DOCUMENT RESUME

ED 331 676 RC 018 141

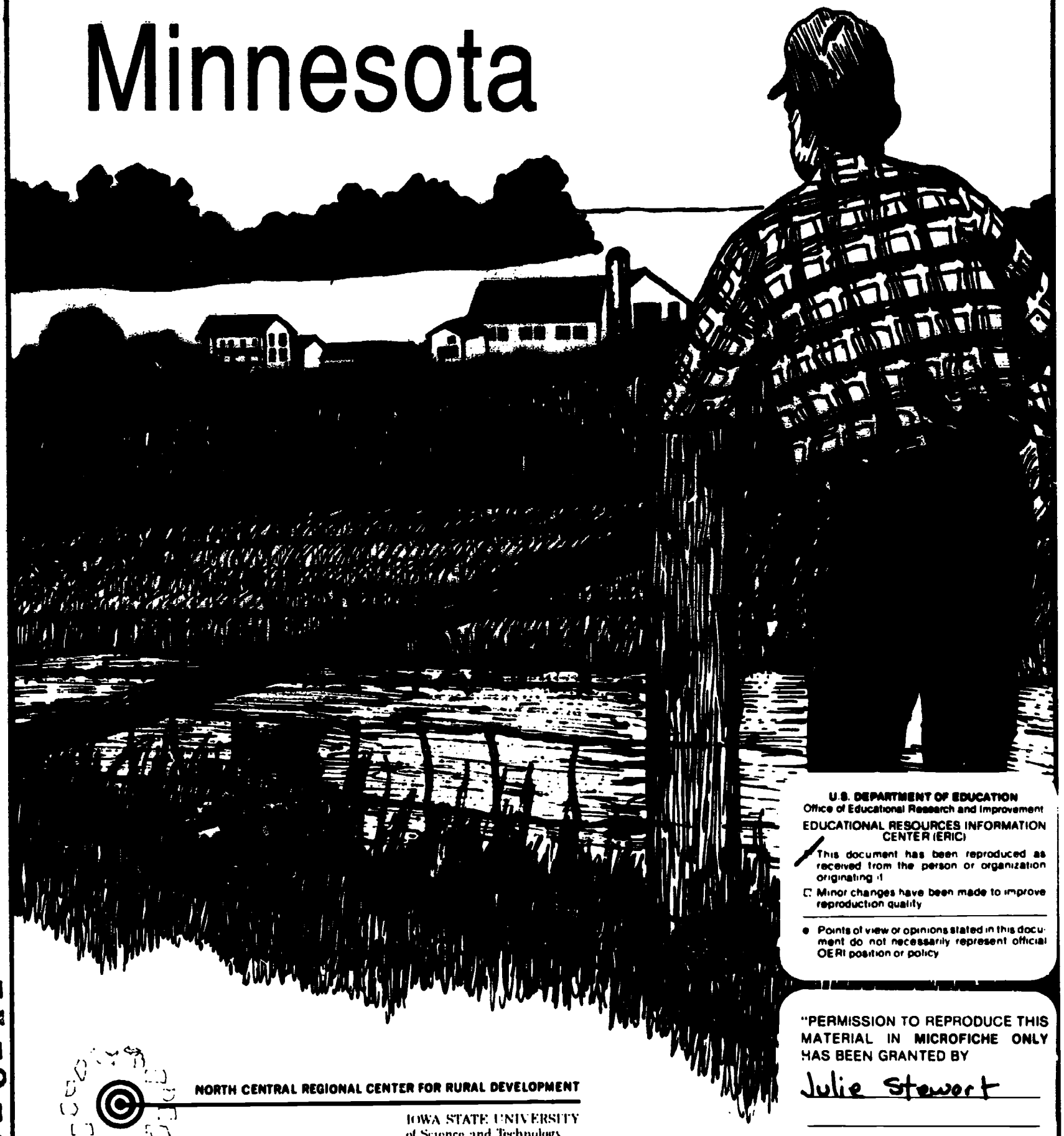
AUTHOR	Olson, Kent D.; Mikesell, Chris L.
TITLE	Farm Family Adaptations to Severe Economic Distress: Minnesota. Results of the 1989 Regional Farm Survey.
SPONS AGENCY	North Central Regional Center for Rural Development, Ames, Iowa.
REPORT NO	NCRCRD-RRD-154-6
PUB DATE	Aug 90
NOTE	42p.; For related reports, see RC 018 075, RC 018 078, and RC 018 136-145. Each report in this series contains a section on "Information and Training Needs." Part of regional research project NC-184.
AVAILABLE FROM	North Central Regional Center for Rural Development, 317D East Hall, Iowa State University, Ames, IA 50011 ($3.00).
PUB TYPE	Reports - Research/Technical (143) -- Statistical Data (110)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Attitudes; Community Services; Coping; *Economic Change; Economic Impact; Economic Status; Educational Needs; Family Income; *Farmers; *Financial Problems; Information Needs; *Quality of Life; Rural Farm Residents; Spouses; State Surveys; Stress Variables; Tables (Data)
IDENTIFIERS	*Farm Crisis; Farm Women; *Minnesota

ABSTRACT

During the farm crisis of the 1980s, many midwestern farm families suffered financial distress, but by 1989 an uneven financial recovery was under way. This report summarizes data collected from 275 Minnesota farm operators (a 39% response rate) and 245 spouses (a 35% response rate) as part of a large survey conducted in 12 North Central states. The purpose of the survey was to identify farm families' adaptation pattern, information and educational needs, and opinions on rural development. Farm operators had an average age of 48.5 years and average educational attainment of 12.2 years. In 1988, 3% of respondents had negative net family income, while two-thirds had family incomes below $30,000. Average farm size was 441 acres. Most respondents believed that, over the last 5 years, local services, facilities, and quality of life factors had improved or stayed about the same; 43% ard 21% saw improvement in adult education opportunities and quality of schools, respectively. About 60% believed that financial conditions for farmers had gotten worse, and 44% thought that conditions would continue to deteriorate. About half responded to hard times by postponing major purchases, using savings for living expenses, or cutting back on charitable contributions; 40% decreased savings for their children's education. About 35% of farmers and 38.5% of spouses worked off the farm; 16% had participated in vocational education or retraining and the majority thought it was somewhat or very helpful. Few farmers expressed strong information and training needs; the most highly rated need was concerned with using new technologies. Half of spouses were highly involved in farm operations and decisionmaking. This report contains 25 data tables. (SV)

Farm Family Adaptations to Severe Economic Distress:

Minnesota



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Farm Family Adaptations to Severe Economic Distress: Minnesota

Results of the 1989 Regional Farm Survey

Kent D. Olson and Chris L. Mikesell

August 1990

RRD 154.6

Preface

The 1980s brought much change to rural America. Profound changes occurred in farming. As new technology was adopted, farm numbers continued to decline and many farm families found themselves struggling against low commodity prices. In addition, financial distress gripped many farm families. As interest rates soared, farm assets declined and farm incomes plummeted. The farm crisis during the 1980s was undoubtedly one of the darkest moments in the history of the Midwest.

However, as the 1980s drew to a close, many farm families' financial positions improved and much of rural America experienced a recovery. As a result of the differential impact of the farm crisis and the uneven financial recovery, this study of farm families was undertaken as a way to assess the socioeconomic status of farm families in the Midwest.

Financial support for the project was provided by the North Central Regional Center for Rural Development as part of the regional research project NC-184. Cooperating in the study were the land-grant universities and the Agricultural Statistics Services in each of the North Central states. The data collection was conducted through a cooperative agreement between Iowa State University and the Iowa Department of Agriculture and Land Stewardship, Agricultural Statistics Service. The primary objective of the study was to assess the socioeconomic conditions of farm families in the region and provide an overview of needed research and extension activities to assist farm families.

