleak winter afternoon with a farmer contemplating suicide, I recommend you count yourself lucky and take that experience off your bucket list.

I started with the Minnesota Extension Service on April Fool's Day of 1988. I try not to place too much significance on my starting date, but there it is anyway. It took me a while to get my feet on the ground in a world of corn and soybeans, because those were alternative crops in other places I had worked. But as I learned more about agriculture here, I saw it was as much Big Time as had been the case anywhere I had worked. That was fine with me.

My work in Minnesota brought experiences that changed me in ways that would not have been likely in my previous positions. I did a policy sabbatical with IATP and learned a new way to look at farm policy and agricultural trade. I did a quarter-leave with LSP and spent lots of time with farmers who showed me an entirely new way to farm, one they were tagging with the relatively new word "sustainable." I became friends with Willard Cochrane. He told me of his years with the Kennedy administration and explained why the principal problem facing American farm policy was abundance, not shortage. I worked with John Ikerd and the Center for Farm

Financial Management on a project to incorporate environmental and social indicators into farm management decision making.

I also worked with the Center for Farm Financial Management in designing software for manure application planning on farms. This was terrible for my professional self-esteem. At countless out-state trainings, I was introduced as the Master of Manure, the Prince of Poop, and the Sultan of, well, you get the picture. But it also sank in that some types of farms were naturally adapted to efficient use of manure, and others were set up in such a way as to make efficient use all but impossible.

Then came the so-called biotech revolution. Early on, I decided it wouldn't last. Farmers would never sign a license that would prevent them from owning seed and ask them to turn in neighbors who violated those agreements. How wrong could I have been? Within a few years, I was awash in the biggest craze to hit agriculture since the euphoria of farm computers put my name on the Florida agriculture map. My College hired the CEO of a biotech company as its new Dean and we began holding College-wide meetings in a new building dedicated to the new technology and named after Cargill.

When the biotech Dean was interviewing, he came to my department and promised magical biotech soybeans that, within two years, would either cure or prevent (I can't remember which) prostate cancer. A few fields of those beans would be so valuable that we might not even bother growing any other soybeans in the state. Some years later, I was diagnosed with prostate cancer. In a memorably frightening meeting with an oncologist, several disagreeable choices were laid before me. Not one involved Magic Soybeans. So I went through some really unpleasant surgery and side-effects in an effort to live long enough to be with you today. I'm glad to be here, don't get me wrong, but I would rather have eaten a few magic soybeans than go through what I did.

The promise of biotech crops that cure or prevent cancer has more recently taken another nasty turn. Glyphosate, the herbicide that is part and parcel of the biotech cropping system, is now suspected of *causing* cancer. Did any of you see the quarter-page ad in the November 11, 2015, *StarTribune* by a New York law firm with the big print saying, "Have you been diagnosed with cancer after being exposed to the weed killer Roundup?" Our quest for Better Living through Farm Biotech has taken us from promises to cure cancer, to crop/chemical combinations that efficiently kill weeds, to crop/chemical combinations that don't efficiently kill weeds, to the possibility of causing cancer rather than curing it. Does anyone here call this progress? I certainly don't.

Along about the time the former Dean was touting magic soybeans, I was asked to be the College liaison with the Minnesota Soybean Growers Association. All of the talk was about "IP" soybeans and how farmers could best capture the value of beans that would take care of all sorts of ills. So-called "IP", that is, "identity preserved" beans have now become better described as "ID" soybeans, that is, "identity denied." The push from farm country is to make sure no one knows if they are eating biotech products.

Today, some of those same farmers are looking at ways to jump out of the below-cost-of-production market they now face and into the more lucrative "non-GMO" market. No wonder. On December 28, 2015, the Business Section of the *Star Tribune* carried a lead story titled "Hershey Says 'Bye' to Beet Sugar." That's "bye" as in "good bye." The candy giant was following consumers, not farmers, by choosing not to purchase GMO ingredients. Let me point out the obvious: this is a mainstream candy company, hardly a place you expect to see a governing board of health-conscious hippies. If Hershey doesn't want GMO's, what buyer will?

You don't need a PhD in economics to know that selling things people don't want is not a recommended business model. It gets even worse when you start calling your customers dumb for not wanting what you have to sell, or even for wanting to know what you have to sell. How else can you interpret a push against GMO labelling, for so-called right-to-farm laws, against animal welfare activists, and in favor of laws that prohibit "defaming food."

If GMO's were the only problem facing today's commercial agricultural system, that would be bad enough. Unfortunately, there are plenty more problems right here in our backyard that are just as bad, maybe worse. The way conventional agriculture asks us to accept clean water as the price we must pay for food production is particularly stark. On Thursday, November 26, 2015, a long opinion piece in the *Star Tribune* called "The elephant in the water-quality room" plainly stated that, "The environmental damage wrought by intensive single-crop agriculture is frightening." Then, just a few days ago, the January 4, 2016, *Star Tribune* opinion section

featured an article titled “State agencies feign helplessness in fish kill.” It ended on this somber note: “We can’t ignore the fact that current agricultural practices will kill our fish and pollute our water.”

