



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

# Alternatives for Small Farm Survival: Government Policies Versus the Free Market

Luther G. Tweeten and William A. Amponsah

## ABSTRACT

This paper briefly outlines a topology of small farms and then considers the role of the government versus the market in key public policies such as commodity income support, environment, stability, research, and rural development. A number of options are explored for public policy to better serve small farms, including drastic alternatives such as graduated property taxes on farmland, with exemptions or lower rates for small farms. These and other alternatives are not necessarily recommended. Improved extension education and human resource development offer some of the most promising public policy opportunities to help small farmers.

**Key Words:** government, limited resource, market, programs, research, rural, scale, small farm.

A 1987 study reported that 80% of a random sample of American adults indicated that “the family farm is an essential part of our heritage and must be preserved” (Jordan and Tweeten, p. 3). In translating that belief into reality, much conflict arises over such questions as: What is a family farm? and How best can it be preserved? For purposes of this paper, we arbitrarily define a small farm as a crop and/or livestock production, decision-making and risk-bearing unit, with annual sales of less than \$100,000. While most such small farms are family farms, we recognize that family farms also can be larger.

Commodity programs are being phased down.

---

The authors are, respectively, Anderson Chair of Agricultural Marketing, Policy, and Trade, Department of Agricultural Economics, The Ohio State University, and associate professor, Department of Agricultural Education, Economics, and Rural Sociology, North Carolina A&T State University.

This paper was presented during the invited paper session, “Small Farms in Sustainable Agricultural and Rural Development,” at the Southern Agricultural Economics Association annual meeting, held in Greensboro, North Carolina, 3–7 February 1996. Comments provided by Allan Lines and Carl Zulauf are greatly appreciated.

Other public programs for agriculture also are being cut. At issue is what programs to cut and whether to cut disproportionately by size of farm. This paper addresses these issues. We first briefly outline a topology of small farms and then consider the role of the government versus the market in key public policies such as commodity income support, environment, stability, research, and rural development.

## Topology of Small Farms

Brooks and Kalbacher (p. 18) identify five classes of farms based on annual farm product sales: (a) rural residence, defined as less than \$25,000 in sales; (b) small commercial, defined as \$25,000 to \$99,999 in sales; (c) moderate commercial, defined as \$100,000 to \$499,999 in sales; (d) large commercial, defined as \$500,000 to \$999,999 in sales; and (e) very large commercial, defined as \$1 million or more in sales. Small farms—defined in this study as rural residence and small commercial farming units—accounted for over four-fifths of all U.S. farms, but represented only 24% of farm sales in 1992 (table 1). As a group, small farm numbers have been falling approximately 2% per year since

**Table 1.** Selected Characteristics of U.S. Farms, 1992

Description	Small Farms		Larger Farms	Total
	Rural Residences (sales of less than \$25,000)	Small Commercial (sales of \$25,000–\$99,999)	(sales of \$100,000 and above)	
Total no. of farms	1,208,321	383,114	333,865	1,925,300
Percent of all farms	62.8	19.9	17.3	100.0
Percent of all sales	6.4	17.3	76.3	100.0
	(percent of class total)			
No. aged 65+	28.9	22.2	12.9	24.8
Work off farm (any)	62.3	42.0	23.7	51.6
Full owners	71.8	40.8	26.2	57.7
Full tenants	8.7	16.1	15.0	11.3
Sole proprietors	90.8	84.0	70.2	85.9

Sources: U.S. Bureau of the Census; Brooks and Kalbacher.

1987, while numbers of larger farms (sales over \$100,000) have been increasing.

Additional characteristics of rural residence farms and small commercial farms, as identified by the 1992 *Census of Agriculture* (U.S. Bureau of the Census), the U.S. Department of Agriculture (USDA), Tweeten (1994), and Brooks and Kalbacher, are detailed as follows. Rural residence farms (annual sales less than \$25,000) account for nearly two-thirds of all farms, but represent only 6.4% of farm sales (table 1); are mostly sole proprietorships rather than partnerships; have operators who work off the farm (nearly two-thirds) or are 65 years of age or over (approximately 29%); and are operated primarily by full owners rather than renters or part owners. Further, the operators of these farms, on average, have negative net income from farming alone, and they have off-farm income averaging near national median family income.

