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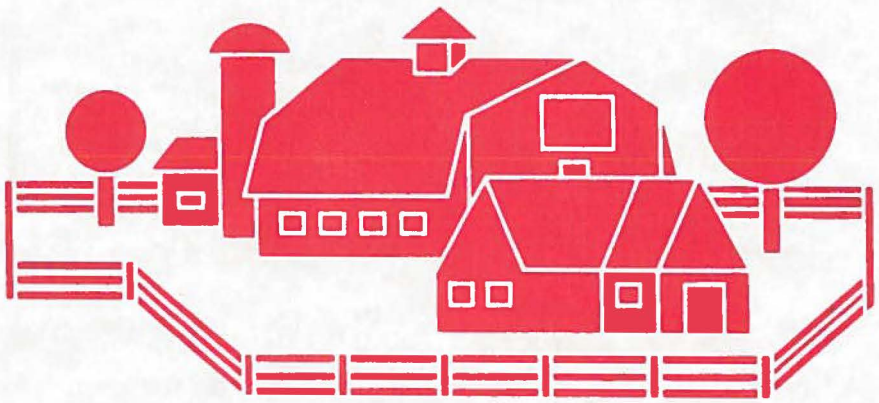
North Central Region

FARM MANAGEMENT EXTENSION WORKSHOP

FARM MANAGEMENT: CHALLENGES AND RESPONSIBILITIES FOR A NEW AGE



MAY 7-9, 1985

Chancellor Hotel, Champaign, Illinois
Hosted by: University of Illinois

Editor: Allan Lines

Produced at The Ohio State University, Columbus, Ohio in cooperation with Ohio Cooperative Extension Service with assistance from the Farm Foundation.

KEYNOTE ADDRESS

AMERICAN AGRICULTURE'S CHANGING STRUCTURE: NEW HORIZONS FOR EXTENSION EDUCATION

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Introduction

Advanced market economies have been described variously as affluent, technocratic, urban-industrial, post-industrial, and rurban, the latter recognizing the predominance of the suburb. Others refer to the United States as an information society or a service economy. Each of these terms characterizes important dimensions of modern, developed economies. These characteristics and trends and changes in the farm, rural, and total economy have important implications for agricultural research and extension as well as for the economics of public policy. Exploring some of these changes and their implications mainly for farm management extension is the major purpose of this paper. I list major changes occurring in the financial structure of agriculture and attendant cash-flow problems before examining other dimensions of farm structure and their implications for education extension.

Farm Financial Structure and Stress[1]

The farming industry was financially sound entering the 1980s. The late 1970s were mostly good years for farmers. On January 1, 1980, the debt-asset ratio was 16.3 percent for the farming industry, and ranged from 32 percent for large farms to 10 percent for the smallest farms (Table 1). By January 1, 1984, the debt-asset ratio had risen to 21 percent for the farming industry, and ranged from 38 percent for large farms to 12 percent for the smallest farms. Although rising, these debt-asset ratios are low by nonfarm business and industry standards. A debt crisis is not apparent from the data in Table 1.

Stillwater Professional Paper of the Oklahoma Agricultural Experiment Station. Comments of Daryll Ray are much appreciated.

[1] Parts of this section are from Tweeten (January 1985)

Table 1. Balance sheet of farming sector (including farm households), by value of sales class, January 1, 1980 and 1984.

