A road trip through California's produce empire

By Mark Bittman, New York Times

I left Los Angeles at 4 in the morning, long before first light, and made it to Bakersfield – the land of oil derricks, lowriders and truck stops with Punjabi food – by 6. Ten minutes later, I was in the land of carrots.

You know that huge pile of cello-wrapped carrots in your supermarket? Now imagine that the pile filled the entire supermarket. That's how many carrots I saw upon my arrival at Bolthouse Farms. Something like 50 industrial trucks were filled to the top with carrots, all ready for processing. Bolthouse, along with another large producer, supplies an estimated 85 percent of the carrots eaten by Americans. There are many ways to put this in perspective, and they're all pretty mind-blowing: Bolthouse processes six million pounds of carrots a day. If you took its yield from one week and stacked each carrot from end to end, you could circle the earth. If you took all the carrots the company grows in a year, they would double the weight of the Empire State Building.

At Bolthouse's complex, carrots whirl around on conveyor belts at up to 50 miles an hour en route to their future as juliennes, coins and stubs, or baby carrots, which the company popularized and which aren't babies. Other carrots become freezer fare, concentrate, salad dressings and beverages. Fiber is separated for tomato sauce and hot dogs. Whatever's left becomes cattle feed.

Bolthouse is just one of the many massive operations of California's expansive Central Valley, which is really two valleys: the San Joaquin to the south and Sacramento to the north. All told, the Central Valley is about 450 miles long,

from Bakersfield up to Redding, and is 60 miles at its widest, between the Sierra Nevada to the east and the Coast Ranges to the west. It’s larger than nine different states, but size is only one of its defining characteristics: the valley is the world’s largest patch of Class 1 soil, the best there is. The 25-degree (or so) temperature swing from day to night is an ideal growing range for plants. The sun shines nearly 300 days a year. The eastern half of the valley (and the western, to some extent) uses ice melt from the Sierra as its water source, which means it doesn’t have the same drought and flood problems as the Midwest. The winters are cool, which offers a whole different growing season for plants that cannot take the summer heat. There’s no snow.

The valley became widely known in the 1920s and 1930s, when farmers arrived from Virginia or Armenia or Italy or (like Tom Joad) Oklahoma and wrote home about the clean air, plentiful water and cheap land. Now the valley yields a third of all the produce grown in the United States. Unlike the Midwest, which concentrates (devastatingly) on corn and soybeans, more than 230 crops are grown in the valley, including those indigenous to South Asia, Southeast Asia and Mexico, some of which have no names in English. At another large farm, I saw melons, lettuce, asparagus, cabbage, broccoli, chard, collards, prickly pears, almonds, pistachios, grapes and more tomatoes than anyone could conceive of in one place. (The valley is the largest supplier of canned tomatoes in the world too.) Whether you’re in Modesto or Montpelier, there’s a good chance that the produce you’re eating came from the valley.

I came to the valley both by choice and by mandate. In preparation for the magazine’s Food and Drink Issue, I asked readers to suggest my assignment. They could send me anywhere they wanted, within limitations of climate and jet lag. After reviewing the suggestions, it became clear that readers wanted an article that incorporated big farming, small farming, sustainability, politics, poverty and, of course, truly

delicious food – and in the United States, if possible. So I decided to head to the Central Valley, where all of this was already happening. This also happened to satisfy a curiosity of mine. From a desk in New York, it's impossible to fathom 50 mph carrots, hills of almonds, acres of basil and millions of tomatoes all ripening at once. How can all of this possibly work?

But I was also inclined to head to the valley because I know that, for the last century or so, we've been exploiting – almost without limitation – its water, mineral resources, land, air, people and animals. Mark Arax, a writer who lives in Fresno and has chronicled the region's past and present, offered his opinion while serving me and a dozen others marinated lamb, a terrific recipe from his Armenian family: "This land and its water have gone mostly to the proposition of making a few men very wealthy and consigning generations of others, especially farmworkers, to lives in the dust." I'd already seen an example of how wealth has been concentrated and captured in the valley: this summer, Campbell's bought Bolthouse Farms for $1.55 billion. Meanwhile, there are thousands of valley farmworkers who are often victims of wage-theft and (illegally) required to supply their own tools.

