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IN MAINE

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A PROFILE OF THE FARM FINANCIAL SECTOR IN MAINE

John Scott Swanberg and Michele C. Marra

INTRODUCTION

Farmers, agricultural leaders and state officials are concerned about the national farm financial crisis and how it impacts on the Maine agricultural sector. Farmers' Home Administration, one of the main sources of agricultural credit in the State, will not provide as much direct funding in the coming years as it has in the past. The state's commercial banking industry has not been heavily involved in agricultural lending in the recent past but will probably be called upon to provide more agricultural loans in the future due to the gradual withdrawal of Farmers' Home Administration. The Maine Department of Agriculture, Food and Rural Resources has formed a task force made up of public and private lenders as well as other state agricultural leaders and educators to investigate ways to help in the transition from Federal to state and private funding sources for Maine's agricultural producers.

The purpose of this report is to provide an integrated view of the current market for agricultural credit in Maine so that those responsible for policy in this area as well as producers and their associations will be able to make well informed decisions for the future. First, we present a summary description of the various sources of funds currently available for agricultural borrowers in Maine. Next, we present a summary of alternative financing sources available to farmers in other states. The third section contains a description of the current financial status and future financing needs of Maine farmers as taken from the results of a farm level survey conducted in early 1986. The survey was developed by the New England Crop and Livestock Reporting Service in cooperation with the Maine Department of Agriculture, Food and Rural Resources, the Finance Authority of Maine and the Department of Agricultural and Resource Economics, University of Maine. The last section contains a summary of the report and the conclusions drawn by the authors as to where future financial problems might arise and where some solutions may be found.

AGRICULTURAL FUNDING SOURCES IN MAINE

In this first section we discuss the past, present and likely future trends in the agricultural credit sector in Maine and make comparisons between the situation in Maine and the rest of the United States. We first describe the trends for Federal and state sources of funds for farmers including the Farmers' Home Administration and the Finance Authority of Maine. Then we describe private sources of funds including the Farm Credit System and the commercial banking industry.

Public Financing Sources

There are basically two sources of public funding within Maine. One major source of funding is the Farmers' Home Administration, which provides loans to farmers for a variety of purposes. The second source is a relative new-comer to the financial market in Maine, the Finance Authority of Maine. The Finance Authority of Maine was created to provide credit to farmers and other businesses within the state that have had difficulty obtaining credit from conventional sources.

The Farmers' Home Administration

The Farmers' Home Administration has been an important source of credit in Maine over the years. The Farmers' Home Administration has been the "lender of last resort" providing farm ownership loans, operating loans, economic emergency loans, and emergency loans as well as being the major supplier of credit to the higher risk borrowers in Maine. This higher risk group includes established farmers with a high debt load and young entrants with inadequate net worth.

Programs Available. The Farmers' Home Administration has used four farm programs to lend to farmers in Maine: 1) Farm ownership loans, 2) Farm operating loans, 3) Emergency loans, and 4) Economic emergency loans. As of January 1, 1986, 2,153 farmers in the state had $187.5 million in

Farmers' Home Administration loans among the four programs (7). Each program has a unique purpose.

Farm Ownership Loans. The farm ownership loan program allows the Farmers' Home Administration to insure, subordinate, or guarantee loans to eligible applicants who will operate family-size farms. Insured loans are made directly through the Farmers' Home Administration from a revolving fund. Loans that are subordinated are made with participation from other lenders or from sellers of farms who provide a portion of the loan. The other lender or seller receives the first lien on the property, while the Farmers' Home Administration portion of the loan is secured with a junior lien. Guaranteed loans are made and serviced by other lenders, but the Farmers' Home Administration will guarantee a portion of the loan to reduce the risk of default for the other lender.

Farm ownership loans may be used for purchasing a farm, improving a farm, or enlarging a farm. Repayment terms and interest rates depend on the type of loan made. The repayment schedule is constructed to meet the borrower's ability to repay the loan. In the first part of 1986 the interest rate for loans made directly with Farmers' Home Administration was 10.75% for long-term loans (8). A lower interest rate is available to farmers with "limited resources". Farmers with limited resources are defined as farmers with a low farm income who have a demonstrated need to increase their farm income. The interest rate for a long-term limited resource loan was 7.25% (8). Loans to a limited resource borrower will be reviewed after three years to determine if they are still eligible for a reduced interest rate. If at any time the borrower has improved his repayment ability, the interest rate will be elevated to the current interest rate. The interest rate for loans made with other lenders will be negotiated between the borrower and the lender. The interest rate cannot exceed the maximum rate set by the Secretary of Agriculture. The maximum outstanding principal balance for insured loans is $200,000 and $300,000 on guaranteed loans.