Item	Large Farms		Medium Farms		Small Farms		
	SALES CLASS						
	$500,000 and over	$200,000 to $499,999	$100,000 to $199,999	$40,000 to $99,999	$20,000 to $39,999	Less than $20,000	All Farms
	Dollars per farm						
PHYSICAL ASSETS:							
Real estate							
1980	2,887,337	1,312,192	813,249	472,338	285,219	117,731	311,329
1984	2,971,146	1,350,299	836,824	485,951	293,384	111,928	322,624
Nonreal estate							
1980	931,841	358,276	225,498	135,195	75,081	29,923	86,042
1984	950,444	289,227	242,313	147,632	81,900	32,163	91,373
FINANCIAL ASSETS							
1980	245,139	62,707	32,668	19,528	13,420	7,851	16,774
1984	410,298	82,144	42,256	24,292	15,722	8,274	21,123
Total							
1980	4,114,317	1,733,175	1,071,415	627,061	373,720	155,505	414,145
1984	4,331,889	1,721,670	1,121,393	657,875	391,006	152,365	455,120
LIABILITIES:							
Real estate debt							
1980	526,248	186,860	97,781	49,644	23,770	9,643	35,184
1984	698,372	247,981	129,758	65,869	31,533	11,822	47,108
Nonreal estate debt							
1980	776,105	166,582	84,045	45,055	22,580	6,324	33,109
1984	954,004	266,231	114,326	60,108	28,255	7,153	63,483
TOTAL LIABILITIES							
1980	1,302,353	353,442	181,826	94,699	46,351	15,967	68,293
1984	1,652,376	474,212	244,084	125,976	59,788	18,975	90,591
PROPRIETORS' EQUITY							
1980	2,811,964	1,379,733	889,589	532,362	327,369	139,538	345,852
1984	2,679,513	1,247,458	877,309	531,899	331,217	133,390	344,529
Total							
1980	4,114,317	1,733,175	1,071,415	627,061	373,720	155,505	414,145
1984	4,331,889	1,721,670	1,121,393	657,875	391,006	152,365	435,120
DEBT-ASSET RATIO (%)							
1980	31.7	20.4	17.0	15.1	12.4	10.3	16.3
1984	38.1	27.5	21.8	19.1	15.3	12.5	20.8

Source: U.S. Department of Agriculture (September 1984, pp.127,131).

Neither is the farm debt crisis apparent from nominal farm income and expense accounts for 1979 and 1983 in Table 2. Net farm income, gross income less production expenses, averaged $11,749 per farm in 1983 compared to $11,237 in 1979. Adding off-farm income, total income of farm operator families from all sources averaged $29,048 in 1983 compared to $25,709 in 1979. The lowest income from all sources was $16,493 in 1983 on farms with sales of $20,000 to $39,999, a figure up from $14,531 in 1979. In 1983, farm disposable income per capita averaged 69 percent that of nonfarm families. After adjusting for the cost of living and the money income farm people forego to realize a farm way of life, the ratio of per capita income of farmers to nonfarmers in 1983 was not far out of line with a long-term equilibrium.

It is necessary to digress from aggregate income and balance sheet data to understand more fully the dimensions of the current farm debt crisis. The farm income return to assets (where income return is measured by gross income less non-asset expenses including a return to operator and family labor and management) as a percentage of assets are shown in Table 3 to range from 18.2 percent for the largest farms to negative for small farms in 1983. Small farms had considerable off-farm income, however, to offset their farm losses.

At 10 percent interest, asset returns were sufficient to cover interest payments on farms with $200,000 to $499,999 of annual sales up to a 63 percent debt-asset ratio (Table 3). Farms with sales of $100,000 to $199,999 broke even on interest payments up to a debt-asset ratio of 42 percent and farms with sales of $40,000 to $99,999 broke even only at a 17 percent or less debt-asset ratio. Smaller farms could not break even with any debt. Because of their high ratio of off-farm to farm income and low leverage, however, small farms are not a major source of financial stress.

I next calculate the incidence of farm financial stress using a cash-flow approach which accounts for income from all sources to service debt. Off-farm income plus net farm income before interest payments less a $15,000 family living allowance is expressed as a percent of assets in Table 3 and labeled the rate of cash flow to assets. If this income flow is used to service debt at 10 percent average interest paid in 1983, tolerable debt-asset ratios are shown by economic class of farms in the last column of Table 3. The ratio ranges from 18 percent for farms with sales of $20,000 to $39,999 to 80-100 percent for the very largest and smallest farms in 1983. This tolerable debt-asset ratio is applied to actual debt-asset ratios by farm size to calculate the magnitude of financial stress. By this measure, 22 percent of farms and assets and half of farm debt experienced financial stress in 1983. The incidence of financial stress, measured by the proportion of farms in each sales class with debt-asset ratios in excess of tolerable limits, was as follows:

Table 2. Per-farm income production expenses and income (including farm households) before inventory adjustment, by value of sales class, 1979 and 1983.