So for five days I drove through the southern half of the valley. I wanted to learn as much as I could about the agriculture in America's produce factory; where thoughtful farmers were leading it; and how – if at all – it might become sustainable.

I have driven through the valley numerous times, almost always on Interstate 5, where, like everyone else, I have had the experience of getting out of the car and being hit by what felt like a giant hairdryer blowing 120-degree, manure-scented air. Like many others, I've also pulled over to the side of the road and taken pictures of the Harris Ranch in Coalinga, which, if it isn't the largest feedlot in the country (capacity: 100,000 cows), is certainly the one with the most

drive-bys.

The best way to enter the valley, though, is from the south, through the Tehachapi Pass, west of the Mojave and Edwards Air Force Base. Although the land is scarred by roads and electric lines, it's still easy to imagine what it looked liked 150 years ago. Not so Fresno, the center of the valley's agriculture industry about 110 miles to the north of Bakersfield. There the valley's problems are readily evident. Since 1970, the population has more than doubled to 6.8 million, virtually all of whom, it seems, drive (more often than not a Ford F-150). The air, trapped between mountain ranges, stinks, and the pollution is consistently ranked among the most severe in the country. Worse, there are so many cows nearby in megadairies and feedlots that the air contains microscopic particles of dried dung, enough so that you can taste it. I smelled it on my clothes when I unpacked each night and even brought it home with me. I have never carried Visine in my life, but there I was using it every half-hour.

Then there's the water and soil. On the west side of the valley, water is scarcer, and hundreds of thousands of acres can't be farmed because of salt buildups (the land is naturally salty) and selenium from irrigation drainwater. Tulare Lake, which was once the biggest freshwater lake west of the Mississippi, was drained long ago; now there's barely a trace of it. The San Joaquin River, the second longest within California and once among the best salmon-fishing rivers in the country, was dammed in the '40s and essentially drained for irrigation, 60 miles of a once-beautiful river run dry. (The Natural Resources Defense Council won a lawsuit that is re-establishing the flow of the San Joaquin.)

Then there's the toxic waste, meth labs and rampant unemployment, which is above 30 percent in some towns. One, Corcoran, bills itself as the "farm capital of the world," but it's actually the "famous-prisoner capital of the world." Charles Manson and Juan Corona – a schizophrenic who was

convicted of murdering at least 25 farmworkers in 1971 — are both there. (Until recently, so was Sirhan Sirhan.) Low wages are compounded by wage theft and correspondingly high poverty levels. Fresno, Modesto and Bakersfield are three of the five poorest cities in the United States. The valley suffers from this, but it can be blamed for it in part, too.

This, and not the verdant hills of a Green Giant commercial, is where our food comes from. Part of the reason is the size and scope of production. Bolthouse farms and manages 60,000 acres, or more than four Manhattans, annually. Though nearly 15 percent of its production is organic, there is no way an operation of that size can avoid chemical fertilizers and pesticides. But the industrial farms don't have a monopoly on doing damage to the land. One day I visited the most unindustrial operation imaginable, a four-acre farm run by May Vu, a Hmong immigrant and former nurse. The valley is home to countless individual farmers like her who work a few acres in marginal land in and around Fresno, much of which was slated for development before the crash. Now it can be rented for around $400 an acre a year.

Vu grows what she believes she can sell locally. (The Hmong population is about 6 percent of that of Fresno, and a visit to a Hmong supermarket is breathtaking.) This includes squash (a kind that lasts for years on the shelf), several varieties of basil, tomatoes, herbs that I can't possibly recognize, okra, a few different eggplants, green beans, daikon, cabbages, cilantro, onion, long beans, chard, zinnia, sunflower, squash and more. This is post-green-revolution farming as it happens in much of the Third World, and there is something to be said for the independence it affords. But on farms like these, almost no one gives much thought to sustainability. It's too time-consuming; the primary goal is not sustaining the land but sustaining themselves. (Vu works seven 10-hour days a week.) It's also historically true that renters — especially those who move from plot to plot every

half-dozen years as the Hmong do there – are bound to the land in general but have no ownership of any particular piece. Their mind-set is often to get as much as you can out of the land this year and don't worry about the next decade.

