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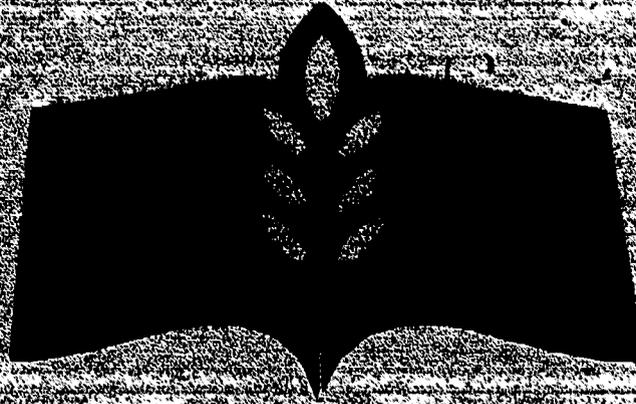
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**ABSTRACT**

Although rural education is entering an era of opportunity in terms of both youth and adult needs, the capacity of rural areas to provide needed educational services may be diminished due to rapid economic and social change, particularly in agriculture. Three federal policies operating over the past two decades have created an unfavorable environment for agriculture. Further factors such as adverse weather brought many farms and ranches to a point that made them vulnerable to those policies' impacts. Total farm debt rose to over \$216 billion in 1983 before declining somewhat in 1984-1985. Unless something is done, more than one third of the farmers will move to insolvency, inflicting serious damage upon the rural community. Policy alternatives developed in 1985 could have an effect on the relationship of commodity prices to land values and capital to labor. As more farms liquidate, the demand for adult education and expanded programs for youth will increase, while available education funds will decrease due to fewer property tax revenues and diminished federal funding caused by out-migration. New education delivery strategies must be formulated as these shifts occur. Statistical information is displayed in graphs and tables throughout the text. (PM)

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IMPLICATIONS FOR RURAL AMERICA

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# National Rural Education Forum

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THE CHANGING RURAL ECONOMY:  
IMPLICATIONS FOR RURAL AMERICA

Neil E. Hari

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The Changing Rural Economy: Implications  
For Rural America\*

--Neil E. Harl\*\*

"Today is not yesterday. We ourselves change. How, then, can our works and thoughts, if they are always to be the fittest, continue always the same? Change, indeed, is painful, yet ever needful; and if memory have its force and worth, so also has hope."

--Thomas Carlyle

Only rarely has rural education in the United States faced the challenges inherent in today's economic environment. Quite clearly, rural education in this country is entering an era of enormous opportunity in terms of educational needs of individuals, both youth and adult. At the same time, the capacity of rural areas to provide the educational services needed may be significantly diminished. A major challenge for school administrators, teachers, taxpayers, concerned citizens and governments is how to finance and organize to meet the educational needs for the last decade and a half of this century. In addressing that challenge, the foundation will be laid for rural education well into the twenty-first century.

### I. The General Setting

Rapid economic and social change in agriculture is not a new phenomenon. Since the beginning of recorded history, agriculture has been adjusting to conditions of greater efficiency. As a consequence, the percentage of the population and the percentage of the capital stock needed to produce needed food and fiber products has declined steadily. The decline has been

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especially marked since the 1930's as developments in--(1) plant and animal breeding and (2) machinery and chemical usage, and improvements in the level of management ability of farmers, have combined to cause an acceleration in the movement of labor out of the sector. Agriculture has truly been a development sector as the industry has "downsized" itself in relative terms, freeing labor and capital for use in the non-farm economy. The development occurring in agriculture has been enormously beneficial to the general economy, permitting the allocation of resources to a burgeoning service sector including space exploration and medical and scientific research, to mention only the more obvious growth sectors of the non-farm economy, and to high technology manufacturing and product development. Had agriculture been frozen by the implementation of highly protective policies in the condition it was in as of the early 1920's, at the beginning of two decades of severe economic trauma for agriculture, society could have been denied the resources needed to support the enormous development effort of the past half century.

However, what is now occurring in agriculture in terms of firms failing because equity is exhausted or operating credit is denied, has little to do with efficiency and does not represent a continuation of the long-term trend toward greater efficiency in agriculture. In fact, the firms now at risk are some of the most efficient in the industry and are operating at or near the minimum point on the long-term average total cost curve except for one factor: the amount of debt held is excessive as measured by the economic environment of the 1980's. Those who survive are not necessarily the most efficient and in fact tend to be the older, more cautious farmers with smaller operations and little or not debt.<sup>1</sup> Thus, the phenomenon cuts across farm and ranch firms in a highly arbitrary manner.

The data are making it increasingly clear that agriculture is going through the most wrenching financial adjustment in a half century. Not since

the 1930's have issues of debtor distress gripped rural America as they have in the 1980's. One need only look to our farms and rural communities for proof.

- In several agricultural states, land values have dropped by one-half or more since 1981, cutting enormous amounts of collateral value and wealth from balance sheets.

- The numbers of farm foreclosures, forfeitures of land contracts and defaults on notes have reached levels not seen since the days of the Great Depression.

- The level of emotional trauma being suffered by indebted farmers and small businesspersons is a tragedy of awesome proportions.