Item	Large Farms		Medium Farms		Small Farms		
	SALES CLASS						
	$500,000 and over	$200,000 to $499,999	$100,000 to $199,999	$40,000 to $99,999	$20,000 to $39,999	Less than $20,000	All Farms
	Dollars per farm						
Gross Farm Income							
1979	1,813,815	331,533	159,520	76,484	36,354	10,160	59,842
1983	1,835,918	347,623	170,996	84,564	40,405	12,021	68,835
Production Expenses							
1979	1,256,528	260,228	129,179	65,216	33,019	10,424	48,583
1983	1,268,333	285,389	144,315	73,910	37,459	12,302	57,097
Net Farm Income							
1979	557,324	71,305	30,342	11,268	3,335	-264	11,237
1983	567,585	62,233	26,681	10,654	2,945	-281	11,749
Off-Farm Income							
1979	22,368	11,500	9,417	9,161	11,196	16,992	14,472
1983	28,603	14,610	11,793	11,253	13,547	20,269	17,299
Total Income from Farm and Off-Farm Sources							
1979	579,692	82,805	39,759	20,429	14,531	16,728	25,709
1983	596,187	76,844	38,474	21,907	16,493	19,988	29,048

Source: U.S. Department of Agriculture (September 1984, pp. 91-93).

Table 3. Estimated rate of income and cash-flow return to assets and tolerable debt-asset ratios in 1983 by economic class of farms.

Size of Farm Annual Sales	Rate of Farm Income Return to Assets[a]	Rate of Total Cash Flow to Assets[b]	Tolerable Debt-Asset Ratio for Income Farm Only[c]	Tolerable Debt-Asset Ratio to Pay Interest Total Cash Flow[d]
($1,000)	----------	Percent	----------	
500 and over	18.2	16.6	over 100	over 100
200 to 499	6.3	6.1	63	61
100 to 199	4.2	4.1	42	41
40 to 99	1.7	2.7	17	27
20 to 39	Neg.	1.8	Neg.	18
10 to 19	Neg.	2.4	Neg.	24
5 to 9	Neg.	4.0	Neg.	40
2.5 to 4.9	Neg.	4.0	Neg.	40
Under 2.5	Neg.	8.0	Neg.	80

[a]Farm income return computed as gross income less production expenses including cost of operator labor ($10,000) and management (5 percent of gross cash farm income) divided by value of assets January 1, 1984 as computed by Melichar (November 1984, p. 13).

[b]Net farm income before interest payments plus off-farm income less $15,000 family living allowance divided by value of assets January 1, 1984.

[c]Computed from data as defined in footnote a, assuming 10 percent annual interest rate, the average interest paid in 1983.

[d]Computed from data as defined in footnote b, assuming 10 percent annual interest rate.

Size of Farm ($1,000 of Annual Sales)	Percent of Farms in Each Class Experiencing Financial Stress	Percent of All Output Accounted for by: Financial Stress Farms	All Farms
500 and over	0	.0	29
200 to 499	24	4.6	19
100 to 199	36	6.8	19
40 to 99	46	9.2	20
20 to 39	41	2.5	6
10 to 19	29	.9	3
5 to 9	14	.3	2
2.5 to 4.9	11	.1	1
under 2.5	1	.0	1
		24.4	100

Proportions ranged from near zero for the largest and smallest farms to nearly half of all farms with sales of $40,000 to $99,999. An estimated 24 percent of farm output as measured by cash income was produced by farms in financial stress in 1983. Farm financial stress is severe for one-fourth of all farms and of all farm assets and for half of all farm debt. A guess is that half of such stressed farms might fail in the next three years if current trends continue. Although the largest farms are most leveraged on the average, failure rates probably will be highest among mid-size commercial farms.

Origins of financial stress can be divided into proximate and primary sources. The major proximate cause of the farm financial crisis is interest rates. Real interest rates on Federal Land Bank mortgage loans went from a long-term average of 3 percent and a 1970s average of zero to 9 percent in 1984.

The farming industry financial structure has been built around real interest rates of 3 or 4 percent. Few enterprises on the majority of farms yield returns sufficient to cover real interest rates in 1985 double or triple the historic rates.

High real interest rates are felt through higher interest expenses and through asset depreciation. High real interest rates cause financial stress by causing farm assets, especially land, to decline in real value. The result is real wealth losses and declining collateral for loans. At issue is whether the market structure and process for valuing assets from discounted future earnings is arbitrary and capricious. Did participants in the land market behave rationally, or did speculation in the 1970s and panic in the 1980s aggravate an already difficult situation?

To explain the behavior of land prices, it is well to review briefly the theory of rational land pricing in a well-functioning land market. The land price P_t in year t is a function of current land earnings or rent, R_t, capitalized at a rate b-i' where b is the

desired real rate of return and i' is the expected real rate of increase in future earnings R.

$$P_t = R_t / (b-i')$$

As the expected real rate of increase in land earnings approaches the real discount rate b, land values become very large relative to earnings, the current rate of return becomes very small and cash-flow problems become severe for this growth stock scenario.