There must be, I thought (or fantasized) as I traveled through the valley, some movement toward pushing farmers, big and small, to produce decent food sustainably. Because if there's not, the valley's problems will only worsen, and we'd be complicit in destroying one of the country's greatest resources, one that has served us amazingly well until now. Indeed, I found a number of large farmers experimenting with sustainability and scale. John Diener's 4,500-acre Red Rock Ranch, in the west valley town of Five Points, uses mostly so-called conventional methods, but does so in creative and intelligent ways. Over all, his vision of big farming – minimizing chemical application, for example, and reducing tillage (turning over or otherwise disturbing the soil) – may point a way toward a future in which big-time farming can become more sustainable. Diener has also already instituted a system of mining (and even selling) minerals that he extracts – via a series of tiles under his farmland – after irrigation. This keeps local businesses from having to purchase minerals mined in more destructive ways.

Likewise, Keith Gardiner, the principal owner of Pacific Ag Management, farms about 10,000 acres of almond groves using plenty of conventional techniques. But the company is experimenting with solar energy to pump water and trying to reduce chemicals through an integrated pest management system. It was almond-harvest time when I visited Pacific Ag. In one field, Gardiner and Holly King, whose family land is farmed by the company, showed me a shaker, a squat four-wheel vehicle with a robotic arm that grabs the trunk of a tree and shakes it until the nuts fall to the ground. There they sit, drying for a week or so (the chances of rain are almost nil), until a sweeper comes along and gathers them. This is followed by a

harvester, which scoops them into trucks that bring them to be hulled and shelled. The result is dozens of towering hills of almonds waiting to be processed and a small but growing mountain of shells.

It’s not labor-free, but it’s pretty easy compared with growing tomatoes or broccoli. And along with the fact that almond trees go for 25 years, it explains why so many valley farmers are turning to nuts. A decade ago, many analysts thought that the crop had reached its peak of one billion pounds. This year the harvest is something like two billion pounds, and farmers are still ripping out other crops and planting almonds. They’re selling, too, if not here, then in China. The same is also true of grapes, which are feeding China’s growing and extraordinary thirst for wine.

All of this made me wonder what, if anything, big farmers owe a society — not only in terms of what they do to their land but in terms of what they actually grow. The food that’s grown in the valley may be copious, but it’s not necessarily all that good. The fruits and vegetables at my breakfast buffet in Glendale were pretty much the same as the stuff I bought two weeks ago at a supermarket on Broadway. And though I ate well on my trip, I tasted plenty of produce that was grown to withstand a couple of weeks in transit and on the shelf.

Do we have a right to expect tomatoes that taste like tomatoes and to have them grown in sustainably? It might sound like a ridiculous question. These are for-profit enterprises operating on private land and dealing with the difficulties of distribution and the vagaries of the market. But it’s not so outlandish to think we should have some collective say in what is farmed and how. After all, between 1862 and 1934, the Homestead Act transferred 10 percent of all land in the United States from federal to private control, and it’s federal money that pays for much of the roads and irrigation systems that make farming in the valley so profitable.

I badly wanted to visit Tom and Denesse Willey in Madera, 25 miles northwest of Fresno. I'd met them over dinner at Mark Arax's house at the outset of my trip. (Denesse's plum cake was the best I've ever had.) The Willeys represent another part of valley culture that usually gets little credit: making a sizable organic farm work, with few compromises. It's true that 75 acres is small by Central Valley standards, but their model is important and their impact large: they have 800 families in their C.S.A., or community-supported agriculture, program, some of whom live 60 miles away. They have a largely year-round, full-time staff of 60, all of whom can qualify for vacations and a bonus pool. The Willeys farm 40 crops on their land, with a four-season rotation and customers from the Pacific to the Mississippi.

There are people who will tell you that the valley is all food production and no food culture, but that's not true at the Willeys' farm, where varieties are chosen for flavor and color — the overall look of the place is dazzling, almost psychedelic — as well as hardiness and productivity. When I arrived, Tom was struggling with a basil problem that showed me just how seriously he takes his produce. Basil is a huge crop for the farm — at four acres, it might be the biggest basil patch in the country — and downy mildew had attacked the crop. There were two 25-gallon garbage barrels of basil ready to be recycled. The bright green leaves looked gorgeous to me, but Willey deemed them unfit for sale.

