

Small Farms and Sustainable Development: Is Small *More* Sustainable? Discussion

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In their paper, “Small Farms and Sustainable Development: Is Small More Sustainable?” D’Souza and Ikerd examine the potential linkages between two streams of analysis—“sustainable development” and “small farms.” This is a worthwhile objective, as there has been little effort to link the two together. This is—as the authors note—a surprising gap in the thinking about forces that might lead to long-term sustainability in agricultural production. The authors are right to bring the issue to our attention.

As a member of the leading edge of the baby boom generation, I cannot resist the temptation to remind the audience that the authors seek an answer to an old question raised in a more general context by Schumacher in a 1973 “little black book” popular with early environmental activists, *Small Is Beautiful*. In the days around the time of the 1972 National Environmental Policy Act (NEPA), the environmental gluttony of big business was widely criticized. In many cases, the criticisms were on target even if the most vocal critics—ranging from Jane Fonda to Abbie Hoffman—were hardly mainstream analysts or even politicians.

Is “small” beautiful? The question is raised anew in the discussion of the characteristics of small farms and the sustainability of development. If the farm size structure continues on the path toward “industrialization,” like the mega-hog operations in North Carolina that seem to be responsible for fouling some streams in parts of that state, will that mean that the resource base will be so neglected that long-term agricultural sustainability

will be threatened? And, if instead, we returned to the hog farm structure of many small producers, could the set of small producers needed to replace the large “industrial” farms produce the same output and do a better job of conserving the resource base needed for long-term sustainability?

Benefits of Small Farms

Since D’Souza and Ikerd have used a qualitative approach to this issue, my suggestions should be taken as a plea for more analysis to examine the evidence that the assertions in the paper are credible. At this juncture, I am skeptical that many of the arguments made for small farms as key players in long-term sustainability will hold up under serious evaluation of the data available. Based on their review of the literature, the authors attribute a number of benefits to small farms. Taking each of these small farm benefits in the sequence presented by D’Souza and Ikerd, let me raise a few questions in response to their comments.

(1) *Small farms act as buffers against urban encroachment.*

Thompson’s dictum that “the number of small farms in a community is directly proportional to the economic vitality of that community” is cited by the authors to support this benefit. The explanation given is that small farms have owners who are not much concerned about the income earned on the farm, i.e., they are “gentleman” farmers who care more about stewardship of the farmland they own than its market value in farming or in alternative uses. Thus, according to the authors, unlike owners of large farm operations, farmers on small-scale operations are less likely to succumb to market

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pressures to sell to urban developers of ex-urban residential tracts.

Two questions are raised in my mind about this “buffer” benefit of small farms. First: Is urban spread to nearby rural areas less evident in rural counties with a larger share of small farms? This seems like an easy question to answer with data from the *Census of Population* and *Census of Agriculture* over various years.

Second: Is urban spread to rural areas bad for the natural resource base that sustains agriculture? Markets for land at the urban fringe tend to allocate land to its highest and best use. There may be market failures in this process if use of farmland for residential or commercial purposes at the urban fringe reduces long-run agricultural sustainability (and more importantly, the welfare of rural and urban residents). If so, then public policy can and has provided subsidies to small farms and purchased land to preserve green space at the rural fringe of densely populated urban areas. But is this an important problem in the context of long-term viability of farming? My guess is that it is not. However, large-scale protection of small urban fringe farms through new subsidies by taxpayers, higher land costs for urban homeowners, and commercial activities suggests welfare losses, not to mention large howls of protest by the multitudes that love nothing better than another excuse to bash “big government.”

In sum, making the case that the “buffer benefit” matters is likely to be extremely difficult at best, and a thorough analysis might suggest that the effort to maintain small farms as buffers is a welfare-losing proposition for society.