With this background, we analyze the behavior of land values in the eight states where prices fell most sharply in the U.S. from 1980 to 1984 (Table 4). They just happen to be Midwest states. The analysis uses Ohio as an example because that state experienced the largest price decline, 26 percent, in the nation. Similar inferences can be drawn from data for other states. At issue is whether land prices behaved rationally.

Net cash rents in Ohio increased from $62.44 per acre in 1980 to $70.71 in 1984, hence declining land prices were not explained by declining nominal land earnings. Investors' discount rates are influenced by real mortgage interest rates, which for the Federal Land Banks averaged near zero in the 1970s as noted earlier. However, investors would be expected to desire a real return of 5 percent, hence assume b=.05 for 1980. Real land rents increased an average of 1.7 percent annually in the 1960s and 6.9 percent annually in Ohio in the 1970s. If investors perceived this trend to be permanent, the capitalization rate b-i' would approach zero and the land price infinity. If b=.05, the actual land price was consistent with expectations in 1980 that future land earnings would increase at 1.3 percent per year--a conservative expectation based on past history. Land was not overpriced in Ohio in 1980 based on reasonable expectations formed from information available in the 1970s.

Of course, economic conditions and expectations changed in the 1980s. What land values were justified based on expectations in 1984? Federal Land Bank real interest rates averaged 8.1 percent in 1982 and 1983. If future real rents are expected to be constant so i'=0 but the discount rate is raised from 5 percent to 8 percent, Ohio land rents in 1984 would have justified a land price of only $884, a drop of 47 percent from the 1980 value.

Other states in Table 4 show patterns not unlike those in Ohio. Nominal net land rents increased in each state from 1980 to 1984. In 1980, each state had a lower ratio of net rent to land price than in the 1960-69 or the 1970-79 periods. But the 1980 ratio by no means reflected the capitalization rate that would have been apparent if 1970-79 trends in real land rents and real interest rates had been perceived as permanent. If b=.05, in each state the expected trend in real land rent was well below the trend that would have been justified if 1960-70 or 1970-80 trends has been extended.

Table 4. Annual rate of increase i' in real net cash rent per acre.[a]

Annual average rate of increase i' in real net rent:				Land value/acre	
	Actual		Expected if b=.05 (5%)	Actual	
State	1960-70	1970-80	1980	1980	1984
Minnesota	1.80	4.61	-.12	1,061	990
Ohio	1.72	6.94	1.28	1,678	1,245
Indiana	1.85	6.20	.34	1,833	1,477
Illinois	2.98	4.39	.79	2,013	1,692
Iowa	3.77	5.39	.18	1,811	1,396
Missouri	3.61	4.95	-.41	878	759
Nebraska[b]	6.25	3.62	-1.80	600	459
Kansas	2.32	3.80	.15	573	528

Source: U.S. Department of Agriculture (August 1984 and earlier issues).

[a]Net rent is cash rent on farms rented for cash less property taxes.

[b]Non-irrigated land.

In summary, farmland prices in the 1970s were not built on speculation that inflation would push real estate values upward without regard to land earnings. If the price structure had been a "house of cards" or "giant pyramid scheme" as many claimed, it would surely have tumbled down in the financial earthquake of the 1980s. Land values declined as new information emerged in the 1980s, but panic was not evident. Farm real estate appears to be an efficient market; participants showed good judgment in using available information to establish land prices. Expectations will change with new information, of course. The most vital new information will be decisions regarding monetary-fiscal policy and farm commodity programs. If currently high real interest rates and the slow increase or decline in land earnings persist for several more years, the potential is great for expectations to change in a manner causing continued land price reductions and decapitalization of farming assets.

Farm management extension may not be able to do much about macroeconomic policy or forecast its trajectory but it can do something to cushion impacts on farmers. Extension economists are at the vanguard of efforts to help farmers through a very trying period. Much of this has been one-on-one personal financial counseling of farmers in an age when mass communication was supposed to dominate.

Farming Industry Adaptation to Forces for Change

Technology, changing capital-labor price ratios, instability from macroeconomic and trade policies, and growing farm size requirements for an economic unit are forcing farmers to adapt or fail. Some of farmers' structural adaptations are listed below.