The scope of the problem is much broader than farms. Although economic stress gained a foothold among the more heavily indebted farmers, the phenomenon has escalated rapidly so that today it threatens to engulf the entire rural community. In fact, few will escape unscathed. Many lenders are struggling to survive. Suppliers have taken and will continue to take enormous hits as unsecured creditors. Main street businesses have felt the ravages of this cancer that gnaws at the very structure of rural communities.

The data make it clear that the problem is almost national in scope. The severity varies from area to area, and the upper midwest has suffered the most from the ravages of this economic downturn, but the blight of agricultural stress virtually blankets the country. In many ways, it's been like a war, against an invisible enemy. And that enemy is the cost of servicing a huge debt load with interest rates at unprecedented levels in real terms.

#### Why the problem exists

It would be an unwise use of time to focus a great deal of attention on who is responsible for the plight of rural communities. Finger pointing and

accusations of culpability will do little to remedy the situation. But in choosing remedial policy instruments, it is important to recognize the roots of the problem. Two principal categories of forces are responsible for much of the economic woes of agriculture--(1) three major federal policies that created an economic environment highly unfavorable for agriculture and other sectors that are both capital intensive and export sensitive and (2) forces operating at the farm or ranch level that moved some firms into a "window of vulnerability." Once within the window of vulnerability, the unfavorable economic environment was sufficient to move the firms inexorably toward insolvency.

Federal policies. As noted, three federal policies operating over nearly two decades created an economic environment that, in the 1980's has been highly unfavorable for agriculture. Although agriculture is not alone in being impacted adversely, the characteristics of a relatively low cash rate of return for many farm assets, a high level of capital intensity for U.S. agriculture and sensitivity to changes in export supply and demand conditions in international farm commodity markets have magnified the impacts upon farm firms.

- The first federal policy contributing to the unfavorable economic environment for agriculture was the set of policies over five different federal administrations that came to treat inflation as an expected part of economic life. The relatively high rate of inflation from the budget strains of the Vietnam conflict was compounded by the effects of rapid increases in energy costs after 1972. By the late 1970's, the persistence of inflation in the economy had led to widespread efforts at accommodation. The most common strategy for accommodating inflation was to index one's economic fortunes to the rate of inflation. Thus, social security benefits and taxes were indexed,

federal civil service compensation levels were indexed and many labor union contracts were indexed as to basic compensation levels. Beginning in 1985, the entire income tax system was indexed.

Farmers, unable to index with the same degree of effectiveness, in some instances accelerated the purchase of capital assets in the face of consistent increases in the cost of machinery and equipment and in the price of land. The differential effect of the two responses to inflation became painfully clear in the early 1980's. Indexing is a benign strategy in an era of declining rates of inflation, Anticipating the purchase of capital assets is not benign and leaves the purchaser with financial commitments to be met.

The experience of the inflationary era of the 1960's and 1970's makes it clear that an enormous price is paid when expectations about conditions that should be viewed as aberrational in nature harden into a belief that the condition is permanent.

- The second important factor was the decision by the Federal Reserve Board in October of 1979 to wring inflation out of the United States economy.<sup>2</sup> The action, to limit the supply of credit, led almost immediately to high nominal rates of interest which eventually served to dampen the level of economic activity. In the first half of the 1980's, inflation dropped from the 13 to 15 percent range to three to four percent. Thus, the gains from inflation, that were substantial during the decade of 1970's were dramatically reduced, leaving farm debt to be serviced largely from current income.

The third significant factor contributing to an unfavorable economic environment for agriculture in the 1980's appears to have been enactment of the Economic Recovery Tax Act of 1981 that cut federal revenues so sharply as to assure massive budget deficits.<sup>3</sup> The 1981 legislation was enacted with the realization that an estimated \$872 billion in revenue would be cut from

the federal tax system through fiscal year 1986.<sup>4</sup> Cuts of that magnitude assured that the outcome would be massive federal budget deficits.

The result of these policies has been an economic environment of low inflation and record setting real interest rates as tight credit and strong private sector demand for capital have boosted interest rates. For agriculture, the result has been--(1) a strong dollar that continues to set records against other currencies and that has cost U.S. agriculture dearly in terms of exports of farm commodities, (2) high interest rates that have boosted the cost of production for indebted farmers to high levels and (3) falling land values as potential investors have been confronted with the reality of 10 to 12 percent real interest rates and the reassessment of land as an alternative investment in the economic environment of the 1980's.

#### Factors contributing to farmer vulnerability

In the economic environment of the last four or five years, any factor that made a farmer vulnerable by increasing the debt load was sufficient to assure economic difficulty. It was the resulting "window of vulnerability" that set the stage for financial stress.

- Adverse weather conditions in some areas with consequent loss of part or all of a crop have been costly to farmers affected. For many areas, agriculture has experienced an unusual sequence of adverse weather conditions beginning in 1980, both too wet and too dry.

- Beginning farmers are almost always vulnerable the first several years of operation. Part of the uniqueness of family farms is that families accumulate most of the equity capital for the firm from earnings. The result is economic vulnerability during the first several years of life of farm firms. That has certainly been the case in the 1980's. This factor alone assures that we are in danger of losing a generation of young farmers.

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- Losses in cattle feeding in the 1970's and even losses in hog production in more recent time have increased debt loads and, thus, vulnerability. For about half of the months over the last five years, hog production has been at a loss. That is unprecedented in this country. Losses in cow-calf enterprises in recent years have been perhaps less visible but no less devastating.

