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# **Why Conduct Research and Extension Programs for Small Farms**

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# Why Conduct Research and Extension Programs for Small Farms

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Eddy LaDue and R. David Smith<sup>1</sup>

Researchers and extension educators at land grant institutions have often described their work as “size neutral.” They cite their efforts as being relevant to, and addressing the needs of, all farms, regardless of size. In recent years, technology and other factors have resulted in general expansion of farm size and the existence of a strong and highly visible core of what would be called “large farms.” The owners of these large farms have generally been supportive of research and extension programs and have served on committees and boards that influence research and extension program priorities. These owners along with their managers and employees have attended extension program meetings and made effective use of the information provided. They have also successfully lobbied for public funds to support research and extension in Congress and at state and local levels.

Often, because of their inability to leave the farm and their lesser economic and political power, small farm owners have not been as visible nor exerted the influence on the direction of research and extension programs that has been achieved by the owners of larger farms. This has led researchers and extension educators to give more focus to the specific issues of larger farms. Most assumed, or hoped, that the extension programs and the results of the research would be just as useful for small farms as large farms.

Recent work with small farms has led some people to suggest that the land grant system is not effectively serving small farms and an effort to work more specifically on the problems and challenges of small farms would be of value. Others have countered that (1) many of what USDA counts as small farms are really hobby or part time operations that should not be counted as farms, (2) economies of size are so strong that these businesses have no real future and (3) that small farms cannot generate enough money to sustain a family. Thus, work with small farms cannot be justified in the face of declining personnel and financial resources to support agricultural research and extension.

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They argue that smaller farms should either “get big” or “get out.” Or, that research and extension work is size neutral, so if these small farms are interested in assistance, they should adapt and use the research and extension programs that have evolved as farm size has increased. They argue that the concepts are the same so what has been developed that is being used by large farms is also applicable to smaller farms and that resources to support extension programs are insufficient to target multiple farm audiences.

The objective of this paper is to investigate some of these issues. Issues specifically addressed include (1) the number of small farms that are “real” farms, (2) the magnitude of economies of size, (3) income levels on small farms, (4) the age distribution of small farm operators, (5) opportunities to strengthen small farm businesses, and (6) the contribution small farms make to rural communities.

### **A Large Number of Small Farms are Really Farms**

By any measure, small farms make up a large proportion of farms in the United States, Northeast Region and New York State. Using the USDA definition of a small farm as one that sells less than \$250,000 worth of agricultural products, 92 percent of all U.S. farms are small (Table 1). Those small farms produce 28 percent of all agricultural products in the United States and 40 percent in New York State. Taken at face value, this indicates that small farms are very important, mainly because most farms are small farms. The USDA counts anyone who sells over \$1,000 of agricultural products as a farmer. Thus, a person with a relatively small amount of agricultural production is counted as a farmer. In fact, about half of all farms counted by the USDA sell less than \$10,000 of agricultural products. Inclusion of operations with so little agricultural production in the USDA data leads some people to say “but many of the people they count as farmers are not really farmers.” Such statements are then used to “paint” all small farmers as not really being farmers and their businesses as not being worthy of research, educational assistance or other USDA programs.

It is important to consider, however, that some of the farms producing under \$10,000 of product have sufficient margin (ratio of net income to gross income) that the net farm income can make a significant contribution to family income. This is particularly true for some types of horticultural enterprises.

Alternatively, the \$10,000 level of gross sales can be achieved with (1) 4 dairy cows, each producing 20,000 pounds of milk at \$12.50 per hundredweight, (2) 50 acres of corn yielding 100 bushels per acre at \$2 per bushel, or (3) 4 acres of apple trees yielding 500 bushels per acre at \$5 per bushel. Although this clearly represents agricultural production, net income from such a farm is, by definition, quite limited. Farm income from these operations could contribute only a small amount to family income and the success of the farm would necessarily be relatively unimportant to the financial well being of many of these families. It is this type of thought process that leads many people to say that those who sell less than \$10,000 of agricultural products should not be considered **real** farmers.

Table 1. Distribution of Farms and Production by Farm Size  
United States, Northeast Region and New York State, 1997

Size (sales per farm) (\$1,000)	Percent of All Farms			Percent of Production		
	United States	Northeast Region	New York State	United States	Northeast Region	New York State
Under 10	50	49	46	1	2	2
10 – 19	11	11	11	2	1	1
20 – 39	10	8	8	3	3	3
40 – 99	11	12	13	7	8	10
100–249	10	12	14	15	21	24
250-500	4	5	5	15	17	17
Over 500	4	3	3	57	48	43

Source: 1997 Census of Agriculture, Table 2

USDA data show that 85 percent of the operators with sales under \$10,000 do not consider farming their primary occupation and 60 percent have full time non-farm jobs since they report that they work off the farm at least 200 days per year (Table 2). Further, less than 10 percent receive at least 10 percent of their household income from the farm. This implies that only a small proportion of the farms with less than \$10,000 in sales would find their lives financially improved through education and other services designed to improve their farm businesses.