The high proportion of operators on rural residence farms who work off the farm (62.3%) or are over 65 years of age (28.9%) (table 1) leaves only about one-tenth of such operators who are non-aged (i.e., under 65), full-time operators (assuming only a few aged operators work off the farm). Once the most predominant category of farm operators, the full-time, able-bodied, small farm operator is now an endangered species.

Small commercial farms (annual sales between \$25,000 and \$99,999) have many of the same characteristics as rural residence farms, but also possess

some unique features. These farms account for one-fifth of all farms and for a slightly smaller percentage of all receipts, and thus run a little below the national average farm size (table 1); on average are more efficient than rural residences as measured by all farm revenues per unit of all farm economic costs, but are not as efficient as larger farms (i.e., current rates of return on assets and on net worth are frequently negative) (Tweeten 1994, p. 13); have a higher rate of participation in farm commodity programs and higher government payments per dollar of receipts than rural residences or very large commercial farms; and more frequently have positive net income from farming than do rural residences, but have lower off-farm income than rural residences, and so total net income from all sources is not necessarily higher than for rural residences but is lower than for larger farms.

The incidence of poverty is greater among families on small farms than on larger farms, and is above poverty rates for the U.S. population. However, measures of poverty tend to be flawed, at least in part because they omit in-kind income such as food stamps, food produced and consumed on the farm, and net worth. On average, families of small farms have much higher net worth than other U.S. families. In 1992, farms with sales of less than \$20,000 averaged \$144,000 in net worth (USDA, p. 80), more than double the median net worth of American families (Tweeten 1994, p. 12; data are not available for the same farm sales categories

as in table 1.) Farms with sales of \$40,000 to \$100,000 had an average net worth of \$474,000 (USDA, p. 81), nearly ten times that of the average American family.

Of course, public policy must accommodate diversity among small farms apparent in the foregoing statistics. It seems that rural residence farms (sales under \$25,000) are too small to be economically viable in supporting a family without outside income. Nonetheless, they provide utility for the families who live on them to enjoy the amenities and ambiance of rural life. Families on most such farms lose money through farming, but are partly compensated by tax savings and the satisfactions of rural living.<sup>1</sup> Most such families do not desire to "get big or get out," and are on farms because it is a hobby or way of life which they support from off-farm income. Because they are so numerous, these farms do much to create the landscape of rural America. And since Americans care about farm families and the appearance of the rural landscape, nonfarmers have a stake in the destiny of these and other small farms.

### **Government Policies Versus the Free Market**

Economies of size pervading American agriculture create a dilemma for policymakers (Tweeten 1984). Economies of size will cause continuing consolidation of farms, resulting in fewer and larger farms in the absence of intervention in markets. Also, economies of size mean that intervention in markets to preserve small farms will raise overall costs of food and fiber to consumers and/or taxpayers.

Government policies have both helped and harmed small farms. Without subsidies to rural residence farms in the form of services and tax write-offs for some farm assets (e.g., pickup trucks) used for consumption as well as production purposes,

small farms would be financially more hard pressed. On the other hand, public policies have played a key role in training the engineers and scientists and (along with the private sector) in paying for the research and technology creation that has replaced labor with capital and brought about fewer, larger farms. Government policies relating to scale include, among others, commodity programs, the environment, stability, research and extension, and rural development. Each is discussed below.

### *Commodity Programs*

Commodity programs saved many family farms by intervening in markets to reduce the number of farm failures, especially in times of financial crises such as in the 1982–86 period. While programs preserved many noncommercial and commercial farms in the short run and provided greater payments per dollar of farm sales to small farms (especially to the small commercial farms) than to large farms, in the long run, commodity programs have not preserved noncommercial farms (Tweeten 1993). Programs provided funds and stability encouraging farm investors to leverage equity capital—e.g., to buy a tractor and purchase or rent and consolidate their neighbor's farm with their home farm.

While not designed exclusively for small farms, it is difficult to judge whether commodity programs are being phased out because policymakers no longer give priority to preserving small family farms or because policymakers have realized that commodity programs were ineffective in preserving small farms. If the latter argument holds, then we need to ask whether commodity programs could be designed to preserve more small farms.