- Expansion to bring a family member into the operation has increased debt loads. The economics of farming in recent years has encouraged the continuation of family operations with ownership and management transferred to the next generation.

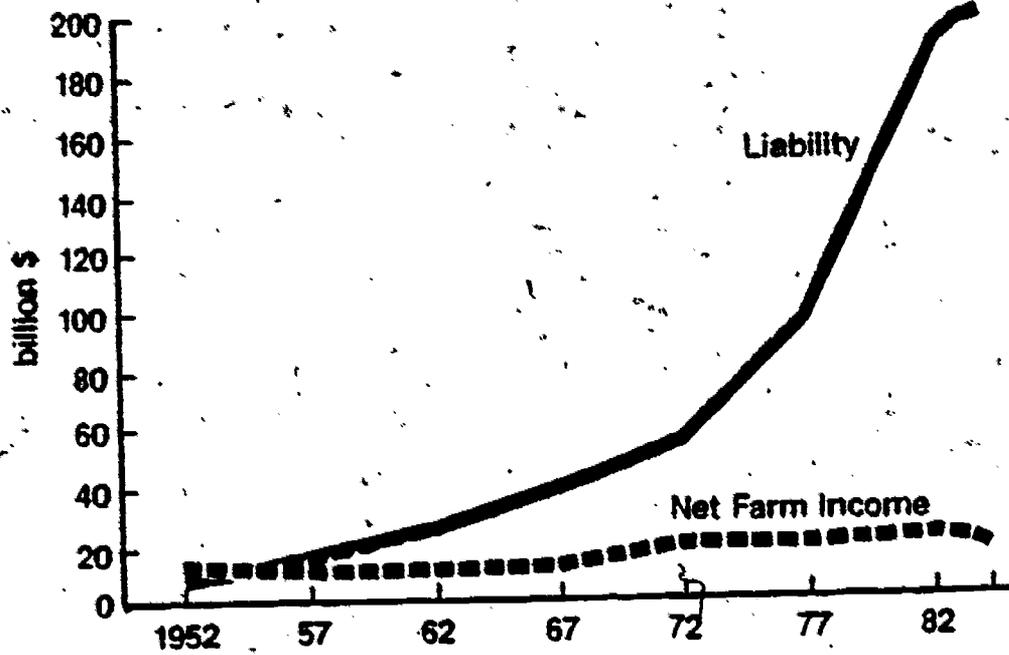
- Major purchases of land, machinery or livestock facilities in the late 1970's and early 1980's were factors increasing economic vulnerability.

Any event or series of events that placed a farmer in the window of vulnerability has proved to be economically devastating. Once in the window of vulnerability, high real interest rates have moved the firm toward insolvency at a breathtaking pace.

#### Amount and distribution of debt

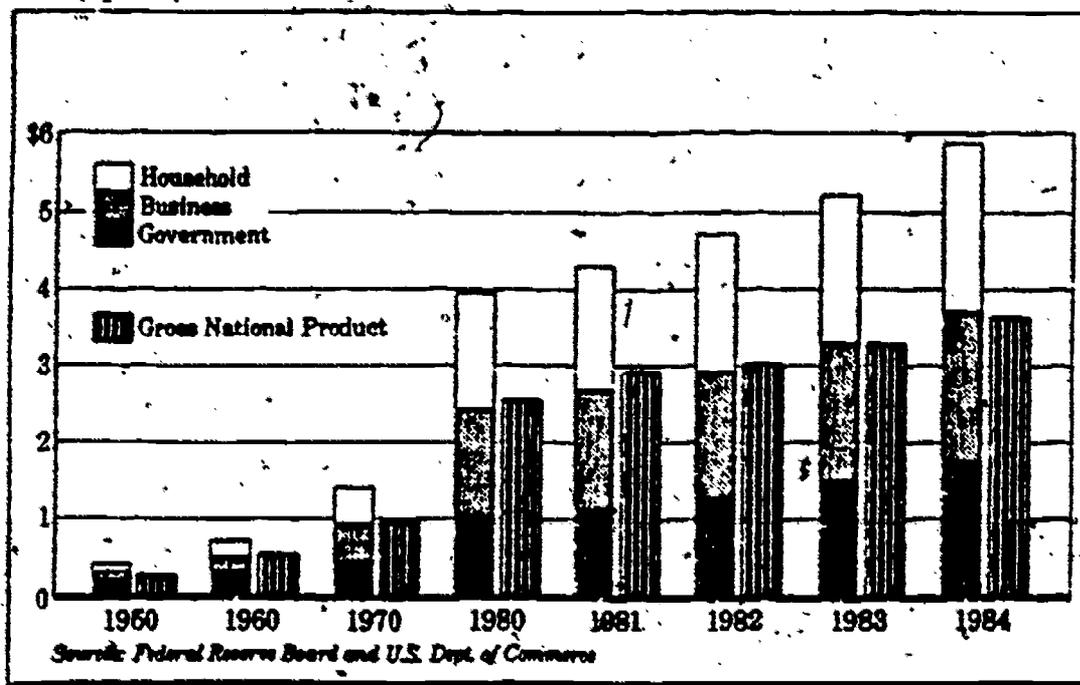
The amount of debt in U.S. agriculture has increased dramatically since 1950 as shown in Figure 1. Total farm debt outstanding in 1950 totalled \$11.2 billion in 1950, rising to over \$216 billion nationally in 1983, before declining in 1984 and 1985 as some debt has been paid off or discharged otherwise and as the economic environment has discouraged the contracting of new debt. Debt as a percentage of net farm income stood at 92 percent in 1950 but rose to 1350 percent of net farm income in 1983.