Table 2. Percent of Farms that Meet Various Definitions of a “Farmer” by Farm Size  
United States, 2000

Size (sales per farm in \$1,000)	Definition of a “Farmer”			
	Farming is Primary Occupation	Work Less Than 200 Days Off Farm	At Least 10% of Income from Farm Sources	Combination (meets all three criteria <sup>a</sup> )
	-----Percent of Farms in Size Category -----			
Under 10	15.5	41.4	7.9	2.5
10 - 19	32.2	41.2	29.7	10.4
20 - 39	47.7	52.5	39.4	19.1
40 - 99	71.9	59.3	62.0	39.2
100 - 249	86.9	71.0	80.8	58.4
250 - 500	93.7	83.8	88.7	74.2
Over 500	92.7	86.7	92.5	78.3
All Farms	37.4	48.6	29.1	17.5

<sup>a</sup> Farms that consider farming their primary occupation, work off farm less than 200 days and receive at least 10 percent of income from the farm.

Source: U.S. Department of Agriculture. Agricultural Resources Management Study (ARMS) Survey, Economic Research Service, Washington DC, 2000.

As the level of sales increases from the \$10,000 level, the proportion of farms with principal occupations other than farming or full time off farm jobs declines rapidly.

About half of those with sales of \$20,000 to \$39,999 reported that farming was their principal occupation and only about half reported full time off farm jobs. Most farm operators with \$100,000 to \$250,000 in sales worked only on the farm and farming was their principal occupation.

If one considers as farmers only those farmers who say that farming is their primary occupation, or those that work off farm under 200 days, or those who receive at least 10 percent of their household income from the farm, the proportion of farmers that fall into the small farm categories is still significant. Thirty-seven percent of all farms by USDA's definition have farming as their primary occupation (Table 2). Of those, 84 percent are small farms (Table 3).

Counting as "farmers" only those without full time jobs off the farm eliminates over 50 percent of what the USDA calls farms (Table 2). Of those who work a high proportion of their time on the farm, 89 percent are small farms (Table 3).

About 30 percent of the farms with more than \$1,000 in sales receive at least 10 percent of their household income from farming (Table 2). Eighty percent of these farms are small farms (Table 3).

Table 3. Distribution of Farms by Size Under Alternate Farm Definitions  
United States, 2000

Size (sales per farm in \$1,000)	Definition of a "Farmer"				
	USDA Standard Definition (over \$1,000 sales)	Farming is Primary Occupation	Work Less Than 200 Days Off Farm	At Least 10% of Income from Farm Sources	Combination (meets all criteria <sup>a</sup> )
	-----Percent of all farms -----				
Under 10	55.7	23.0	47.5	15.1	8.0
10 - 19	9.5	8.3	8.0	9.6	5.7
20 - 39	8.6	11.0	9.3	11.7	9.2
40 - 99	10.6	20.3	10.5	18.2	19.4
100 - 249	9.3	21.6	13.6	25.8	30.9
250 - 500	3.7	9.4	6.4	11.3	15.4
Over 500	2.6	6.4	4.7	8.3	11.4
Total:					
All Farms	100	100	100	100	100
Small Farms	93.7	84.2	88.9	80.4	73.2

<sup>a</sup> Farms that consider farming their primary occupation, work off farm less than 200 days and receive at least 10 percent of income from the farm.

Source: U.S. Department of Agriculture. Agricultural Resources Management Study (ARMS) Survey, Economic Research Service, Washington DC, 2000<sup>2</sup>.

If you apply a stringent assessment and say a farmer is one who indicates that farming in his/her primary occupation, does not hold a full time job off the farm and receives at least 10 percent of household income from the farm, only 18 percent of the

<sup>2</sup> Thanks to Ashok Mishra, ERS, USDA for his assistance with this information.

operators now called farmers by the USDA would still be classified as farmers (Table 2). Of the farmers who met these requirements, nearly three-quarters are small farmers.

From this analysis, it is clear that even restricting the definition of what constitutes a farmer leaves large numbers of small farms. There are several times as many small farmers as large farmers. If your interest is in people, rather than, or in addition to, cows, corn or cabbage, there is good reason for being interested in small farms. A focus on small farmers will influence the lives of more farm operators, and their families, than a focus on large farms.