Farm Operating Loans. The farm operating loan program allows the Farmers' Home Administration to insure, subordinate, and guarantee operating loans to family farmers. A "family farm" is defined as one a family can operate with only a minimal amount of hired labor.

Farm operating loans can be used for purchasing production inputs, machinery, and making minor improvements to the farm. Repayment terms and interest rates depend on the type of loan made. Short-term loans made directly by Farmers' Home Administration had an interest rate of 10.25% in early 1986 (8). A lower interest rate is available for farmers with limited resources. The interest rate for a short-term limited resource loan was 5.25% (8). The same limited resource repayment rules apply to the farm operating loans. Loans made with other lenders will carry an interest rate negotiated between the borrower and the lender. The interest rate cannot exceed a maximum set by the Secretary of Agriculture.

The term for farm operating loans ranges from one to seven years. If the Farmers' Home Administration guarantees the loan, it must be repaid within seven years. Direct loans have a limit of $100,000 per farm and guaranteed loans have a limit of $200,000 per farm.

Emergency Loans. The emergency loan program allows the Farmers' Home Administration to make loans in counties where property damage or severe production losses have occurred as a result of a natural disaster. First, for an area to be eligible for assistance, it must be declared a natural disaster area. Funds from this type of loan can be used to cover losses and expenses for damaged or destroyed property and production. Repayment of these loans varies according to the purpose of the loans. Operating loans must be paid back within seven years. Real estate loans must be paid back within 40 years. Although these are the maximum limits, repayment should be scheduled for as early as possible according to the borrower's ability to pay.

Economic Emergency Loans. The economic emergency loan program allows the Farmers' Home Administration to make loans to farmers who have suffered from economic hardship attributed to an unfavorable relationship between costs and prices received for agricultural products. This program has been discontinued due to a lack of funding and a high delinquency rate attributed to the program. These loans were made to enable farmers to continue farming during an economic emergency. Loan funds could have been used to refinance delinquent secured and unsecured farm operating debt. The funds could also have been used to reorganize the farming operation to make it more competitive, enabling operations to continue.

The total economic emergency loan to any one borrower cannot exceed $400,000. The combined loans from all the various programs cannot exceed $650,000 to any one borrower. Operating loans must be paid within seven years. Real estate loans must be repaid within 30 years; however, if extreme hardship is shown, a 40 year repayment plan could be approved.

Relative Share of Agricultural Loans Over Time. Figure 1 shows that the Farmers' Home Administration's share of the total U.S. farm real estate debt has risen slowly from a 5.59% share in 1960 to a 8.29% share in 1983. In Maine, Farmers' Home Administration has been a more significant participant in agricultural finance than in most other states. In 1960, Farmers' Home Administration held $10.5 million (43.78%) of the farm real estate debt in the state as can be seen in Figure 2. Farmers' Home's share of the total farm real estate debt in the state peaked in 1970 when it held 60% of the debt outstanding. By 1983, its share had decreased to $86.3 million or 49.5% of the debt outstanding in the state (6).

Figure 3 shows that, on the national level, the non-real estate debt held by the Farmers' Home Administration has risen sharply from a 2.8% share in 1975 to a 16.2% share in 1983. From Figure 4, Farmers' Home Administration held $9.7 million (30.8%) of the total non-real estate debt in Maine, in 1960. Its share of Maine's farm non-real estate debt has fluctuated from a peak of 41.7% in 1965 to a low point of 29.2% in 1975. By 1983, its portion had grown to $102 million or 42.4% of the total non-real estate debt outstanding (6).

