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SMALL-FARM DEFINITION AND PUBLIC POLICY

by
Thomas A. Carlin and John Crecink*

Even the most casual review of literature suggests that there are numerous definitions of small farm. Range in definitions varies from acres of land, units of livestock, value of farm products sold, days worked off-farm, level of farm income, to level of total family income [3]. Many authors combine two or more of these classifications to arrive at a more limited definition. Some authors even display wisdom by not attempting to specifically define what they mean by small farms. It becomes clear that the small farm is not precisely defined either within the agricultural research community or for the general public. As William W. Wood recently points out "Small becomes less a descriptive term than it is a philosophical one . . . . Policy objectives and small-farm categories are interrelated, and they are identified on the basis of the concerns of interested parties or participants" [6].

Public discussion of small-farm issues is also confounded by a lingering set of beliefs about farming--some of which may no longer be valid. These beliefs include:

- The economic performance of the farm establishment is an accurate reflection of the economic well-being of the farm family.
- Small farms <u>are</u> problems while family farms <u>have</u> problems. Images of the family farm are inherently positive while images of the small farm are inherently negative.

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- o Small farms are inherently inefficient thus are poor users of resources.
- o The relative vitality of a rural community is directly dependent on the vitality of the farming sector in and around that community.

Clearly, our individual response to small-farm issues depends to some extent on our perceptions about agriculture and rural America.

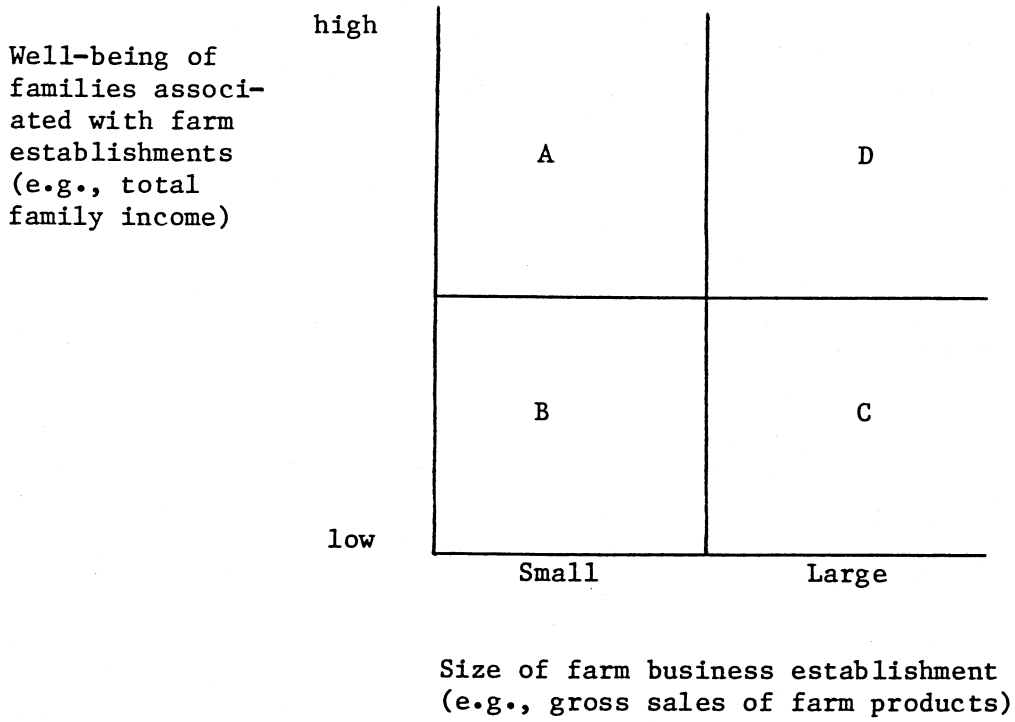
An imprecise definition of small farm may serve the policy process quite well. Groups with somewhat divergent goals can unite in efforts to advance a "small farm" policy with a shared sense of satisfaction. But those who are responsible for implementing small-farm policy (particularly if specific assistance programs are involved) must again face the issue of defining a small farm (for eligibility purposes). This problem is particularly acute for statisticians who must provide basic counts of the probable target population, etc. Vague or imprecise definitions are simply not amenable to efficient data collection, particularly in an era alive with concerns about respondent burden and privacy. Thus, we must come to grips with an acceptable small-farm definition so that we can get on with the real work at hand--helping those small-farm families eligible for assistance.