### **Economies of Size are Less Important than Many Think**

A basic economic reality with which small farms must deal is economies of size. Economies of size can result from larger operations having lower costs than small ones or from larger businesses being able to obtain higher prices for products sold. Although economies of size do exist, they are not as large as frequently implied and are not sufficiently large that efficient smaller farm units cannot be competitive in today's economic environment.

Cost Economies. Economies of size in the dairy industry are frequently illustrated using data similar to that shown in Figure 1<sup>3</sup>. It is important to note that the line drawn through the data in Figure 1 does not truly reflect economies of size because it has not been corrected for factors that might be correlated with size, but are not the result of differences in size. For example, production per cow tends to increase with herd size, but it is not the result of larger size. None-the-less, Figure 1 indicates the type of relationship usually shown<sup>4</sup>. That is, costs per unit of production decrease sharply as herd size increases, particularly up to 150 or 200 cows. Data such as that shown in Figure 1 have led a number of people to conclude that small dairy farms are going to disappear, and therefore, do not warrant investments in research, education, technical assistance or other services.

However, it must be emphasized that some small farms are indeed able to control costs quite effectively. For example, in Figure 1, notice that there are a number of small farms with total costs of producing milk of approximately \$13 per hundredweight – similar to the levels achieved by the best larger farms. Those small farms find a way to produce at a competitive level of cost.

Tauer<sup>5</sup> shows that much of the apparent economies of size are really a reflection of differences in efficiency between farm businesses. Efficiency refers to the level of output relative to the level of input.

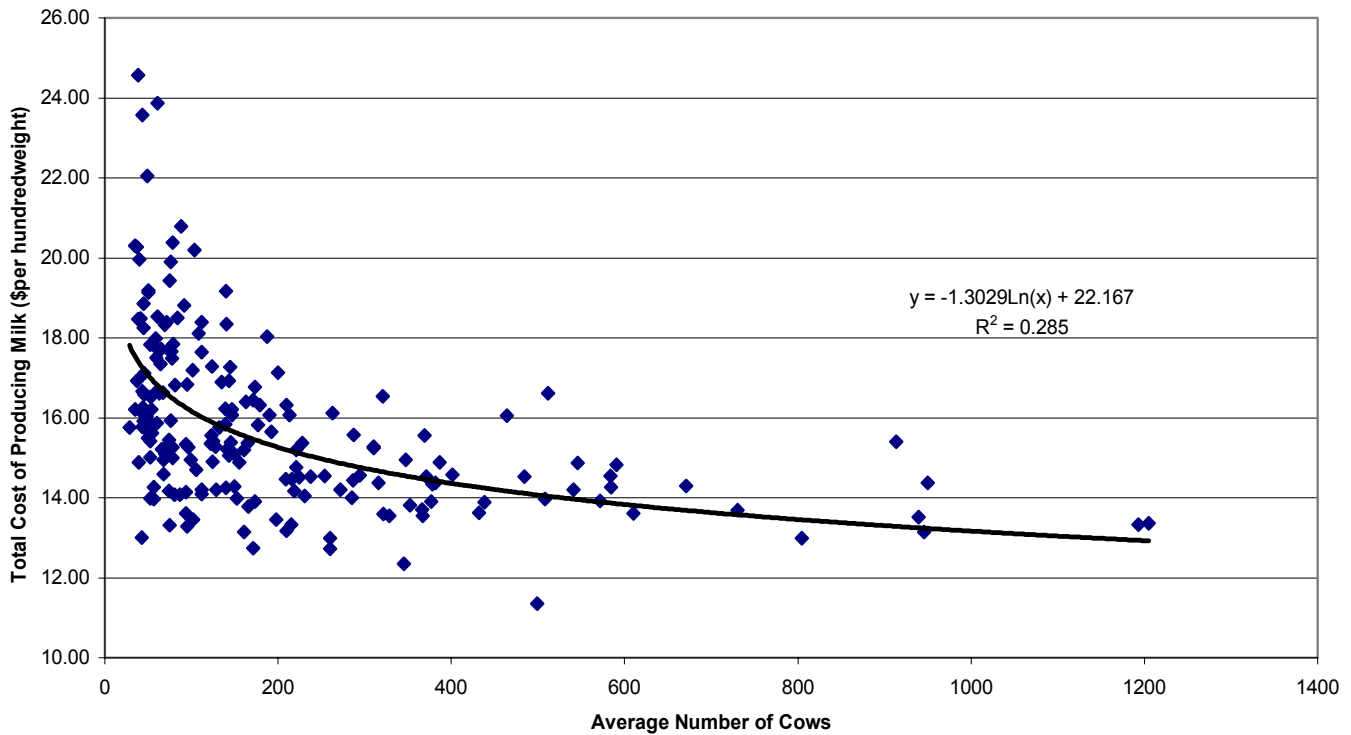
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<sup>3</sup> Figure 1 data come from the Dairy Farm Business Management Project of the Department of Applied Economics and Management, Cornell University. Individual farm data were averaged for 1997-1999.