Figure 1. Net Farm Income and Liabilities.



The increase in personal, business and federal government debt has been similar as shown in Figure 2.

Figure 2. National, Personal and Business Debt (in trillions of dollars).



Never in the history of agriculture have problems of debtor distress occurred at a time when there was greater variation among farmers.<sup>5</sup> Moreover, the financial position of roughly one-half of the farmers is deteriorating. As of January, 1984, approximately 19 percent of the farmers nationally holding 22 percent of the farm assets were responsible for 63 percent of the farm debt as shown in Table 1. Two-thirds of approximately \$215 billion of farm debt nationally was held by borrowers slipping toward insolvency.

Table 1. Financial Condition of U.S. Farmers by Debt-to-Asset Ratio, January, 1984.

	<u>Debt-to-Asset Ratio</u>				All farms
	0-10	11-40	41-70	Over 70	
Operators (percent)	58	24	11	8	100
Assets (percent)	47	32	14	8	100
Debt (percent)	5	32	32	31	100

Source: Federal Reserve Bulletin, January, 1984.

In general, it has been believed that most farmers with a debt-to-asset ratio above 40 percent would be unable to make their interest payments when due in a setting of real interest rates prevalent in the mid-1980's and the rates of return for agricultural assets common in the mid-1980's. In a December, 1984, survey, the percentage of farmers in the Central states with debt-to-asset ratios above 40 percent had risen to 42.5 percent of all farmers as indicated in Table 2. For the country as a whole, 28.7 percent of the farmers, holding 65.1 percent of the farm debt, were in the over 40 percent debt-to-asset category as of mid-December, 1984. A 1985 survey in North Dakota as of January, 1985, indicated that 36 percent of the farmers had debt-to-asset

ratios over 40 percent, held 37 percent of the assets and accounted for 74 percent of the debt.<sup>6</sup>

Table 2. Financial Condition of U.S. Farmers by Debt-to-Asset Ratio, December, 1984.

	Debt-to-Asset Ratio			
	0-10	11-40	41-70	Over 70
Central	31.5	26	21.5	21
South	44.9	30.3	13.9	10.9
East	53.1	26.7	13.9	6.3
West	36.9	36.6	16.7	9.8
U.S. Operators	37.9	28.8	17.9	15.4
Debt	2.7	32.3	34.9	30.3

Source: Farm Journal Survey, December, 1984.

Table 3 shows the Iowa data as of January, 1984. Over one-third of the farmers in Iowa, averaging 59 years of age, had little or no debt as of January, 1984. Roughly another third had significant amounts of debt but, in most instances, it was thought that group would be able to stabilize their financial condition although the upper quarter or so of that group were encountering financial stress. Members of the remaining group, 23 percent of the total, were severely impacted and were sliding toward insolvency.

Table 3. Financial Condition of Sample Iowa Farmers by 1984 Debt-to-Asset Ratio, January, 1984.

	Debt-to-Asset Ratio					All Farms
	0-10	11-40	41-70	71-100	Over 100	
Operators (percent)	38	37	19	4	1	
Assets (percent)	31	42	24	3	1	
Debt (percent)	4	39	47	8	2	
Average age	59	53	47	45	47	54
Average assets per farm	\$503,000	\$694,000	\$745,000	\$470,000	\$217,000	\$615,000
Average debt per farm	\$11,000	\$160,000	\$383,000	\$375,000	\$262,000	\$156,000
Average equity per farm	\$492,000	\$534,000	\$362,000	\$95,000	-\$45,000	\$459,000
Acres owned (average)	233	298	271	172	131	261
Acres rented (average)	121	189	306	382	198	193

Source: 1985 Iowa Farm Finance Survey, Iowa Dep't of Agriculture, Iowa State University and Iowa Crop and Livestock Reporting Service.

The more recent balance sheet data, as shown in Tables 4 and 5, indicate that a movement has occurred of borrowers in the 41-70 percent category into the over 70 percent group. Moreover, a significant number from the 11-40 percent category have moved into the 41-70 percent group. A comparison of Tables 3 and 5 shows that, on the average, the sample farmers in the 71-100 percent debt-to-asset ratio category on January 1, 1984, lost \$84,000 (88.4 percent) of their equity in 1984. The rate of deterioration in financial condition for the more heavily indebted farmers has been great. Even those in the 1-10 percent debt-to-asset category on January 1, 1984, lost 20.1 percent of their equity in 1984.

Table 4. Distribution of Operators, Assets, and Debts of Sample Farmers, by 1985 Debt-to-Asset Ratio, January, 1985.

	Debt-to-Asset Ratio					All Farms
	0-10	11-40	41-70	71-100	Over 100	
Operators (percent)	35	32	21	7	4	
Assets (percent)	29	34	28	7	2	
Debt (percent)	2	25	48	17	8	

Source: 1985 Iowa Farm Finance Survey, Iowa Dep't of Agriculture, Iowa State University and Iowa Crop and Livestock Reporting Service.