Attributes of a Good Definition

A desirable small-farm definition should have an understood underlying conceptual basis. Frequently used definitions of small farm appear to be derived from two basic concepts. The first concept of small farm is that of a low volume business establishment (Area A and B

in fig. 1). The most notable definition of this type is farms producing less than $20,000 in gross farm products.

Figure 1



Proponents of this type of definition are generally as concerned about issues such as increased concentration in agricultural production and marketing, dependence on capital intensive technology, use of harmful production practices, and land reform, as they are about other issues.

The second concept of a small farm is that of a farm operator or family having a low level of economic well-being (e.g., income) (areas B and C in figure 1). The recent USDA small-farm definition is an example of this type definition. The USDA definition includes all farm families:

- o Whose family net income from all sources (farm and nonfarm) is below the median nonmetropolitan income of the state.

o Who depend on farming for a significant though not necessarily a majority of their income, and

o Where family members provide most of the labor and management.

Proponents of this type definition are generally more concerned about issues of limited resource farmers and farm poverty than about other types of issues.

Proponents of both types of definition are quick to exorcise certain types of farming activity from their respective focus. For example, they are particularly alienated by "hobby" farmers and others who are able to convert ordinary income into capital gains using special farm tax, rules thus sheltering nonfarm income. Thus, one attribute of "the optimal definition" (if such a definition should exist) would be to exclude the less desirable types. One caution, however; constraining the definition too much may reduce the absolute size of the target population so that political support for small farms (and assistance programs) may be reduced. (e.g., There would be broader support for a target group of 1.5 million than for one of 25,000.)

Debate over a small farm definition can also be minimized if the definition chosen, regardless of its conceptual basis, would include a relatively large common element (area B in figure 1). This attribute would allow each interest group to identify subcomponents of the small farm population of particular concern and still identify with the coalition supporting the small farm movement.

The chosen definition should have other desirable attributes from a statistical perspective. The definition should be easily understood by all data users. The elements of the definition should be measurable.

Most important, the definition should be workable--capable of being implemented using conventional statistical procedures. This, by the way, was one problem with the old definition of a farm--it was becoming impossible to develop a list frame for extremely small establishments. In addition, the definition must allow for feasible data collection and collation, within the constraints of existing budgets.

With the background in mind, this paper will look at three definitions of small farms which are under discussion, at least in Washington, D.C. The first definition will be farm families with a total family income below the median nonmetropolitan income of the region, consistent with the low-income concept of small farm. The second and third definitions will be all families operating a farm business selling less than (1) $20,000 and (2) $40,000 in farm products, consistent with the small business establishment concept. Selected characteristics of families under these definitions will be examined with implications for public policy. Others have examined in detail the characteristics of farms selling less than $20,000 in farm products [2, 3]. But, relatively little is known about the low-income farm families, particularly characteristics of their farming operations.

Data

The data presented below are mainly from the 1975 Farm Production Expenditures Survey (FPES) conducted by the Statistical Reporting Service (now ESCS, USDA). This was a national probability sample of approximately 5,700 farmers designed to obtain detailed data on farm production expenses. Information was also obtained on farm and off-farm

income, farm assets, and occupation and age of the farm operator. This was the most readily available and recent source of national data on attributes of farm operators and their farms at the time the paper was prepared.

The unique advantage of the FPES survey data is the ability to sort individual observations (families) by the alternative criteria for defining small farms. Currently, this advantage is not present in other data sources, particularly those which provide information on both the characteristics of the operator and family and attributes of the farming business.

The distribution of farms by value of agricultural products sold is skewed upwards in the FPES survey compared to the Census of Agriculture. For example, the proportion of farms with sales of $40,000 and over is larger in the FPES (36 percent of all farms) than in the census data (21 percent of all farms). Thus, distribution data used below are from the 1974 Census of Agriculture and the Current Population Survey [4, 5].