<sup>4</sup> For an example, see Tauer, L. W. "Cost of Production for Stanchion Versus Parlor Milking in New York", *J. Dairy Sci.* 81:567-569, 1998.

<sup>5</sup> Tauer, L. W., "Efficiency and Competitiveness of Small New York Dairy Farms" *Journal of Dairy Science*, 84:2573-2576, 2001.

**Figure 1. TOTAL COST OF PRODUCING MILK BY HERD SIZE**  
**3-Year Average of 201 Farms, 1997-1999**



Less efficient farms obtain less production for a given level of inputs than more efficient farms, whether they are large or small. There are inefficient small farms and inefficient large farms. However, the data in Figure 1<sup>6</sup> show that a higher proportion of small farms have high costs. With a higher proportion of high cost farms in the sample, the average cost for all small farms is higher. When only the efficient farms are considered, the cost curve is much flatter than that shown in Figure 1.

For example, Tauer reports that farms with an average of 50 cows have, on average, \$3.34 higher costs per hundredweight due to inefficiency and \$0.58 higher costs due to economies of size, than efficient 500 cow farms (Table 4). On average, farms with 50 cows had costs of \$16.95 per hundredweight. If these farms had utilized resources in ways comparable to the most efficiently operated 50 cow herds, average costs would have been \$13.61. The difference represents the average cost of inefficiency. Efficient 500 cow farms had an average cost of producing milk of \$13.03. The difference between the average cost of efficient small farms and efficient large farms (\$13.61 - \$13.03 = \$0.58) represents the cost of production differential due to economies of size. While the \$0.58 cost, due to lack of economies of size, is an important consideration for small farms, it is less than the average cost of inefficiency (\$0.83) for large herds (average cost for 500 cow farms of \$13.86 minus the average cost on efficient 500 cow farms of \$13.03). Thus,

<sup>6</sup> The data in Figures 1 and 2 come from the Cornell Dairy Farm Business Management Project.



these data illustrate that efficient small farms can compete with average large farms in terms of cost of production.

Inefficiency (less production for a given level of inputs) can result from a variety of sources. Organizing a farm to produce a different product, such as the production of organic milk, may reduce efficiency as measured by the cost of production. It can also result from use of lower quality resources where the lower quality is not completely reflected in the value of the resources used and the quantity of resources used is measured in dollars. In a few cases, less efficient farms are purposefully organized as they are in

Table 4. Comparison of Inefficiency and Economies of Size  
314 New York Dairy Farms, 1999

Number of Cows	Average Actual Cost All Farms	Average Cost For Efficient Farms	Amount Due to Inefficiency	Amount Due to Economies <sup>a</sup>
50	\$16.95	\$13.61	\$3.34	\$.58
100	16.55	13.54	3.01	.51
150	16.16	13.47	2.69	.44
200	15.79	13.40	2.39	.37
250	15.43	13.34	2.09	.31
500	13.86	13.03	0.83	---

<sup>a</sup> Cost difference for efficient farms compared to 500 cow size.