The authors wish to acknowledge the valuable technical assistance provided by Julie Stewart and Kristi Hetland of the North Central Regional Center for Rural Development. Jacqueline Fellows, department of sociology, Iowa State University, provided much assistance in the data management and analysis.

Results of the 1989 Regional Farm Survey: Minnesota

Kent D. Olson and Chris L. Mikesell

While much public attention has focused on the farm crisis, little scientific inquiry has been directed toward understanding its long-term consequences. Extensive media coverage has focused on the tragedies of the crisis, the distress associated with economic hardship, and the farmers' protests against the "causes" of the crisis. Beyond these journalistic accounts of the personal stories of loss, there is very little documentation about the extent or severity of the farm crisis and how these experiences have altered farm families' behaviors and attitudes. Some national and state surveys of farm operators have addressed the needed financial adjustment such as debt-asset ratio, cash flow analysis and lender restructuring options (Melichar, 1984; Jolly, et al., 1985). Other more limited studies have focused on case studies of the farm crisis (Heffernan and Heffernan, 1986: Salamon and Davis-Brown, 1986). However, a regional assessment or perspective of the consequences of the farm crisis was difficult, given that little was known about how economic hardship has affected longer term adjustments in farm operations or its influence on farm family functioning and individual well-being.

To provide more knowledge of how farm families have been affected, a regional study was conducted in the 12 North Central states of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, North Dakota, South Dakota and Wisconsin. This report summarizes data collected from a sample of Minnesota farm families as part of the larger study. The survey was conducted through the cooperation of the University of Minnesota and the Minnesota Agricultural Statistics Service.

The purposes of the survey were to:

- Identify what adjustments farm families made during the 1980s in response to the farm crisis.
- Identify information and educational needs of farm families.
- Assess farm families' opinions about several important agricultural and rural development issues.

Methodology

In February 1989, a statewide random sample of 700 farm operators and spouses was contacted. A packet of two questionnaires was sent--one for the farm operator and the other for the spouse. One set of questions was answered by both operator and spouse; other questions were

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answered only by the operator or by the spouse. There were 275 operator surveys returned for a response rate of 39 percent and 245 spouse surveys returned for a response rate of 35 percent. Of these, 299 were matched questionnaires for both the spouse and the operator for a response rate of 33 percent. The distribution of responses among Minnesota counties is shown in Figure 1.

Nonresponse and Weighting

Since the response rate for this survey was only 39 percent, the possibility of nonresponse bias in the survey responses requires some consideration.[1]

Nonresponse bias can be of two forms--the first case occurs when the distribution of the survey respondents by selected characteristics is different from the distribution in the population with these same characteristics. A weighting procedure may be used so survey responses will reflect the population proportions. This weighting procedure is justified only if the individuals' characteristics affect their behavior and responses to the survey questions.

To correct for the nonresponse bias in this survey, two characteristics of the farm population were chosen for comparison with the survey respondents: age of the farm operator and gross farm sales (a measure of farm size). Data for the farm population were obtained from the 1987 Census of Agriculture. The distribution of the survey respondents by age and gross farm sales was found to be somewhat different from the farm population, thus indicating a bias in the survey results. The survey data were then adjusted to reflect the characteristics of the farm population.

The weighting matrix is reported in Appendix Table A.1. Differences in the distributions of the unweighted and weighted observations for selected characteristics can be found in Appendix Tables A.2 and A.3.

The second type of bias arises if nonrespondents answer differently than respondents with the same characteristics. In this case, information about the nonrespondents was needed to correct for the bias. In order to gain this information, 28 operator and 35 spouse nonrespondents were interviewed by telephone and asked several of the questions from the mail survey. Appendix B provides a discussion of comparisons.

Results

The average ages of the farm operators and spouses in the survey were 48.5 and 45.9 (Table 1). The average age of farm operators in the 1987 Minnesota Census of Agriculture was also 48.5. The two biggest age groups as a percentage of the total were the 25- to 34-year-old and 35- to 44-year-old groups; these were also the largest groups in the 1987 Census. Of the surveyed operators, 19.5 percent were less than 35 years old; 12.4 percent were over 65. The age distribution of the spouses was slightly younger, reflecting the younger average.

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[1] This section follows the procedures used by Saupe and Eisenhauer (1989).

On average, operators had 12.2 years of education; that is, operators finished high school and a small amount of post-secondary education. The spouses averaged 12.8 years of education. Among the operators, 14.9 percent finished eighth grade but did not go on for further schooling. Forty-nine percent of operators had between 9 and 12 years, with 79.7 percent of those having finished school. About 32 percent had some college education, with 13.8 percent of those having finished college. Almost 3 percent of the operators had done graduate work. In general, the spouses received more education; 94 percent finished high school and 14.2 percent finished college.

Average net family income from all sources for 1988 was in the lower range of those specified. Fully two-thirds of the operators reported income below $30,000. Almost one-half of the operators reported their net family income to be between $10,000 and $30,000. Less than 5 percent had income over $70,000.

Of the sample farms, 16.2 percent had average gross farm sales of less than $10,000, compared with 31.4 percent of the population (Table 2). Approximately one-half of the surveyed farms and the population had gross farm sales in the $10,000 to $99,999 range. Of the survey farms, 35.4 percent had sales of $100,000 or more compared to 19.3 percent of the population. Of the surveyed farms, 2.7 percent had sales of $500,000 or more compared to 1 percent of the population.

In terms of acreage, the sample farms were larger than the population of all farms. The average size farm was 441 acres in the sample of operators compared to 312 acres in the 1987 Census (Table 2). Only 3.8 percent of the survey farms were fewer than 50 acres compared to 16.5 percent in the population. In the sample, 8.6 percent of the farms had more than 1,000 acres compared to 5.1 percent in the population.

Community and Economic Conditions

One series of questions asked the farm operators' opinions if and how local services, facilities and economic conditions had changed in the past five years. Although there is a difference of opinion, a majority of the operators believed these had remained the same over the past five years: quality of schools, health care services, police and fire protection, banking services, and opportunities for entertainment and recreation (Table 3). A majority of the operators believed these had improved or remained the same: child care facilities, shopping facilities, and adult education opportunities. Of the services and facilities, job opportunities was the only category in which a plurality (42.3 percent) believed it had gotten worse over the past five years.

Of the four financial condition points, a majority believed the financial condition of farmers and of agribusiness firms had gotten worse, although there was also a difference of opinion on this point. A majority of the operators said the financial condition of lenders had either remained the same or gotten worse. When asked about the financial condition of their own farms, the operators were fairly evenly divided among improved, remained the same and gotten worse.

Quality of Life

Although a plurality of operators and spouses (44.7 and 38.0 percent, respectively) believed their family finances had become better during the past five years, 28.2 percent of the operators and 35.1 percent of the spouses believed their finances had gotten worse (Table 4). However, finances were not the total picture of a family's quality of life; a much smaller proportion (16.4 and 17.4 percent, respectively) believed their quality of life had become worse during the past five years. The majority of both operators and spouses (83.6 percent and 82.6 percent respectively) believed the quality of life of their family had remained the same or become better during the past five years. This is much lower than the proportion that said finances had become worse.

Considering their farm's overall financial situation, most farmers believed the likelihood that they would continue to farm for at least the next five years had remained the same. More than one-third of the operators and one-fourth of the spouses said that the likelihood had increased. Seventeen percent of both the operators and spouses said the likelihood had decreased. This latter proportion is very similar to the proportion that believed quality of life had decreased, but is much lower than the proportion who said finances had gotten worse. Thus, the likelihood of continuing to farm appears to be more connected to the perception of quality of life than to the single measure of financial condition.

Compared to farmers in their area, most operators and spouses (48.1 percent and 51.7 percent, respectively) believed their financial situations had remained the same. Forty percent and 32.1 percent, respectively, believed their situations had become better than their neighbors during the past five years. A smaller group (11.9 percent and 16.2 percent, respectively) believed their financial situations had become worse.