Current Credit Situation. On the national level, Farmers' Home Administration holds $67 billion in loans to 278,000 borrowers. As of January 10, 1986, 31.9% of the portfolio dollars was delinquent, which are held by 25.5% of the borrowers (7). The worst delinquency rates are found in the emergency loan program. This program accounted for 67% of the delinquent borrowers and 80% of the delinquent dollars. Nationally,

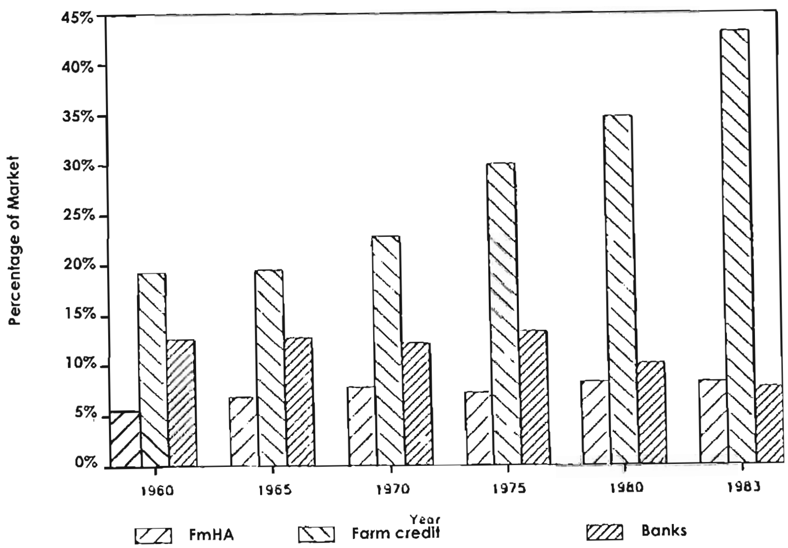

Figure 1. U.S. Farm Real Estate Debt By Funding Source

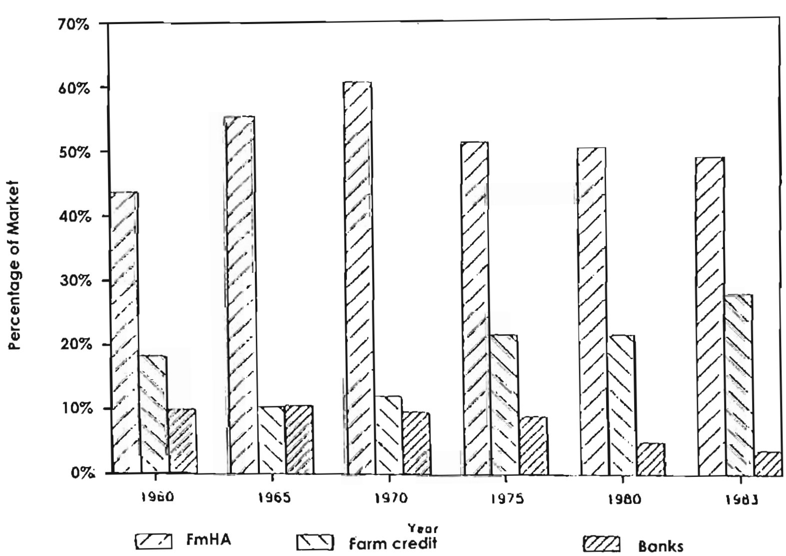

Figure 2. Maine Farm Real Estate Debt By Funding Source

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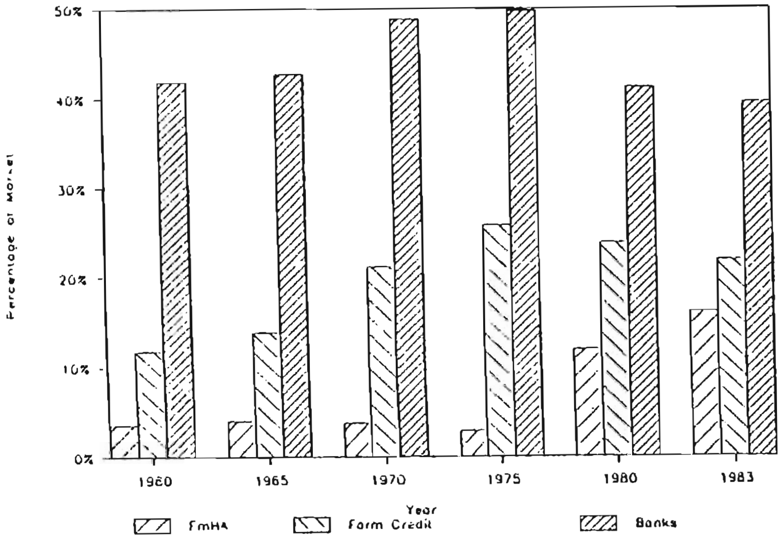

