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Agricultural Structure and Change: Litchfield County, Connecticut

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Introduction

The agriculture industry in the United States is at a crucial point in its evolution. Farming today bears little resemblance to farming at the turn of the century or, for that matter, even thirty years ago. New technological innovations, increasing specialization and increased capital investments have contributed to an exponential increase in per capita production and a corresponding decrease in the number of farms and an increase in farm size.

Lyle P. Schertz (1979) suggests that farming in the United States may be undergoing a series of far reaching changes which rival earlier changes resulting from the shifts from hand power to horse power and from horse power to tractors. Many forces are now operating which have drastically affected our agricultural structure since the end of World War II and are continuing to have an impact today. Among the factors he cites are: inflation and resulting increases in land value; increasing farm exports; capital-extensive technologies; commodity programs; and tax rules. These and other factors have led to a dramatic transformation in our agricultural system which he refers to as a "revolution."

The problems of the American agricultural system today are complex and resist simple solutions. Production has been dramatically

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boosted to the point where surpluses are a major problem, yet this production is increasingly concentrated in relatively few larger farming operations. Recent concerns have focused on the preservation of the small family farm as a vital part of rural life in America, yet current forces are producing a serious threat to their survival (U.S. Department of Agriculture, 1980).

The purpose of this report is to examine the socioeconomic characteristics of farmers in Litchfield County, Connecticut, in order to describe the farm operations in the county and to identify the current perspectives and aspirations of farmers in the county based upon data obtained in a mail survey conducted in 1982.

Litchfield County is located in northwestern Connecticut. It is bordered on the north by the state of Massachusetts and on the west by the state of New York and contains 26 towns. It is Connecticut's largest county, containing approximately 922 square miles of land and was fifth in population size in 1980 (Groff, 1982). In 1982, Litchfield County ranked first among the eight counties in the state in total land in farms, total cropland, harvested cropland and the number of dairy farms; second in sales of dairy products, sales of livestock and poultry products, the number of farms and the value of farm land and buildings; third in the proportion of land in farms; and fourth in total sales of farm produce (U.S. Bureau of the Census, 1984).

Although Litchfield County is one of the leading agricultural counties in the state, it also contains a number of diverse industries and recreational services. Its land rises from gently rolling hills in the southern portion to the rugged Berkshire mountains in the northwest corner. Farmland in the county is scattered throughout the area.

Given the importance of agriculture to Litchfield County and its relative position in the state's agriculture system, it represents an ideal area for the study of the socioeconomic characteristics of farmers, their farm operations, lifestyles and aspirations.

Survey and Methodological Considerations

During the week of May 17, 1982, a questionnaire containing 25 questions was mailed to 1037 farmers or potential farmers in Litchfield County. An extensive and time consuming process was used to develop the mailing list in an effort to make it as complete as possible. Beginning with a mailing list used by the Litchfield Cooperative Extension Office for mailing to their clients, the researchers in consultation with Extension per-

sonnel first deleted or added names to the original lists based upon the knowledge of other Extension personnel and mailing lists used for other purposes. The revised list was then reviewed by other agricultural agencies in the county for more additions and deletions. Finally, tax assessors, town clerks and/or other town officials in the 26 towns within the county were personally contacted as an additional resource for further modification and validation of the farmers with mailing addresses in each town. The end result of this process was the listing of 1037 potential farmers who represented the nearest approximation to the universe of farmers in the county. A total of 423 questionnaires were returned by farmers of which 393 questionnaires (approximately 38 percent of all questionnaires mailed out) were found to be sufficiently complete to be used in the analysis. Approximately 40 additional responses were received from persons who indicated they did not qualify for the study or who returned their questionnaires too late to be included in the analysis. It is these 393 questionnaires which are the basis for the following analysis of farmers in Litchfield County. It was clear that our mailing list was exaggerated by inclusion of some persons who were not farmers and by others who may not have met the definition of farms used in the 1978 and 1982 censuses. Thus, any conclusions drawn from the survey should not be treated as representative of the study area.

One way to check the representativeness of the survey responses is to compare them with data from the Census of Agriculture (See Groff and Braden, 1983a). Included in the questionnaire was a question asking the respondents to indicate if they had completed the forms for the 1978 Census of Agriculture. Of the 393 eligible questionnaires, 327 (83.2 percent) answered this question. Of these, 178 (54.4 percent) have returned the 1978 Census of Agriculture forms. The responses of both those who completed the 1978 census forms and those who did not were then compared to the data from the 1982 Census of Agriculture.

Three cautions should be noted. First, respondents to the mailed surveys may have been more highly motivated than non-respondents. Since we have no basis for controlling for the potential biases of non-respondents we cannot generalize to the universe of farmers in the area. Second, the time intervals between the two censuses and the survey could affect the comparisons. Changes in farm operations during the intervals could have an effect which cannot be accounted for in the comparisons. Finally, the survey data is based upon self definitions rather than the criteria used for farms in the Censuses of Agriculture described earlier. Since we were interested in both current and potential farming

operations in our study we decided to include all income categories in the analysis even though some did not meet the census definition of a farm. As a result we would expect the sample data to overestimate the number of farms and underestimate averages for land use.

Table 1 provides a basis for some general comparisons between census data and survey data. As expected the survey results show lower average farm size, acreage in cropland and percent of farms with incomes of over \$2500 from sales of agricultural products. However, when only those respondents who completed the 1978 Census returns are considered the differences narrow appreciably, especially for average farm size.