(1) Farms have adapted in unique ways to economic forces. Some of the most notable accommodations include off-farm employment, part-ownership and leasing of assets, incorporation, vertical coordination, and greater reliance on debt capital. A problem is that these arrangements frequently compromise the family farm. On family farming units, the operator and family ideally provide more than half of the labor, management, and equity capital and derive most of their income from farming. The following data reveal some of the departure from the family farm ideal in U.S. farming (see Tweeten, 1984):

--Over 90 percent of all farm families have at least one source of off-farm income and two-thirds of all income of farmers comes from off-farm sources.

--Part-owner operators accounted for one of eight acres operated in 1900 but for over half of all acres operated in 1978. The gains were accompanied by a decline in the full-renter class of operators -- full-tenant operators accounted for only one-tenth of land operated and of all farm operators in 1978.

--Larger than family size farms accounted for 6 percent of all farms but for nearly half of all farm output in 1978. Most of these

farms were considered "larger than family size" because they hired over 1.5 person years of labor rather than because they were nonfamily corporations. If farms with crop and livestock sales of $20,000 or less are not classified as family farms because most of their income is from nonfarm sources, then family farms accounted for only 30 percent of all farms and 45 percent of all output in 1978.

--The proportion of crop and livestock output produced under vertical coordination increased from 20 percent in 1960 to 30 percent in 1980. Most of the vertical coordination was production contracts (23 percent of farm output in 1980) rather than vertical integration (7.4 percent of farm output in 1980), the latter a much more ominous threat to the family farm structure than the former.

--Farmers have resorted to more debt financing to control assets required to form an economic farming unit, defined as an operation large enough to realize economies of size and a labor-management return comparable to that in the nonfarm sector. Real debt per farm increased 350 percent between 1960 and 1984! This rate well exceeded the real gain in assets, hence the debt-asset ratio went from 12 percent in 1960 to 21 percent in 1984. Although real volume of assets in the U.S. farming industry has remained almost unchanged for two decades, real assets per farm have increased substantially.

(2) Many of the above changes are inseparable from the pervasive substitution of capital for labor in agriculture. Because the price of capital was low relative to the price of labor, the proportion of all farm inputs accounted for by labor fell from just over 50 percent in 1940 to 14 percent in 1981. The proportion of inputs accounted for by labor was even less on large farms. Risk increases with these greater capital-labor ratios, and farmers have made adaptations to cope. Capital per worker in farming averages twice the ratio in nonfarm industry.

(3) These above adaptations by farmers to cope with economic instability and cash-flow problems while catching up in income with their city cousins irreversibly changed the countryside. One notable change has been evolution towards a dual farm economy. The U.S. commercial sector is comprised of a comparatively few large farms accounting for the majority of farm output. For example, 5 percent of all farms account for half of U.S. farms sales. The noncommercial sector, increasingly dominated by part-time small farms, accounts for a minor proportion of farm output but for most farm numbers.

Each of these sectors has accommodated to cash-flow and instability problems in its own unique way. The commercial sector thrives by exploiting market and production economies of size, by utilizing diverse sources of debt and equity capital and of earnings, and by sophisticated management and technical assistance. Large farms utilize the best products of a service economy to survive and even to prosper. In 1983, farms with sales of $500,000 or more on average earned rates of return on assets in excess of interest rates while

smaller farms on the average lost money. The small-farm sector thrives despite low returns on resources by extensive use of off-farm employment and income. Although the sector is not very efficient measured by earnings relative to opportunity cost, it provides families with a valued way of life and sizable tax advantages.

Squeezed between these sectors and at risk is the mid-sized family farm which accounts for a declining share of farm output and numbers. It is often too large and demanding of time to allow the operator to find security in off-farm employment and too small to utilize sophisticated management, marketing, and financial arrangements common among large farms. The mid-size family farm, long the backbone of American agriculture, remains unsurpassed for operational efficiency -- getting the crops in on time, overseeing farrowing, and executing cost control. But the value of operational management increasingly is being overshadowed by the value of organizational management apparent in sophisticated investment portfolio management, use of microcomputers or paid consultants to help make marketing and management decisions, and access to diverse sources of debt and equity capital on a corporate basis not subject to family farm live cycle problems. It is too strong to say that the once magnificent species known as mid-sized family farms is obsolete and soon headed for extinction -- generous parents will ensure that the heritage is passed to future generations. However, family farmers will be a continuing source of political agitation because in equilibrium the average mid-size family farm will not earn a return covering opportunity costs of resources. Even in normal economic times, family farms will engage in protest movements and political lobbying efforts to raise earnings. If large, medium, and small farms receive the same higher commodity price, receipts will not cover all costs on medium-size and small farms after land prices are bid up. In short, society will have to determine whether to let the family farm fade away under a market-centered policy or preserve the family farm by income transfers targeted to mid-size and smaller farms.

