

Farm Household's Adjustments to Changing Economic Conditions: Highlights of 1986 Farm Survey

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The Cooperative Extension Service and the Department of Agricultural Economics at North Dakota State University and the United States Department of Agriculture have joined to conduct one of the first longitudinal studies of farm operators in the 1980s. This effort is in response to the continued attention being focused on the financial condition of farmers and ranchers and attempts to provide local, state, and national policymakers with accurate financial and socioeconomic information on North Dakota operators. This article is a comprehensive summary of survey results from the March 1986 follow-up survey of over 900 North Dakota farmers initially contacted in March and April 1985. That year 933 farmers and ranchers were surveyed regarding their 1984 financial and other socioeconomic characteristics, such as their off-farm employment history and trade patterns.¹

This spring attempts were made to contact all 933 operators. Of these, 759 responded, 99 refused to participate, 18 had ceased to operate a farm or ranch², four were deceased, and 53 could not be contacted. The 759 operators who were still farming and who completed usable questionnaires constitute the data base for this summary. Comparison of selected characteristics of 1986 survey respondents with those of 1985 respondents and with the 1982 Census of Agriculture revealed that the 1986 respondents were comparable with the 1985 respondents and that both groups are representative of North Dakota farmers who were less than 65 years old and who considered farming to be their primary occupation.

The first part of this summary compares the 1985 and 1986 survey results regarding operators' financial characteristics and off-farm employment status in 1984 and 1985. These comparisons reflect the answers of respondents who provided pertinent financial data for both years. Next, opinions about the cause of the current farm crisis, level of agreement with selected statements about farmers and farming, and attitudes toward various financial

assistance policies are reviewed. The article closes with a discussion of management adjustment strategies and of the effects of economic stress on their personal lives.

Financial Characteristics

Basically, little change was noticed in the statewide averages of the composition of farm family income in 1984 and 1985 (Table 1). The most noticeable change occurred in the category **other off-farm income**, which consisted primarily of interest or other revenues associated with off-farm investments. Two possible explanations for the lower value in 1985 are (1) declining interest rates and (2) unfavorable economic conditions that may have forced some producers to dip into savings or liquidate nonfarm investments. Overall, increases in 1985 net cash farm income and off-farm employment were not adequate to offset the decrease in **other off-farm income** and mineral lease payments; total farm family income in 1985 fell by \$775 (about 3 percent from 1984).

Although statewide averages of net farm income³ varied little from 1984 to 1985, differences were apparent at the regional level. Altogether, four regions showed an increase in net income and four regions showed a decrease in 1985

Table 1. Composition of farm family income, North Dakota, 1984 and 1985.

Income Source	1985	1984
Net cash farm income:		
Average	\$15,958	\$15,285
Percent of total	63.2	58.7
Earnings from off-farm employment:		
Average	\$ 4,725	\$ 4,402
Percent of total	18.7	16.9
Mineral lease income:		
Average	\$ 1,720	\$ 2,523
Percent of total	6.8	9.7
Other off-farm income:		
Average	\$ 2,842	\$ 3,811
Percent of total	10.9	14.6
Total farm family income:		
Average	\$25,245	\$26,020
Percent of total	100.0	100.0

³Net cash farm income is gross farm income less all cash expenses and depreciation.

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¹Readers are referred to previously published results of the 1985 survey for more detailed information and background (Leholm et al., 1985; Leistritz et al., 1985, 1986; Ekstrom et al., 1985; Goreham et al. 1986a, 1986b).

²No attempt will be made in this article to discuss the 18 former farmers because the data base was too small to permit analysis without breaching confidentiality rules. Over 150 additional former farmers were contacted in September 1986; results of the entire group will be available soon.

(Figure 1). Most noticeable increases occurred in the southern Red River Valley, which reported nearly a \$14,000 increase over 1984, and in the region encompassing Rolette, Towner, Cavalier, Ramsey, Benson, and Eddy counties, which showed an increase of nearly \$6,800. In contrast, the northwestern corner of the state reported the sharpest decrease in net income, which was down over \$15,000 from 1984. This decrease largely reflects the continued severe drought conditions in that part of the state during 1985.