When asked whether their satisfaction with farming had changed during the past five years, most operators and spouses said it had remained the same (43.2 percent and 49.0 percent, respectively). The rest of the respondents were essentially split between whether their satisfaction had become better or worse, with a few more indicating that it had become worse. For example, 27.3 percent of the operators said their satisfaction had become better while 29.5 percent said it had become worse. Twenty-three percent of the spouses said their satisfaction had improved, compared to 28.0 percent who said it had become worse.

Three questions dealt with how farmers related with their neighbors and in their community. While most of the operators (49 percent) and a majority of the spouses believed the amount of "neighboring" and "helping" had remained the same over the past five years, the proportion of operators and spouses who believed it had become worse was more than double (or not quite double) the proportion who believed it had become better. A large majority of both operators and spouses (70.4 percent and 71.5 percent, respectively) believed the things they had in common with people in their community had remained the same over the past five years; the remainder of the responses were divided almost evenly between the commonality becoming better or worse.

Farm Family Adjustments

There were many potential adjustments for farm families to make to respond to financial needs. However, a majority of families (as reported by the operator) did not make any of the adjustments listed in the questionnaire because of financial need in the past five years (Table 5). When interpreting these adjustments or lack of adjustments, it is important to remember that this survey went to farmers in 1989. That is, it went to farmers who had survived the 1980s and were still farming, or had started farming since the major financial crunch of the 1980s.

The one exception to this is that a majority (58.2 percent) did postpone major household purchases. However, several adjustment were used by many families: used savings to meet living expenses (48.2 percent), cut back on charitable contributions (47.6 percent), changed transportation patterns to save money (41.5 percent), decreased money saved for children's education (40.4 percent), changed food shopping or eating habits to save money (38.5 percent), spouse took off-farm employment (38.5 percent), operator took off-farm employment (35.4 percent), postponed medical or dental care (34.2 percent), sold possessions or cashed in insurance (32.1 percent), and reduced household utility use (29.8 percent). More than 25 percent (but less than 30 percent) said they had canceled or reduced medical insurance coverage, purchased more items on credit, and fell behind in paying bills.

More than one-third of the operators indicated that either they, their spouse, or both had taken off-farm employment because of financial need during the past five years (Table 5). In 1988, 36 percent of the operators worked an average of 36 hours per week in off-farm employment; most of them worked 40 hours per week or more (Table 6). Fifty-one percent of the spouses indicated they had worked off the farm for an average of 31.5 hours per week, with almost one-half of them working 40 hours or more.

Between 1984 and 1988, 77 percent of the operators did not change the number of acres owned, 15.8 percent decreased the number of acres owned, and 7.2 percent purchased more land (Table 7). Just under one-half of the operators had not changed the number of acres rented (49.0 percent), 29.9 percent increased rented acreage, and 21.0 percent decreased rented acreage. These changes resulted in almost one-half of the farms remaining the same size in terms of total acres operated, while one-third of the farms increased in size.

One adjustment made by many operators was a decrease in the number of hours worked on their farms. Ninety-four percent of the operators reported this had decreased. Only 4.8 percent had increased their hours worked and 0.9 percent had not changed.

The amount of family labor used on the farm in 1988 was reported the same as in 1984 by 68.5 percent of the operators. Family labor had increased on 19.8 percent of the farms, and decreased on 11.7 percent of the farms.

Risk Reduction Behaviors

A majority of farmers made these changes in how they managed their farms between 1984 and 1988: paid closer attention to marketing (79.4 percent), postponed a major farm purchase

(69.9 percent), kept more complete financial records (61.0 percent), reduced short-term debt (60.5 percent), and reduced long-term debt (58.7 percent) (Table 8). Other changes made by a large number of farmers were: bought crop insurance (47.8 percent), shared labor or machinery with neighbors (43.9 percent), reduced expenditures for hired help (43.1 percent), diversified their farm by raising livestock (36.8 percent), and sought off-farm employment (33.1 percent).

When the operators looked forward to 1992, a majority said they would pay closer attention to marketing (69.2 percent), reduce both long-term and short-term debt (56.0 percent and 53.4 percent, respectively), and keep more complete financial records (60.7 percent). Other changes selected as important were postponing major farm purchases, sharing labor and machinery, reducing expenditures for hired help, buying crop insurance, and diversifying by raising livestock. Changes that were being considered but were not as definite included diversifying by adding crops, buying additional land, renting more acres, using the futures markets to hedge prices, and seeking off-farm employment. Almost one-third of the operators said they were considering quitting farming in the next five years.

Participation in Government Programs

There are a number of government programs and laws designed to help farmers. Their participation in and evaluation of these programs varied. Four programs had the highest participation rates: the federal government commodity programs (76 percent), the 1988 Drought Assistance Act (68.9 percent), Federal All-Risk Crop Insurance (38.5 percent), and the Conservation Reserve Program (CRP; 29.6 percent) (Table 9). Farmers did not participate in the other listed programs to the same extent as they did in these.

Even with these high participation rates, the effectiveness of these programs was evaluated differently. Most of those who participated said the commodity programs were either a lot of help or some help; only 2.8 percent said they had participated and found the commodity programs to be of no help. Even after all these years of information and public exposure, there were still 1.6 percent of the respondents who claimed they did not know about the commodity programs.

Sixty-two percent of the operators participated in the 1988 Drought Assistance Act and believed the program had helped them either a lot or some. Thirty percent of the farmers did not participate in the drought program because it was not needed or because they did not qualify. Twenty-seven percent participated in Federal All-Risk Crop Insurance and believed it had been of help, but 11.6 percent believed it had not been helpful. Interestingly, even in February 1989, after the drought of 1988, 50.8 percent of the operators did not participate in the insurance program because they did not think it was necessary. Forty-five percent believed the CRP was not needed and did not participate. In the other programs with lower participation levels, many of the operators who had participated indicated that the programs had been of no help. A majority said they did not participate because the programs were not needed.

Information and Training Needs

The operators were asked to indicate their need for information and/or training in several areas in order to continue farming in the next five years. Their responses do not indicate a strong need in any area; the needs are spread among several categories (Table 10). For six of the nine areas listed, about one-third of the operators said they had a moderate need for information and/or training. Information and training on new technologies was needed at some level by 72.5 percent; 31.8 percent said this area was a high or very high need. More than one-half of the operators said the need for information and training was low or not needed in these areas: processing farm products on farm before selling (69.4 percent), diversification of the farm (51.0 percent), and bookkeeping and financial systems (50.2 percent).

Spouses' Involvement in Farm Operation

There are no surprises in the duties listed by the spouses: 92.6 percent of them said they always did household tasks and/or child care; another 5.3 percent said they did these tasks sometimes (Table 11). The care of a vegetable garden or animals for family consumption was always done by 64.2 percent and sometimes by another 24.6 percent. Bookkeeping and maintaining records was another task done always by 43.6 percent, and done sometimes by another 32.9 percent. Thirty percent of the spouses always ran farm errands, and 64.3 percent did this sometimes. Working at an off-farm job was reported by 29.8 percent of the spouses all the time and 40.5 percent sometimes. Sixty-five percent of the spouses said they did field work at least sometimes. Duties that were not done or never performed by a majority of the spouses were: marketing of products (79.9 percent), purchasing of major supplies and equipment (71.1 percent), and supervising others (57.9 percent).

A majority of the spouses said that the time spent on each of the duties listed had stayed the same over the past five years except for the milking and caring for farm animals (49.0 percent). More than 20 percent of the spouses said their time had increased on these duties: working at an off-farm job (28.0 percent), bookkeeping and maintaining records (23.6 percent), and doing household tasks and/or child care (21.1 percent). More than 30 percent of the spouses said they spent iess time on these duties: milking or caring for farm animals (32.4 percent) and field work (30.3 percent). Twenty-one percent of the spouses said they had decreased their time spent working at an off-farm job or taking care of a garden or animals for family consumption.