Some characteristics of operators within the lower sales classes derived from the FPES are consistent with census data (e.g., average age, occupation, and days worked off-farm by the farm operator; and median size farm). Median off-farm income appears to be consistent with Census of Agriculture estimates but considerably below USDA estimates. However, estimates of median net cash farm income from the FPES are troublesome, being substantially below those from other sources. 1/ Other important attributes of the operator family, such as family size, race, and off-farm occupation, were not included in the FPES survey. No attempt was made to adjust the data presented below. Rather, attention should be

concentrated on differences among the alternative small-farm groups rather than on the absolute estimates themselves.

Results

Approximately 52 percent of all farm families have total family incomes below the median nonmetropolitan income for their region in 1975. 2/ This low-income group is smaller than those families operating a small business establishment; two-thirds (66 percent) operated farms selling less than $20,000 in farm products; about four-fifths (79 percent) operated farms selling less than $40,000 in farm products in 1974. Regardless of the definition used, small farmers are located throughout the U.S. with the major concentrations in the North Central and Southern regions (table 1). Relatively more low-income farmers live in the North Central region, particularly the West North Central, than do operators of small businesses. This is due in part to the fact that Southern farm operators are more likely to have an off-farm job which raises total family income.

FPES data suggest that low-income farm operators are more likely to have farming as their principal occupation than are operators of small-farm businesses (table 2). On the average, low-income farmers work fewer days off-farm resulting in lower off-farm incomes. Total family income for low-income operators is almost half that for operators of small-farm businesses. Low-income operators appear to have larger acreages than

Table 1--Geographic distribution of small-farm families under alternative definitions

Region/division 1/	Families 2/ with incomes below median nonmetro income (1975)	Families 3/ selling farm products of less than	
		$20,000 (1974)	$40,000 (1974)
	Percent		
Northeast	6	5	5
New England	2	1	1
Middle Atlantic	4	4	4
North Central	42	37	41
East North Central	17	18	19
West North Central	25	19	22
South	43	49	44
South Atlantic	13	15	14
East South Central	15	18	15
West South Central	15	16	15
West	9	9	9
Mountain	5	4	4
Pacific	4	5	5

1/ Estimates using data from U.S. Bureau of Census, "Money Income in 1975 of Families and Persons in the United States," Curr. Pop. Rpt., Series P-60, No. 105, U.S. Government Printing Office, Washington, D.C., 1977.

2/ Source: U.S. Department of Commerce, Bureau of Census, 1974 Census of Agriculture: United States Summary and State Data, Vol. 1, Part 51, Dec. 1977.

Table 2—Characteristics of all farm families, low-income families, and families with a small-farm business, 1975

Characteristics	Unit	All farm families	Low-income farm families	Families with small-farm business: Gross sales less than $20,000	Families with small-farm business: Gross sales less than $40,000
Farming principal occupation 1/	Pct.	69	69	48	56
Working off-farm 100+ days	do.	35	36	55	48
Median total family income	Dol.	10,300	3,300	6,200	7,000
Median net farm income	do.	2,900	2,000	2,400	4,400
Median off-farm income	do.	3,600	3,300	7,600	5,600
Average age	Years	52	53	53	52
Under 35	Pct.	12	12	12	12
35-64	do.	73	66	66	68
65 and over	do.	15	22	22	20
Median size farm	Acres	185	135	82	106
Median market value of farm assets	Thou. dol.	232	142	91	270
Median net worth	do.	204	110	84	256
Type of farm 2/					
Small grain	Pct.	10	9	7	6
Cotton/tobacco	do.	2	2	3	1
Corn/soybean	do.	27	24	20	15
Potato	do.	1	—	—	—
Other field crop	do.	1	1	—	—
Vegetable	do.	3	2	2	1
Horticultural crops	do	7	21	27	11
Livestock, dairy, and general	do.	39	41	41	66

1/ That occupation which operator spent the majority (50 percent or more) of his work time in 1975.

2/ Based on crop using the largest acreage in 1975.

Source: Special tabulations from the 1975 Farm Production Expenditure Survey conducted by the U.S. Department of Agriculture.

operators of small businesses. And low-income operators have more invested in their farms than operators of farms producing less than $20,000 in sales.