Figure 3. U.S. Farm Non-Real Estate Debt By Funding Source

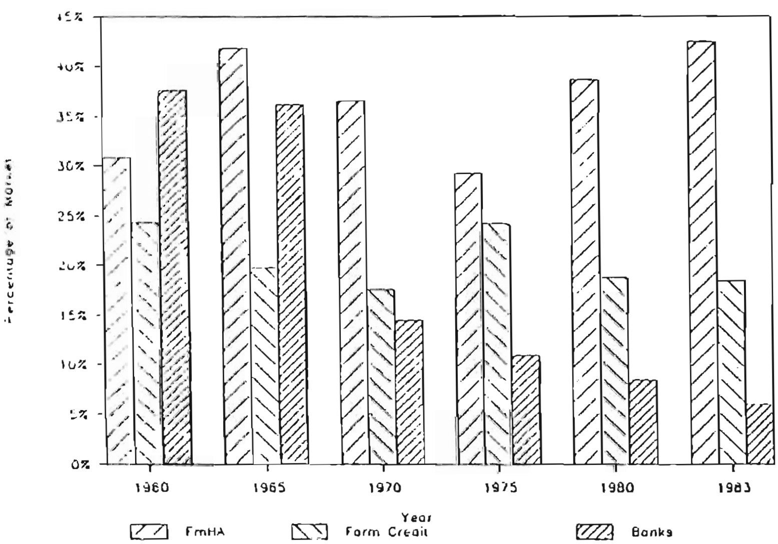

Figure 4. Maine Farm Non-Real Estate Debt By Funding Source

there are 30,000 accounts (about $4 billion) that have been in default for three years. The total in default is about $12 billion (8).

In 1982, the farm ownership program had $63.5 million in loans to farmers within Maine. By 1985, the farm ownership program grew to $65.5 million, financing 1,395 farmers. As of January 31, 1986, 203 of those farmers were delinquent on their loans or 15% of the total number of farmers (7). On a dollar volume basis, $9.9 million in loans were delinquent or 15% of the total debt in the farm ownership program as shown in Table 1.

Table 1. Delinquency Rate on Farmers' Home Loans in Maine as of January, 1986

	Farm Ownership Loans	Farm Operating Loans	Emergency Loans	Economic Emergency Loans	State Total
Number of Loans	1,395	1,478	402	301	3,576
Number Delinquent	203	348	169	169	889
% of Total Loans	14.6%	23.5%	42.0%	56.0%	24.9%
% of Total Delinquent	22.8%	39.1%	19.1%	19.0%	
Dollar Amount ($mil)	65.5	55.8	51.6	13.0	185.9
Dollars Delinq.($mil)	9.94	11.49	24.93	5.32	51.7
% of Total Dollars	15.2%	20.6%	48.3%	40.9%	27.8%
% of Total Delinquent	19.2%	22.2%	48.2%	10.4%	

Source: Farmers' Home Administration, Orono, Maine. January 31, 1986.

Dividing the state into two areas, Aroostook county and the rest of the state, the financial stress in Aroostook county can be seen more clearly. Figures 5 and 6 show the delinquent loans for Aroostook County and the rest of the state in numbers of loans and the dollar amount of loans. Twenty-six percent of the total farm ownership loans was held by farmers in Aroostook county, while the rest of the state held seventy-four percent. Even though Aroostook County held only a quarter of the total, it was almost equally delinquent on a dollar volume basis with the rest of the state. Four hundred sixty-seven Aroostook county farmers held farm ownership loans totaling $16.989 million. Out of those 467 farmers, 117 (24%) were delinquent on their loans, accounting for $4.555 million or 26% of the farm ownership loans made in Aroostook county. Nine hundred twenty-eight farmers from the rest of the state held $48.5 million in farm ownership loans. Of those, 86 farmers (9.27%) were delinquent accounting for $5.5 million or 11.3% of the dollar amount of farm ownership loans made in the rest of the state (7).

In 1982, the farm operating loan program had $38.7 million in loans to farmers within the state. In 1985, the farm operating loan program grew to $55.8 million, financing 1,478 farmers. As of January 31, 1986, 348 (24%) of those farmers were delinquent on their loans. On a dollar volume basis, $11.5 million were delinquent or 21% of the total debt in the farm operating loan program, as shown in Table 1.