Family Decision-Making Behavior

Buying major household appliances was a decision that 78.7 percent of the spouses surveyed said they did jointly with their partner (Table 12). This was a much higher percentage than the 59.7 percent who said they made a joint decision to buy or sell land. Renting more or less land was a joint decision for 49.0 percent of the spouses. Buying major farm equipment was done by the spouses's partner according to 51.0 percent of the responses and in a joint decision in 44.9 percent. The decisions of when to sell products and whether to try a new practice were made with the partner according to 57.3 percent and 57.4 percent of the responses.

Pressures Experienced by Spouses

From the spouses' responses, two pressures can be seen as the most often experienced. Twenty-seven percent of the spouses said they had daily problems in balancing work and family responsibilities; 48.3 percent said they had this pressure occasionally (Table 13). One-fourth of the spouses said they felt the pressure of lacking control over weather and commodity prices on a daily basis; 54.8 percent said they felt this occasionally.

The other pressures were reported by a majority of the spouses at least occasionally, with two exceptions. A majority of the spouses reported almost never having insufficient support in farm or family duties. Also, more than three-fourths of the spouses almost never had difficulty with child care arrangements or the pressure of child care did not apply to them.

It is also interesting to note that in two instances the responses were almost evenly divided between feeling pressure daily or occasionally versus almost never or not applicable. These two pressures are: no farm help or loss of help when needed, and indebtedness and debt-servicing problems.

Coping Strategies Used by Farm Spouses

When faced with these pressures, there are several coping strategies that can be used to deal with them. The one coping strategy that was used a great deal by 35.7 percent of the spouses was participating in church activities (Table 14). Participating in church activities was also used quite a bit by 24.9 percent of the spouses. Only two other strategies were used a great deal or quite a bit by a majority of the spouses: making a plan of action and following it (43.2 percent), and noticing people who had more difficulties in life than they did (51.9 percent). Reminding themselves that for everything bad about farming, there was also something good was also used by many spouses. Fewer than 20 percent used eating or drinking; refused to think about it; or kept problems a secret. Fewer than 30 percent sought support from a friend, relative or minister, and fewer than 10 percent ever talked to a counselor.

Participation in Farm and Local Organizations

Of the organizations listed, only the farm groups such as Farm Bureau, National Farmers' Organizations and Grange had a majority of the operators who were current members or had been members (Table 15). These groups were the only ones listed by more than 30 percent of the spouses who were or had been members. Other organizations that were listed as having more than 30 percent of the operators as members or former members were farm supply cooperatives, commodity groups, local governing boards and marketing cooperatives.

Table 1. Comparison of respondents' personal characteristics to personal characteristics of total farm population in Minnesota

Personal characteristics	Sample of operators	Sample of spouses	Farm population[a]
Average age, years	48.5	45.9	48.5
	Percent		
Under 25	0.8	2.5	2.8
25-34	18.7	19.2	16.9
35-44	23.0	25.4	21.7
45-49	10.1	12.1	10.5
50-54	10.6	13.3	11.0
55-59	10.1	10.4	11.9
60-64	14.3	10.4	11.0
65-69	6.0	4.6	7.1
70 +	6.4	2.1	7.1
Average years of education	12.2	12.8	N/A
	Percent		
1-8	15.7	3.4	N/A
9-12	49.1	58.7	N/A
13-16	32.5	35.8	N/A
17 +	2.7	2.1	N/A
Net family income	Percent		
Loss	3.4		N/A
$1-$9,999	18.8		N/A
$10,000-$19,999	22.6		N/A
$20,000-$29,999	23.8		N/A
$30,000-$39,999	11.9		N/A
$40,000-$49,999	7.7		N/A
$50,000-$59,999	5.0		N/A
$60,000-$69,999	2.3		N/A
Over $70,000	4.6		N/A

[a] Minnesota 1987 Census of Agriculture, (U.S. Dept. of Commerce).

Table 2. Comparison of respondents' farm characteristics to farm characteristics of total farm population in Minnesota

Farm characteristics	Sample of operators	Minnesota farm operators population*
Average farm size, acres	441.0	312.0
	Percent	
1 to 9	0.0	5.4
10 to 49	3.8	11.1
50 to 179	24.4	19.3
180 to 499	42.5	36.4
500 to 999	20.7	12.7
1,000 +	8.6	5.1
Gross farm sales	Percent	
Less than $10,000	16.2	31.4
$10,000 to $39,999	20.0	25.9
$40,000 to $99,999	28.5	23.4
$100,000 to $249,999	25.8	15.1
$250,000 to $499,999	6.9	3.2
$500,000 or more	2.7	1.0

* Minnesota 1987 Census of Agriculture, (U.S. Dept. of Commerce).

Table 3. Farm operators' opinions on changes in local services, facilities and economic conditions

Category	Improved	Remained the same	Gotten worse	Uncertain	Not available	Number of respondents
			Percent			
Adult education opportunities	43.2	48.7	3.7	3.7	0.7	271
Shopping facilities	40.9	35.7	23.0	0.4	0.0	269
Farm's financial condition	31.3	39.3	27.6	1.1	0.7	272
Police and fire protection	29.4	65.4	3.7	1.5	0.0	272
Child care facilities	23.4	47.2	7.4	19.0	3.0	269
Banking services	22.6	56.3	21.1	0.0	0.0	270
Health care services	21.0	56.1	19.2	3.0	0.7	271
Quality of schools	21.0	50.0	23.5	4.8	0.7	272
Opportunities for entertainment and recreation	18.8	57.6	19.2	3.3	1.1	271
Current financial condition of farmers	17.7	18.5	60.1	3.7	0.0	271
Current financial condition of area lenders	15.2	42.7	30.5	11.2	0.4	269
Job opportunities	13.2	39.0	42.3	4.4	1.1	272
Current financial condition of area agribusiness firms	10.3	32.4	51.5	5.1	0.7	272

Table 4. Farm operator and spouse opinions on quality of life in their communities

Opinions	Become better		Remained the same		Become worse	
	Op	Sp	Op	Sp	Op	Sp
	Percent					
Your family finances in past 5 years	44.7	38.0	27.1	26.9	28.2	35.1
Quality of life for your family in past 5 years	42.2	37.6	41.4	45.0	16.4	17.4
Overall economic condition of farmers in next 5 years	26.6	25.1	29.6	37.4	43.8	37.4
Likelihood you will continue to farm for at least the next 5 years	34.7	25.7	48.1	57.7	17.2	16.6
Your financial situation compared to farmers in your area	20.0	32.1	48.1	51.7	11.9	16.2
Your satisfaction with farming	27.3	23.0	43.2	49.0	29.5	28.0
"Neighboring" over the past 5 years	15.4	14.1	49.1	55.2	35.5	30.7
Neighbors helping each other over the past 5 years	18.5	12.9	49.3	58.8	32.2	28.3
Things you have in common with people in your community	15.7	14.9	70.4	71.5	13.9	13.6

Op = Operator (N=267-274)
Sp = Spouse (N=235-242)

Table 5. Farm family adjustments reported by operator as made in 1985-1989 because of financial need

Adjustments	Yes	No	Number of respondents
	Percent		
Postponed major household purchase(s)	58.2	41.8	274
Used savings to meet living expenses	48.2	51.8	274
Cut back on charitable contributions	47.6	52.4	275
Changed transportation patterns to save money	41.5	58.5	275
Decreased money saved for children's education	40.4	59.6	265
Changed food shopping or eating habits to save money	38.5	61.5	275
Spouse took off-farm employment	38.5	61.5	265
Took off-farm employment	35.4	64.6	271
Postponed medical or dental care to save money	34.2	65.8	275
Sold possessions or cashed in insurance	32.1	67.9	274
Reduced household utility use, such as electricity, telephone	29.8	70.2	275
Canceled or reduced medical insurance coverage	28.5	71.5	274
Purchased more items on credit	26.6	73.4	274
Fell behind in paying bills	25.3	74.7	273
Borrowed money from relatives or friends	16.7	83.3	275
Let life insurance lapse	15.4	84.6	273
Postponed children's education	8.5	91.5	260