There appears to be little difference in the operator age-distribution among the three small-farm groups (table 2). And there appears to be little difference in the types of farming activities engaged in by low-income farmers and those operators of farms selling less than $20,000 in farm products. Operators of farms producing less than $40,000 in sales appear to be engaged in livestock production (general farming) more than is true for the other small-farm groups.

About 70 percent of the low-income farmers reported a loss in their farming operation in 1975 (table 3). 3/ These farm families had higher average off-farm incomes than those farm families reporting farm profits. But even then, the majority had low off-farm incomes. Operators of small-farm businesses were just as likely to have a farm loss in 1975 as low-income farm families (table 4). But, small farm business operators reporting losses (75 and 66 percent of those reporting sales of less than $20,000 and $40,000, respectively) were much more likely to have higher off-farm incomes than their low-income counterparts. To the extent that one associates high off-farm income and farm losses with "hobby" farming, it appears that the low-income concept of small farm eliminates more "hobby" farmers from a small-farm population.

Table 3—Characteristics of low-income farm families, 1975

Characteristics	Unit	All low-income farm families	Negative farm income	Positive farm income
Farming principal occupation 1/	Pct.	68	60	87
Working off-farm 100+ days	do.	36	44	17
Median total family income	Dol.	3,300	2,500	6,100
Median net farm income	do.	2,000	-3,700	3,300
Median off-farm income	do.	3,300	5,100	700
None	Pct.	27	21	40
Under 5,000	do.	33	28	44
5,000-9,999	do.	21	24	15
10,000 and over	do.	19	27	1
Average age	Years	53	53	54
Under 35	Pct.	12	12	11
35-64	do.	66	66	66
65 and over	do.	22	22	23
Median size farm	Acres	135	108	189
Median market value of farm assets	Thou. dol.	142	123	176
Median net worth	do.	110	96	161
Type of farm 2/				
Small grain	Pct.	9	8	10
Cotton/tobacco	do.	2	2	4
Corn/soybean	do.	24	21	30
Potato	do.	—	—	—
Other field crop	do.	1	1	1
Vegetable	do.	2	3	2
Horticultural crops	do.	21	26	9
Livestock, dairy, and general	do.	41	39	44

1/ See footnote 1, table 2.

2/ See footnote 2, table 2.

Source: Special tabulations from the 1975 Farm Production Expenditure Survey conducted by the U.S. Department of Agriculture.

Table 4--Characteristics of farm families with a small-farm business, 1975

Characteristics	Unit	Selling farm products of					
		Less than $20,000			Less than $40,000		
		All	Negative farm income	Positive farm income	All	Negative farm income	Positive farm income
Farming principal occupation 1/	Pct.	48	40	72	56	51	80
Working off-farm 100+ days	do.	55	59	41	48	59	26
Median total family income	Dol.	6,200	5,900	7,100	7,000	5,200	9,600
Median net farm income	do.	2,400	-2,700	2,400	4,400	-2,900	4,400
Median off-farm income	do.	7,600	9,300	3,400	5,600	8,900	2,300
None	Pct.	14	10	24	18	12	30
$1-4,999	do.	26	22	38	27	22	37
5,000-9,999	do.	20	21	18	19	20	15
10,000 and over	do.	40	47	20	36	46	18
Average age	Years	53	52	55	52	52	53
Under 35	Pct.	12	13	10	12	13	11
35-64	do.	66	67	64	68	68	68
65 and over	do.	22	20	26	20	19	21
Median size farm	Acres	82	66	132	106	74	175

Continued--

Table 4--Characteristics of farm families with a small-farm business, 1975--Continued

Characteristics	Unit	Selling farm products of					
		Less than $20,000			Less than $40,000		
		All	Negative farm income	Positive farm income	All	Negative farm income	Positive farm income
Median market value of farm assets	Thou. dol.	91	89	94	270	231	287
Median net worth	do.	84	82	90	256	213	269
Type of farm 2/							
Small grain	Pct.	7	6	10	6	5	8
Cotton/tobacco	do.	3	2	5	1	1	1
Corn/soybean	do.	20	18	28	15	12	22
Potato	do.	--	--	1	--	--	--
Other field crop	do.	--	--	1	--	--	--
Vegetable	do.	2	2	1	1	1	1
Horticultural crops	do.	27	33	11	11	15	4
Livestock, dairy, and general	do.	41	39	43	66	66	64

1/ See footnote 1, table 2.