The results of the comparisons shown in Table 1 suggest that the sample is not as representative of the total universe of farms as we would like. Any attempt to generalize from the sample data to the universe of farms in the county should be made with extreme caution since the data from the sample is biased by the inclusion of cases which may not qualify under the census definition of a farm. It is likely that most of the respondents would have met the acreage definition used in the 1969 Census of Agriculture since only 7.1 percent of the respondents reported owning less than 10 acres of land and thus could be viewed as potential farms.

Once the survey data was coded and placed in a computer file the Statistical Package for the Social Sciences was used for the analysis of the data. Since the data from the survey did not meet the criteria of a ran-

Table One: Comparison of 1978 and 1982 Census Data with Data from the Survey.

Data Source	No. of Farms	Average Acreage	Average Crop Acreage	Percent of Farms Over \$2,500 in Farm Income
1978 Census	575	185.0	65.6	73.5
1982 Census	640	162.0	80.9	68.6
Survey	393	125.0	44.5	40.2
Respondents to 1978 Census	178	162.6	56.0	56.6
Nonrespondents to 1978 Census	149	93.7	32.8	19.6

dom sample, most of the analysis is based upon frequency distributions, cross-tabulations, percentages, ratios and rates. The number of responses to specific questions may vary since all respondents were not required to answer every question in the survey and some respondents either refused or could not answer other questions.

General Characteristics of Survey Respondents

Table 2 presents selected general characteristics of the respondents based upon percentages and the mean average for self selected types of farm operations (See Groff and Braden, 1983b). The small farm category has been subdivided into part- and full-time operations based upon data collected on the class of farming operations, while the data for total small farms was derived from a question on type of farm operations only. As a result the data for these categories are not strictly compatible since the total small farm category may include persons who did not consider themselves as farmers or who were retired but who still defined themselves as small farmers (18.8 percent of the small farm respondents). In retrospect, this is one of the areas where the questionnaire was weak. Question 9 was a two-part question which in the first part asked the respondents to indicate if they considered themselves as non-farm, part-time farmers, full-time farmers, or retired; and in the second part to indicate their type of farm operation as either hobby, small, medium-sized commercial or large-sized commercial farms. In the coding of the questionnaires it was obvious that some respondents did not understand the questions since a number checked a category in either or both parts while others skipped the question entirely but went on and completed other pertinent parts of the questionnaire.

Table 2 discloses the similarities and differences in the central tendency of responses between the six self-identified classes or types of farming operations. Combined, these provide a series of profiles of the farm type/class categories. In some instances there is a clear association between farm types (size) and the selected variables, while the association is not as clear for others. In general, the associations tend to follow the expected patterns.

Briefly, there is a tendency toward a direct relationship between the type of operation by size and the mean number of acres per farm, mean acreage in cropland, the percent owning livestock, the use of non-household labor, the percent belonging to a farm organization, the per-

Table Two: General Characteristics of Survey Respondents by Type of Farming, Litchfield County, 1982.¹

Variables	Type of Farm Operation					
	Hobby	Small, ² Part-Time	Small, ² Full Time	Small, Total	Medium	Large
Number of Respondents	74	71	53	138	53	19
Mean No. in Household	2.8	3.5	3.5	3.3	3.1	3.1
Mean Age of Respondent	54.6	48.6	53.8	54.9	47.9	50.9
Percent Male	79.7	80.3	85.3	78.1	89.8	94.7
Mean Grade Completed- Respondent	14.1	14.1	12.7	13.2	12.4	13.4
Respondent Married ⁵	93.7	84.5	96.8	88.1	88.4	93.3
Mean No. of Children ³	1.9	2.5	2.0	2.3	2.0	2.2
Off Farm Employment ⁵	75.7	93.0	44.4	66.4	47.2	26.3
Mean No. of Days Worked-Respondent ⁴	264.9	243.0	176.6	230.9	162.6	60.0
Mean No. of Days Worked-Spouse	214.0	212.0	201.5	208.8	115.5	143.0
Mean No. of Acres	77.8	80.1	93.8	92.7	197.5	477.1
Mean Acres of Cropland	7.9	10.9	20.8	14.9	72.5	143.2
Percent Rented Acres	9.5	31.0	58.3	36.2	81.1	68.4
Own Livestock ⁵	60.8	80.3	83.3	77.5	86.8	94.7
Use of Non-Household Workers ⁵	20.3	46.5	63.9	46.3	84.6	94.7
Member of Farm Or- ganization ⁵	28.4	37.1	60.6	46.5	89.6	88.9
Work with Ag. Agencies ⁵	43.5	69.0	71.9	65.1	94.2	100.0
Applied for 490 Tax Assessment ⁵	41.2	58.2	64.7	62.2	68.8	83.3

¹Source: 1982 Survey of Farms. Data are shown in means or percentages as indicated.

²The part and full time small farm categories were derived from a different sub-question than the other four categories.

³Mean based upon those families reporting children only.

⁴Off farm employment.

⁵Percentages.

cent working with a farm support agency, and the percent having applied for use tax assessment under State Public Act 490. On the other hand, there is a tendency toward an inverse relationship (as farm size increases the measurement of central tendency decreases) between type of operation and off-farm employment and the mean number of days worked off the farm for both the respondents and their spouses. The relationships are not as clear for the remaining variables. For example, the mean household size is largest for small farmers but smallest for hobby farmers and both the mean age of the respondent and the mean number of children in a family are lower for medium-sized commercial farms than for both small and large farms. It is also interesting to note that both hobby farmers and small part-time farmers appear to be better educated.