Table 6. Off-farm employment of operator and spouse in 1988

	Operator		Spouse	
Hours per week	Number	Percent	Number	Percent
1-9	8	8.2	10	8.1
10-19	9	9.1	14	11.3
20-29	7	7.1	18	14.5
30-39	7	7.1	22	17.7
40 +	67	68.4	60	48.4
Average hours per week	36.4		31.5	
Number of respondents	98		124	

Table 7. Changes in farm operation reported by farm operator--1984 and 1988

Changes	Increased	No change	Decreased
		Percent	
Acres owned	7.2	77.0	15.8
Acres rented	29.9	49.0	21.0
Total acres operated	33.6	48.9	17.6
Operator hours worked on farm	4.8	0.9	94.3
Percent family labor on farm	19.8	68.5	11.7

Table 8. Farm operators' report of risk reduction behaviors for 1984-1988 and behaviors planned for 1989-1993

Adjustments	Changes made 1984-1988		Changes planned 1989-1993		
	Yes	Number of respondents	Yes	Maybe	Number of respondents
	Percent		Percent		
Paid closer attention to marketing	79.4	267	69.2	9.9	253
Postponed major farm purchase	69.9	269	47.5	19.2	255
Kept more complete financial records	61.0	269	60.7	6.7	254
Reduced short-term debt	60.5	261	53.4	11.6	251
Redu d long-term debt	58.7	264	56.0	11.5	252
Bought crop insurance	47.8	270	44.5	12.6	254
Shared labor or machinery with neighbors	43.9	269	31.6	18.3	257
Reduced expenditures for hired help	43.1	267	32.2	8.8	252
Diversified farm by raising livestock	36.8	266	25.2	15.4	254
Sought off-farm employment	33.1	269	23.7	15.8	254
Rented more acres	25.3	265	18.2	23.4	253
Reduced machinery inventory	25.1	271	16.4	13.3	256
Diversified farm by adding new crops	21.1	270	18.0	29.3	256
Bought additional land	19.6	271	12.8	25.2	258
Rented fewer acres	19.2	265	10.8	13.9	252
Used futures markets to hedge prices	16.7	269	19.8	24.8	258
Started a new business (not farming)	12.0	267	7.9	15.1	253
Sold some land	10.3	271	5.5	9.0	257
Sought training for new vocation	7.4	271	7.8	13.3	257
Retired from farming	7.4	270	11.7	19.8	258
Changed from cash rent to crop share	6.8	264	6.8	14.7	252
Transferred land back to lender	5.6	268	2.0	4.4	255
Quit farming	4.8	271	7.8	23.7	258

Table 9. Farm operators' report of participation in government programs and their opinions on how helpful the programs were

Programs and laws	Participated			Did not participate				Number of respondents
	No help	Some help	A lot of help	Not needed	Did not qualify	Not available	Did not know about	
	Percent			Percent				
Federal government commodity programs (Feed Grain, Dairy Support)	2.8	42.8	30.4	16.0	6.4	0.0	1.6	250
1988 Drought Assistance Act	6.4	38.2	24.3	19.9	10.4	0.0	0.8	251
Federal All-Risk Crop Insurance	11.6	15.3	11.6	50.8	6.6	0.0	4.1	242
Conservation Reserve Program (CRP)	6.3	12.5	10.8	45.0	20.8	0.4	4.2	240
Loans from FmHA	7.9	5.4	8.3	60.0	15.8	0.0	2.5	240
Vocational retraining/ education program for self or family member	6.5	5.7	3.5	75.9	2.0	1.2	5.3	245
Farmer/lender mediation service	7.1	5.8	2.9	76.3	5.8	0.4	1.7	240
Fuel assistance	5.3	4.9	2.8	72.0	13.0	0.4	1.6	246
Financial analysis or counseling by extension service	6.6	7.8	2.0	75.0	2.9	0.4	7.0	248
Job Partnership Training Act or other off-farm job search assistance program	6.6	0.4	1.7	78.9	2.9	0.0	9.5	242
Unemployment benefits	6.1	4.5	1.6	69.1	15.4	2.0	1.2	246
Food stamps	5.7	2.0	1.2	77.5	12.7	0.4	0.4	244
Income assistance (AFDC, SSI)	6.6	0.8	0.8	75.4	11.5	0.4	4.5	244
Chapter 12 (debt restructuring for farmers)	5.4	0.8	0.4	87.6	2.5	0.0	3.3	242
Mental health counseling for yourself or family member	7.8	4.5	0.4	82.0	2.0	0.0	3.3	245
Chapter 11 bankruptcy (debt reorganization)	6.2	0.4	0.0	88.5	2.9	0.0	2.1	243

Table 10. Farmers' opinions on their information and training needs to continue farming in the next five years

Category	Need					Number of respondents
	None	Low	Moderate	High	Very high	
	Percent					
Reducing production costs through low-input farming methods	14.8	16.0	34.8	22.3	12.1	256
Marketing skills	19.1	12.5	35.8	21.4	11.3	257
Available government assistance	21.2	23.5	35.3	10.2	9.8	255
Using new technologies as they become available	12.0	15.5	40.7	23.3	8.5	258
Using new machines and chemical inputs to increase production	17.1	19.1	33.1	22.6	8.2	257
Bookkeeping and financial systems	29.6	20.6	26.8	17.1	5.8	257
Using appropriate conservation techniques	22.5	22.1	32.9	17.8	4.7	258
Diversifying farm operation by adopting new crops and livestock	27.8	23.2	31.3	13.1	4.6	259
Processing farm products on farm before selling	44.6	24.8	21.3	5.8	3.5	258

Table 11. Farm spouses' report on types of farm duties and changes in the amount of time spent on these duties

Duties	Perform these duties					Time spent on these duties			
	Always	Sometimes	Never	Not done	Number of respondents	Increased	Stayed the same	Decreased	Number of respondents
	Percent					Percent			
Household tasks and/or child care	92.6	5.3	0.8	1.2	244	21.1	62.1	16.8	232
Took care of a vegetable garden or animals for family consumption	64.2	24.6	4.5	1.6	243	9.4	63.7	20.8	230
Bookkeeping and maintained records	43.6	32.9	19.3	4.1	243	23.6	69.1	7.3	220
Ran farm errands	30.3	64.3	2.9	2.5	241	15.0	69.9	15.0	226
Worked at an off-farm job	29.8	40.5	19.0	10.7	242	28.0	50.9	21.0	214
Milked or cared for farm animals	20.3	45.6	18.3	15.8	241	18.6	49.0	32.4	210
Field work	9.6	55.4	27.1	7.9	240	12.7	57.0	30.3	221
Purchased major farm supplies and equipment	4.6	24.3	57.3	13.8	239	2.5	88.0	9.5	200
Marketed farm products through wholesale buyers or directly to consumers	3.8	16.2	59.4	20.5	234	3.1	86.4	10.5	191
Supervised the farm work of others	3.3	38.7	46.7	11.2	240	7.0	78.1	14.9	201

Table 12. Farm spouses' opinions on family decision-making behavior

Decisions	Usually me	My husband or someone else	My husband and I or someone else	Decision has never come up	Number of respondents
			Percent		
Buy major household appliances	12.7	7.8	78.7	0.8	244
Buy or sell land	0.4	19.3	59.7	20.6	243
Rent more or less land	0.0	32.0	49.0	19.1	241
Buy major farm equipment	0.0	51.0	44.9	4.1	243
Determine when to sell agricultural products	0.8	57.3	36.9	5.0	241
Produce a crop or livestock	0.0	49.6	35.1	15.3	242
Try a new agricultural practice	0.0	57.4	30.2	12.4	242