Farmers in Aroostook County held 55% of the operating loans, compared to 45% for the rest of the state. However, the delinquency rate in Aroostook county was more than double that for the rest of the state. Six hundred thirty-two Aroostook county farmers hold farm operating loans totaling $30.9 million. Out of those 632 farmers, 217 (34%) were delinquent on their loans, accounting for $8.2 million or 27% of the farm operating loans made in Aroostook county (7). In the rest of the state 846 farmers held $25 million in farm operating loans. Of those, 131 farmers (15.5%) were delinquent, accounting for $3.3 million or 13.2% of the farm operating loans made in the rest of the state, as shown in Figures 5 and 6.

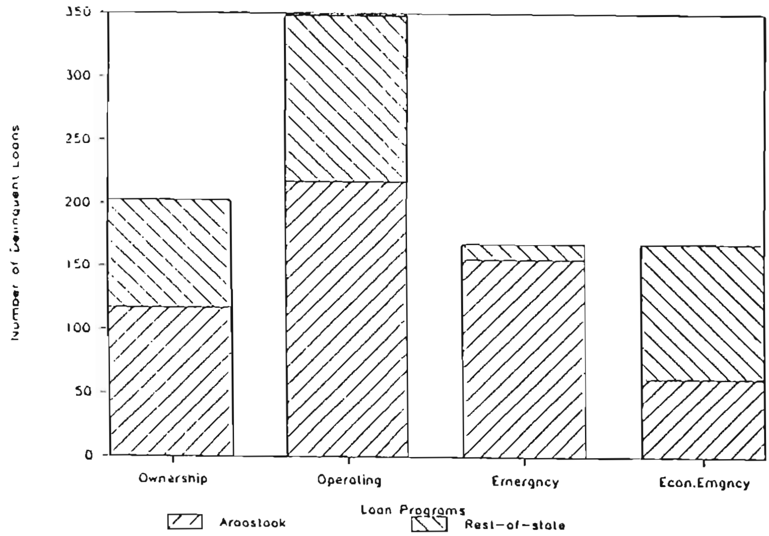

Figure 5. Farmer's Home Loan Delinquencies By Region

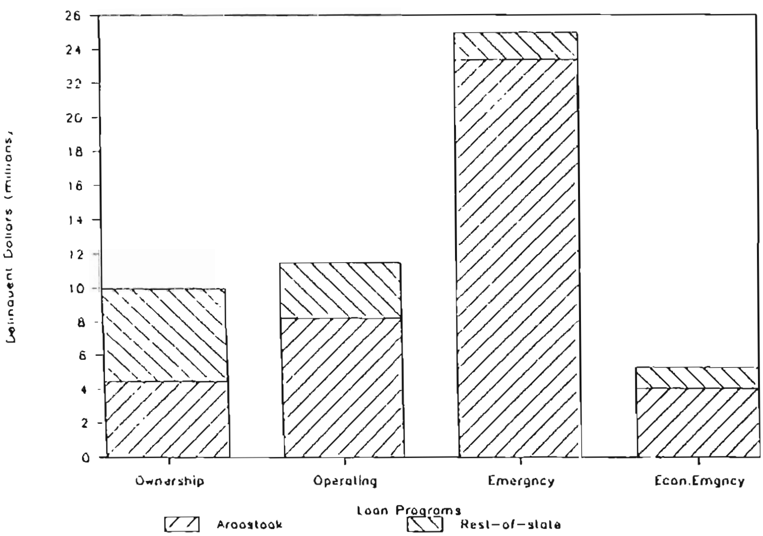

Figure 6. Farmers' Home Dollar Volume Delinquent By Region

In 1982, the emergency loan program had $53.4 million in loans to farmers within the state. In 1985, the emergency loan program decreased to $51.6 million, financing 402 farmers. As of January 31, 1986, 169 of those farmers were delinquent on their loans or 42% of the total number of farmers. On a dollar volume basis, $24.9 million were delinquent or 48.3% of the total debt in the emergency loan program, shown in Table 1 (7).

Farmers in Aroostook county also held a major portion of the emergency loan funds in the state, 91% in Aroostook county versus 9% for the rest of the state. Three hundred twenty-four Aroostook County farmers held emergency loans totaling $46.9 million. Out of those 324 farmers, 156 (48.1%) were delinquent on their loans accounting for $23.4 million or 49.8% of the emergency loans made in Aroostook county. In the rest of the state 78 farmers held $4.7 million in emergency loans. Of those, 13 farmers (16.7%) were delinquent accounting for $1.6 million or 33% of the emergency loans made in the rest of the state (7).