We took a golf-cart ride in the afternoon heat, during which I admired Willey's tomatoes (6 acres), potatoes (25, in two crops), peppers (2), eggplant (4) and cool-weather crops like lettuce and artichokes. T & D Willey Farms is different from the valley's largest operations in four important ways. First, the farm averages nearly one worker per acre, a remarkable rate by industrial standards. Second, unlike other farms, their rotation allows them to offer year-round work. Third, the farm's land is replenished at or near the rate that it's

being exploited. Perhaps most important are his superior crops. Though I arrived late in the season, I tasted Willey's tomatoes and eggplant, and they did for me what all the best California produce does: they made me want to farm. Or at least garden — but definitely in California.

The Willeys are pioneers in the organic (and fair) farm movement, and Tom is as articulate and committed a representative of it as I've found. He's unshakable in his belief in organic farming, though "we're all pioneers," he reminded me. "For 95 percent of history, we were hunter-gatherers. There's no reason to assume that agriculture of any kind will be successful in the long run."

Willey argues frequently with his friend Paul Buxman, who lives about 50 miles southeast, in Dinuba, and who has become gradually disillusioned with organics. After stints as a painter and a teacher, Buxman bought a majority of his 58-acre family farm from his father 30 years ago and went broke almost immediately. He survived, incredibly, by selling art, and now he is one of the best tree-fruit growers in the state. Part of the land he purchased had been contaminated by a once-popular soil-treatment chemical known as DBCP that was believed to double grape yields. That is, until it was shown to cause sterility and maybe worse. Health officials told Buxman that not only should he not use his groundwater on his crops but also that his family shouldn't wash in it, cook with it or breathe near it. Buxman's 32-year-old son, Wyeth, came down with leukemia when he was 3. Buxman became an organic farmer immediately.

But after a few years, Buxman came to believe that nonorganic chemicals can target problems more precisely and more accurately than organic ones and that it was time to leave "organic" behind. "An organic pesticide is still poisonous," he told me, over his fabulous biscuits, served with his (ditto) apricot jam.

There is, it's true, a spirit and letter of what's organic. What Tom and Denesse Willey do is organic in every sense of the word, but they're the exception. When consumers buy organic, they are guaranteed little more than food that is (in theory at least) produced without synthetic chemicals or G.M.O.'s (genetically modified organisms), and with some attention (again, in theory) to the health of the soil. They're not guaranteed fair treatment of laborers. They are not guaranteed a minimized carbon footprint or anything approaching local. (Organic vegetables, as you probably know, may come from China.) Nor, for that matter, are they guaranteed anything that tastes good.

"The public is tired of corporate food," Buxman said. "But the word 'organic' has been misused and usurped." Instead, Buxman devised a rating system called California Clean, which would allow for chemical fertilizers but exclude farms of more than 100 acres and require the farmer and his or her family to be the primary laborers. It would also require that produce be of high quality, with high nutrition, and would require that the farms had an active biology, including healthy soil, birds, worms and so on.

It hasn't caught on, and it may be imperfect, but Buxman's idea of splitting the difference between "organic" and "conventional" seems to me to point the way forward to a place beyond a simplistic label like "organic." Big farmers can be encouraged and taught — and perhaps incentivized — to use fewer and more precise pesticides, to reduce tillage and water use, to evaluate soil not only based on output but on health. The biggest beneficiary, of course, is the land, but the health of workers, animals, the environment and consumers are all important considerations as well. And in the valley right now, not much attention has been paid to them.

No matter what, though, it seems as if the valley is eventually going to become less productive. In fact, that's already happening. Development and contamination have taken

land out of production. And disproportionate swaths are being devoted to grape and almond farming solely because those crops can be reliably processed and profitably shipped to China. There are pioneers in the valley, people working to figure out ways to make their style of farming — whether big or small — work over the long term. But beyond the profit motive, there is little public support or encouragement for them or their ideas and no way for consumers or even officials to know whom to support. As a result, our land use and, to a considerable extent, our diet are dependent on the hunches and whims of landowners. If we want a system of farming that's sustainable on all levels, we have to think about a national food and farming policy. And as I was looking out at Buxman's amazing land, it occurred to me just how amazing it is that we don't have one.