Repeated legislative attempts to focus program benefits on small farms by limiting payments generally have failed. Legislators have left enough loopholes to make provisions largely ineffective. Policymakers argued that support of farm prices and income with acreage reduction programs (ARPs) required inclusion of large farms which accounted for most production. Congress has proposed an end to acreage reduction programs. Payments finally could focus on small and low-income farmers. There are at least two problems with this approach. First, commodity programs are probably not viable without the political support of commer-

<sup>1</sup> Many, but by no means all, organic and alternative lifestyle families operate small farms. We do not have adequate data on the number of organic farms in the U.S., but organic farms in Ohio represent less than 1% of all farms. Many are small, and hence probably account for less than 1% of farm output in Ohio. Alternative lifestyle or counterculture farm families operating small farms full time and willingly accepting low returns to be close to nature appear to be few, but again data are not available.

cial agriculture whose families and organizations provide campaign funds for members of Congress who pass farm bills; and second, the trend is already underway to phase out direct payments as well as ARPs. It follows that the issues of preserving small farms with commodity programs may be moot because commodity programs including payments are being phased down, if not out.

Public policy providing catastrophic crop insurance likely will be retained for farms willing to pay the small fee required for the modest coverage. Such insurance is not of much benefit for small farms because scale of operations, and hence potential payments, are small and because most such farms depend upon off-farm income to cover losses from nature or markets.

### *Environment and Industrial Agriculture*

Smaller scale farms often lag in protecting the environment (Tweeten 1995). Larger farms tend to take better care of land than do smaller farms for several reasons. First, smaller farms often rely on older, used machinery such as moldboard plows and conventional drills and planters, while large operations purchase new chisel plows, field cultivators, no-till drills, and other equipment used for conservation tillage. Second, large livestock operations are supervised by the Environmental Protection Agency; waste disposal on smaller family farms is not so supervised. Operators of small farms often spread manure without working it into the soil, and thus effluent runoff becomes a problem with heavy rainfall or snow melt off frozen fields. Environmental pollution arising from runoffs from small and large swine operations in North Carolina, for example, has become a major concern for state legislators.

Small farms also have potential advantages. Although many commercial and noncommercial farms supply organic markets, smaller operators often have an advantage in the high labor and management intensity characteristic of organic production. Products of range-produced livestock and poultry, preferred by some consumers over products produced in confinement systems, are also well suited to the labor intensity characteristic of many smaller farms. Premiums paid by consumers for niche-market products can help to maintain economic vitality of small farms.

Modern disease control (e.g., subtherapeutic

antibiotics) and waste management (e.g., effluent irrigation and waste lagoons) have made industrial farming feasible, but the public is concerned about developing antibiotic resistant pathogens and by odors and breaches of waste lagoons from large livestock operations. The public is also concerned about threats to traditional family farms posed by price competition from industrial agriculture. Strict public policies regarding subtherapeutic antibiotics, waste disposal, confinement systems, odor control, and limits to scale of operations could restore some lost competitive advantage to smaller farms.

Many states have aggressive anti-industrial agriculture movements, and some have imposed restrictions designed to stop integrated, large-scale farming. However, efforts to stop industrial farming are often counterproductive because integrators simply move to states where regulators do not exist. This deprives local families of the opportunity to remain on the small farm by producing for integrators under contract, by receiving cheap fertilizer (manure), or by supplementing income through working in integrators' feed mills or processing plants.

Thus, successful efforts to drive out industrial agriculture can stop odors but deprive a state of jobs and income. Judging the appropriate tradeoffs ultimately is a political as well as an economic decision. It is important to note that a successful policy to halt industrial agriculture must be *national* in scope. Family farmers will feel the same price competition from low-cost, integrated operations whether those operations are located within the state or elsewhere.

Precision farming with Global Positioning Systems (GPS) offers new challenges for small farms. Technical and environmental gains can be sizable by tailoring fertilizers and pesticides to meet the precise needs of every spot in each field. Such systems require considerable lumpy investment in capital and know-how that must be spread over large acreages to be economically efficient. Small farms will need to work with cooperatives, neighbors, input dealers, and Cooperative Extension Service experts to compete. Public policy can help with the latter.

### *Stability*

Ability to handle risk is a potential advantage of noncommercial over commercial agriculture.

Smaller farms cope with risk mainly by diversifying into off-farm employment. Small farms are less leveraged and hence relatively less dependent on borrowed capital, and so a given farm price or income change is less likely to compromise solvency. On the other hand, small farms make less use of risk avoidance or shifting tools such as forward pricing through marketing contracts, options, and futures.