Table 5. Financial Condition of Sample Iowa Farmers by 1984 Debt-to-Asset Ratio, January, 1985.

	Debt-to-Asset Ratio					All Farms
	0-10	11-40	41-70	71-100	Over 100	
Average assets per farm	\$411,000	\$578,000	\$625,000	\$347,000	\$171,000	\$506,000
Average debt per farm	\$18,000	\$170,000	\$388,000	\$336,000	\$244,000	\$161,000
Average equity per farm	\$393,000	\$408,000	\$237,000	\$11,000	-\$73,000	\$345,000
Average loss of equity in 1984	-20.1%	-23.6%	-34.5%	-88.4%		

Source: 1985 Iowa Farm Finance Survey, Iowa Dep't of Agriculture, Iowa State University and Iowa Crop and Livestock Reporting Service. \*

The U.S. Department of Agriculture estimates that, as of January, 1985, 23.7 percent of the farm debt was owed by farms with debt-to-asset ratios over 70 percent with an additional 32.5 percent owned by those with debt-to-asset ratios of 40 to 70 percent.<sup>7</sup> Thus, 56.2 percent of the debt was held by individuals with sufficient indebtedness relative to assets to assure that, in

most instances, the farmers were moving toward insolvency. Moreover, the national data indicate that the largest farms have the highest proportion of debt in the highly or very highly leveraged categories.<sup>8</sup>

Lenders holding land as collateral, principally the Federal Land Bank and sellers under land contract, report sharply rising default rates. The willingness of short and intermediate term lenders to provide credit needed to keep land payments current appears to be diminishing rapidly. Further increases in delinquency rates on land loans is anticipated.

Unless something dramatic is done, or circumstances change, more than one-third of the farmers nationally will move to insolvency, taking down their lenders, their suppliers and other merchants, and inflicting incalculable damage upon the fabric of rural communities. Discharged indebtedness goes ricocheting through local communities, laying waste, with the unsecured creditors taking the greatest hit. However, with the weakness in land and machinery markets, even secured creditors are, in reality, only partially secured as collateral values have slipped below loan balances.

#### Effects of price and income policies

It is in this general setting of high real interest rates, a strong dollar (against other currencies) and an enormous debt load for the agricultural sector that discussion and debate on the 1985 farm bill is taking place. With agriculture fully integrated into the national and international economies, the sector does not enjoy the luxury of specifying the economic environment in any era. Yet agriculture is caught in 1985 in circumstances that provide little opportunity for maneuvering under alternative policies.

Quite clearly, U.S. agriculture in 1985 faces clear-cut choices as to its future trajectory. With the cooperation of farmers, consumers and taxpayers, agriculture could move toward a program of supply management, reduced output

and higher prices. That trajectory would involve downsizing agriculture by 30 to 40 percent over time and would bring modestly higher food prices. In the alternative, agriculture could move toward a more competitive position in terms of international trade, in output, lower prices, full use of resources and lower food costs for consumers.

The latter policy alternative has a certain appeal especially to those who favor a market-oriented farm policy. Yet the strength of the dollar and the amount and distribution of farm debt assure that any movement toward internationally competitive commodity prices must be measured and related to progress in bringing down the value of the dollar and in stabilizing the farm debt situation. Agriculture simply has been sufficiently weakened to make rapid adjustments impossible without massive economic damage to the sector.

If price and income support policies were to be sufficiently favorable to farmers to solve the economic problems of the farmers with the greatest debt, serious problems of pricing U.S. commodities out of world markets and problems of production control would likely emerge. Therefore, it is unlikely that the debt problem can be solved completely by adjusting price support levels on farm commodities.

Yet the decisions made by the Congress relative to price and income supports in the 1985 farm bill promise to impact very substantially the resolution of the debt problem. A reduction of farm income would increase the number of farmers in financial difficulty and speed up the rate at which they would reach insolvency. Under present conditions, the calculated interest short-fall on agricultural loans for the United States is approximately \$2.2 billion. Reducing the rate of return by one-third (from six percent to four percent) and increasing the interest rate by two percentage points (from an

average of 11 percent to 13 percent) on farm loans would quadruple the cost for solving the farm debt problem.

Relationship of commodity prices to land values

Lower farm commodity prices would be expected to lead to a reduction of the price at which land is economically supportable. That would be the case at least if potential investors had a permanent expectation of lower land values.

Iowa State University projections under an assumption of a 140 bushel corn yield produce the figures shown in Table 6.

Table 6. Estimated land values based on income capitalization for high grade land assuming continuous corn.

Corn price	Net income	Capitalization Rate			
		0.06	0.08	0.10	0.12
2.25	54.05	900.83	675.63	540.50	450.42
2.50	89.05	1484.17	1113.13	890.50	742.08
2.75	124.05	2067.50	1550.63	1240.50	1033.75
3.00	159.05	2650.83	1988.13	1590.50	1325.42

Thus, with an expected corn price of \$3.00, and a capitalization rate of eight percent, land would be economically supportable at \$1988 per acre. If the expected price for corn were to decline to \$2.25, based on income capitalization and under the same assumptions, the economically supportable price would be about \$675 per acre. It is indeed clear that land prices are linked to expected levels of commodity prices.