(4) If preserving family farms is deemed important, affluent service economies can afford to pursue such policies. The decision whether to follow such policies ultimately is political but the terms of debate can be informed by social and economic analysis. My results (Tweeten, 1984, p. 49) as well as those in Table 3. indicate that mid-size family farms are much more efficient (measured by opportunity resource cost per dollar of farm output) than small farms but slightly less efficient on the average than larger farms. Mid-size farms practice better soil conservation than small farms but slightly poorer conservation than large farms. Farm operators do not differ significantly in quality of life among farm sizes -- given the same income, education, and age. Having many small farms as opposed to large farms creates more social activity in nearby communities. "In strictly economic terms, however, the gain to rural communities from a system of small farms is more than offset by higher food and other commodity costs to consumers due to lower economic efficiency on small farms" (Tweeten, 1984, p.50).

In view of the importance to new and expanding operators of renting land to reduce cash-flow and financial risk problems, non-farm owners would appear to be providing a useful service. Financial consultants frequently advise operators to sell off some of their land as a way to maintain financial vitality. If farmers are to rent land to reduce cash-flow and capital acquisition problems, it follows that off-farm investors must be landlords.

Institutional Change

Rural institutes will change just as farming structure changes. Some of the changes are listed below from Project 1995 (Farm Credit Service).

Many rural banks will disappear, and most of the survivors will affiliate with larger institutions. Branch banking will expand. Those fewer financial service companies will aggressively compete for business, offering the products and services that are needed to serve their customer market.

Congress is becoming increasingly more urban and is less willing to grant agriculture and financial institutions special favors.

Marketing orders will survive, but with removal of some supply-controlling powers that may be objectionable to consumer advocates. Marketing orders will be used more frequently to promote demand expansion and in facilitating market information and price discovery.

Many cooperatives will be dissolved or forced to combine and improve operations because they will be unable to position themselves to provide for the needs and desires of the larger and more efficient farming units projected during the next decade.

Mergers of local cooperatives will continue to achieve size, volume, and ... locations in an attempt to be competitive and to serve large-volume farmers.

A service society characterized by generally high income and wealth is especially concerned about security. Food security is near the top of the list. Such a society is especially responsive to calls by farm groups to maintain the family farm and maintain reserves of idle acres or commodity stocks to guard against food shortfalls and high food prices. A service economy is almost certain to subsidize agriculture. One result is international trade problems because subsidies frequently lead to dumping of surpluses on foreign markets and to depressing international food prices. Thus, a service economy world is likely to be a protectionist economy world.

Future Directions for Extension

Thus far I have discussed structural characteristics of farming but have only peripherally touched on implications for extension.

Some such implications discussed in relation to structural developments are listed below.

Part-Time Farmers

Given that part-time farmers will dominate farm numbers in the future, serious questions arise regarding how to more effectively work with them in extension programs. Their time is especially limited. Many have much to learn but the payoff is often less than on larger farms because fewer resources and outputs are involved. Extension personnel will need to "walk the extra mile" to reach them at off hours and in unique ways with carefully crafted and focused information of recognized benefit to the part-time farmer's business.

The Rising Role of Women

Female operators now account for 5 percent of all farm operators, a higher proportion than black operators are of all farm operators. But female operators are only the tip of the iceburg. Women now share in nearly all phases of farm operation and management. As women take a large role in making decisions on farms, it will become more and more important for extension to involve them in programs to improve farm and financial management.

Multi-family enterprises will become more common. More professional attention will be devoted to family inter-relationships to better utilize family skills and reduce family tension. Skilled personnel management and written management plans will be common, often provided by outside sources ("Production Agriculture", Farm Credit Service, p. 4).

Organizational versus Operational Management

It was noted earlier that one of the major structural changes has been the rise in importance of organizational relative to operational management. Operational management requires not only personal touch in husbandry but also technical skills in animal and plant science. Organizational management on the other hand requires farm and financial management skills. If organizational management is the major problem operators face in competing with large industrial type farms, then extension must play a key role in raising organizational management capabilities if family farms are to compete with large farms for survival.