A front-page story in the December 6, 2015, *Star Tribune* began this way: “Taxpayers spent nearly \$125 million last year to clean up Minnesota’s lakes, streams, and groundwater...” Later, the article pointed out that the same farming practices that caused the pollution were being subsidized to the tune of \$600 million in Federal farm payments. In other words, taxpayers are asked to support the activity that causes the problem, then pay to clean up the mess. How long can such a system go on? Is the Des Moines water works lawsuit a taste of what’s to come?

I am also deeply concerned that the agricultural system we have today is killing off wild species, at least one of which is critical to the long-term survival of the system itself. The front page of the December 22, 2015, *Star Tribune* carried a story titled “Farmlands displacing wild bees in Minnesota.” The sub-heading to the story was, “Popular crops incompatible with pollinators, threatening U. S. production, study found.” The principal culprit, according to the report featured in the study, was “intensely managed row crops.”

The related plight of monarch butterflies was a subject of the September 8, 2015, Opinion Exchange section of the *Star Tribune*. The chief technology officer at Monsanto began by referring to the monarch as a “wonderous creature” that was being killed as the chemical his company sells destroyed its food supply. While “we need to restore milkweed populations” that feed monarchs, it must not be done in farmer’s fields. That would “interfere with the goal of feeding humanity.”

Here’s a quiz. Which of these four phrases best brings to your mind images of “feeding humanity”?

- A. Ethanol
- B. High fructose corn syrup
- C. Well-marbled steaks from animals raised in confinement
- D. None of the above

The “feeding the world” argument is tired and bankrupt, but the argument for causing problems in farming and fixing them somewhere else is at least relatively new. Give the author credit for that.

Of all these problems and costs associated with conventional agriculture, there is one that bothers me more than any of the rest. The long-standing reputation of farmers as fundamentally good people is losing its support with the general public. When Senator Franken referred to “our farmers who are good stewards of the land and water,” the author of an opinion piece I mentioned earlier said, “Perhaps the senator slipped back into his previous life as a comedian and attempted a bad joke.” Not that long ago, the idea of a mainstream newspaper in an agriculture state printing such a thing would have been inconceivable.

You see, I didn’t stay in farm management because I like to walk around farms and look at machinery and such. In fact, I will now go on record and say that I particularly don’t like going on pasture walks. I am afraid of rogue farm dogs. Big animals make me nervous when they give me the sideways Evil Eye. I think standing on slippery grass while trying to step over an electric fence is about the dumbest thing a man can do.

But being around farmers, now there is a different story. Red Buicks, odd politics, and bad jokes aside, I really like being around farmers, all kinds of farmers, even those who have shown little liking for me. I am far more comfortable shooting the breeze with farmers in a coffee shop than I have ever felt leading a seminar at the University. So when farmers lose their good reputation, it really bothers me.

I hope it is clear that every example I have used so far is taken from a mainstream newspaper in an agricultural state. The problems with conventional agriculture I have outlined are, with fewer and fewer exceptions, taken as the truth. The old “it’s the golf courses” defense for water quality problems, the cancer-curing justifications for biotech crops, and ever-more-strained appeals to “feeding the world” have had their day. The CAFO swine manure pits I have been around do not smell like money. The cows I have seen on factory dairy farms in California don’t look happy.

It is time we moved on.

I hope it is obvious that I am not happy to say what I just said. Agriculture has been good to me. To use words from the Rolling Stones, "It's only rock and roll, but I like it." How things could have gone so woefully astray both mystifies and saddens me. I wish things were different but, as best I can tell, we are on the wrong road. Driving even faster down that wrong road is not going to get us where we need to be.

Now the question becomes, "where do we go?" I finally saw the way I would answer that question the summer before last. John Bobbe and the good farmers at OFARM gave me the chance to work on a project that led to the "Organic the Real Natural" campaign and web site (www.OrganicTheRealNatural.com). If you haven't seen it, I strongly recommend you do so. As part of that project, I spent a good deal of time with eight wonderful organic farmers. They told me how they farm and why they farm.

Let me give you a few highlights:

An organic farmer in Kansas won her county's water quality award. How did she keep chemicals out of the water so effectively? She didn't use them. Duh. Too bad we didn't have an article from the December 24, 2015, *Des Moines Register* when we did the story. It would have made for an even stronger endorsement of organic agriculture: "Organic farming can cut nitrate leaching in half." Surprisingly, that study was done on tilled ground, a principal suspect in water quality discussions throughout the Corn Belt.