Debt-to-asset ratios are another reflection of the financial health of the farm economy. Statewide, this ratio increased from 32.6 percent in 1984 to 34.2 percent in 1985 (Figure 2). All but the two westernmost regions exhibited an increase in their regional debt-to-asset ratio. When debt-to-asset ratios of operators providing financial information for

both 1984 and 1985 were compared (Table 2), about the same percentage of operators were found with no debt and with 41 to 70 percent, but about 5.0 percent fewer farmers were carrying less than 40 percent debt and about 3.5 percent more farmers were carrying over 70 percent debt in 1985.

Earnings from off-farm employment was the largest single source of nonfarm income for North Dakota farm operators during the past two years. Average earnings from off-farm employment in 1985 rose about \$300 from 1984 (Table 1). The number of operators who worked off the farm dropped slightly in 1985 (from 23.2 percent to 22.0 percent), but the number of spouses who worked off the farm increased (from 31.3 percent to 34.4 percent) (Leistriz et al., 1986b). Overall, operators with lower gross and net farm incomes and with higher debt-to-asset ratios tended to work off the

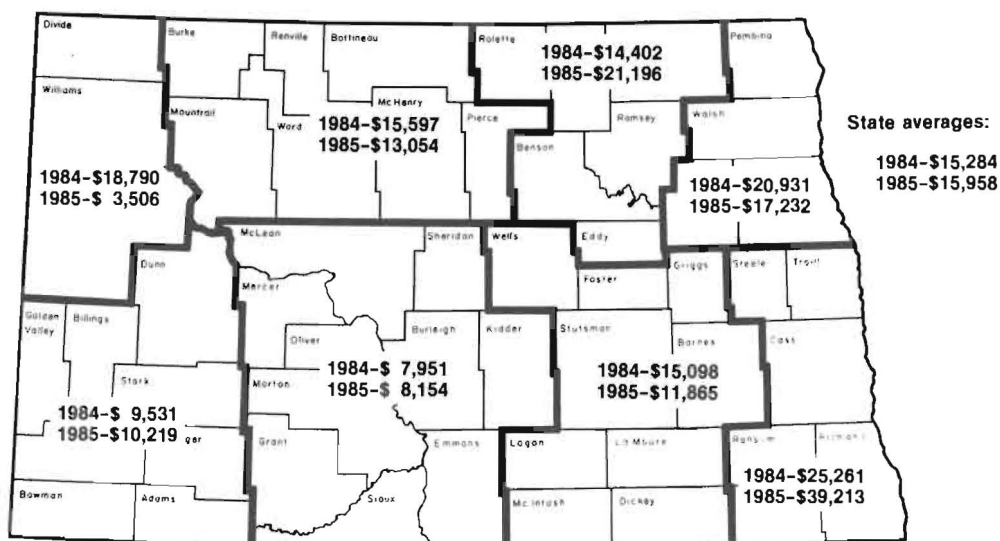


Figure 1. Regional Average Net Cash Farm Income in North Dakota, 1984 and 1985.