Income and Employment Characteristics

The previous section provided a general profile of the socioeconomic characteristics of the respondents and their households by type of farming operation. In this section we will look at income and employment characteristics in more detail. Tables 3 and 4 provide information on total household income, the proportion of household incomes obtained from off-farm employment, and income from farming. In general, the data from these tables tends to follow the expected pattern. Larger operations tended to have higher incomes from farming, higher total household incomes and a lower proportion of their total household incomes from off-farm employment.

Several exceptions should be noted. First, 21 percent of the large farms reported that over half their total household income came from off-farm employment. This is over twice the corresponding proportion for medium sized farms and nearly the same as that reported for small full-time farms (Table 3). Second, approximately 7 percent of the small part-time farms indicated they had no income from off-farm sources. By definition we would expect part-time farmers to have at least some income from other occupations. Finally, the data in Table 4 raises some questions about the use of self-definitions for categorizing type of farms. The income from farming reported by the respondents suggests that as many as 37 percent of the respondents may not qualify as farmers according to the Agricultural Census. In addition, the self-classification of types of farms as hobby, small, medium and large by the respondents may have been based on factors other than income from farming.

Table Three: Total Household and Percentage of Total Household Income Obtained from Off-Farm Employment by Type of Farm.¹

Type of Farm	Less than \$10,000		\$10,000-\$24,999		\$25,000-\$49,999		\$50,000 & Over		Percentage from Off-Farm Sources	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	None	Over 50%
Hobby Farm	8	11.9	22	32.8	20	29.9	17	25.4	22.9	72.8
Small Farm ²	27	20.8	39	30.0	39	30.0	25	19.2	26.5	53.5
Part-time	7	10.3	24	35.3	23	33.8	14	20.6	7.2	75.4
Full-time	8	22.2	6	16.7	13	36.1	9	25.0	52.8	22.2
Medium Farm	8	16.3	13	26.5	9	18.4	19	38.8	54.9	9.8
Large Farm	1	5.3	5	26.3	3	15.8	10	52.6	63.2	21.0
Total	44	16.6	79	29.8	71	26.8	71	26.8	33.5	47.0

¹Data shown are the frequencies and percentages by type of farming operation.

²Figures for part- and full-time small farms will not sum to total small farms since this information was derived from a different set of responses. Part- and full-time farm frequencies are not included in the total since they are contained in the small farm category.

Table Four: Income from Farming During 1981 by Type of Farm.¹

Type of Farm	None		Less than \$1000		\$1,000-2,499		\$2,500-9,999		\$10,000-19,999		\$20,000-39,999		\$40,000 and Over	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hobby Farm	39	53.4	16	21.9	10	13.7	8	11.0	--	--	--	--	--	--
Small Farm ²	14	10.2	33	24.1	27	19.7	26	19.0	15	10.9	10	7.3	12	8.8
Part-time	8	11.3	21	29.6	20	28.2	15	21.1	6	8.5	1	1.4	0	0.0
Full-time	1	2.9	1	2.9	2	5.7	4	11.4	8	22.9	8	22.9	11	31.4
Medium Farm	2	3.8	1	1.9	0	0	5	9.6	2	3.8	6	11.5	36	69.2
Large Farm	0	0	0	0	1	5.3	0	0	1	5.3	0	0	17	89.5
Total	55	19.6	50	17.8	38	13.5	29	13.9	18	6.4	16	5.7	65	23.1

¹See Table 3.

²See Table 3.

Tables 5 and 6 provide information on off-farm employment for the total households, the respondents, and their spouses. White collar occupations clearly represented the major type of off-farm employment for all farm types for both the respondents and their spouses. On the other hand, more respondents were employed in blue collar occupations (approximately 80 percent of the respondents were male) while the mode for their spouses was white collar professional occupations. Any comparisons of occupation by type of farming operation should be viewed with caution because of the small number of medium and large farms reporting off-farm employment.

Briefly, Tables 3-6 provide greater detail on the income and employment characteristics of the respondents and their households by type of operation. As expected, larger operations generally reported more income from farming and higher household incomes. Smaller operations, on the other hand, were more likely to have a larger proportion of their household incomes from off-farm sources. Comparisons of off-farm occupation are limited because of the low frequency of off-farm employment among medium and large farm types. The differences in off-farm employment for part-time and full-time small farmers are significant and will be discussed later in this report, since not only are more part-time farmers dependent upon off-farm incomes (as would be expected) but they are more likely than any of the other categories to be employed in blue collar occupations.

Farm Structure and Selected Operational Characteristics

Changes in the general structure of agriculture in Connecticut and Litchfield County were discussed earlier in this report. Socioeconomic forces have contributed to a decline in farmland acreage and the number of farms and to an increase in the size of farms since the end of World War II. As noted earlier, Litchfield County ranked first among the eight counties in Connecticut in acreage in farms, harvested cropland, and the number of dairy farms in 1982. In this section we will review selected organizational and structural characteristics derived from the responses to the survey.

Table 7 shows the distribution of farm acreage by types of farming operations. Although the relationship between farm size and the self-

Table Five: Proportion of Households with Members of Household Employed in Off-Farm Labor and Type of Employment for Respondents by Type of Farm.¹

Type of Farm	Number and Percent With Off-Farm Employment		Type of Employment of Respondents ⁴							
			Blue Collar		White Collar Professional		White Collar Other		Other ³	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hobby	53	75.7	13	28.9	9	20.0	18	40.0	5	11.1
Small ²	91	66.4	30	40.5	25	33.8	13	17.6	6	8.1
Part	66	93.0	25	41.0	22	36.1	10	16.4	4	6.5
Full	16	44.4	1	20.0	2	40.0	2	40.0	0	0.0
Medium Commercial	25	47.2	6	40.0	2	13.3	5	33.3	2	13.3
Large Commercial	5	26.3	1	50.0	0	0.0	1	50.0	0	0.0
Total	174	62.4	50	36.8	36	26.5	37	27.2	13	6.6

¹See Table 3.