An organic farmer in South Dakota wasn't worried at all about shrinking biodiversity. Biodiversity happens naturally in the organic system because of crop rotation requirements. To use that farmer's words, "We have four seasons of wildlife on our farm. Be it deer, pheasants, ducks, or bees, they all find a safe haven here. Everything thrives here on our farm."

An organic farmer near Wadena, Minnesota, had many more bees than I care to be around buzzing all over his fields when we visited him. How did he keep from killing them with pesticides? He didn't use pesticides. And his rotations provided natural habitat for the essential, if annoying, little beasts.

An organic farmer in Wisconsin had developed a local market for what he grew. But as we talked, I saw that no matter where an organic crop gets sold, the system is fundamentally more local than conventional agriculture could ever be. No chemicals, lab-born seeds, and synthetic fertilizers are purchased from distant sources. The money that would have gone to those purchases stays home.

An organic farmer in Illinois told us how happy he is that the economics of organic agriculture favor bringing his son back to the farm. Sadly, we can no longer say that about most of conventional agriculture. The implications for rural communities should be obvious.

An organic farmer in western Minnesota showed me his ultra-modern equipment and demonstrated beyond any doubt that organic farming was not by its nature primitive.

Feeding the world would be as possible, maybe more so, with organic farming. I have since come to think how much better that farm would have been with grand scale agricultural engineering support of the type conventional farming takes for granted. To my mind, the future of hi-tech farming is more likely to be organic than conventional. I could go on, but I think you get the picture.

I like to play poker. I sometimes imagine conventional agriculture on one side of a table and organic agriculture on the other. Head-to-head competition, the last two players standing. Conventional agriculture has big problems, but at least it is familiar. Organic agriculture, while perhaps not ready for prime time, can bring environmental advantages that are simply out of the question for conventional agriculture. If I was playing that game, I would go all in for organic. I would bet that way for three reasons.

The first is that of environmental benefits. Too often, organic agriculture is argued at the consumer end, that is, is organic food better for you? I hope so, because Jane and I eat a lot of it these days. But, to be honest, I don't really know. The environmental benefits, however, seem crystal clear to those of us lucky enough to see organic food being grown on farms rather than sold at Costco.

The second reason is that consumers appear to want food with traits produced by organic farming, and to not want food with traits inherent in conventional farming. While the demand for organic food continues to grow, conventional farmers too often struggle to make cost of production.

The third reason is that I am worried about the future. The coming years seem to me like they will have more violent weather events, more global financial instability, and more global political instability. Organic agriculture seems more resilient to me. Something about growing only a few varieties of a handful of crops, hoping that there are no long-term problems with chemicals and GMO's, ignoring threats to shrinking water resources, and putting thousands and thousands of animals in one place in hopes that avian flu and other diseases will go away doesn't make much sense to me.

So there it is. I've made my bet. If I had anything to say about it, which I clearly don't, I would redirect as much public research and subsidy money as possible away from trying to fix a system that most likely can't be fixed and into building one that holds so much promise. It's not that we don't have lots of money and smart people to devote to organic agriculture. Rather, we don't seem to be able to shake the idea that organic is a niche market, a lamb that needs to somehow "coexist" with the lion of conventional agriculture. It can't be done, and it is time we admit it.

I want to close with three quotes. In full and shameless disclosure, the first two are from books published by my favorite publishing company, Levins Publishing. Thanks to MOSES for selling both at their booth.

Dennis Keeney is the first Director of Leopold Center for Sustainable Agriculture at Iowa State University. In *The Keeney Place* (www.TheKeeneyPlace.com), he says: "The industrial model will fail, not catastrophically, but slowly, one piece at a time, and sustainable agriculture will be there to put it together again."

In his new book *Marketing Organic Grain* (www.MarketingOrganicGrain.com), John Bobbe says: "Crossing the river from conventional farming to organic farming has taken me a lifetime. I hope our younger farmers will make the journey more quickly. But no matter how long the journey takes, I know that each and every one of those who make it will feel like I do. The journey, no matter how difficult, is more than worth it. The view from the other side is truly wonderful."

The third is from that wonderful night in 2001, sitting by a woman more wonderful than I ever thought would marry me and having dinner with people I never expected to know as friends. Somewhere during that evening, Nelson Mandela said:

"We recognize that we have a long way to go," he said. "We do trust the theme of your event tonight: 'Never give up hope.'"

Miracles do happen.

Once again, it is one of the great honors of my career to be able to speak to you today. I wish you all the best in the coming year and thank you for all you do to put such good food on our tables.

Richard A. Levins is Professor Emeritus of Applied Economics at the University of Minnesota and President of L&K Enterprises LLC. He can be contacted at dlevins@umn.edu.