Table 13. Farm spouses' report on frequency of life pressures

Pressures	Almost never	Occasionally	Daily	Does not apply	Number of respondents
			Percent		
Problems in balancing work and family responsibilities	19.3	48.3	27.3	5.0	238
Lacking control over weather and commodity prices	11.7	54.8	25.1	8.4	239
Indebtedness and debt-servicing problems	34.2	40.4	12.9	12.5	240
Conflict with spouse	32.2	54.1	9.1	4.5	242
Conflict with children	30.6	47.5	9.1	12.8	242
Adjusting to new government policies	24.2	55.4	6.7	13.8	240
Insufficient support from spouse in farm or family duties	52.5	33.5	4.5	9.5	242
No farm help or loss of help when needed	32.4	46.9	2.9	17.8	241
Difficulty with child care arrangements	28.9	17.8	2.1	51.2	242

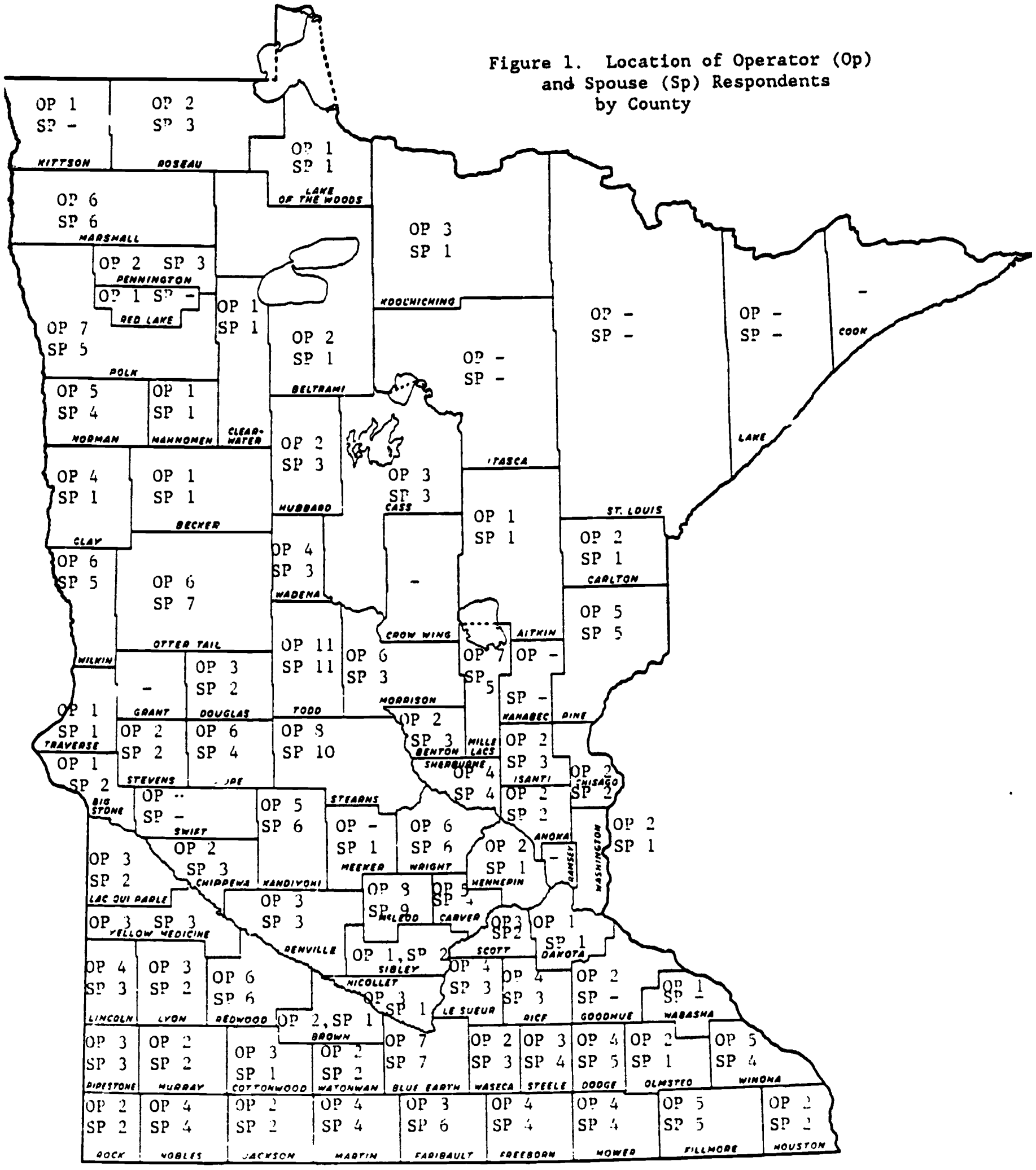
Table 14. Coping strategies used by farm spouses

Coping strategies	Use a great deal	Use quite a bit	Use somewhat	Never use	Number of respondents
			Percent		
Participate in church activities	35.7	24.9	29.9	9.5	241
Remind myself that for everything bad about farming, there is also something good	20.3	28.7	38.0	13.1	237
Notice people who have more difficulties in life than I do	17.0	34.9	42.7	5.4	241
Tell myself that success in farming is not the only important thing in life	16.3	25.9	38.1	19.7	239
Put up with a lot as long as I make a living from farming	15.5	25.9	35.6	23.0	239
Wish that the situation would go away or somehow be over with	12.7	16.9	43.6	26.7	236
Make a plan of action and follow it	12.3	30.9	42.8	14.0	236
Try to keep my feelings to myself	12.1	20.1	48.1	19.7	239
Become more involved in activities outside the farm	12.0	27.0	51.0	10.0	241
Go on as if nothing is happening	10.9	18.1	41.2	29.8	238
Don't expect to get much income from farming	10.6	13.6	45.8	30.1	236
Keep problems secret from others	8.0	12.2	46.8	32.9	237
Seek support from friends and/or relatives	6.7	21.4	50.0	21.8	238
Seek spiritual support from minister, priest or other	6.7	12.2	37.0	44.1	238
Talk to someone who can do something concrete about the problem	5.1	8.1	41.1	45.8	236
Try to make myself feel better by eating, drinking, smoking, using medication, etc.	4.6	7.5	27.8	60.2	241
Refuse to think about it	1.3	10.9	41.8	46.0	239
Talk to a family counselor or other mental health professional	0.8	1.3	8.5	89.4	236

Table 15. Operator and farm spouse membership in farm and local organizations

Organizations/activities	Spouse				Operator			
	Member	Former member	Never member	Number of respondents	Member	Former member	Never member	Number of respondents
	Percent				Percent			
Any organization, such as National Farmers Organizations, Grange, Farm Bureau, National Farmers Union, Young Farmers and Farm Wives	25.3	13.3	61.4	233	34.5	17.7	47.8	232
Any women's branches of general farm organizations, such as Farm Bureau Women	5.2	3.0	91.8	232	2.5	2.0	95.5	198
Any commodity producers' associations, such as the American Dairy Association or National Wheat Producers Association	18.5	4.8	76.7	227	28.6	9.4	62.1	224
Any women's branches of commodity organizations, such as the Cattlewomen or the Wheatheart[illegible]	3.0	2.6	94.3	230	1.5	0.5	98.0	197
Women's farm organizations, such as Women for Agriculture, American Agri-Women, or Women Involved in Farm Economics	1.7	1.3	97.0	232	0.0	0.5	99.5	195
Farm political action groups, such as a state Family Farm Movement or National Save the Family Farm Coalition	0.4	0.4	99.2	235	0.9	0.9	98.2	219
Local governing board, such as school board or town council	5.7	5.3	89.0	228	22.0	13.3	64.7	218
Marketing cooperative	11.0	2.2	86.8	227	23.3	7.2	69.5	223
Farm supply cooperative	19.1	2.2	78.7	225	36.4	7.6	56.0	225

Figure 1. Location of Operator (Op) and Spouse (Sp) Respondents by County



APPENDIX A

The high nonresponse rate for this survey (61 percent of the farm operators) indicates the potential for bias in the survey results. To improve the representativeness of the sample, we weighted the sample based upon two characteristics of the farm population: the farm operator age and gross farm sales. The population distribution is based upon the results of the 1987 Census of Agriculture. The weights were calculated as follows:

$$\text{Weight for Observation in "Gross Sales-Age" Category i} = \frac{\text{Percent of the population in "Gross Sales-Age" Category i}}{\text{Percent of sample in "Gross Sales-Age" Category i}}$$

The specific weights assigned to each observation in a gross sales-age category are given in Appendix Table A.1.

