Farmland, Farms, Farming, and Farmers: The Four F’s of Food Production

When my daughter, Callie, was eighteen months old she helped me plant the garlic crop, although I had to teach her not to bite the cloves in half first. Last summer, when she was two, Callie helped harvest with a bucket in hand so that we could eat freshly-picked vegetables for dinner (the trick was getting them to the kitchen without bites disappearing). In our part of the country—central New Jersey—Callie will not have to worry about where most of her vegetables come from during the four or five months of prime growing season. But vegetables make up only a portion of the food we consume, and four months does not a year make. What about the rest of the year? What about the rest of our food? What about those without land or the desire to grow some of their own food? Where will it come from? Who will grow it? What will be the growing conditions, both for the food and for those who do the work of production? As the population continues to grow worldwide and land continues to contract, these questions are not trivial.

Some believe that food production will continue to shift to less-developed countries around the world—tomatoes from Mexico, fruits and beef from South America, rice from Asia—and that u.s. agriculture will become a profession of the past. This continuing transfer of production bodes poorly for farm viability across the United States. Why do we want to encourage this trend? With two billion of the world’s population currently underfed, why isn’t it prudent to enhance export production from the very countries currently unable or unwilling to feed their own populations? With the population of the world reaching nine billion over the next fifty years, it seems incredibly shortsighted to impair our capacity to grow food domestically, whether for our own consumption or to meet a portion of the world’s food needs. Such an approach inherently decreases our flexibility for food provision while making us much more dependent on world market fluctuations.

There is another way to approach food production, a movement growing in fits and starts across the country as local coalitions buy a farm in California or Massachusetts; hog farmers shift from high-density containment production to deep-bedding quonset huts in Iowa; dairy farmers shift to rotational grazing systems in Vermont; and small-scale organic producers crop up nationwide. This movement is called ecological farming and sustainable agriculture by many, or just a good way to live by some; it is embraced by a growing cross-section of the population and by niches within the food industry. Most people conceive of it as a more localized agriculture where the distance between grower and eater is minimized and where, in some way, they know each other. Government, private, and non-profit sectors alike have established activities aimed at aiding this movement—but are they sufficient? To consider this question, it is helpful to think about the “four F’s” of food production: farmland, farms, farming, and farmers.

Farmland

Growing produce for a family requires only a small yard, but feeding 275 million people requires a lot of farmland. Many areas of the United States have lost significant amounts of farmland; New Jersey, for instance, has lost about 51% of its 1950 acreage. The Northeast overall has lost a similar amount, though nationally the rates are not as marked, given the huge expanse of farmland throughout the Midwest. Nationwide we lost about thirty million acres (3.1%) from 1987–1997, while New Jersey lost 7.8%. This amount is too much, when those thirty million acres represent some of the best farmland in the country. States, municipalities, and non-profit organizations have watched with alarm and acted. Since 1977, nineteen states have developed statewide “Purchase of Agriculture Easements” programs (PACE) along with thirty-four independently funded local PACE programs in eleven states. The approximate total acreage conserved in these programs to date is 800,000 acres. A number of other programs have emerged to avert farmland loss. These include Agricultural District programs, Agricultural Conservation easements, private purchases by non-profits, and others. However, in total they represent a relatively small percentage (approximately 0.1%) of the 968 million total acres of u.s. farmland. In other words, the basis of farms and farming is in a continual state of decline, with some noteworthy, but insufficient, strategies to maintain the land that yields our current productivity.
Farmland productivity is, of course, not a constant. Human cleverness in the form of land-grant university research, farmer ingenuity, and work in the government or private sector have continually expanded per-acre productivity (the sustainability of various modes of productivity enhancement is another issue). Despite increases in productivity, however, the question of farmland sufficiency over the next one hundred years is highly germane. It is estimated that the U.S. population will reach 404 million people by 2050; by 2100 it will top 570 million. It currently takes about .5 to 1 acre¹ to feed the average consumer in the U.S., which translates into a need for 285 to 570 million acres of land for food production by 2100. If we continue to lose farmland at a rate of thirty million acres a decade, by 2100 another three hundred million acres will be gone. In addition, a growing percentage of land is used for non-food production, such as fiber, fuel, and the raw materials for chemical compounds. It is not unreasonable to expect an increase in this type of use as substitutes for petroleum are continually developed. Other environmental factors will probably also add to the depletion of our current acreage (the loss of Ogallala Aquifer water in some western states, for instance). Thus, it is not at all clear that sufficient farmland will exist by the end of this century to feed the nation’s population. Preserving farmland is necessary to ensure the production that allows us to enjoy the rich diversity of foodstuffs we have come to expect as different cultures mix, influence each other’s foodways, and expand our palates.