In 1982, the economic emergency loan program had $19.8 million in loans to farmers within the state. By 1985, the economic emergency loan program decreased to $13 million, financing 301 farmers. As of January 31, 1986, 169 of those farmers were delinquent on their loans or 56.2% of the total number of farmers. On a dollar volume basis, $5.3 million (40.8%) were delinquent in the economic emergency loan program, as shown in Table 1.

Aroostook county farmers held slightly fewer loans but more of the total economic emergency debt than those in the rest of the state.. One hundred forty-eight Aroostook county farmers held economic emergency loans totaling $7.7 million. Out of those farmers, 62 (41.9%) were delinquent on their loans accounting for $4.1 million or 53% of the economic emergency loans made in Aroostook county. In the rest of the state 153 farmers held $5.4 million in farm economic emergency loans. Of those, 107 farmers (69.9%) were delinquent accounting for $1.3 million or 23.5% of the economic emergency loans made in the rest of the state.

Ownership loans are capped at $520 million annually. This type of loan must also have a phased shift from an equal division between direct and guaranteed loans to a third year division of $130 million direct loans and $390 million guaranteed loans (5).

Emergency disaster loans are capped at $1.3 billion in 1986, $700 million in 1987, and $600 million in 1988 (5). Disaster loans will no longer be available for farms larger than family farms, for farmers who can get credit elsewhere, or on losses for which crop insurance is available.

Farmers' Home Administration allocated $10.6 million for operating loans within the state for the 1986 crop year. This funding was divided into $6.2 million for Aroostook County and the remaining $4.4 million for the rest of the state. An additional emergency allocation was made in early summer of $4 million. In 1985 $16 million were allocated to Aroostook county alone. The farm ownership program has $748,000 allocated to it, with an additional $150,000 of hardship money (7).

Loan subordination is one method that is being used to spread the money out to as many who need financing as possible. In a subordination, Farmers' Home Administration gives the bank or input company first lien on the property, while the Farmers' Home Administration portion of the loan is secured by a junior lien. The amount of subordination increased in Aroostook county from $461,760 in 1984 to $1,554,400 in 1985, a 237% increase (7). The amount of loan subordination in the rest of the state has been minimal and it is unknown if this will change as Farmers' Home credit becomes increasingly scarce.

The federal government is placing more emphasis on the guaranteed loan program instead of direct lending. This program has been used quite successfully in the southern part of the country; however, the effectiveness of this program in this state has been minimal to date. As of Summer, 1986, Casco-Northern Bank was the only bank to have acquired an approved lender status, enabling it to make guarantees directly without an extensive review by Farmers' Home Administration. Norstar Bank and Merrill Bank have shown some interest in the program. Key Bank has indicated that it will not apply for approved lender status but may use the guarantee program on a limited basis.

One reason why banks have not shown more interest in the loan guarantee program is the concern over the program's current foreclosure rules. In the case of a foreclosure, the bank must first seek Farmers' Home Administration approval. Many banks are concerned about the lag that might occur between the bank's decision to foreclose and the final sale of the distressed property. Another possible reason for the lack of interest is the fact that Farmers' Home Administration borrowers tend to not be financially strong. The guarantee program, as it is currently structured, may not be secure enough for commercial banks to lend to many of these farmers.

Finance Authority of Maine

The Finance Authority of Maine was created to provide assistance to businesses that have difficulty acquiring conventional financing. Finance Authority of Maine's primary means of assistance is through loan guarantees to lenders who would not have extended credit any other way.

Programs Available. The Finance Authority of Maine has a number of credit assistance programs, two of which are directly aimed at natural resource businesses, and another is currently being developed. The three programs suitable for use by agricultural borrowers are: 1) the Potato Marketing Improvement Fund, 2) the Natural Resource Entrant Program, and 3) the Natural Resource Capital Corporation.

Potato Marketing Improvement Fund. The Potato Marketing Improvement Fund was established to provide direct loans to potato growers and packers for the construction of improved storage facilities, packing lines, and equipment to apply sprout inhibitors to improve the quality and marketing of the Maine potato. The Potato Marketing Improvement Fund is a revolving fund with an initial funding of $5 million in 1983. As of March 1, 1986, approximately $1.3 million had been lent for 25 projects (10).