²See Table 3.

³The "Other" category represents occupations which could not be classified as either blue collar or white collar occupations.

⁴Numbers will not sum to total number who reported off farm employment since all respondents did not indicate type of employment.

Table Six: Number and Percent of Spouses Employed Off the Farm, by Type of Employment and Type of Farm.¹

Type of Farm	Blue Collar		White Collar Professional		White Collar Other		Other ³	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hobby	6	24.0	12	48.0	5	20.0	2	8.0
Small ²	12	32.4	11	29.7	14	37.8	0	0.0
Part	9	36.0	7	28.0	9	36.0	0	0.0
Full	3	27.3	4	36.4	4	36.4	0	0.0
Medium	2	33.4	1	16.7	3	50.0	0	0.0
Large	0	0.0	2	0.0	0	0.0	0	0.0
Total	20	28.5	26	37.1	22	31.4	2	2.9

¹See Table 3.²See Table 3.³"Other" category represent occupations which could not be classified as either blue collar or white collar occupations.

Table Seven: Farm Acreage by Type of Farming Operation.¹

Type of Farm	10 Acres or Less		11-24 Acres		25-49 Acres		50-99 Acres		100-199 Acres		200-499 Acres		500+ Acres		Total	Percent
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%		
Hobby Farm	14	18.9	10	13.5	18	24.3	18	24.3	10	13.5	3	4.1	1	1.4	74	26.1
Small Farm ²	12	8.7	22	15.9	29	21.0	29	21.0	30	21.7	15	10.9	1	0.7	138	48.6
Part-time	10	14.1	15	21.1	15	21.1	12	16.9	10	14.1	9	12.7	--	--	71	--
Full time	1	2.8	5	13.9	7	19.4	11	30.6	8	22.2	4	11.1	--	--	36	--
Medium Farm	1	1.9	4	7.5	5	9.4	2	3.8	18	34.0	20	37.7	3	5.7	53	18.7
Large Farm	0	0	2	10.5	0	0.0	0	0.0	2	10.5	11	57.9	4	21.1	19	6.7
Total	27	9.5	38	13.4	52	18.3	49	17.3	60	21.1	49	17.3	9	3.2	284	100%

¹See Table 3.²See Table 3.

Note: Median acreage for farm types are: Hobby Farms, 43; Small Farms, 61; Small Part-time Farms, 43; Small Full-time Farms, 73; Medium Farms, 181; and Large Farms, 350.

defined operational types tends to follow the expected pattern, it is evident that acreage itself was not the only factor the respondents considered in their self-definition. As was the case with income from farming (Table 4), it seems possible that some respondents may have based their responses on factors other than acreage and income from farming. For example, nearly 12 percent of the respondents who classified their operations as small farms owned more than 200 acres while approximately 20 percent of the large farm operations had less than 200 acres. On the other hand, as the data from Table 7 and Table 4 indicate, acreage and farm income were important considerations in farm types.

Table 8 shows the number of operations which owned livestock and the importance of dairying in Litchfield County. Seventy-six percent of the respondents reported they owned livestock and approximately 34 percent owned dairy cattle. Here again there is a direct association between type of farm operation and both the ownership of livestock and the size of dairy herds. Smaller operations were less likely to own livestock and more likely to have smaller dairy herds. As the farm types increase in size the likelihood of owning livestock and the importance of dairying increases.

Table 9 shows the marketing methods for crops used by the respondents. Since respondents were given the opportunity to identify three methods, the frequencies in the table reflect the number of times a given method was reported. The data should also be treated cautiously because of the low response rate. Only approximately 40 percent of the respondents answered this question while only 18 percent of those responding indicated more than one method. Although no clear patterns are evident, the data suggest that relatively few of the respondents marketed their products through cooperatives (5.7 percent), while the largest proportion used direct contacts with consumers to market at least part of their produce (nearly 59 percent). Only a small proportion of the respondents reported that they used a marketing method which involved a middle man. If animal industries had been included in the questions it seems probable that a much higher proportion of the responses would have indicated either the use of cooperatives or a marketing method involving a middle man. It should also be noted that only a relatively small proportion of the survey reported that they raised crops for the market rather than for their personal use. Hay was by far the crop most often mentioned both for personal use and sales (57 percent). It would also seem likely that most respondents would sell hay directly to other users rather than wholesale. An analysis of the crops grown by the

Table Eight: Number and Percent of Farm Operations Which Own Livestock and Selected Sizes of Dairy Herds by Type of Farm Operation.¹

Type of Farm	Own Livestock		Dairy Herd Size									
			1-10		11-24		25-49		50+		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%		
Hobby Farm	45	60.8	6	100	--	--	--	--	--	--	6	6.2
Small Farm	107	77.5	15	37.5	6	15.0	8	20.0	11	27.5	40	41.2
Part-time	57	80.3	11	73.3	2	13.3	2	13.3	0	0.0	15	--
Full time	30	83.3	0	0.0	4	21.1	4	21.1	11	57.9	19	--
Medium Commercial	46	86.6	0	0.0	1	2.8	2	5.6	33	91.7	36	37.1
Large Commercial	18	94.7	0	0.0	0	0.0	0	0.0	15	100.0	15	15.4
Total	216	76.1	21	21.6	7	7.2	10	10.3	59	60.8	97	100.0

¹See Table 3.