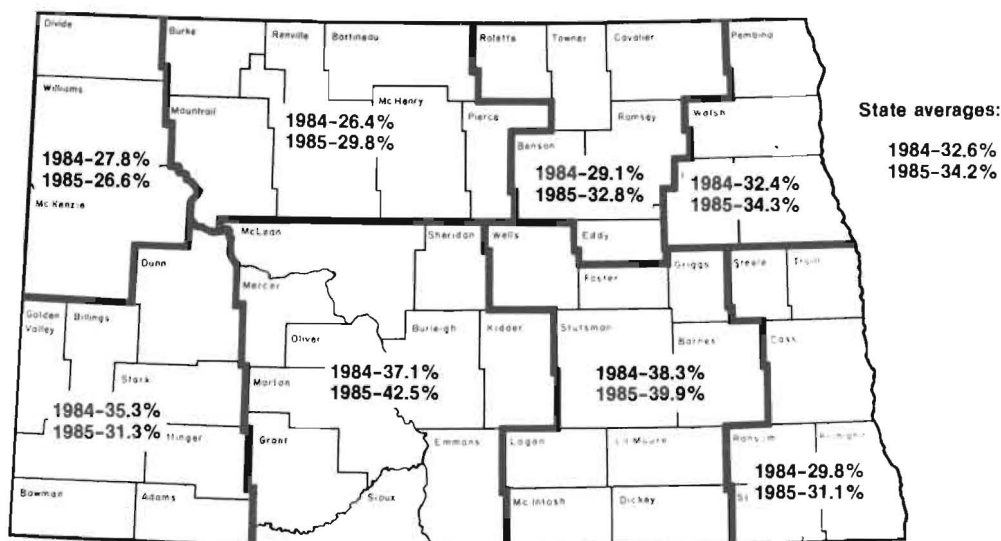


Figure 2. Regional Average Debt-to-Asset Ratios of North Dakota Farmers in 1984 and 1985 as of December 31.

Table 2. Level of debt of operators providing financial data for both 1984 and 1985.

Level of Debt	1984	1985
	-----percent of respondents -----	
No debt	16.26	17.55
Less than 40%	46.22	41.23
41 to 70%	23.68	23.97
More than 70%	13.84	17.26
N = 701		

farm more than their counterparts with more favorable financial conditions. Interestingly, no pattern for off-farm employment participation in relation to gross and net farm income was found for spouses; between 30 and 40 percent of the spouses in all income categories worked off the farm in 1985. As expected, though, spouses of more highly leveraged operators worked off the farm more than their counterparts with no debt; values ranged from 16.2 percent of spouses in the no debt category to nearly 40 percent of spouses in the over 70 percent debt category. Overall, the percentage of respondents and spouses who were going to seek off-farm employment in 1986 rose about 2 percent over last year.

Causes of the Farm Situation

Several new questions were added to the farm survey in 1986. Survey respondents were asked to evaluate a number of factors that are frequently cited as contributing to the current financial situation in agriculture. Over 80 percent of the farmers rated high interest rates and low prices for farm products as very important causes of the current situation (Table 3). When asked to identify the single most important

cause, about 38 percent chose low prices for farm products, and over 23 percent chose high interest rates. Answers of the remaining 39 percent of respondents were dispersed fairly evenly among the other categories.

Attitudes about Farming and Farmers

Survey respondents were asked to respond to a number of statements about farming and farmers. Nearly all respondents agreed that agriculture plays a vital role in the nation's economy and that it is our nation's most basic industry (Table 4). Over 90 percent also felt that the proportion of farmers who are now in financial trouble is much greater than at most times in the past. In addition, over 70 percent agreed that farmers should organize to bargain for the price of farm products and that the family farm is rapidly going out of existence.

Financial Assistance Policies

Farmers were asked in the 1986 survey to express their level of support for the federal and state governments' providing financial assistance to farmers who are in financial trouble. Overall, there was more support for the federal government's assistance than for the state government's assistance (Table 5). Many farmers stated that they felt the state was not in a financial position to provide such assistance to farmers. Respondents who favored some form of governmental assistance were also asked about their level of support for specific types of aid being proposed in various legislative bodies. Over 80 percent of these respondents supported both state and federal assistance to agricultural creditors, subsidy of interest rates on operating loans, restructuring land debt, and low-interest loans or grants for training in new occupations (Leistriz et al., 1986a). A definite relationship existed between (1) an operator's attitude toward assistance and (2) his/her debt-to-asset ratio

Table 3. North Dakota farm operators' evaluation of possible causes of the current farm financial situation.