Farms

But farmland is only the opening chord of agricultural production. Farmland does not inherently produce crops for human consumption. An aggregate of farmland and support facilities develops in concert as a farm. Many think of a farm as a holistic unit that has the capacity to produce food or other products for human use in either an environmentally sustainable or a destructive manner. The farms themselves need to be preserved. There are two primary reasons that farms cease to exist: consolidation of acreage and transition to non-farming. Former Secretary of Agriculture Earl Butz’s call to “get big or get out” has been put into operation not only by the clear-cutting of hedgerows, but also by a progressive increase in per-farm acreage. While U.S. farmland has declined by 3.1% between 1986 and 1997, the number of farms has declined by 7%. This means a progressive decrease in the number of farm units.

The second reason for the decline in the number of farms is transfer to non-farming primary owners. In heavily populated areas like the Northeast or other areas adjacent to denser populations, many people want to “own a piece of land.” They have sufficient economic resources to purchase a farm but have little regard for its most recent historical use and no desire to continue producing food. The land looks nice; it’s peaceful, relaxing, and a nice escape from the rigors of the city. However, once these new owners claim it, the farm ceases to exist. In many cases former pastures and cropland revert to forest and are no longer useful for food production.

Farming

Farming as the act of producing food implies that there is both farmland and a farm. However, for farming to remain, or become, an attractive activity for a large number of men and women, it needs to be profitable and provide a reasonable standard of living. For an increasing number of farming operations this is far from the case. It is no surprise that U.S. residents have gotten used to an extremely cheap food supply. In fact, the food supply grew even cheaper in the 1990s. In 1996, U.S. consumers spent 10.7% of disposable income on food, compared to 13.4% in 1980. Simultaneously, the farm-to-retail price spread has increased for most farm products. On average, the farm value of all foods is $2.21 of every food dollar. Some comparisons of 1997 farm value to 1987 are illustrative. The farm value of meats was 47% of the food dollar in 1987 and 37% in 1997, while fresh fruits were 26% and 18% and fresh vegetables 31% and 21%, respectively. In New Jersey, 50% of the farming enterprises lose money and balance the books by off-farm income. Among a farm sample in southwestern Minnesota, farming net income has declined from $55,000 in 1996 to $8,600 last year.⁴

Farming is more than an economic enterprise. It is also an ecological one. The choices that are made in the act of farming affect the siting of lakes and rivers, contamination or purity of water supplies, particle counts in the air, and the future productivity of the soils underlying the farm. In the last several decades a number of initiatives have been developed to improve the ecological sustainability of farming. These include integrated pest management, soil management and soil-building tactics, water conservation technologies, and animal husbandry programs. While not all of the new strategies have been uniformly adopted, and research to optimize their usefulness in an agroecological framework has not yet been conducted, they represent important steps. But we have also moved backwards. The

Right: Children at the Memorial Homes Community Garden.

COURTESY OF THE NEW JERSEY URBAN ECOLOGY PROGRAM
use of biotechnology to date has been driven by the monopolization and profit-maximizing desire of several dominant agricultural biotechnology companies, which has led to increasing polarization on the topic of its use. A framework for developing socially constructive uses of biotechnology within an ecological farming paradigm has not been attempted to date. There are potentially beneficial uses for biotechnology, but so far they have been drowned by the half dozen or so uses of notable contention.