Source: Tauer<sup>5</sup>

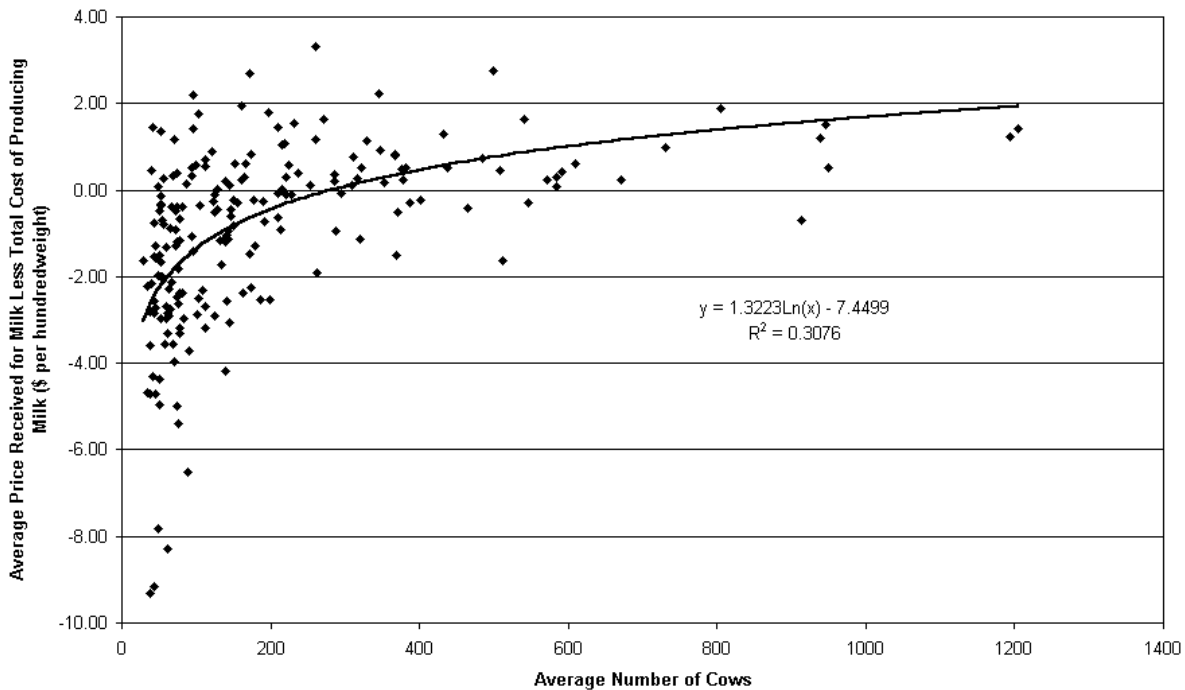
order to meet non-economic goals of the operator who is willing to accept a higher cost per hundredweight produced and a lower level of income from the farm, if necessary, to attain those goals. Never the less, many of the small farms with high costs of production relative to those on other small farms have considerable opportunity to reduce their costs, improve their incomes and strengthen their businesses.

Economies of size are less important in many horticulture (fruit, vegetable, nursery) businesses than in dairy. Many of these businesses do not use specialized machinery or buildings that are the primary contributors to economies of size in dairy herds.

Price Economies. Three reasons that larger operations may receive higher prices are transportation economies, transaction economies and product quality or consistency advantages. Transportation economies can be important in the dairy industry because a trucker spends less time and drives fewer miles to obtain a load of milk on a route that is primarily large farms. The driver may only go to one or two farms to fill the tanker instead of traveling to 10 or 15 smaller farms.

Transaction economies result when the buyer has to deal with, write checks for and do bookwork for only a few sellers. Quality and consistency economies result when a large quantity of product is handled under the same regime, by the same people and can be ready at one time. It is less costly to negotiate quality and consistency standards with

FIGURE 2. PRICE RECEIVED LESS TOTAL COST OF PRODUCING MILK BY HERD SIZE  
3-Year Average of 198 DFBS Farms, 1997-1999



one person than with six. And, deviations from standards, which tend to be random events, will occur less frequently on one farm than six.

Some small farms are able to offset these economies of size disadvantages by using niche markets which provide price premiums. Niche markets are found where the total product required can be provided by a small operation (for example, community supported agriculture) or where the needs of the market can most easily be met by small operations (for example, local super-fresh vegetable market).

Niche or special markets are especially important in the horticulture area, but can also be important in the dairy industry. Some small dairy farms can also achieve prices that allow as high (or higher) a net income per hundredweight as larger farms (Figure 2). Costs can be controlled and price enhanced sufficiently for small farms that they can be competitive with large farms.

Even though small farms can compete on a per hundredweight basis, they still have the multiplier disadvantage. A 50 cow farm producing 20,000 pounds of milk per cow and netting \$2 per hundredweight will net a total of \$20,000, while a 200 cow farm with the same production and net income of \$2 per hundredweight will net \$80,000.

### **Small Farms Do Make a Contribution to Family Living.**

Some small farms make contributions to family living that approximate those on many larger farms (Table 5). The net income per operator shown in Table 5 represents the income earned by the operator as a return to his/her labor, management and equity

capital. The best managed small farms make respectable incomes and incomes that are greater than that of some larger farms.

The \$50,000 iso-income line through the graph is a dividing line between those farms of each size group that provide more than \$50,000 (those above the line) and those that provide less than \$50,000 (those below the line). The differences between groups represent variation in costs of production and prices received for farms of all sizes and the multiplier effect for larger farms.

Table 5. Distribution of Net Income Per Operator<sup>a</sup> by Size of Business  
322 New York Dairy Farms, 1999

Income Group	Number of Cows				
	<65	65-129	130-194	195-259	260+
Number of Farms	65	96	45	31	83
	Net Farm Income Excluding Appreciation Per Operator				
Top 20 percent	\$51,668	\$78,309	\$103,316	\$157,436	\$567,863
2 <sup>nd</sup> Quintile	31,127	52,891	61,896	108,483	198,128
Median 20 %	20,971	33,660	42,733	76,065	129,938
4 <sup>th</sup> Quintile	13,369	20,508	27,675	46,824	75,756
Bottom 20 %	-3,392	471	1,534	11,629	27,597
Average	22,095	36,786	47,431	77,879	203,427

<sup>a</sup> Excluding appreciation of capital assets.