Cause	Percent of Farmers Who Rate This Cause As:		
	Very Important	Somewhat Important	Not at All Important
Low prices for farm products	91.6	7.7	0.8
High interest rates	81.9	16.1	2.0
The high cost of farm supplies and equipment	78.5	19.9	1.6
Changing export markets for farm products	71.0	24.2	4.8
Changing land values	69.1	24.6	6.3
Farmers' attempting to expand the size of their farms too rapidly	58.1	30.6	11.3
Government involvement in agriculture	42.6	45.8	11.7
Farmers' living beyond their means	40.0	44.1	16.0
Farmers' being poor managers	33.1	48.1	18.8
Corporate farms	11.4	24.6	64.0

Table 4. North Dakota farm operators' level of agreement with selected statements about farmers and farming.

Statement	Percent of Farmers Who:		
	Strongly Agree or Agree	Neither Agree nor Disagree	Strongly Disagree or Disagree
Agriculture plays a vital role in the nation's economy	98.5	0.7	0.9
Agriculture is our nation's most basic industry	97.3	1.6	1.2
The proportion of farmers who are now in financial trouble is much greater than at most times in the past	92.8	1.7	5.5
American farmers will always be able to produce enough food to feed America	81.2	6.0	12.9
Farmers should organize to bargain for the prices of farm products	73.2	10.7	16.1
The family farm is rapidly going out of existence	72.8	5.8	21.5
To me, farming is strictly a business	72.2	6.2	21.6
Today, large corporations, not farmers, control agriculture	57.7	9.9	32.5
Most farms today are too large	30.3	11.6	58.1
Farmers are primarily to blame for high food prices	1.6	1.1	97.4

Table 5. Farmers' attitudes toward federal and state financial assistance, 1986.

Source of Aid	Agree	Neutral	Disagree
	-----percent-----		
Federal	39.3	26.1	34.6
State	31.3	24.7	44.1

and status with respect to debt payments. Farmers who carried over 70 percent debt or who were not current on their debt payments were twice as likely to favor aid from either the state or federal government when compared to those with no debt.

Management Adjustment Strategies

How are farmers adjusting to their current financial problems? About 28 percent of all respondents had made some specific change in 1985 to reduce their farm debt. Specifically, about 14 percent of all the respondents had renegotiated a loan to reduce the principal amount, 9 percent had sold breeding livestock, and over 3 percent had sold machinery.

Operators were also asked if they had made any of a number of changes in their operation in 1985 that they normally would not have made in a typical year. These results are summarized in Figure 3. Over 60 percent of the respondents had postponed capital purchases, and nearly

50 percent had reduced tillage operations and family living expenses.

Analysis of these changes by debt-to-asset ratio revealed that, as expected, those with no debt made few of these changes and that those in the higher debt categories (i.e., over 40 percent debt) consistently made disproportionately more of these changes than their counterparts with less debt. For example, those with over 70 percent debt represented about 17 percent of the total operators surveyed but accounted for 45 percent of those who renegotiated a loan to reduce interest, 36 percent of those who obtained professional financial advice, and 32 percent of those who changed lending institutions or started using crop insurance. Examination of management changes by net farm income revealed that, in most cases, the highest percentage of respondents making the change had a negative or zero net income.

Effects on Personal Lives

The last section of this article discusses the emotional toll that the farm situation has taken on the personal lives of farm families. Thirty percent of the 1986 respondents indicated that it had had a great deal of effect, 54 percent reported some effect, and 16 percent said they had not been affected at all. The operators were asked whether they or any member of their immediate family⁴ had experienced any of a number of stressful events during the past two years

⁴Immediate family was defined as parents, children, spouse, brothers, or sisters.