²See Table 3.

Table Nine: Marketing Methods of Crops Used by Type of Farm Operation.¹

Type of Farm	Marketing Method											
	Co-op		Direct to Customer ³		Direct to Dealer		Direct to Processor		Other		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Hobby Farm	0	0.0	13	54.1	2	8.3	4	16.7	5	20.8	24	17.0
Small Farm ²	4	5.6	47	65.3	9	12.5	8	11.1	4	5.6	72	51.5
Part-time	0	0.0	33	67.4	6	12.2	6	12.2	4	8.2	49	--
Full time	4	18.2	13	59.1	3	13.6	2	9.1	0	0.0	22	--
Medium Farm	3	8.1	16	45.9	11	29.7	4	10.8	1	2.7	37	26.2
Large Farm	1	12.5	6	62.5	1	12.5	1	12.5	0	0.0	8	5.7
Total	8	5.7	83	58.8	23	16.3	17	12.1	10	7.1	141	100.0

¹See Table 3; multiple responses were permitted.²See Table 3.³Direct to customer includes: Roadside Markets and Retail Farm Markets.

respondents is not included in this report because of the relatively low frequencies of responses for most crops, especially those crops raised for sale on the market.

Tables 10 and 11 provide information on the relationship between farms and the providers of services from off-farm sources. In general, the patterns of data in Table 10 follow the expected pattern with a significantly higher proportion of the large and medium farm operations citing membership in farm associations or farmers cooperatives, more likelihood of using the tax advantages of Public Act 490, of employing off-farm labor and working with at least one service agency. Small farmers and hobby farmers, on the other hand, were less likely to utilize off-farm services. Thus, size of operation tends to be directly associated with the utilization of off-farm services.

It is interesting to note that only 47 percent of the respondents reported that they belonged to a farmers cooperative or a farmer organization such as a livestock association, etc., and that only approximately 57 percent utilized tax assessment advantages provided under Public Act 490. The relatively low proportion of positive responses may be a consequence of economic consideration since P.A. 490 may not lead to lower taxes in every instance and membership in associations or cooperatives generally involves dues or other expenses.

Table 11 provides information on the relationship between federal farm agencies and other service providers. Approximately 64 percent of the 284 respondents reported that they received assistance from at least one service agency with the response rates directly associated with farm size. The same pattern is evident for each of the selected types of federal agencies (data not shown) although when we look at the number of contacts between these services and the respondents by farm type the data suggests that two agencies, the Soil Conservation Service and the Cooperative Extension Service, had proportionally more contacts with smaller farm operators. For example, over 59 percent of the respondents who received assistance from the Cooperative Extension Service were small farmers or hobby farmers. In other words, while more large and medium farms received some assistance from the Cooperative Extension Service (86 percent compared to 42 percent of the small and hobby farm types), smaller operations accounted for a higher proportion of the contact with the Cooperative Extension Service (59.3 percent compared to 40.7 percent for medium and large farm types). A similar but slightly lower association was evident for the Soil Conservation Service. The Farmers Home Administration and the Agricultural Stabilization and Con-

servation Service both had proportionally more contacts with larger operations and provided services to a larger proportion of these operations. It is possible that the services provided by these agencies are more directly concerned with and of greater interest to larger operations.

In summary, Tables 7 to 11 provide information on selected operational characteristics of the respondents by type of farm. Responses by farm types tended to follow the expected pattern in respect to farm acreage, dairying, and the utilization of off-farm services. The information on marketing method is not quite as clear, but given the limitations of the data and their restriction to the marketing of crops, it seems safe to conclude that marketing is an area which merits further research, especially on the economic advantages of the various methods and on the potentials for increased cooperation by farm operators. The information on the relationship with off-farm services suggests that many hobby and small farmers (both part-time and full-time operators) could benefit from a greater utilization of available assistance.

Table Ten: Percentages of Responses for Selected Off-Farm Relationships by Type of Farm Operation.¹

Type of Farm	Member of One or More Cooperatives or Farm Associations	Utilized PA490 ³	Employed Non-Household Workers
Hobby Farm	28.4	41.2	20.3
Small Farm ²	46.5	62.2	46.3
Part-time	37.1	58.2	46.5
Full time	60.6	64.7	63.9
Medium Farm	89.6	68.8	84.6
Large Farm	88.9	83.8	94.7
Total	47.1	57.6	43.7

¹See Table 3.

²See Table 3.

³Public Act 490 is an act by the State Legislature which provides for the assessment of taxes on land on the basis of use rather than market value for those who qualify.

Table Eleven: Frequencies and Percentages of Responses for Agency Services Used by Type of Farm Operation.¹

Type of Farm	Agency Services Used ³										Services from at Least 1 Agency	
	Soil Conservation Service		Farmers Home Admin- istration		Cooperative Extension Service		Agricultural and Conservation Service		Other			
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Hobby Farm	16	12.9	2	4.6	21	13.8	11	11.1	8	23.5	30	40.5
Small Farm ²	53	42.8	17	39.5	69	45.5	34	34.3	13	38.2	84	60.9
Part-time	36	--	6	--	38	--	19	--	10	--	49	69.0
Full time	13	--	7	--	19	--	11	--	2	--	23	63.9
Medium Farm	38	30.6	17	39.5	44	28.9	37	37.4	10	29.4	49	92.5
Large Farm	17	13.7	7	16.3	18	11.8	17	17.2	3	8.9	19	100.0

¹See Table 3.