2/ See footnote 2, table 2.

Source: Special tabulations from the 1975 Farm Production Expenditure Survey conducted by the U.S. Department of Agriculture.

A large part of the similarity observed among many characteristics of the alternative small-farm groups is due to the size of the common element (area B in figure 1). The FPES data suggest that about three-fourths (76 percent) of all operators with farms selling less than $20,000 also had total family incomes below the nonmetro median income. About 71 percent of operators with farms selling less than $40,000 had total family incomes below the nonmetro median. These two groups constituted, respectively, 72 percent and 84 percent of the total low-income group. While the FPES undoubtedly overstates the size of this common element because of the reported low farm incomes, the true overlap is most likely sizable. For example, similar tabulations from the 1973 Farm Family Living Expenditure Survey suggests that 62 percent of all operators with farms selling less than $20,000 in farm products had total family incomes below the nonmetro median for that year.

Relative to the two groups with small-farm businesses (table 4), the common population (area B in figure 1) is more dependent on farming, working fewer days off-farm and having lower off-farm incomes (table 5). On the other hand, the common population is slightly older than the low-income population and has smaller farms (acreages and value) (tables 3 and 5).

The tradeoff groups between the two basic concepts of small farm are areas A and C in figure 1. Group A, higher-income small-farm business operators, appear to be middle-age (almost all between 35 and 64 years old) operators with relatively large off-farm incomes (most reported $10,000 or more), most of whom are not farmers by occupation.

Table 5--Characteristics of low-income farm families operating a small-farm business, 1975

Characteristics	Unit	Selling farm products of					
		Less than $20,000			Less than $40,000		
		All	Negative farm income	Positive farm income	All	Negative farm income	Positive farm income
Farming principal occupation 1/	Pct.	58	50	83	63	53	88
Working off-farm 100+ days	do.	45	52	22	40	49	18
Median total family income	Dol.	3,900	3,200	5,100	3,900	2,900	5,800
Median net farm income	do.	2,000	-2,000	2,000	2,800	-2,200	2,800
Median off-farm income	do.	4,800	6,300	1,900	4,100	6,000	1,100
None	Pct.	18	14	31	22	16	37
$1-4,999	do.	33	29	47	34	29	46
5,000-9,999	do.	26	28	20	23	27	15
10,000 and over	do.	23	29	2	21	28	2
Average age	Years	55	54	57	53	53	54
Under 35	Pct.	11	12	9	12	12	10
35-64	do.	62	63	59	64	64	63
65 and over	do.	27	25	32	24	24	27
Median size farm	Acres	88	74	130	104	84	161

Continued--

Table 5--Characteristics of low-income farm families operating a small-farm business, 1975--Continued

Characteristics	Unit	Selling farm products of					
		Less than $20,000			Less than $40,000		
		All	Negative farm income	Positive farm income	All	Negative farm income	Positive farm income
Median market value of farm assets	Thou. dol.	85	84	89	95	90	132
Median net worth	do.	79	77	86	88	82	118
Type of farm 2/							
Small grain	Pct.	7	7	10	8	7	10
Cotton/tobacco	do.	3	2	6	2	2	4
Corn/soybean	do.	20	18	26	22	20	28
Potato	do.	--	--	--	--	--	--
Other field crop	do.	1	--	1	1	--	1
Vegetable	do.	2	2	2	2	2	1
Horticultural crops	do.	27	32	12	24	30	9
Livestock, dairy, and general	do.	40	39	43	41	39	46

1/ See footnote 1, table 2.

2/ See footnote 2, table 2.

Source: Special tabulations from the 1975 Farm Production Expenditure Survey conducted by the U.S. Department of Agriculture.

Group C, lower-income families with larger farms, appear to be middle-age operators whose occupation is farming and who have lower off-farm incomes (most reported less than $5,000).