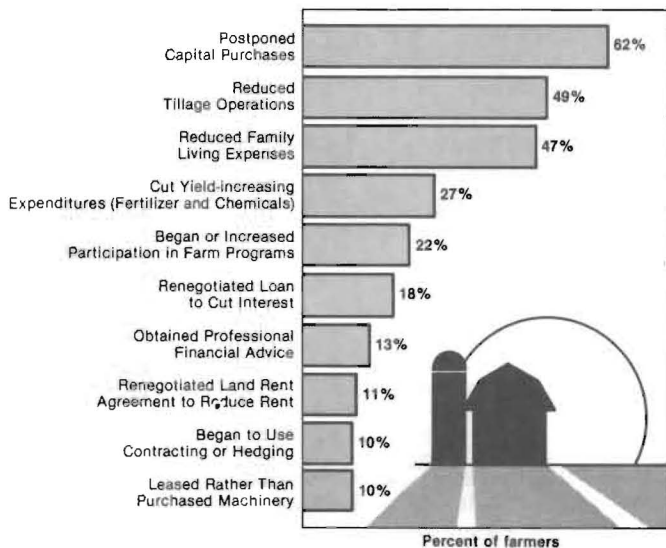


Figure 3. Selected Management Adjustments North Dakota Farmers Made in 1985.

and whether they believed that event was related to the financial conditions in agriculture. More than 24 percent reported they had experienced depression or other emotional problems; 22 percent reported a reduction in pay, benefits, or working hours because a business had to cut back; and 15 percent reported unusual marital or other family stress or conflict (Table 6). About 15 percent also reported a job lost because a business had to cut back, and about 15 percent reported the death of a relative.

The relationship between debt load and the percentage of farm families reporting depression and other emotional problems is displayed in Figure 4. The relative importance of financial and other variables in explaining the frequency of depression and of marital and family conflict was tested through the use of multiple discriminant analysis. Several financial and demographic (e.g., age, education) characteristics of operators were tested. Two variables, net cash farm income and status with respect to debt payments, were positively associated with the two previously mentioned problems. Age was also a significant factor in predicting marital and family stress; i.e., younger operators reported these problems more frequently.

Summary

Several changes have occurred among North Dakota farmers and ranchers from 1984 to 1985. Some of these changes have been relatively small and subtle, while others, especially on the regional level, have been dramatic. Statewide, net cash farm income rose about \$670, but total farm family income decreased \$755. Regionally, net cash farm income in the southern Red River Valley rose about 55 percent from 1984 to 1985, while net income fell over 80 percent in the northwestern section of the state. Slightly fewer respondents were working off the farm, but more spouses had found their way into the labor market.

Most farmers agreed that high interest rates and low commodity prices were to blame for the current financial situation in agriculture, that agriculture is vital to the nation's economy, that the family farm is rapidly going out of ex-

Table 6. Selected events experienced by North Dakota farm operators or their immediate family within the last two years.

Event	Percent who have experienced	Percent who believe event was a direct or indirect result of financial conditions in agriculture ^a
Suffered depression or other emotional problems	24.4	84.3
Had a reduction in pay, benefits, or working hours because a business had to cut back	22.0	63.5
Experienced unusual marital or other family stress or conflict	15.2	80.9
Lost job because a business had to cut back its staff	15.2	60.0
Had an immediate relative die	14.9	11.5
Been divorced	4.5	23.5

^aPercentages represent the proportion of those who experienced the various events.

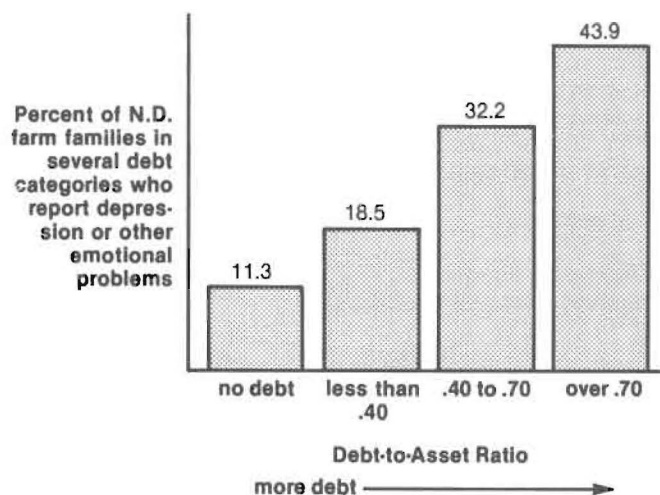


Figure 4. Relationship of Emotional Problems and Debt in North Dakota Farm Families, 1985.

istence, and that farmers should organize to bargain for the price of farm products.