²See Table 3.

³Multiple responses were permitted. The last two columns represent the number who worked with at least one agency and percentages by types of farm operations.

Problems and Future Perspectives

Table 12 provides information on the changes planned by the respondents. Over 86 percent of the respondents indicated that they would like to keep their operations the same or expand them in the future. The high proportion of responses in these categories suggests that there is a general satisfaction with farming in Litchfield County and that the respondents were somewhat optimistic about the future of farming in the area.

The planned changes in operation do not show the same kind of relationship with type of operation as those observed in the previous tables. Hobby farming seems to represent a unique type of operation in which the respondents live on farms and are involved in small scale farming operations because of the lifestyle associated with rural living. Approximately 65 percent of the respondents for this type of operation expect to make no changes in their operations. Hobby farmers also tended to be older on average and better educated (Table 2). They also were more dependent on off-farm employment as their primary source of income (Table 3). The remaining categories tended to fall into two groups.

Both small full-time farms and large farms had the smallest proportion of those who planned to keep their operations the same and those who planned to expand their operation. Small part-time farmers and medium-sized farmers were just the opposite, with a higher proportion of respondents who planned to expand their operations and a lower proportion who planned to do less farming or retire. In other words, based upon future plans, it may be possible to identify three sub-categories of types of operation: 1) hobby farmers; 2) full-time small farms and large farms; and 3) part-time small farms and medium-size farms. We will examine this possibility later in the discussion section.

Tables 13 and 14 provide more detail on the future plans of those respondents who indicated that they planned to expand their operations (119 respondents) and on factors which they perceived as possibly preventing them from achieving their goals. Both of these tables are based upon the number of responses mentioned, since the respondents could mention more than one planned change. It should be noted that some respondents may have mentioned two or three planned changes or factors that could prevent those changes while others may have mentioned only one.

The data in Table 13 suggest that increasing the acreage farmed was not considered as important as improvements in the management of existing facilities. Buying and/or renting more land represented only 18.6

Table Twelve: Future Planned Changes in Operations by Type of Farm.¹

Type of Operation	Keep Operation Same		Expand Operation		Do Less Farming		Work More Off-Farm		Retire		Total	Percent
	Number	%	Number	%	Number	%	Number	%	Number	%		
Hobby Farm	43	65.2	21	31.8	2	3.0	0	0.0	0	0.0	66	24.9
Small Farm ²	42	32.1	64	48.9	9	6.9	1	0.8	15	11.5	131	49.4
Part-time	16	23.2	45	65.2	4	5.8	1	1.4	3	4.3	69	--
Full time	13	36.1	14	38.9	5	13.9	0	0.0	4	11.1	36	--
Medium Farm	17	34.7	28	57.1	2	4.1	0	0.0	2	4.1	49	18.4
Large Farm	8	42.1	6	31.6	2	10.5	0	0.0	3	15.8	19	7.2
Total ³	110	41.5	119	44.9	15	5.7	1	0.3	20	7.6	265	100.0

¹See Table 3.²See Table 3.³Total frequencies and percentages are based upon those who responded to the question and do not include part- and full time small farmers.

Table Thirteen: Selected Changes Planned by Respondents Who Plan to Expand Their Operation by Type of Farm Operation.¹

Type of Operation	Buy More Land		Rent More Land		Improve Crop Production		Improve Livestock Production		Purchase Machinery		Remodel or Construct New Buildings		Other		Total Mentioned	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Hobby Farm	7	11.5	1	1.6	15	24.6	13	21.3	10	16.4	11	18.0	4	6.6	61	17.4
Small Farm ²	20	10.9	12	6.5	45	24.5	32	17.5	35	19.0	34	18.5	6	3.3	184	52.6
Part-time	16	13.1	6	4.9	29	23.8	21	17.2	23	18.9	23	18.9	4	3.3	122	--
Full time	4	8.5	5	10.6	12	25.5	9	19.2	8	17.0	7	14.9	2	4.3	47	--
Medium Farm	8	9.5	11	13.1	16	19.1	19	22.6	14	16.7	15	17.9	1	1.2	84	24.0
Large Farm	3	14.3	3	14.3	4	19.1	3	14.3	3	14.3	4	19.1	1	4.8	21	6.0
Total ³	38	10.9	27	7.7	80	22.9	67	19.1	62	17.7	64	18.3	12	3.4	350	100.0

¹See Table 3, multiple responses were permitted.

²See Table 3.

³Total number of specific changes mentioned.

Table Fourteen: Factors Preventing the Planned Expansions of Present Operations by Type of Farmer.¹

Type of Operation	Lack of Operating Money		High Costs and Risk of Borrowing Money		Current Debts		Lack of Available Land		Cost of Land and Equipment		Shortage of Hired Help		Age-Health of Operator		Other		Total Mentioned ³	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hobby Farm	11	30.5	9	25.0	0	0.0	2	5.5	7	19.4	3	8.3	2	5.5	2	5.6	36	13.6
Small Farm ²	39	25.3	31	20.1	19	12.3	13	8.4	27	17.5	9	5.8	7	4.5	9	5.8	154	58.4
Part-time	25	23.6	24	22.6	12	11.3	10	9.4	21	19.8	6	5.7	3	2.8	5	4.8	106	--
Full-time	9	25.7	6	17.1	7	20.0	2	5.7	5	14.3	2	5.7	1	2.9	3	8.6	35	--
Medium Farm	12	20.0	13	21.7	5	8.3	9	15.0	13	21.7	4	6.7	3	5.0	1	1.7	60	22.7
Large Farm	4	28.6	3	21.4	2	14.3	1	7.1	3	21.4	1	7.1	0	0.0	0	0.0	14	5.3
Total ³	66	25.0	56	21.2	26	9.8	25	9.5	50	18.9	17	6.4	12	4.5	12	4.6	264	100.0

¹See table 3, multiple responses were permitted.