Source: NY Dairy Farm Business Summary, Cornell University

Some families combine the income from a small farm business with off-farm work by one or more family members to generate a very respectable level of family income. A survey of 76 successful small farms in New York State showed that although the farm income may be relatively modest, when combined with off-farm income, the family achieved a level of living that compares favorably with that achieved by many of their non-farm neighbors (Table 6).

Table 6. Amount of Farm and Non-Farm Income by Importance of Non-farm Income<sup>a</sup>  
76 Successful New York State Small Farms, 2000-2001

Income Source	-----Importance of Non-Farm Income <sup>b</sup> -----				
	None	Insignificant or Small	Medium	Moderate	Very Significant
Non-Farm	\$0	\$14,048	\$22,143	\$25,714	\$31,667
Farm	\$25,577	\$25,783	\$25,000	\$18,571	\$25,417
Total	\$25,577	\$39,831	\$47,143	\$44,285	\$57,084

<sup>a</sup> Calculated from the midpoint of the ranges within which data were collected: \$15,000 for \$10,000 to \$20,000, \$25,000 for \$20,001 to \$30,000, \$5,000 for those who indicated less than \$10,000 and \$40,000 for those indicating over \$30,000.

<sup>b</sup> The farmer's assessment of the importance of non-farm income to his/her family.

Source: Cuykendall, LaDue and Smith, "What Successful Small Farmers Say, Income and Finance", Number 10 in a series, Department of Applied Economics and Management, Cornell University, 2001.

In addition to the monetary contribution, small farms provide a particular quality of life that is valued by some farm families. These families find the small farm setting a good place to raise a family. They find self-satisfaction in operating a successful small farm business. They also enjoy the connections to nature as well as the work activities required on a small farm.

Another perspective on the level of incomes achieved by small farms comes from recognition that in any group of people, regardless of who they are, there is a wide array of capabilities. This leads some to assess their abilities as being more appropriate for operation of a small farm than a large farm or a crop farm rather than a dairy farm. It also means that off-farm opportunities differ among people and geographic localities. Some farm operators have the skills required to successfully operate a larger farm business or a non-farm business that would allow them to earn \$100,000 per year. They choose not to do so. Others may conclude that their alternative employment is an \$8.00 per hour factory job (about \$16,000 annually). In this case, earning \$15,000 on the farm may be viewed as just as profitable and a lot more fun – and represents the operator’s best alternative.

### **Opportunities Exist for Improving Small Farm Performance**

At all size levels, some farms are able to achieve lower levels of cost of production than others. However, there appears to be a larger proportion of small farm businesses in the high cost category. There are a number of possible reasons for this. The operators of small farms are frequently younger and less experienced at farming. With experience and learning, their businesses are likely to improve. Some operators are older farmers who have decided against major changes in the way they operate their businesses as they anticipate retirement<sup>7</sup>. Others have made lifestyle choices to operate in a specific manner, even if costs are somewhat higher and income lower, to achieve the lifestyle and/or quality of life they and their families seek. High cost small farms can continue in existence for a longer period than high cost large farms, because losing \$20,000 a year can be handled with equity declines or off farm income for much longer than losses of \$200,000. Thus, these businesses often have a longer period within which to improve their performance, and any sample will include more of these businesses. It is also possible that Cooperative Extension has been less effective in reaching these small farms.

Historically, it was generally believed that small farmers could do a better job of caring for the cattle, paying attention to detail and getting jobs done on time than large farms. The highest production per cow was “expected” to be found on small farms. However, that expectation no longer holds. On average, larger farms generally have better production performance than small ones (Table 7). In today’s environment, average large farms appear to be better managed than average small farms. This occurs in spite of the fact that some small farms are very well managed and efficient (Figure 1).

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<sup>7</sup> For a discussion of this process, see Brake, John R., Winding Down Your Farm Operation, A.E. Ext. Bulletin 93-13, Department of Agricultural Economics, Cornell University and Casler, George L., Farming Together, A Message to the Owners and Potential Owners of “Last Generation” Farms, SYF1.4, Department of Agricultural Economics, Cornell University, July 1993.

One reason that it appears that large farms are better managed results from “natural selection.” Some larger farms become large farms because they are better managed. A second reason is that large farms “make money faster” and “lose money faster.” Therefore, a large farm that is not well managed will not be around long and few are counted in any average. Small farms, on the other hand, can often survive and attempt to improve for long periods of time at lower production levels.