Many farmers are working on developing management strategies to face the financial crunch. Some had sold machinery and breeding livestock to reduce farm debt; others had postponed capital expenditures and reduced tillage operations and family living expenses.

Table 4. Daily ET rates for corn as a function of reference evapotranspiration rate and time of season. This table is also based on the K_{cm} curve given in this paper.

	Week Post Emergence																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.04	0.00	0.01	0.01	0.01	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.02
0.06	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.03
0.08	0.01	0.02	0.02	0.03	0.04	0.06	0.07	0.07	0.08	0.08	0.09	0.08	0.08	0.07	0.07	0.05	0.04
0.10	0.01	0.02	0.03	0.04	0.06	0.07	0.08	0.09	0.10	0.11	0.11	0.11	0.10	0.09	0.08	0.07	0.06
0.12	0.02	0.03	0.04	0.05	0.07	0.09	0.10	0.11	0.12	0.13	0.13	0.13	0.12	0.11	0.10	0.08	0.07
0.14	0.02	0.03	0.04	0.06	0.08	0.10	0.12	0.13	0.14	0.15	0.15	0.15	0.15	0.14	0.12	0.10	0.08
0.16	0.03	0.04	0.05	0.07	0.09	0.12	0.14	0.15	0.17	0.17	0.18	0.17	0.17	0.15	0.14	0.11	0.09
0.18	0.03	0.04	0.06	0.08	0.11	0.13	0.15	0.17	0.19	0.20	0.20	0.20	0.19	0.17	0.15	0.13	0.10
0.20	0.03	0.05	0.07	0.09	0.12	0.15	0.17	0.19	0.21	0.22	0.22	0.22	0.21	0.19	0.17	0.14	0.12
0.22	0.04	0.05	0.07	0.10	0.13	0.16	0.19	0.21	0.23	0.24	0.25	0.24	0.23	0.21	0.19	0.16	0.13
0.24	0.04	0.06	0.08	0.11	0.14	0.18	0.21	0.23	0.25	0.26	0.27	0.26	0.25	0.23	0.21	0.17	0.14
0.26	0.04	0.06	0.09	0.12	0.16	0.19	0.22	0.25	0.27	0.29	0.29	0.29	0.27	0.25	0.22	0.19	0.15
0.28	0.05	0.07	0.09	0.13	0.17	0.21	0.24	0.27	0.29	0.31	0.31	0.31	0.30	0.27	0.24	0.20	0.16
0.30	0.05	0.07	0.10	0.14	0.18	0.22	0.26	0.29	0.32	0.33	0.34	0.33	0.32	0.29	0.26	0.22	0.18
0.32	0.06	0.08	0.11	0.15	0.19	0.24	0.28	0.31	0.34	0.35	0.36	0.35	0.34	0.31	0.28	0.23	0.19
0.34	0.06	0.08	0.12	0.16	0.21	0.25	0.29	0.33	0.36	0.38	0.38	0.38	0.36	0.33	0.29	0.25	0.20
0.36	0.06	0.09	0.12	0.17	0.22	0.27	0.31	0.35	0.38	0.40	0.41	0.40	0.38	0.35	0.31	0.26	0.21
0.38	0.07	0.09	0.13	0.18	0.23	0.28	0.33	0.37	0.40	0.42	0.43	0.42	0.40	0.37	0.33	0.28	0.22

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Most North Dakota farm families surveyed felt they had been personally or emotionally affected by the financial conditions in agriculture. Over 80 percent felt they had been affected in some way. Problems ranged from depression and emotional and marital conflicts to lost jobs and reduced wages and working hours.

Although the information presented in this summary cannot yet be used to point to the development of major trends, it does serve to document the state of North Dakota agriculture in the past two years and is offered as one more guide to local, state, and national decision makers in establishing policies to best meet the needs and desires of North Dakota farmers and ranchers.

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