²See Table 3.

³Total number of factors mentioned.

percent of the changes mentioned, while improvements in crop and/or livestock production was mentioned by 42 percent of the respondents. Purchasing machinery and remodelling or constructing new buildings were mentioned more often as separate variables than either buying more land or renting more land. The improvement of crop production was the change mentioned most often by respondents for all farm types except medium-sized farms; the latter mentioned improvement in livestock production most often.

In looking at the individual changes by type of operation, only renting more land is directly related to the size of farm operation. Two other changes, improving crop production and purchasing farm machinery, tended to be inversely associated with farm size but contained at least one exception to the observed tendency.

Table 14 provides information on factors perceived by respondents as possibly preventing them from achieving the desired expansion of their operation. The responses in this table tend to concentrate most heavily on economic factors. Lack of operating capital, the high cost and/or risks of borrowing money, and the high cost of land and equipment accounted for approximately 65 percent of the factors mentioned. None of the remaining factors accounted for more than 10 percent of the total mentioned. Thus, it would seem logical to conclude that the respondents were aware of the financial uncertainties facing agriculture in the 1980s. This conclusion is also supported by the information presented in Table 15.

Table 15 provides data on the respondents' perception of the major problems confronting farmers in the United States. Unlike the last two tables, this table asked *all* respondents to indicate what they thought were the biggest problems facing farmers in the United States. This question was open-ended, permitting the respondents to mention more than one problem. The responses were grouped into the eight categories used in Table 15. A total of 569 problems were mentioned by the 269 respondents who mentioned at least one problem.

The percentage distribution for the problems ranged from a high of approximately 39 percent for the cost of farming to a low of 5.6 percent for the development of land for non-farm use. There is a surprising degree of consistency in the ranking of the problems throughout all types of farming operation. The high cost of farming, including the cost of feeds, fertilizers, equipment, etc., was ranked highest by each type of farm organization, followed by problems in marketing and the price received for products. Poor general economic conditions ranked third,

Table Fifteen: General Agricultural Problems in the United States by Type of Farming Operation.¹

Type of Operation	High Cost of Farming		Poor General Economy		Marketing and Price Problems		Government Policy (or lack of)		Shortage of Labor		Land Development		Farm Land ³		Other		Total ⁴	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hobby Farm	58	43.6	13	9.8	22	16.5	8	6.0	11	8.3	7	5.3	2	1.5	12	9.0	133	22.4
Small Farm ²	107	39.5	32	11.8	43	15.9	21	7.7	25	9.2	16	5.9	7	2.6	20	7.4	271	47.6
Part-time	64	41.6	14	9.1	25	16.2	11	7.1	12	7.8	9	5.8	6	3.9	13	8.4	154	--
Full time	32	40.5	9	11.4	15	19.0	7	8.9	8	10.1	3	3.8	1	1.3	4	5.1	79	--
Medium Farm	40	34.2	10	8.5	25	21.4	6	5.1	13	11.1	8	6.8	6	5.1	9	7.7	117	20.6
Large Farm	18	37.5	3	6.3	12	25.0	2	4.2	1	2.1	1	2.1	3	6.3	8	16.7	48	8.4
Total ⁴	223	39.2	58	10.2	102	17.9	37	6.5	50	8.8	32	5.6	19	3.2	49	8.6	569	100.0

¹See Table 3, multiple responses were permitted.²See Table 3.³Includes poor land and the lack of available land.⁴Total number of problems mentioned.

except for medium and large farmers for which it was ranked fourth. On the other hand, the availability and/or the poor quality of land, problems associated with the development of land for non-farm use, and government policy or the lack of it were the least mentioned problems for most types of operations.

With the exception of the high cost of farming category and problems with marketing and pricing, there was a relatively weak association between farm types and the frequency with which a specific problem was mentioned. Finally, the high costs associated with farming tended to be inversely associated with farm size, with this problem mentioned more often by smaller operations than larger operations. On the other hand, marketing and pricing problems were mentioned more often by larger organizations than by smaller organizations.

In summary, Table 15 provides some interesting insight into perceptions of the respondents concerning the major problems in American agriculture today. Economic factors were cited most often but the specific types of economic problems mentioned varied to some extent by the type of farm operation.

Discussion and Conclusions

This section will focus primarily upon the data collected through the mailed survey, the limitations of which were discussed earlier in the methodology section. The discussion will be separated into two parts. The first part will provide a general overview of the major findings and a brief summary of the characteristics of each of the four major types of farm operations and the two subdivisions of the small farm operations. The second part will contain some general conclusions and recommendations which are derived from the survey and the review of the literature.