Implications

There are differences in general policy focus inherent in the two concepts of small farm. The low-income definition focuses on individuals and families who have a commonly understood problem--moderate to low income. The implied objective is to undertake actions which improve their income (well-being) level. This objective flows naturally from the concept itself. While the small-business concept focuses attention on certain farm establishments, it does not present a commonly understood problem. And the concept itself does not suggest a clear policy objective; rather, the policy objectives emerge from an understanding of population characteristics.

There appears to be some distinction between the populations included in the two concepts of small farm (besides those differences inherent in the concept itself). The above analysis suggests that low-income farm operators are tied closer to farming (both by occupation and income) than are operators of small-farm businesses. In other respects, there is very little difference in population characteristics between the two concepts. For example, regardless of the definitions considered above, small farmers are concentrated in the North Central and South, a fifth are aged and perhaps reducing the intensity of their farming operations, and they are engaged in all types of farming. Regardless of the definition used, the small-farm population appears to be hetero-

geneous; no single major attribute emerges aside from income level and relative dependency on farming.

While the two concepts of small farms (low-income and small-business) elicit a different general policy focus, practical approaches to assisting small farmers may not differ. This is due to the fact that a large number of the same farm operators would be included in a small-farm population under either concept. Regardless of the definition, programs to assist small farmers must be diverse in order to accommodate the heterogeneity of the population. Some small farmers can benefit most from programs to improve farm operations, others can benefit most from increased off-farm employment opportunities, and still others (e.g., the elderly) may benefit most from improved access to public assistance and social services. The exact combination depends almost entirely on the circumstances faced by the individual small-farm family.

Perhaps any final decision on the proper concept of the small-farm definition lies in the public's preference for the tradeoff groups (groups A and C). This analysis suggests that the tradeoff is between (1) operators of small-farm businesses who are not farmers by occupation having relatively high off-farm incomes versus (2) full-time farmers operating larger farms but having problems making a satisfactory income. Given the public's apparent lack of social concern for hobby farmers, the low-income concept appears to have a distinct advantage over the small business establishment concept; low-income farmers are less likely to view farming as a hobby. Yet, there is enough diversity in the low-income farm population to accommodate the concerns of those who are interested in issues typically associated with a small business concept.

A more detailed and accurate description of the low-income farm population must await more extensive surveys. The 1979 Farm Finance Survey, a follow-on survey to the 1978 Census of Agriculture, appears to be particularly promising. ESCS will continue to explore low-income farmer attributes using other data files. Those states with good data available can also extend insight into the attributes of low-income farm families. Hopefully, such efforts will varify the analysis above.

References

[1] Internal Revenue Service
Income - 1975 Business Income Tax Returns. 1978.

[2] Larson, Donald K., and James A. Lewis
"Farm Profile," Small-Farm Issues: Proceedings of the ESCS Small-Farm Workshop, May 1978. ESCS-60. U.S. Dept. Agr., Econ., Stat., and Coop. Serv., July 1979, pp. 10-30.

[3] Lewis, James A.
"Implications of Alternative Definitions of a Small Farm," Toward a Federal Small Farms Policy. Nat'l. Rural Ctr. Rpt. No. 9. Washington, D.C., Nat'l. Rural Ctr., Nov. 17, 1978.

[4] U.S. Department of Commerce, Bureau of Census
1974 Census of Agriculture: United States Summary and State Data, Vol. 1, Part 51, Dec. 1977.

[5] _____
Money Income in 1975 of Families and Persons in the United States. Curr. Pop. Rpt., Series P-60, No. 105. 1977.

[6] Wood, William W., Jr.
"Role of Small Farms in American Agriculture and Rural Society," Increasing Understanding of Public Problems and Policies - 1978, Oak Brook, Ill., Farm Foundation, Oak Brook.

Footnotes

*Thomas A. Carlin and John Crecink are economists with the Economic Development Division, ESCS, USDA.

1/ Net cash farm income excludes inventory adjustments, value of home-produced and consumed food, and the rental value of the farm dwelling. These items are typically included in other data sources.

2/ This estimate is from the Current Population Survey [5]. The estimate from the FPES was approximately 55 percent.

3/ Forty-nine percent of the respondents to the FPES reported a loss on their farms in 1975. The Internal Revenue Service reported that 47 percent of all sole proprietorship farm businesses operated at a loss in 1975 [1].