Farm markets may be more unstable in the twenty-first century as government holds less reserve capacity in the form of diverted acres and commodity stocks to stabilize prices. New risk-management tools, such as state crop yield futures and options, are likely to mushroom in this more risk-prone environment. Operators of smaller farms are least likely to take advantage of such innovations, in part because contracts are too large for them and transaction and learning costs are high per unit of output. One possible strategy for such farms is to forward contract with local elevators, which in turn will hedge prices and yields for many farms. A role for government policy is to provide education and encouragement through the Cooperative Extension Service and other information delivery systems.

### *Research and Extension*

Most public research emphasizes producing scale-neutral technology, but large-scale farms have often been earlier adopters because they can gain more profit from innovation than can small-scale farms (Carter et al.). Noncommercial operators generally use the same varieties and breeds as operators of larger farms but often lag on innovation because they lack incentives for timely and decisive changes to improve efficiency, especially when those changes are costly. Scale economies also contribute to slower and less complete acquisition of information on small farms.

Public research and extension will continue to emphasize scale-neutral innovation such as biotechnology applicable to all sizes of farms. Efforts to redirect much research to smaller operations are hampered by two problems. First, as noted earlier, small farms produce too modest a share of output to provide favorable benefit/cost ratios to much research and extension. Second, very few opportunities exist to uniquely assist small farms. In fact,

technology helping smaller farms usually helps larger farms even more!

In both Ohio and North Carolina, successful efforts at working with smaller scale farms have not been extensive, but have reached selected groups. Some examples include: (a) organic farms, addressing sustainable production problems of disease control, varietal selection, composting, and the like; (b) farmers' markets, addressing problems of location, timing of delivery, and quality control; (c) recreational or pet animal care, keeping, and exhibition; (d) gardening and pick-your-own fruit and vegetable operations, especially addressing marketing problems; and (e) farming on the urban fringe, addressing zoning, property taxes, pesticide drift control, odors, and dead animal disposal.

Many Americans are concerned about the loss of prime farmland to urban uses. Sometimes the process is encouraged by subsidies to school bus, electrical, telephone, road, and other services fostering sprawl of urban "gentry" onto small acreages in the country.<sup>2</sup> The market often suggests that the prime farmland near cities is worth more in urban development, but the market does not consider the "minimum safe standard" argument or the irreversible nature of conversion of prime farmland to urban uses. Such conversion effectively removes the option to shift land back to farms if food shortages emerge in the future. Colleges of agriculture can do more to identify tradeoffs and design an appropriate mix of policy and market solutions to the problem of urban sprawl.

Small farms are frequently on the frontier of the urban fringe. Their owners are holding the land for speculative profit from sale for urban development and may not take kindly to suggestions to end public-service average-cost pricing and subsidies that encourage urban expansion into the countryside.

Farmers who embrace the low-input sustainable or alternative agriculture movement frequently complain that they are not well served by public research and extension. They often have taken a separate, ascetic existence apart from mainstream agriculture. Their sometimes metaphysical approach to

---

<sup>2</sup> Requiring rural residential tracts to be at least, say, five acres to be eligible for certain services is another example of policies encouraging excessive lot size and sprawl.

agriculture, deemphasizing science and objectivity and emphasizing attitude and philosophy, does not promote rapport with colleges of agriculture. Their call for a systems approach of whole-farm integrated analysis does not lend itself to science because it does not lend itself to controlled experiments changing one variable (treatment) at a time. Separate funding and agencies through the USDA and land-grant colleges to serve alternative agriculture can encourage further undesirable separation from mainstream agriculture.

Greater effort needs to be made to bring alternative and mainstream agriculture research together. Farmers themselves often are in the best position to undertake whole-farm system approaches to research on alternative agriculture. The role of colleges of agriculture in such circumstances is to provide scientific backup and extension to help alternative agriculture and ecological farmers who primarily want to pursue their own unique style of production and marketing. Sometimes it is helpful to encourage farmers to share experiences. Scientists must be ready to provide help where highly technical issues of disease and insect control go beyond the expertise of lay analysts. Open minds and a willingness to listen can help bridge the gap between mainstream and alternative agriculture as both groups grow to recognize they need each other.

