NORTH DAKOTA
Farm Research
Bimonthly Bulletin

Vol. 43, No. 4 January-February 1985

Guest Column

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This issue of North Dakota Farm Research identifies several of the economic indicators of the nature and magnitude of economic stress that faces the American agriculture industry. We, in the Land Grant University system, ponder, with farmers and agribusiness managers, means of finding ways of surviving financial stress caused by economic forces beyond our control. The major economic forces that have caused current financial woes are high interest rates and falling farm product prices.

Rising interest rates in the past several years have increased production costs for all segments of the agricultural industry that use borrowed capital to sustain business operations. Each farm and agribusiness firm is therefore affected differently depending on the level of equity the owner has in the business.

Declining farm prices, on the other hand have reduced gross revenues at a relatively uniform rate to all farm firms producing similar commodities.

The final consequence of present economic conditions has been to seriously threaten the solvency of a significant segment of North Dakota's farm economy. This is evident when one considers that nearly one fourth of all farm borrowers are behind on loan payments. Farm loans that would cash flow in the 1970s have changed dramatically since 1980. The pincers movement of falling revenue resulting from declining prices and higher interest rates has turned profitable enterprises to unprofitable ventures at an alarming pace.

What can your Land Grant University do to help alleviate the present situation? Agricultural research and education programs can help farmers weather the financial storm on two important fronts. First, assist farmers who have financial problems with the development of management strategies that will increase cash flow in this period of extreme stress. This could involve strategies ranging from partial asset liquidation on one extreme to basic changes in production practices designed to minimize costs. Second, new research technology that helps farmers produce at lower costs is essential if North Dakota farmers are to survive during this period of financial stress. The world's farmers continue to reach new heights in production technology in providing food and fiber for a growing world population. We

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In This Issue

On the Cover: North Dakota's farmland and farms are the state's greatest assets, but many farmers are facing financial stress and farmland values are under pressure. Articles in this issue explore the areas of financial stress and farmland values. Photo by James Berg.

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Vol. 43, No. 4 **January-February 1985**

A BIMONTHLY progress report published by the
Agricultural Experiment Station, North Dakota State University of Agriculture and Applied Science
Fargo, North Dakota 58105
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Dean of Agriculture, and Director of Agricultural Experiment Station
EDITOR
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Dakota county took only 1.5 percent of the tracts, but they contained 4.8 percent of the land transferred in 1984.

Land Use Before and After Sale

Land use before sale divides the use of the sale tracts into a simple three-way classification of single or independent farm units, tracts being used as part of another farm, and rural homes or part-time farming and other uses. About 74 percent of the tracts with 64 percent of the land transferred were parts of another farm. The larger tracts, making up 22 percent of the parcels with 33 percent of the acreage, had been operated as separate, independent farms. Four percent of the tracts with 3 percent of the land were in other uses. The average sale price paid was $405 an acre for tracts formerly parts of another farm, $350 for separate farms, and $344 an acre for tracts in other uses.

The after-sale picture (Table 7) indicates that only 13 percent of the tracts containing 24 percent of the land went to separate farms. They averaged 568 acres and sold for an average of $381 per acre. Parts of another farm took 8 of every 10 tracts leaving the market. They accounted for 71 percent of the acreage. These tracts averaged only 279 acres but sold for an average of $410 an acre. Other uses represented 7 percent of the parcels, 5 percent of the land, with an average size of 291 acres and average cost of $249 per acre.

TABLE 7. PERCENT OF SALE TRACTS PURCHASED BY TYPE OF BUYERS IN 1980-84

Type of Buyers	State Averages for:				
	1984	1983	1982	1981	1980
	percent of sales				
Single Farms	13	9	7	12	13
Expansion Farms	80	86	91	83	83
Other Buyers	7	5	2	5	4

Comparing the before and after use scenes shows that the number of parcels going for separate farms has sharply dwindled. Twenty-one tracts entered and left the market as separate farm units. Another 21 tracts (once part of another farm) moved into the separate farm category. Also, two tracts formerly in other uses were purchased as independent farms. Larger tracts (averaging 621 acres) entered and left the market as separate farms. Tracts changing from part of another farm to the separate farm group averaged 539 acres.

The dominant group in the 1984 market consisted of expansion-minded buyers, seeking to add to their farms. They bought 41 tracts formerly operated as separate farms. Another 212 tracts entered and left the market to be parts of another farm. They also bought nine tracts formerly in other uses.

The number of tracts passing through the 1984 market to be used as separate independent farms declined. The market serves to reallocate land resources, based on the ability to purchase the land.

Looking Back and Ahead

Reporters were asked to reflect on factors influencing the 1984 farmland market, the sellers, and the buyers. The most frequently mentioned factor affecting the market was high interest rates, closely followed by poor commodity prices. Another group of factors included the poor farm economy, lack of credit, and poor or decreasing returns from farming. Also mentioned was plenty of land available or on the market, high operating costs, and foreclosures.