(2) *Small farms provide scenic attributes.*

This may or may not be true. The Lancaster, Pennsylvania, example given by the authors as evidence of “the small farm as tourist attraction” is a curious illustration. The productivity, quaintness, and scenic features of these farms are associated with the Amish and Mennonite values and traditions—not with small farm characteristics. Most of us can cite numerous examples of extremely unattractive small farms, as well as scenic large farm operations. In my mind, scenery associated with large expanses of cattle-grazing areas of the West, the great corn desert of Illinois, and amber waves

of grain across large wheat farms in my home state of Kansas are more scenic than many small farms I have seen in the South, for example. Of course, some may prefer the scenic attraction of rows of broiler houses nestled in the hills of the small farms of north Georgia.

The obvious point is that this “scenic benefit” has more to do with the scenic vista provided—whether it be by small farms or large “industrial” farms—and the eye of the beholder. Size of farm is not relevant. Moreover, what are the linkages between scenic attributes and agricultural sustainability?

(3) *Small farms tend to involve lower intensity of land use.*

If small farms do use land less intensively by devoting larger land shares to woodlands, pasturing, and in cover crops to improve the soil, is this good for the environment and sustainability? Perhaps and perhaps not. Since most small farm operations rely on off-farm employment for most of their income, small farm operators have less time and incentive to use all of their land in fence row-to-row cultivation. At the margin, these farmers will devote time to off-farm activities since the opportunity cost (off-farm wage rate) is too high to justify added use of farmland. It is widely accepted that it is this rise in the off-farm wage rate (relative to the return to labor in farm activities) that is a key to understanding why average farm size has increased steadily over this century.

As the U.S. economy continues to shed farm jobs and small farm operations over the next decade, the small farm will continue as a part-time activity supported by work in the rural manufacturing and service sectors that dominate the rural economy. There is no going back to small farms as a dominant source of food and fiber. And few economists would argue we should unless society is willing to pay much higher costs for food and fiber that characterize other countries, such as France. The French support for small farms (50 to 60 acres) has been widespread. The array of public programs for small farmers has been astounding, but the result has been very *intensive* use of both land and chemicals. A similar government policy in the U.S. to encourage small farms would be under extreme pressure to subsidize small farms, and thus would

encourage greater land use and chemical intensity to compete effectively in world markets.

The "lower land use intensity" benefit suffers from the fallacy of composition. What is true for a few small farms (lower chemical and land use intensity) is likely to be false if most farming returned to small size operations (more intensive use of both land and chemicals).

(4) *Small farms imply greater reliance on conservation practices.*

D'Souza and Ikerd suggest that an army of small farmers can take better care of their acres than the same land under the management of a few large industrial managers. This follows, according to the authors, because small farmers are "less dependent on row crops . . . , they farm fewer acres, and they can devote more time to caring for them."

This reasoning suffers from the same fallacy of composition as the lower land use intensity argument. If the U.S. returned to an army of small farmers, these farmers would plant more row crops, use land and chemicals more intensively, and, accordingly, would have less time to devote to land stewardship because their attention would be focused on competing in world markets.

Another reason to be skeptical about this small farm benefit is the development of Geographic Information Systems (GIS) for use at the farm level. Using GIS technology, large industrial farms can adjust chemical applications as they move across large fields. This can be done to minimize chemical use to achieve a given expected yield by acre on the farm. It can also be used to comply with Conservation Reserve Program (CRP) guidelines efficiently by avoiding use of the most erodible acres, and those that are most likely to generate runoffs to nearby streams.¹ It is likely that GIS technology will be adopted primarily by larger farms that can spread fixed costs over a larger number of acres. This puts small farms at a disadvantage in employing the use of a GIS technology that is well suited for improving the stewardship of large farms.

(5) *Small farms foster intergenerational transfers of practices.*

This benefit example suggests that small farm operators hand down environmentally sound practices. Do they? In developing countries, small landholders may respond to government chemical subsidies by excessive chemical application to crops, and may handle chemicals in ways that endanger their own health (Shepard, Hammig, and Carner). They respond to gratuitous subsidies like farmers in France and the U.S. They use more chemicals than market conditions warrant. And with weak "OSHA-like" and environmental laws, these small farmers put their health in jeopardy (Kishi et al.). In the Philippines, small landowners are taught about sloping agricultural land technologies to reduce erosion on hillsides. These are government-sponsored programs to correct nonsustainable habits on small farms (Van Wagner).