### Relationship of capital to labor

A subtle but powerful shift in the relative costs of labor and capital has occurred in the past decade that has important implications for rural education. In the 1970's and before, but particularly in the decade of the 1970's, the real cost of capital (the stated interest rate for borrowing less the rate of inflation) was low, on the order of four percent or less, and in several quarters in the 1970's the real cost of capital was negative. Labor, on the other hand, was perceived as high and rising in cost. The consequence was a substitution of capital for labor as larger capacity equipment was purchased and greater use was made of manufactured inputs.

By the mid-1980's, the relationship of capital and labor had changed dramatically. The real cost of capital had risen to 10 to 12 percent as the rate of inflation had declined and interest rates for farm lending had remained in the 12 to 14 percent range. At the same time, the cost of labor was perceived as plateauing in cost if not declining. The expected outcome is a substitution of labor for capital. The outcome of the changed relationship of capital and labor in cost terms is likely to be greater use of labor in agriculture, a slowing in the trend toward fewer and larger farms and a shift toward less costly machinery and equipment.

### Possible scenarios

Undoubtedly the most crucial question in framing solutions to problems of farm debtor distress is what can be expected over the next two to five years with respect to--(1) interest rates, (2) farm income and (3) strength of the general economy both domestically and world wide. Substantial uncertainty surrounds each of those variables. For purposes of discussion, four scenarios are identified.

1. Continued high real interest rates, possibly rising over the near term, with stable or slightly lower farm commodity prices. At some point, high interest rates will choke off economic activity in the general economy with a recession resulting. A decline in private sector borrowing should weaken interest rates.

2. The value of the U.S. dollar relative to other currencies, presently high by historical standards, although down from late February, 1985, could decline sharply because of the effects of the record-setting trade deficit (expected to total \$130 to \$150 billion for the 1984-85 fiscal year and could climb to \$160 billion in the 1985-86 fiscal year) and a decline in interest rates domestically. The result presumably would be increased exports with a positive effect on farm income.

3. The Federal Reserve, concerned about economic pressure on Third World debtor nations (over \$900 billion owed, much of the total to U.S. financial institutions) and pressure on some sectors of the U.S. economy might relax credit controls with an increase in the money supply and resulting higher rates of inflation. After some lag, farmland values would likely be affected. However, it is unclear in a world of deregulated financial markets what the impact would be on real interest rates.

4. If high and rising interest rates cause Third World nations to default on their debt obligations, an international liquidity crisis of major proportions could occur. The effects would be highly destabilizing within and without the United States. Obviously, every effort will be made to avoid such a financial catastrophe. The probability of such a default would seem to be quite low.

### Global implications

Efforts to make U.S. agriculture more competitive on international commodity markets should be evaluated also in terms of likely impacts on other countries producing agricultural products, particularly Third World countries and on importing nations and consumers. An aggressive program to move larger quantities of U.S. agricultural products into international trade channels could be profoundly destabilizing for some Third World exporters of agricultural commodities. Such a move could, for example, exacerbate the problems of Third World Countries in meeting commitments to service their large and growing debt burden. Quite clearly, the analysis of the effects of changes in U.S. farm policy should be global in scope and comprehensive in nature with emphasis on general equilibrium outcomes as well as on the U.S. economy. The \$140 to 150 billion trade deficit is a hidden form of foreign aid. Unfortunately, only about 15 percent of the U.S. trade deficit was with Third World debtor nations in 1984. In 1980, the U.S. ran a small surplus (\$293 million) with the same debtor nations.<sup>9</sup>

### II. Implications for Rural Education

Economic and social change has been the dominant force affecting the structure of rural education this century. This is the supply-side of rural education--including the delivery and financing of education in rural areas. Economic and social change has had some, but probably less dramatic, influence on the nature and content of rural area education. This is the demand-side of rural education. The wrenching effects of change now being visited upon agriculture and rural areas promise to impact substantially both the supply and demand aspects of rural education.

### Demand for education in rural areas

Certainly one of the most significant shifts in the demand for education in rural areas over the next five years, and possibly over the next ten years, is adult education for the one-third or more of the farmers nationally who will be unable to survive financially unless--(1) farm incomes rise substantially, (2) real interest rates decline significantly or (3) major public-sector intervention efforts are implemented to stabilize the agricultural sector. Of those three possibilities, the latter appears to be the most probable. Although a substantial number of those leaving farming for financial reasons and their spouses will undoubtedly not receive additional vocational or technical education, the employment opportunities will be greater and the compensation levels higher for those with marketable skills in the non-farm world.

In an Iowa State University study of those leaving farming for financial reasons in 1984, 12.8 percent of the husbands ended up working on a local farm, 25.5 percent were employed in a local agri-business firm, 31.7 percent were working locally in a non-agriculturally related job, 14.9 percent were unemployed and 2.3 percent were working "out of town."<sup>10</sup> With respect to the spouse's employment status, 43.7 percent were in the same job outside the home the spouse had while they were farming, 35.1 percent were not working after the shift in employment and did not work outside the home while they were farming, 5.8 percent were not working after the shift but did before and 4.7 percent were working after the shift but did not before.<sup>11</sup> In all likelihood, as the pace of off-farm movement quickens, the employment opportunities locally will be fewer in number with the result that the proportion leaving the local community will increase. A relevant question that will become even more relevant as the numbers leaving the local community

increase is whether additional adult education should be provided by the local community or by the receiving community. This question is more important the greater the amount of local subsidy in the educational effort. This is, of course, a strong argument for adequate state and federal funding of such programs. Because of the uncertainty inherent in moving out of the local community without marketable skills, a strong argument can be made that vocationally oriented adult education programs should be provided in the local community or within commuting distance. Certainly this situation will create important opportunities for post-high school vocational-technical institutions to increase their level of service.