Marketing and financial skills increasingly will determine the success of farming and increase demand for financial accounting, tax preparation, advisory services, and financial and business services.

Firms that aggressively assist farmers with marketing information and planning services will be an integral part of agriculture in a decade. How will extension interface with such firms?

Human Resources at Risk

A typical justification for farm commodity programs is that farmers have to put up with undue risk. Such justification for programs may have questionable validity (we don't help speculators in the futures market), but there are obviously risk-averse farmers who find the ups and downs of farming traumatic. Perhaps it is time to advise potential operators to stay out of the game if they are unduly bothered by risk.

On the whole, U.S. agriculture must continue to plan for a difficult future. Nevertheless, there will still be ample opportunities for innovative and progressive operators in the years ahead. In a well functioning market, land prices will adjust until adequate-sized, well-managed farms are just breaking even. It follows that other farms will be losing money on the average. Although farmers can cope with instability, it is important for them to recognize than on the average profit margins for mid-size farms are likely to be small in the future. But there will be favorable rewards for good management. Farmers need to be aware that it is "normal" for profit margins to be narrow and unstable.

Agriculture today is buffeted not only be forces of nature but also by unpredictable political actions associated with macroeconomic policy and international trade policy. Risks are increasing in agriculture at a time when many farmers are less able to absorb shocks. Data show that few farmers make use of the risk-shifting devices such as commodity hedging and crop insurance. Can extension do a better job of educating farmers to shift risk? A high-risk agriculture provides economic rents to those who manage risk to their advantage.

The Extension Service will make greater use of "expert systems" and "artificial intelligence" to facilitate management of vast data. Teleconferencing, whereby employees in different geographical locations can "meet" using video communications, will be used increasingly. In a decade this technology will be more cost-effective, practical, and commonly used. However, some personal contacts with clientele will be a cost-effective way to inject farm management expertise into farm information networks. The explosion in number of desk top microcomputers, data base systems, and local area networks will accelerate data retrieval and exchange. "Information overload" will be a serious problem. Farm managers bombarded with information will have to be very discerning in what to use and reject. Competition will be intense among information providers. This will place a premium on having pointed, relevant, reliable information systems that respond to the perceived needs of managers. Business systems for both hardware and software will become obsolete quickly. Each new advance in hardware and software will provide the opportunity to deliver a wider range of more relevant services to consumers. Successful organizations will recognize the need to improve and update systems as well as when to retire systems outdated by new technology (Business Technology, pp. 2-5).

Summary and Conclusions

The structure of agriculture has undergone a metamorphosis in recent decades in response to technological, social, and economic forces. Notable characteristics of farming include high capital-labor ratios, a strong net debtor position, and heavy reliance on exports. The result has been severe financial problems in the face of high real interest and exchange rates. The cause was mainly huge structural (full employment) federal deficits, but farm and financial management expertise from the extension service has played a critical role in controlling damage to the farming industry.

Other changes in the farming industry influence the way the extension service operates:

(1) Women play a large role in the operation and management of arms. How best can they be integrated into extension farm management programs?

(2) Part-time farmers are a growing portion of all farmers. They have been difficult to reach. Can extension come up with innovative proposals for outreach?

(3) The mid-size family farm is in a competitive struggle for survival, its principal competitor being larger farms with sophisticated organization management. The family farm may take pride in operational management but will require help from farm and financial management extension to build up organizational management required to compete in today's economy.

(4) Ability to deal with risk often separates successful from unsuccessful operators. Perhaps potential operators who are risk averse should be encouraged to look for another line of work. Those who do enter will need plenty of help from extension to cope.

(5) Farmers have entered the information age with the rest of us. They suffer information overload just like everyone else. Coordination among farm management extension personnel to develop standardized, nonredundant, information delivery systems remains an elusive goal. Working with farm microcomputer clubs and other user groups can reduce costs of getting more sophisticated management approaches in the hands of farmers.

(6) Agribusiness firms and institutions serving farmers are changing. Privatization is becoming more widespread, and commodity programs likely will become more market orientated. Private and cooperative input supply and product marketing firms will become fewer and farther between. Economies of size will permit more of them to provide marketing and management services for farmers. Plenty of opportunities will remain for extension, including wholesaling of marketing and management strategies and information to input supply and marketing firms as well as to farmers.

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