Farming over this century will change dramatically. But what direction will it take? Will biotechnology dominate the farmscape in a way that reduces democratic principles and ecological dictates? Or will we move in a more rational, humble direction that admits our deficiencies in the face of nature? Wes Jackson and the Land Institute are working to perennialize the dominant Midwest grains with the idea that within the next fifty years the capacity will exist to rebuild Midwest soils and eliminate the constant plowing and degradation of soil organic matter. Jackson’s vision has the potential to transform the landscape in this century, essentially rebuilding the prairie using human cleverness based on nature’s wisdom. Other strategies to increase food production by means of perennial crops are beginning to emerge. These are relatively small measures, yet they can radically change the way we conceptualize agriculture.

Farmers
It takes people to actually produce the food: farmers, the forgotten providers, the 1.6% of the population who grow food for the rest of us. As the number of men and women classified as farmers decreases, the knowledge base for producing our greatest need is held by fewer and fewer people. Ironically, as rural and immigrant farmers have migrated to urban areas over the last fifty years, a large base of production knowledge has concentrated in our cities and is slowly being lost. For many, this loss of farmer numbers is contrary to what is needed. Wes Jackson considers that an ecological agricultural system will have a greater “eyes to land ratio,” not a lesser one. Who will farm in the next and future generations? Who will have the skills to farm? As we look ahead, these questions should simultaneously fill us with optimism and send a shiver down our spines.
Anecdotally, a far greater number of “farm kids” are leaving the farm now than during the twentieth century. Farmers in this country have historically gained knowledge and experience through some combination of being raised on a farm, being an immigrant farmer, or attending a land-grant university. In many of the eastern land-grant universities, the number of farm-background students is minute. Today, much of this traditional path to becoming an independent farmer is historical, not actual. Increasingly, new farmers are coming from two pools of people—those with no farming backgrounds and immigrants with farm histories who currently work in non-farm occupations or as farm workers. Those from non-farming backgrounds bring tremendous dedication to farming (especially organic farming) as either a part-time or full-time occupation. However, they also bring a dearth of experience. Multiple strategies must be adopted to develop their knowledge and evolve the lifelong learning so necessary to ecological farming. Several initiatives are promising, such as the internships offered by small organic farms around the country. Although some of this work constitutes little more than low-paid labor under the guise of education, many farms provide true internships—practical experience coupled with a well-rounded education in various aspects of the farm enterprise. In addition, organizations such as the New England Small Farm Institute are working to develop integrated training programs that would include land-grant education, internships, and a developed curriculum. Such measures are needed nationwide to enhance the training of young people interested in farming. Some academic institutions, including Rutgers University, Cornell University, and the University of California at Santa Cruz, support farms to expose students to farming. And linkages between retiring farmers and unrelated young farmers seeking land offer another means of enhancing the pool of talented young people engaged in farming. Recently, farm workers and urban immigrants have been encouraged to improve their skills, though often their greatest need is increased access to land and capital. This group represents rich potential for enhancing the “eyes to land ratio” of our farmland.

Farms, farmland, farming, and farmers: these four F’s guarantee that there will be food to put on our tables. Across the country, efforts to develop a food system embedded in democratic principles and environmental sustainability are moving forward. Often with explicit support from non-farm groups and individuals, farmers are developing strategies for marketing and distribution that enhance their viability as well as their contact with those who eat their food. Government and private organizations at different levels are helping in various ways, from farmland preservation to farm viability. Yet all of these efforts are stacked against a food system that seems intent on minimizing the value of farming and reducing our food supply to a combination of chemicals. Every consumer in the country plays a role in insuring a food production network that maintains the ability to produce a wide variety of foods—in a sustainable manner—for our great-great-great grandchildren.

NOTES
2. For a full listing and fact sheet on this and other farmland preservation programs, see the American Farmland Trust website at http://www.farmland.org
5. Wes Jackson, Personal communication.