Finance Authority of Maine will only lend a maximum of 45% of the total project cost, and with projects over $250,000 it will only finance 25%. Finance Authority of Maine requires the borrower to finance at least 10% of the project's cost from their own equity. The interest rate for loans less than $50,000 was 6.7% in early 1986 with a repayment period of between five and 25 years. The interest rate for loans greater than $50,000 was 7.7% with an additional origination fee of 1%. The repayment period for these loans is also between five and 25 years (10).

The use of this fund has been quite limited to date with only a portion of the $5 million being used at the present time. The Potato Marketing Improvement Fund was established with a clear purpose of improving the quality and marketing of the Maine Potato. The Potato Marketing Improvement Fund has only a limited effect on improving an established farmer's financial strength and has no financial benefit for new entrants.

Natural Resource Entrant Guarantee Program. The Natural Resource Entrant Guarantee Program was created to provide loan guarantees to new and expanding natural resource businesses that have had difficulty acquiring conventional financing. The loan guarantee program allows a bank to reduce its risk of borrowing, enabling higher risk borrowers to receive financing. Natural Resource Entrant Guarantee Program will guarantee 90% of the principal and accrued interest on loans made by lenders or sellers. As of March 1, 1986, there were no loan guarantees made to farmers through this program.

The maximum amount to be guaranteed is $225,000, or 90% of the loan, whichever is less. The borrower must have a net worth of less than $100,000 and be a resident of Maine. There are some conditions on the loan amount in relation to the value of the asset being purchased. A real estate loan must not exceed 90% of the value of the land, with repayment within 25 years. Machinery and equipment loans must not exceed 75% of the value of the equipment with a repayment period not greater than 10 years. Loan guarantees can be made on seller-financed sales as long as the interest rate is 3% less than the rate charged by the Federal Land Bank at the time the loan is made (10). There are no restrictions on the interest rate charged by financial institutions.

Natural Resource Capital Corporation. The Natural Resource Capital Corporation is being created to provide equity investment into natural resource type businesses. The total plan is not official at the present time, but the general structure can be described. The Natural Resource

Capital Corporation will be funded by an initial private offering to investors who could benefit from a state tax credit. The offering will be in the form of $40,000 shares for a total offering of $1 million. The investor will be able to take a $20,000 state tax credit every year for five years.

The Natural Resource Capital Corporation is designed to invest in companies that will provide a return on equity of between 10% and 15%. This will enable the investor to receive a 20% to 30% return on the investment due to the tax credit (11). The use of this corporation by established and entrant farmers may be somewhat limited because of the requirement of at least a 10% return on equity.

Private Financing Sources in Maine

There are three main private sources of credit in the state. They include the Farm Credit System, the commercial banks, and individuals or firms. The discussion of private credit sources will primarily be focused on the Farm Credit System and the banking industry in the state. The flow of credit from farm input firms and individuals is not well documented, thus it will not be considered in our discussion.

The Farm Credit System

The Farm Credit System is a member-owned credit cooperative. The system is made up of three branches: 1) the Federal Land Banks and the Land Bank Associations, 2) the Federal Intermediate Credit Banks and the Production Credit Associations, and 3) the Banks for Cooperatives. The Farm Credit System offers two types of loans to farmers, operating loans and real estate loans. Operating loans are made by the Production Credit Associations, while the real estate loans are made by the Federal Land Bank Association. This section will discuss how Farm Credit has financed agriculture in Maine over the years, and how the recent financial stress of certain banks in the system might affect the ability of local associations to lend to the Maine farmer.

Current Indebtedness. On the national level, Farm Credit has increased its market share of farm real estate debt. Table 2 shows that

Farm Credit held 19.3% of the total real estate debt in 1960. By 1983 Farm Credit held 43% of the nation's total farm real estate debt. In contrast, Farm Credit holds a smaller share of the farm debt in Maine. However, Farm Credit has increased its market share of Maine's farm real estate debt from an 18.3% share in 1960 to a 28.3% share in 1983 (6).

Table 2. Federal Land Bank's Past Lending Experience
Farm Real Estate Debt Outstanding
January 1, 1960-83 (nominal dollars)

Year	National Total	Federal Land Bank	Percent of Total	Maine Total	Federal Land Bank	Percent of Total
	----$million----			----$million---		
1960	12,082	2,335	19.33%	24.072	4.415	18.34%
1965	18,894	3,687	19.51%	36.019	3.768	10.46%
1970	29,183	6,671	22.86%	58.369	7.124	12.20%
1975	44,637	13,402	30.02%	91.862	19.927	21.69%
1980	85,421	29,642	34.70%	152.410	33.091	21.71%
1983	109,507	47,180	43.08%	174.207	49.174	28.23%

Source: Agricultural Finance Statistics, 1960-83. USDA, Economic Research Service, Bulletin #706.