The most frequently mentioned factors affecting sellers included age, health, retirement, or estate settlements, followed by financial pressures and foreclosures. A third group of factors frequently mentioned included poor returns and the need to reduce the debt load. Also often listed were better return by selling, depressed farm economy, and high interest rates.

High interest rates was the major factor affecting buyers. Next listed were difficulty in obtaining credit, low commodity prices, and location as affecting the expansion buyer. Other reasons included poor cashflow, repayability, lack of financing, low land prices, and the depressed economy.

Reporters also were asked to look at prices expected in the fall of 1985. Only 4 percent expected prices to be 5 percent or more higher in the fall of 1985 compared to 1984. About 51 percent were in the optimistic group in the 1980 survey, only 22 percent in 1981, 8 percent in 1982, and 9 percent in 1983. Nearly 62 percent of the reporters expect prices to be about the same in the fall of 1985, and 38 percent expect more declines. Figures indicate an increase in the group expecting little change in land values and in those reporters expecting further declines in the year ahead.

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must keep pace with world production systems if North Dakota farms are to survive in the decades ahead. A 5 percent increase in wheat yield provides about $5 per acre in increased cash flow to the producer at current price levels. Research programs have historically produced a 1½ to 2½ percent increase in farm productivity each year.

What has the cost of agricultural research been in North Dakota? Based on fiscal 1983 data, there was about ⅓ of a cent of general fund tax dollars spent on agricultural research for each dollar of gross farm income generated in North Dakota. We ranked 34th in the nation. Contrast this with industry which typically budgets 2 cents of every gross income dollar for research and development expenditures.

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Table 1. Annual Variable Aquaculture Production Costs, Leland Olds Station, 1983

Item	Production Scenario I	Production Scenario II
	dollars	
Fingerlings		
Rainbow trout	$20,834	$ 8,333
Channel catfish	6,000	NA
Feed		
Rainbow trout	19,453	44,939
Channel catfish	16,406	NA
Labor	7,072	7,072
Repairs and maintenance	2,349	2,349
Pumping costs	5,879	7,839
Transportation	589	589
Miscellaneous expense	3,929	3,556
Interest on operating capital	4,126	3,734
Total		
Rainbow trout[a]	52,259	78,411
Channel catfish[a]	34,378	NA

NA = Not Applicable.

[a] For Production Scenario I, the total cost of labor, repairs and maintenance, pumping, transportation, miscellaneous expense, and interest on operating capital have been divided equally among rainbow trout and channel catfish.

Table 2. Catfish and Trout Production Costs, Scenarios I and II, Leland Olds Station, 1983

Item	Production Scenario I	Production Scenario II
	dollars	
Total Annual Costs	$134,657	$126,431
Annual fixed cost	48,020	48,020
Annual variable cost (trout)	52,259	78,411
Annual variable cost (catfish)	34,378	NA
Total Cost Per Pound (Trout)[a]	1.53	1.26
Fixed cost per pound	0.48	0.48
Variable cost per pound	1.05	0.78
Total Cost Per Pound (Catfish)[b]	1.17	NA
Fixed cost per pound	0.48	NA
Variable cost per pound	0.69	NA

NA = Not Applicable

[a] Based on an annual harvest of 50,000 pounds for Production Scenario I and a harvest of 100,000 pounds for Production Scenario II.

[b] Based on an annual harvest of 50,000 pounds.

Economic feasibility is not easily determined. Trout and catfish production costs at the proposed facility are substantially higher than the average prices received by producers in the major aquaculture production regions ($0.60 - $0.70/pound). However, higher prices have been received by producers in other states. The potential for profit exists if these higher prices could be received in North Dakota through promotion as a specialty or locally-raised product.

Success of any large-scale commercial venture will depend upon solving marketing and economic problems more than biotechnical ones. Prior to any aquacultural development, potential markets need to be identified or created. Addition of a major fish wholesaler to the venture would certainly help in this area.

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The world's agriculture is entering an era of high technology driven by the computer chip and the basic science of genetic engineering. If we think that our farms have changed in the past 20 years, I'd submit that we "haven't seen anything yet." Our new plant varieties will have genes "engineered" for disease and insect resistance; and still other genes for salt and drouth tolerance; and still other traits for high yield under irrigation. We will use variable seeding, herbicide and fertilizer rates on a given field guided by an on-board computer that will follow a seeding plan programmed on a "floppy disk," planned by the micro computer on the kitchen table. All of this will lead North Dakota farmers to an increasingly important position in U.S. agricultural production.

Space age agriculture will challenge us all in terms of keeping pace with our real world potential. Our challenge as operators of North Dakota's research establishment is the implementation and management of research programs that will keep North Dakota farmers on the leading edge of farm production technology. This means we must be prepared to compete for the best trained minds to man the scientific research laboratories of our research organization. If we continue to reach for a more agressive research program in North Dakota, our agriculture will not only survive the present period of financial stress, but we will be in a position to lead American agriculture to a period of greater future prosperity.

Agricultural Experiment Station
NORTH DAKOTA STATE UNIVERSITY
of Agriculture and Applied Science
University Station
Fargo, North Dakota 58105
Publication

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