Appendix Table A.1. Weights assigned to farm operators and spouses

	Gross sales of farm products categories		
Age of operator, years	<$10,000	$10,000 to $99,999	>$100,000
Less than 34	2.31	1.42	0.38
35-44	2.17	0.82	0.67
45-54	2.06	0.97	0.81
55-64	3.10	0.86	0.49
65 +	1.02	1.24	1.30

The weights indicate that farms with gross sales of farm products less than $10,000 for operators of all ages were undersurveyed as their proportion surveyed is lower than their proportion observed in the farm population. Likewise, older farms were also undersurveyed in all the gross sales categories. Other categories, especially farms with gross sales above $100,000, were over-represented in our sample.

Appendix Table A.2. Comparison on weighted and unweighted personal characteristics of operators and spouses

Characteristics	Sample of operators		Sample of spouses	
	Unweighted	Weighted	Unweighted	Weighted
Average age, years		Percent		
Under 25	0.8	0.3	2.5	3.0
25-34	18.7	19.4	19.2	20.7
35-44	23.0	21.6	25.4	26.2
45-54	20.7	21.5	25.4	21.9
55-64	24.4	23.0	20.8	20.7
65 +	12.4	14.2	6.7	7.5
Average years of education		Percent		
1-8	15.7	15.5	3.4	5.4
9-12	49.1	53.5	58.7	58.1
13-16	32.5	27.9	35.8	35.1
17 +	2.7	3.1	2.1	1.4
Net family income		Percent		
Loss	3.4	3.7	N/A	N/A
$1-$9,999	18.8	19.0	N/A	N/A
$10,000-$19,999	22.6	22.3	N/A	N/A
$20,000-$29,999	23.8	24.1	N/A	N/A
$30,000-$39,999	11.9	13.1	N/A	N/A
$40,000-$49,999	7.7	8.9	N/A	N/A
$50,000-$59,999	5.0	3.7	N/A	N/A
$60,000-$69,999	2.3	2.3	N/A	N/A
Over $70,000	4.6	2.9	N/A	N/A

Mean age of farm operator was 48.5 years for the Census of Agriculture and 48.9 years from our weighted survey respondents.

The weighting procedure had only a small effect upon the distributions by age, education and net family income.

Appendix Table A.3. Comparison of weighted and unweighted respondents' farm size characteristics to characteristics of total farm population in Minnesota

Farm characteristics	Sample of operators		Farm population*
	Unweighted	Weighted	
		Percent	
Average farm size, acres			
1 to 9	0.0	0.0	5.4
10 to 49	3.8	6.8	11.1
50 to 179	24.4	30.3	19.3
180 to 499	42.5	43.2	36.4
500 to 999	20.7	14.6	12.7
1,000 +	8.6	5.1	5.1
Gross farm sales			
Less than $10,000	16.2	31.4	31.4
$10,000 to $39,999	20.0	20.5	25.9
$40,000 to $99,999	28.5	28.8	23.4
$100,000 to $249,999	25.8	15.5	15.1
$250,000 or more	9.6	3.9	4.2

* 1987 Census of Agriculture, (U.S. Dept. of Commerce)

Our survey reports small farms with fewer than 50 acres and over-report middle- and large-sized farms as compared with the farm population. Likewise the survey also under-reports small farms in the gross sales categories and over-reports the number of middle- and larger-sized farms. The weighted sample will very closely resemble the farm population in the gross sales category as the weights are based, in part, on the value of gross sales.

Appendix B. Comparison Between Respondents and Nonrespondents

In order to gain additional information about possible bias, 28 operator and 35 spouse nonrespondents were interviewed by telephone and asked several questions from the mail survey. The sample mean responses from the mail surveys were compared to those of the phone interviews using t-tests.

No significant difference was indicated between the respondents and the nonrespondents for most of the survey questions compared. The average age of the farm operator was 48.6 (farm spouses 46.0) for survey respondents as compared to 48.3 (45.0 for spouses) on the nonrespondent survey. Mean responses were compared for the two surveys and no statistical differences were indicated. Likewise, no statistical differences were found for operator and spouse education, total family income and gross farm sales. Average owned acres of the mail survey was 284 acres as compared to 355 acres for the phone survey. This was statistically different ($\tilde{a}=0.2$ level). However, average rented acres were statistically the same: 295 for the mail survey and 304 for the phone survey.

Other variables compared were related to perceived quality of life, financial condition, overall satisfaction with farming and plans to continue farming. In this case, the average mail respondent indicated that he was more likely to discontinue farming operations.

There were no statistical differences indicated by the farm operator from a selection of the risk-reducing behaviors in question eight of the survey. Nor were the nonrespondents more or less likely to have off-farm occupations.

Similar comparisons were made with the survey of farm spouses with no statistical differences observed.

Appendix C

Experience of Operator

Thirty-two percent of the farmers surveyed became a farm operator in the decade of the 1970s (Appendix Table C.1). The percentage per decade declines farther back in time with only 3.4 percent of the respondents starting earlier than 1940. The median year for starting was 1968. Only 16.0 percent of the respondents started farming in the decade of the 1980s; this smaller percent reflects the financial troubles of those years, which probably discouraged some from starting to farm, did not allow others to start farming, and caused others to start and stop within that decade.

Appendix Table C.1. Experience of survey respondents

Year became a farm operator	Operator
Median 1968	Percent
Earlier than 1940	3.4
1940-1949	10.4
1950-1959	17.2
1960-1969	20.9
1970-1979	32.1
1980-1989	16.0

Family Labor

The proportion of labor supplied by the family changed very little between 1984 and 1988 (Appendix Table C.2). More than 90 percent of labor was supplied by the family. Less than 3 percent of the respondents supplied less than 50 percent of the labor.

Appendix Table C.2. Percent of farm labor by family

Percent of farm labor by family	1984	1988
	Percent	
Average	92.3	92.6
10-49	2.3	2.7
50-89	15.0	12.5
90-99	25.4	27.0
100	57.3	57.8
Number of respondents	260	263

Farming Intensity and Diversification

The average farm had real estate assets valued at $226,685 and nonreal estate assets of $105,634 (Appendix Table C.3). Fifty-nine percent of farmers had real estate assets valued at less than $200,000. Forty-five percent had nonreal estate assets of less than $60,000. Only 10.9 percent of farms had real estate valued at more than $500,000.

Thirty-five percent of farms had real estate debt of more than $100,000 and 15.5 percent of farms had non real estate debt of more than $100,000. The average real estate debt was $99,329 and the average nonreal estate debt was $61,900. Net worth was calculated for each of the 187 farms to provide the necessary information. Almost 8 percent of the farms were insolvent; that is, with total debt exceeding totai assets. Sixteen percent had net worth of less than $100,000 while 27.3 percent had net worth of more than $250,000. The average calculated net worth was $213,519.

The average farm was 441 acres, up from 405 in 1984 (Appendix Table C.4). The average owned acreage was 280 acres and the average rented acreage was 294 acres. Twenty-six respondents leased an average of 105 acres to other farmers. (These acreages were calculated by using the number of responses in each category. Thus the total average does not equal the owned plus rented minus rented-out average). Twenty-eight percent of farms were less than 180 acres in size; 29.3 percent had more than 500 acres. Compared to 1984, owned and rented acreages increased only slightly.