### *Rural Development*

Many (perhaps most) smaller farms exist only because of off-farm jobs and income. Hence, rural development is an important means to sustain noncommercial farms. The business retention and expansion program initiated at The Ohio State University, the community business development partnership and "Ways to Grow" programs at North Carolina Agricultural and Technical State University, the community service economics program initiated at Oklahoma State University, and many other Cooperative Extension Service efforts across the nation demonstrate how colleges of agriculture can help rural communities and, through them, families on small farms.

Few public services are more important to the well-being of small farms than improved communication, transportation, and schools. Families, whether on small farms, large farms, or in rural

communities, frequently share these services and have a stake in improving them. Markets alone will not address such issues—sound public policy is essential. Market institutions alone are unable to generate sufficient revenue to pay the cost of providing socially appropriate levels of communication, transportation, and schooling services.

### **Concluding Comments**

Commodity programs could have favored small farms more than they did, but the issue is moot because commodity programs are being phased down to a low level unlikely to be a viable instrument to affect farm structure. Public research and extension programs could do more to help small farms; some proposals are presented in the text and elsewhere (Tweeten 1979, 1984).

Additional policy options to preserve and assist small farms could include expanding Farm Service Agency (formerly Farmers Home Administration) lending to operators of small farms and businesses (perhaps through rural community development corporations as intermediary lenders), and ending all public subsidies to operators of large farms. An even more drastic alternative is graduated property taxes on farmland, with exemptions or lower rates for small farms. These and other alternatives are not necessarily recommended because they are difficult to administer, can be regressive (small farm operators are not necessarily poor), may promote inefficiency in the form of high-cost production, and may provide unfair competition to mid-size family farms. Improved extension education and human resource development (vocational and general education, wage supplements, welfare reform, etc.) offer some of the most promising public policy opportunities to help small farmers. It is well to note, however, that most families on small farms are neither poor nor at risk of being forced out of agriculture.

Governments ranging from the former Soviet Union to East Asia, the developing world, and elsewhere have not been adept at dictating an optimal farm size. International experience indicates an appropriate strategy is to leave farm size decisions mainly to the market, but for the government to help supply public goods (services) such as information systems, basic research, infrastructure, and schooling.

## References

- Brooks, N., and J. Kalbacher. "Profiling the Diversity of America's Farms." In *Americans in Agriculture: Portraits of Diversity* (1990 Yearbook of Agriculture), pp. 18–23. Washington DC: U.S. Department of Agriculture, 1990.
- Carter, H., W. Cochrane, L. Day, R. Powers, and L. Tweeten. "Research and the Family Farm." Report prepared for the Agricultural Experiment Station Committee on Organization and Policy, Cornell University, Ithaca NY, 1981.
- Jordan, B., and L. Tweeten. "Public Perceptions of Farm Problems." Res. Rep. No. P-894, Agr. Exp. Sta., Oklahoma State University, 1987.
- Tweeten, L. "Causes and Consequences of Structural Change in the Farming Industry." NPA Food and Agriculture Committee Rep. No. 207, National Planning Association, Washington DC, 1984.
- . "Government Commodity Program Impacts on Farm Numbers." In *Size, Structure, and the Changing Face of American Agriculture*, ed., A. Hallam, Chap. 13. Boulder CO: Westview Press, 1993.
- . "Is It Time to Phase Out Commodity Programs?" In *Countdown to 1995: Perspectives for a New Farm Bill*, ed., L. Tweeten. Anderson Chair Pub. No. ESO 2122, Dept. of Agr. Econ., The Ohio State University, 1994.
- . "Structure of Agriculture and Policy Alternatives to Preserve the Family Farm." In *Proceedings: Farmers' Agricultural Policy Conference*, Coop. Ext. Ser., Oklahoma State University, 1979.
- . "The Structure of Agriculture: Implications for Soil and Water Conservation." *J. Soil and Water Conserv.* 50,4(1995):347–51.
- U.S. Bureau of the Census. "United States Summary and State Data," Vol. 1, Part 51, AC92-A-51. *1992 Census of Agriculture*. U.S. Department of Commerce/Economic and Statistics Administration, Washington DC, September 1994.
- U.S. Department of Agriculture. *Economic Indicators of the Farm Sector: National Financial Summary, 1993*. Pub. No. ECIFS-13-1, USDA/Economic Research Service, Washington DC, December 1994.