As shown in Table 7,<sup>12</sup> 57.6 percent of those leaving farming in 1984

Table 7. Farmer Age by Current Residence Status.

Age	In Same House	Moved to Nearby Town or Rural Residence	Moved out of County, In State	Moved Out of State	Row Totals
< 35	39 (8.32)	38 (8.10)	13 (2.77)	19 (4.05)	110 (23.5)
35-44	72 (15.35)	48 (10.23)	16 (3.41)	24 (5.12)	160 (34.1)
45-54	71 (15.14)	26 (5.54)	12 (2.56)	11 (2.35)	121 (25.8)
55-65	46 (9.81)	15 (3.20)	5 (1.07)	6 (1.28)	72 (15.4)
> 65	2 (.43)	1 (.21)	1 (.21)	2 (.43)	6 (1.3)
Total	230 (49.04)	128 (27.29)	47 (10.02)	62 (13.22)	
Frequency (percentage)				469 (100.00)	
Source: Otto (10).					

for financial reasons were under the age of 45. Only 16.7 percent were over age 54. Thus, a high percentage of the individuals involved are sufficiently young for additional educational investment to be economically justified in terms of probable years in the work force.

The massive adjustment taking place in agriculture will also affect the demand for educational services for adults remaining in farming. The economic environment for at least the rest of this century is likely to place heavy emphasis upon the need for--(1) high levels of management skills with an understanding of risk management and international demand and supply factors affecting agricultural commodities; (2) a thorough knowledge of the cost structure of agricultural production; (3) financial management with close attention to the consequences of wide swings in interest rates, rates of inflation and rates of return on farm assets; (4) financing arrangements for the farm business in the face of potential instability of sources of debt and equity capital; (5) utilization of non-farm sourced equity capital; and (6) marketing skills as progressively less price protection is provided by government price and income support programs. The current financial travail is likely to call into question the historic pattern of financing family farm operations with owner-accumulated equity capital which assures economic vulnerability for at least the first decade of existence of firms and means that younger operators are likely to be disproportionately impacted by periods of protracted economic adversity. As agriculture emerges from the troubled 1980's, the use of borrowed capital is almost certain to be viewed more critically than was the case in the 1970's with larger built-in margins for financial safety in financial planning. Hopefully, what will emerge will be systems of long-term rational financial management with the parameters of the financial management systems more independent of the current economic

environment than has been the case in recent decades. Clearly, the educational system bears a responsibility to see that decision makers are fully apprised of bounds of decision making propriety in a world of economic uncertainty.

The current financial crisis in agriculture is likely also to affect the demand for educational services for farm and rural area youth. Those leaving agriculture for financial reasons tend to be younger (average age of 42.1 in the 1984 Iowa survey)<sup>13</sup> with an average of almost two children per family<sup>14</sup> as shown in Table 8. Only 24.4 percent of those leaving farming had no children under age 18 as shown in Table 9.<sup>15</sup>

Table 8. Summary Statistics of Iowa Farmers Quitting for Financial Reasons during 1984.

	Mean	Std. Dev.	N	1982 (Ag. Census)	1984 CLRS Survey
Husband's Age	42.1	10	482	47.6	54
Number of children	1.8	1.4	476		
Years farming	17.8	10.7	481	19.9	29
Acres farmed	401.7	266.3	449	283	447

Source: Otto (10).

Table 9. Number of Dependents under 18.

No. of Children	Frequency	% of Total
0	116	24.4
1	68	14.3
2	158	33.2
3	81	17.0
4	37	7.8
5	6	1.3
6	9	1.9

Source: Otto (10).



The reduced numbers of children in grades K through 12 will alter the supply characteristics of educational delivery systems as noted in the next section. Youth wanting to enter farming can anticipate a more demanding economic environment than the 1960's and 1970's with more formal education needed to master the necessary technical and management skills needed for economic survival. Children in rural areas not wanting to farm will need the vocational buoyancy and mobility that can come from formal education in making a successful entry into the non-farm world of work. Children from families suffering economic displacement because of the current financial crisis in agriculture are likely to see a brighter future without agriculture than within.

#### Forces affecting the supply of education in rural areas

Although educational systems to date have been only modestly affected by the economic trauma affecting much of agriculture, successive waves of adjustment are almost certain to affect--(1) the scale of educational delivery systems, (2) the way education is financed in rural areas, (3) the range of educational services available; and (4) the willingness and ability of local districts to provide levels of educational services justified by overall societal benefit and cost.