As a group, the respondents appear to be satisfied with their chosen lifestyle despite the difficulties that are often associated with farming and rural life. Over 85 percent planned to either continue their present operations or expand them. Of the remainder, only approximately 8 percent (20 respondents) planned to retire despite the fact that nearly 30 percent were over 65 years of age. In general, most of the relationships observed in the tables tended to follow the expected patterns with large farms having higher incomes from farming, farming more acres, having larger dairy herds, and utilizing more off-farm sources for information or assistance than smaller operations. Thus, factors related to operational

characteristics tended to follow the expected patterns relative to the self-classification system on size and type of operation utilized in this report. It is when we turn to a consideration of future plans and the perspective of the respondents that the greatest deviations occur. For example, a significantly large proportion of the small part-time and medium-sized farmers planned to expand their operation than any of the other types, while more large farmers and small full-time operators planned to retire or do less farming. Other similarities and differences will be discussed below in the brief summaries of the types of operations.

Hobby Farms — Hobby farms were generally the smallest in size and had the lowest income from farming. Respondents in this category appear to be more concerned with rural living as a way of life than with farming as a source of income. In fact, over 75 percent of this category, which represents approximately 26 percent of the sample, may not qualify as farms according to the definition used for the 1982 Census by the U.S. Census Bureau. On the other hand, over 80 percent of the hobby farmers owned more than 10 acres of land and nearly 32 percent planned to expand their farm operations in the future. An additional 65 percent planned to keep their operations the same, thus, they represent a potentially important group for the preservation of farm land. Since they have the lowest level of contact with farm organizations and federal and state services, increased efforts by these groups could help them to increase economic returns from their land and aid in the conservation of the state's rural areas through better land management techniques.

Small Farms — Respondents who defined themselves as small farmers represented approximately 49 percent of the sample. Although approximately 34 percent of this group may not have qualified as a farm under the current census definition, nearly 92 percent owned more than 10 acres of land. The majority of those who may not have met the census definition and who owned less than 10 acres of land were part-time small farmers. Through the use of a related question, it was possible to separate a majority of the small farm category into two sub-groups: small part-time farms and small full-time farms. These sub-categories accounted for 78 percent of all small farmers in the sample. Since there are significant differences between the two sub-groups each of the groups will be summarized separately.

Small Part-Time Farms — The operations of small part-time farm respondents tended to be smaller than full-time small farmers but significantly larger than the hobby farm group. Of note is the fact that

over 65 percent of the respondents in this category planned to expand their farm operation and an additional 23 percent planned to keep their operations the same. Dairying and livestock were less important to them with only 17 percent citing improvements in these areas as a goal and only approximately 26 percent reported that they owned more than ten dairy cattle. They also were less likely to belong to a farmers association or cooperative and only 69 percent reported that they received assistance from a government service agency. They also were more likely to deal directly with customers in the sale of their farm crops than full-time small farms, and medium and large farms. It seems safe to conclude that many of the part-time small farmers who plan to expand their operation could benefit from increased cooperation with off-farm agencies.

Small Full-Time Farms — Respondents in this category made up only 33.6 percent of the combined sub-category. They tended to be older than part-time small farmers and only approximately 40 percent planned to expand their operations. They also tended to own more land than part-time small farmers and to depend more upon dairying as a source of income (over 50 percent had dairy herds larger than 10 animals). Full-time small farmers were more active in farm associations but a slightly smaller proportion received assistance from government agencies. They also were more likely to plan to do less farming than any of the other categories and had the second highest proportion who planned to retire from farming.

Medium-Sized Farms — Medium sized commercial farmers were highly concentrated in the dairying industry, with approximately 62 percent reporting dairy herds of over 50 animals. They also were more likely to plan to either keep their operations the same or expand their operations (nearly 92 percent). Over 92 percent used government service agencies, with the Cooperative Extension Service mentioned slightly more often than the other agencies. Improvement in livestock production and improvement in crop production were the areas cited most often by medium-sized commercial farmers who planned to expand their operations. Medium-sized commercial farmers, thus, appear to have a good understanding of the agricultural industry in the state and have actively pursued off-farm resources.

Large Commercial Farms — This category contained the smallest number of respondents in the survey (less than 7 percent). They were basically dairy farmers with nearly 80 percent reporting dairy herds of over 50 head of cattle. They also owned more land than the other groups

and tended to have the greatest amount of contact with off-farm resources. On the other hand, they also had the largest proportion who planned to retire and/or do less farming and the smallest proportion who planned to expand their current operations. Age was given as the major reason by three out of the four respondents in this group who planned to retire. Thus, the large commercial farmers may present a unique problem to policy makers because of the large capital investment required for new farmers and the potential loss of farm acreage if changes in land use result from retirement of large commercial farmers.

Conclusions

Although there are a number of similarities between the various types of operations there are also important differences which should be taken into account in considering the future of agriculture in Litchfield County. These differences may also be important for the development of comprehensive programs and policies, since both the needs and objectives tend to vary according to farm type. For example, a significant proportion of part-time small farmers and medium-sized commercial farmers would like to expand their operations largely through improvements in production. Research and the continuing development of farm management programs in these areas could be a major benefit for both the individual respondent and the state's agricultural industry. Since marketing was also mentioned as a major problem by many respondents, further research and the continuing development of programs related to marketing techniques could prove beneficial. The continuation of efforts to provide services and assistance to smaller operations, especially those who plan to expand or keep their operations the same in a time of increased pressures on the agricultural industry, could contribute to an increase in agricultural production and the preservation of open land.

Finally, there appears to be a strong nucleus of farmers and land owners who are satisfied with their life style and/or choice of occupation. This nucleus could be a valuable asset in any efforts to preserve open space in the state and preserve the agriculture industry. From the data it appears that additional research into why many of the respondents do not utilize off-farm resources and services, together with a continuing effort to expand services to smaller operations, would be a major benefit to the state.

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