A third factor is that operators of small farms generally do all the tasks on the farm. This may in some cases make them “jack of all trades and master of none” leading to less optimal performance of some tasks than could be achieved if they were able to specialize on fewer responsibilities. These operators need assistance in achieving higher performance levels using methods other than specialization.

None the less, it is clear that the potential exists for large numbers of small farms to improve the performance of their businesses. For those small farm operators who desire to strengthen their businesses while maintaining them at a smaller scale, there is strong evidence that there are effective and successful strategies to do so. Data such as those shown in Table 7 imply two potential sources of improved performance for small farms. The first is better use of existing production practices that are used by farms of all sizes. Average small farms obtain lower crop yields than average large farms. Although some small farms do have good yields, this means that some small farms have lower yields. Part of this may be the result of poorer quality land. There is some tendency for smaller farmers to be located on poorer quality land. Poor land is cheaper and more available. However, part of the difference is likely to be the less effective adaptation and use of proven state of the art crop production practices on the small farm businesses.

Table 7. Management Performance Indicators by Farm Size  
322 New York Dairy Farms, 1999

Performance Indicator	Number of Cows per Farm					
	<50	50-99	100-149	150-199	200-299	300+
Hay per acre (ton dry matter)	1.7	2.2	2.2	2.6	2.9	3.6
Milk per cow (pounds)	16,600	18,300	19,000	20,000	21,000	22,700
Milk per worker (1,000 pounds)	364	504	645	717	829	1,019
Machinery investment/cow (\$)	1,838	1,620	1,448	1,457	1,150	1,013
Total cost per cwt. milk (\$)	18.39	16.26	15.68	15.16	14.28	13.71
Asset turnover ratio	0.34	0.42	0.47	0.51	0.60	0.67
Average gross income (\$)	113,000	222,000	398,000	604,000	881,000	2,298,000
Number of farms	33	99	54	25	41	70

Source: New York Dairy Farm Business Summary, Cornell University.

In a similar vein, part of the lower production per cow on average small farms is likely due to less use of rBST and/or greater use of grazing, both of which, in many cases, may reduce production levels, but result in higher profitability. But, a part of the production difference between average large farms and average small farms is less use of superior production practices on some small farms.

The second opportunity for improved performance is use of management techniques that are specifically of value to small farms. Anecdotal evidence indicates that some farmers find ways to accomplish tasks efficiently in ways that can only be effectively used on small farms. Other farmers develop labor routines, mechanical devices and structures that allow them to be efficient and low cost.

Successful small farms identified a number of management practices that are important in achieving a high level of performance.<sup>8</sup> Some are things that farmers of all sizes use. Others are specific to small farms. Highly rated cost control practices include shopping for low prices on inputs, forward purchasing, tracking production costs, organizing the farm to make most effective use of family labor, rotational grazing and doing repairs and similar tasks with farm labor (rather than using off-farm merchants or tradespersons). These farms also took advantage of price enhancing marketing opportunities such as niche marketing, direct marketing, milk quality premiums, organic premiums and adding value after production.

Successful small farms found ways to control machinery costs that are a major contributor to economies of size. They focused on buying used machinery, organizing the business to minimize machinery investment, replacing machinery only when it could not be repaired and doing repairs on the farm.

### **Small Farmers Are Not All Old People Waiting to Retire**

It is sometimes contended that small farm operators can be divided into two groups: (1) beginning farmers who have not yet been able to expand enough to be called a large farm operators, and (2) older farmers who have made conscious decisions not to expand the size of their businesses as they contemplate retirement.. This line of reasoning assumes that small farms will disappear because the first group will become large farms and the second group will retire within a few years.

The data do not support this line of reasoning. The age distribution of farmers in New York State shows that the proportion of farmers in the 35-54 year range is similar for large and small farms. Many small farm operators are neither young nor old. A somewhat larger proportion of small farmer operators are in the older categories, but the proportion of farms that could be considered “waiting to retire” is not a great deal larger for small farms than for large farms.

Further, a study of 76 successful small farms conducted in 2001<sup>9</sup> found that many of the operators of small farms wanted to keep their farms small. Keeping the farm small

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<sup>8</sup> Cuykendall, LaDue and Smith, “What Successful Small Farmers Say”, Cornell Program on Agricultural and Small Business Finance, Department of Applied Economics and Management, Cornell University. [www.agfinance.aem.cornell.edu/Small\\_Farms.htm](http://www.agfinance.aem.cornell.edu/Small_Farms.htm)

<sup>9</sup> Cuykendall, LaDue and Smith, “What Successful Small Farmers Say”, Cornell Program on Agricultural and Small Business Finance, Department of Applied Economics and Management, Cornell University, 2001 ( [www.agfinance.aem.cornell.edu/Small\\_Farms.htm](http://www.agfinance.aem.cornell.edu/Small_Farms.htm)).

was a specific goal for their farm businesses. Many younger operators did not desire to operate a large farm business.