No doubt there are many examples of sustainable farm practices handed down through the generations, but is there evidence that these are widespread and promote economic viability? Is the "old way" better than contemporary large farm practice? For a given level of output, do the "old ways" produce more environmental benefits at the same or lower cost than contemporary large-scale production? If not, do the environmental benefits of the old ways suggest a 5%, 10%, 50%, or what % increase in food and fiber costs? As a society, evaluating tradeoffs is an everyday event. We need information on the value of the net benefits (or costs) to society of maintaining the "old ways" of farm production. My guess is that the net benefits are negative.

Societal Costs of Small Farms

In their discussion of societal costs of small farms, D'Souza and Ikerd address two cost arguments. Again, I raise questions in offering my comments and reactions to the authors' statements.

(1) *Small farms are not efficient.*

Yes they are. What is surprising is that the authors suggest that small farm operators are good environmental stewards since they depend more on off-farm income. Ignored here are the inefficiencies of

¹ Sandra Batie at Michigan State University has done some interesting work along these lines.

taking workers out of current jobs in manufacturing and services and putting them back into added small farm operations needed to generate the same output of the large farms we now have. If these small farm operations were needed, then the substantial exodus from farming (even with large federal subsidies for farmers) over the past 50 years has simply been a big mistake forced on the farm sector by the market place.

(2) *Small farms are slower to adopt new technologies.*

The adjustments in the farm sector since World War II have been persistent and productive, driven by technological adoption and rising opportunity costs facing farm labor and small farm operators. Despite the authors' suggestion that slower adoption of technologies by small farmers as a group may benefit society, almost all economists since Malthus point out that technical advances allow more output per unit of a given input; and it is these shifts in the production function that enable societies to improve living standards. Technology also produces new products (e.g., VCRs, laptop computers, and fat-free potato chips) that help fill consumer needs. As long as consumer needs are large relative to their incomes, faster adoption of technology to reduce costs to consumers and to introduce new products is likely to be viewed as a plus for society.

Concluding Comment

Finally, the authors suggest that food self-sufficiency schemes are on the rise and that small farms can make a difference here.

While there are dedicated groups that are into the "new commune economics" of self-sufficiency, and small farms provide organic products needed to meet this market, these groups are likely to be very small players in the future of American agriculture. Why? Let me tell a story of a good cheese. I was with a group on a tour of an integrated dairy/cheese operation near Angers, in the Loire valley of France. The owners were proud that they grew their own feed, fed their own dairy cattle, and processed the milk into Camembert cheese, all without any chemicals or artificial ingredients—a truly organic cheese. After a few samples, it was clear this was a good cheese. On my way home, I stopped at a

Super Marche to take a few cheeses with me to supplement the fare available from the local Winn Dixie. There were about two dozen Camemberts displayed. I picked two that I had tasted before and started to put the "organic" Camembert in my basket of goodies—until I saw the price that was about triple that of the others. After a quick marginal utility calculation, I returned the organic product to its display and replaced it with its neighbor in the dairy case.

My feeling is that most consumers are like me. If so, small farm producers will fill niche consumer markets, but will never be big players in providing most food and fiber. Nor are large farms likely to trash the environment. Despite the current mood in Washington to get government off everybody's back, the environmental influence on farm and food policy is strong and is likely to sustain its momentum, since consumers demand safe food and water supplies. The environmental lobbyists are likely to be very effective as a countervailing force to big agribusiness for a long time to come. The fundamental self-interest of industrial agribusiness to seek profits, along with the growing strength of environmental lobbyists, holds out more hope for long-term agricultural sustainability than small farm operations. At least this is my untested hypothesis.

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