Total cropland increased between 1984 and 1988 even though the introduction of the CRP removed an average of 71 acres from production on 57 farms (Appendix Table C.5). Pasture, hay and timber land remained unchanged from 1984 to 1988.

Corn production decreased slightly and soybean production remained essentially the same between 1984 and 1988 (Appendix Table C.6). The average farm had 134 acres of corn and 149 acres of soybeans in 1988. Wheat, oats and other crop production also remained essentially unchanged.

Livestock production also changed very little (Appendix Table C.7). The average farm had 78.3 head of feeder cattle, 27.6 head of beef cows and 49.3 head of dairy cows in 1988. Thirty-nine percent of the farms having beef cows had fewer than 20 head while only 6 percent of farms with dairy cows had herds this small. Forty-two farms had an average of 87.2 head of sows in 1988. This was an increase of 17.4 head from 1984. Approximately 40.5 percent of the farms with swine had more than 75 sows.

There were 12 farms with ewes in 1988 with an average of 37 head. The number of ewes ranged from 89 head to a single ewe. Eighteen farms reported owning laying hens in 1988. This ranged from five hens to 1,700 hens with an average of 177 layers. There were only two farms with turkeys; one was a large farm with 10,000 birds.

Appendix Table C.3. Farm assets, debts and net worth for 1988

	Real estate assets	Nonreal estate assets	Real estate debt	Nonreal estate debt
			Percent	
Average	$226,685	$105,634	$99,329	$61,900
Less than $20,000	0.9	13.5	12.3	31.8
$20,000 to $39,999	4.5	15.0	16.3	20.9
$40,000 to $59,999	4.1	16.5	16.2	17.1
$60,000 to $79,999	8.6	7.0	10.4	10.0
$80,000 to $99,999	10.4	6.5	9.7	4.7
$100,000 to $124,999	9.5	13.0	7.8	7.0
$125,000 to $149,999	7.2	4.0	3.9	1.5
$150,000 to $199,999	14.1	8.0	10.4	3.1
$200,000 to $299,999	18.1	9.5	7.8	2.3
$300,000 to $499,999	11.7	6.5	4.6	0.8
$500,000 +	10.9	0.5	0.6	0.8
Number of respondents	221	200	154	129

	Net worth
Average	$213,519
Less than $0	7.5
$0 to $49,999	8.5
$50,000 to $99,999	20.4
$100,000 to $149,999	13.3
$150,000 to $199,999	12.9
$200,000 to $249,999	10.1
$250,000 to $499,999	15.5
$500,000 to $749,999	6.5
$750,000 +	5.3
Number of respondents	187

Appendix Table C.4. Farm size, tenure and acreage distribution for 1984 and 1988[a]

Year: 1988	Total farm size	Owned	Rented	Leased out
Average	441	280	294	105
Acres				
1 to 9	0.0	1.2	1.7	3.8
10 to 49	3.8	6.9	11.6	38.5
50 to 99	6.0	10.9	11.6	3.9
100 to 179	18.4	25.9	24.8	42.3
180 to 339	27.4	29.6	24.9	7.7
340 to 499	15.1	11.3	9.2	3.8
500 to 999	20.7	11.4	11.6	0.0
1,000 +	8.6	2.8	4.6	0.0
Number of respondents	246	247	173	26
Year: 1984				
Average	405	273	270	121
Acres				
1 to 9	0.4	2.2	0.6	0.0
10 to 49	4.6	7.6	10.6	25.0
50 to 99	6.1	9.3	14.7	20.0
100 to 179	18.8	25.8	27.0	35.0
180 to 339	28.3	30.2	25.9	20.0
340 to 499	16.9	12.0	6.5	0.0
500 to 999	19.2	10.2	11.8	0.0
1,000 +	5.7	2.7	2.9	0.0
Number of respondents	261	225	170	20

[a] These averages were calculated by using the number of responses in each category. Thus, the total average will not equal the owned plus rented minus rented-out average.

Appendix Table C.5. Cropland acreage by use for 1984 and 1988

Year: 1988	Cropland	Pasture and hay	Timber	CRP
Average	370	72	52	71
Acres				
1 to 9	0.8	7.2	21.2	10.5
10 to 49	8.1	40.4	45.1	43.9
50 to 99	13.5	22.9	19.3	17.5
100 to 179	19.5	22.3	10.6	21.1
180 to 339	25.2	6.6	0.9	5.2
340 to 499	8.9	0.6	2.9	1.8
500 to 999	14.7	0.0	0.0	0.0
1,000 +	9.3	0.0	0.0	0.0
Number of respondents	246	166	104	57
Year: 1984				
Average	357	74	53	N/A[1]
Acres				
1 to 9	0.8	5.8	19.2	
10 to 49	8.9	40.7	46.5	
50 to 99	13.6	22.5	18.1	
100 to 179	21.2	22.6	12.2	
180 to 339	22.4	7.8	4.0	
340 to 499	10.2	0.6	0.0	
500 to 999	16.5	0.0	0.0	
1,000 +	6.4	0.0	0.0	
Number of respondents	236	155	99	

[1] N/A -- Not applicable

[a] The Conservation Reserve Program (CRP) was not available in 1984.

Appendix Table C.6. Major crop acreage for 1984 and 1988

Year: 1988	Corn	Soybeans	Wheat	Oats
Average	134	149	201	31
Acres				
1 to 9	3.5	2.0	1.4	7.5
10 to 49	24.0	22.2	29.7	77.1
50 to 99	25.0	23.5	12.1	11.9
100 to 179	24.0	22.2	14.9	2.6
180 to 339	17.0	20.3	25.7	0.8
340 to 499	2.5	5.2	6.7	0.0
500 to 999	3.5	3.9	8.1	0.0
1,000 +	0.5	0.7	1.4	0.0
Number of respondents	200	153	74	118
Year: 1984				
Average	141	147	196	29
Acres				
1 to 9	2.0	1.5	1.4	4.2
10 to 49	22.2	23.5	31.5	82.4
50 to 99	25.3	20.5	13.7	10.0
100 to 179	24.2	25.7	17.8	3.4
180 to 339	20.7	20.5	21.9	0.0
340 to 499	2.1	4.5	2.7	0.0
500 to 999	2.5	3.0	9.4	0.0
1,000 +	1.0	0.8	1.4	0.0
Number of respondents	198	132	73	119

Appendix Table C.7. Livestock herd sizes for 1984 and 1988

Year: 1988	Feeder cattle	Beef cows	Dairy cows	Sows
Average	78.3	27.6	49.3	87.2
No. of head				
1 to 10	10.5	23.3	3.0	7.1
10 to 19	22.4	16.2	3.0	14.3
20 to 29	11.8	23.3	11.9	4.8
30 to 39	17.1	18.6	19.4	2.4
40 to 49	7.9	4.6	23.9	4.7
50 to 74	17.1	7.0	23.9	26.2
75 to 99	2.7	2.2	10.4	11.9
100 to 499	5.2	2.2	4.5	26.2
500 +	5.3	0.0	0.0	2.4
Number of respondents	76	45	67	42
Year: 1984				
Average	73.1	27.6	48.7	69.8
No. of head				
1 to 10	12.9	23.3	2.9	8.6
10 to 19	20.0	16.2	4.3	13.8
20 to 29	16.5	23.3	13.1	13.8
30 to 39	13.0	18.6	18.8	13.8
40 to 49	4.7	4.6	24.7	6.9
50 to 74	12.9	7.0	26.1	10.3
75 to 99	5.9	4.7	4.5	10.4
100 to 499	9.4	2.3	5.6	20.7
500 +	4.2	0.0	0.0	1.7
Number of respondents	85	43	69	58

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