Table 8. Distribution of Farm Operators by Farm Size and Operator Age  
New York State, 1997

Operator Age	Small Farms <sup>a</sup>	Large Farms <sup>b</sup>
Under 25	.8	.6
25-34	6.6	5.2
35-44	21.1	23.6
45-54	26.6	29.2
55-64	22.2	24.8
65 and older	22.8	16.5

<sup>a</sup> Small farms defined as less than \$250,000 in sales, excluding those with less than \$1,000 in sales.

<sup>b</sup> Large farms are defined as \$250,000 or more in sales.

Source: 1997 Census of Agriculture, New York State

### Small Farms Contribute to Communities

Small farms make significant contributions to the economies, natural environments and social fabric of rural communities.

Local Economies. Small farm businesses are important sources of income for rural farm families, who frequently combine that income with income from non-farm sources.

Small farms provide a skilled part and full time labor force for non-farm businesses in the community and surrounding area. Farm-developed skills are useful in a wide variety of jobs. Good working habits such as hard work and reliability are a hallmark of farm operators.

Small farm operators tend to make local purchases and make use of local tradespersons and services. They contribute to the critical mass necessary to maintain rural community businesses and services. In New York small farms sell 40 percent of production of all of agriculture and purchase over 40 percent<sup>10</sup> of the inputs purchased to support New York's agricultural production sector.

Social Fabric. Rural residents cite the small farm sector as a core component of the social fabric of rural areas. Basic agrarian values make a positive contribution to the set of community values that guide the local mores. Small farm operators also contribute to the critical mass necessary to maintain local churches and community organizations, such as boy and girl scouts.

Natural Environment. Small farms make a contribution to the aesthetics of rural areas. Many European countries have maintained rural pastoral scenery by encouraging small farms. Small farms provide green space. Small farms can be more environmentally friendly because they do not concentrate large quantities of waste or chemicals in one place. Some small farms (e.g. livestock farms and organic farms) are also more likely to use less intensive methods, such as grazing or reduced levels of

<sup>10</sup> 43% according to the 1997 New York Census of Agriculture

pesticides and nutrients. Small farm operators manage 50 percent of the working agricultural landscape in New York State.

### **Summary and Conclusions**

1. Ninety-two percent of all farms counted by the USDA are small farms (less than \$250,000 in sales). Even when you omit those where farming is not the primary occupation of the operator, or the operator has a full time off-farm job or where farm income contributes less than 10 percent of family income, small farms constitute three-fourths all farms.
2. Although economies of scale do exist, they are not as important as some suggest. Well-run small farms are competitive on a cost per unit basis. Some small farms have lower costs per unit of production than many large farms.
3. Many small farms provide quite comfortable levels of living for the operator's family, either solely from the farm or from the farm in combination with off-farm work by some family members. In some cases, even though the farm income is modest, it exceeds the alternative non-farm employment opportunities available to the operator.
4. Many small farms achieve lower levels of performance on a variety of standard management variables. Although, in some cases this results from production for a different market, for many farmers it represents an opportunity for improving the performance of the farm business and the contribution the farm makes to family living. Thus, research and education can make a difference for these farm families.
5. The small farm population is not constituted largely of older farmers "coasting to retirement." The proportion of small farm operators who are in their middle productive years (35-54 years of age) is similar for small and large farms. A specific goal of many small farmers of all ages is in fact to keep the farm small.
6. Small farms contribute to local communities by (1) participating in the local economy through farm and family purchases and provision of a part time skilled labor force, (2) providing green space and family businesses that make up a part of the aesthetics of rural areas, and (3) supplying basic agrarian values that represent a core component of the social fabric of rural areas.



**OTHER A.E.M. EXTENSION BULLETINS**

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2001-18	Agriculture-based Economic Development: Trends and Prospects for New York		Bills, N. L.
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2001-16	New York Economic Handbook 2002	(\$7.00)	Extension Staff
2001-15	Income Tax Management and Reporting for Small Businesses and Farms		Cuykendall, C. H. and G. J. Bouchard
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2001-12	Central Valleys Region 2000 Dairy Farm Business Summary	(\$8.00)	LaDue, E. L., Z. Kurdieh, C. Oostveen, A. E. Staehr, C. Z. Radick, J. Hiltz, K. Baase, J. Karszes, and L. D. Putnam
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