With much of education in grades K-12 and post-high school vocational-technical education dependent upon local property tax revenues, the first wave of adjustment is likely to stem from interruptions in the flow of property tax revenues. Two recent surveys in Iowa indicate a sharp rise in delinquency rates on real property taxes which were due April 1, 1985. A state-wide survey by the Des Moines Register shows that nearly eight percent of the \$1.6 billion in property taxes levied in Iowa during the 1984-85 budget year were unpaid as of May 1, 1985.<sup>16</sup> The delinquency rate by county ranged from a

low of 1.5 percent to a high of 25.6 percent. The Iowa State University Farm and Rural Life Poll, taken of a random sample of farm respondents in March and April, 1985, reported that 10 percent of the respondents had been unable to pay property taxes.<sup>17</sup> The land stands as security for eventual payment of the property taxes assessed but nonpayment interrupts the flow of revenue for periods ranging from a few weeks to several months. The effects of nonpayment will be felt by counties, cities, school districts and other local governmental units dependent upon property tax revenues. Typically, school districts are budgeted tightly enough that interruptions of the magnitude suggested will require budgeting adjustments.

The second wave of adjustment will relate to the capacity of the local community to support educational service and other costs of local government. As farmers reach insolvency and as suppliers and other merchants cease doing business, the employment base of many rural communities will decline with further economic adjustments in school districts. In the 1984 Iowa State University study, 23.3 percent of the Iowa farmers quitting farming for financial reasons moved out of the county.<sup>18</sup> Of that group, 13.2 percent moved out of state. Declines in school census will involve reductions in state level financial assistance to local school districts unless major adjustments are made in aid distribution formulas. The sharp drop in values of farmland and values of machinery and equipment in rural areas relates to a reduced capacity to support public services, including education, and may lead to a shift of the property tax burden to nonagricultural property within taxing districts.

For states which are heavily agricultural, attention should be focused soon on plans for assuring that educational services adequate for local needs, quantitatively and qualitatively, will be available through the remainder of

this century. Under the new educational calculus, a reduction in federal support levels for education can be anticipated, at least in the near term, with a diminished capacity in local areas to provide educational services. Pressure is likely to become intense at the state level for reallocations of public resources for all public services affected by the twin forces of reduced federal funding and diminished local revenue generating capacity. Greater reliance on income and sales tax revenues could be expected in any event in an economy that is becoming more service oriented. That trend is likely to be accelerated in rural areas as states come to accommodate the economic forces set in motion by the financial problems facing agriculture.

The willingness of local districts to provide educational services may also be adversely affected by the negative psychology usually accompanying diminished economic vitality. Those remaining in local communities, disproportionately the older and the more cautious and conservative, are perhaps less likely to provide strong leadership for maintaining levels of educational services. Moreover, rational decision makers tend to discount in the face of uncertainty and many rural-area communities are likely to face a great deal of economic uncertainty for the foreseeable future.

### III. Conclusions

Those charged with managing and administering educational programs in rural areas are approaching a task of herculean proportions: reconciling unprecedented demands for educational services on the one hand and carrying out programs in an environment of diminished local capacity to support established levels of educational services on the other. Without much doubt, well planned and delivered educational services will pay handsome dividends on

a benefit-cost basis. But new strategies will be needed as shifts occur in funding patterns and in supportive leadership in rural areas. The challenge to professional educators at all levels will be awesome. In the words of the nobel-winning American physicist, Albert Abraham Michelson, who spent over 50 years studying the problems of light and who received the 1907 Nobel prize in physics, "my greatest inspiration is a challenge to attempt the impossible." While I would certainly not cast the problems of rural areas education in the realm of the impossible, there will likely be times in the next decade when educators could be readily convinced that such, in fact, was the case.

## Footnotes

<sup>1</sup>"1985 Iowa Farm Finance Survey," Iowa Dep't of Agriculture, Iowa State University, and Iowa Crop and Livestock Reporting Service, April, 1985.

<sup>2</sup>See Harl, "Problems of Debt in Agriculture," 6 J. Agr. Tax. & Law 689, 693 (1985).

<sup>3</sup>Id.

<sup>4</sup>See Joint committee on Taxation, U.S. Congress, General Explanation of the Economic Recovery Tax Act of 1981, p. 401 (Dec. 31, 1981).

<sup>5</sup>See Harl, supra note 2, at 689-691, Tables 1-4 infra.

<sup>6</sup>Pederson, Watt and Vreugdenhil, "Farm Financial Stress in North Dakota," N. Dakota Farm Research No. 4 (1985).

<sup>7</sup>"The Current Financial Condition of Farmers and Farm Lenders," Econ. Res. Service, U.S. Dep't of Agriculture, Agric. Info. Bull. No. 490, March, 1985, p. 18.

<sup>8</sup>Id.

<sup>9</sup>Sedjo, Roger A., "Third World Debts Create U.S. Trade Deficits," in Resources, Resources for the Future, Spring, 1985, p. 14.

<sup>10</sup>Otto, Daniel, "Analysis of Farmer's [sic] Leaving Agriculture for Financial Reasons: Summary of Survey Results From 1984," Table 6, p. 10, Iowa State University, 1985.

<sup>11</sup>Id.

<sup>12</sup>Id., at p. 11.

<sup>13</sup>Id., Table 1.

<sup>14</sup>Id.

<sup>15</sup>Id.

<sup>16</sup>Des Moines Sunday Register, July 7, 1985, pp. 1A, 9A.

<sup>17</sup>Iowa Farm and Rural Life Poll, Iowa State University Pm-1209, June, 1985, p. 8, Table 10.

<sup>18</sup>See Otto, supra note 10.