On the national level, Farm Credit's market share of the non-real estate farm debt has fluctuated from 11.8% in 1960 to a peak of 25.8% in 1975 to 21.9% in 1983, as shown in Table 3. In 1960, Farm Credit held 24.3% of Maine's non-real estate debt; however, that percentage had decreased to 18.5% by 1983 (6).

Table 3. Production Credit's Past Lending Experience
Farm Non-Real Estate Debt Outstanding
January 1, 1960-83 (nominal dollars)

Year	National Total	Production Credit Assoc.	Percent of Total	Maine Total	Production Credit Assoc.	Percent of Total
	----$million----			----$million---		
1960	11,528	1,361	11.81%	31.308	7.611	24.31%
1965	16,367	2,278	13.92%	37.445	7.386	19.72%
1970	21,168	4,495	21.23%	64.302	16.329	17.56%
1975	36,687	9,482	25.84%	75.716	28.493	24.22%
1980	75,313	18,021	23.93%	134.068	38.264	18.81%
1983	91,379	20,070	21.96%	160.924	44.381	18.46%

Source: Agricultural Finance Statistics, 1960-83, USDA, Economic Research Service, Bulletin #706.

There are two regional offices for Farm Credit in Maine, one in Aroostook County and the other in southern Maine. There is a difference between the associations due to the type of farmers to which each association lends. The association in Aroostook County lends primarily to potato farmers, while the association in southern Maine lends to a diversified group: dairy farmers, poultry farmers, fruit growers, and potato farmers, fishermen and forest and wood operations.

Aroostook County Production Credit Association. In 1981, the local Production Credit Association had 424 production loans worth $23.3 million. There were 463 production loans in 1982 worth $27.2 million. By 1985, the number of production loans had decreased to 335, worth $23.9 million. The average size of production loans increased steadily in nominal terms (without adjusting for the effects of inflation) from $54,919 in 1981 to $71,238 in 1985.

In 1981, Aroostook County Federal Land Bank Association had 369 real estate loans worth $15.9 million. By 1985, the number of real estate loans had decreased to 280, worth $14.4 million. Again, the average size of real estate loans increased in nominal terms from $43,140 in 1981 to $51,460 in 1985 (12).

Southern Maine Production Credit Association. In 1981, Southern Maine Production Credit Association had 537 production loans worth $26.3 million. By 1985, the number of production loans had increased slightly to 553, worth $30.1 million. The average size of production loans has increased from $48,936 in 1981 to $54,397 in 1985.

In 1981 the local Federal Land Bank Association had 441 real estate loans worth $39.2 million. By 1985, the number of real estate loans had increased to 467, worth $30.4 million. The average size of real estate loans decreased from $88,931 in 1981 to $65,077 in 1985 (13).

Current Credit Situation. Over the past year, the current "Farm Crisis" has put a financial strain on the Farm Credit System at the national level. In the first-quarter of 1986, the Farm Credit System posted a loss of $206 million (2) and in the second-quarter the loss was $762 million (3). In 1985 Farm Credit lost $2.7 billion compared to a profit of $373 million in 1984 (4). To add to these loan losses, non-accrual loans (loans for which interest is no longer accruing) have increased from $1.8 billion at the end of 1984 (4) to $7.6 billion at the end of June, 1986 (3). Also, because of the rules under which the Farm Credit System operates, the interest rates they can charge on loans tend to be higher than rates at other lenders during times of falling interest rates. These events have caused many of the stronger borrowers of Farm Credit to seek other lenders. Loans outstanding at the end of 1984 were $78.5 billion, while they decreased to $64.9 billion as of March, 1986 (2,4). Roughly $1.2 billion has been written off, while the rest of the difference seems to be the defection of farmers concerned about the system's financial condition, upset over the system's changes, or able to borrow at lower rates with other lenders.

On the regional level, the story is quite different. The Farm Credit Banks of Springfield is one of the most financially strong districts in the system, and the Farm Credit Banks in Maine are just as strong. The delinquency rates as a percent of loan volume for loans overdue more than 30 days for both Maine associations are relatively low compared to the national rates. As of January 3, 1986, the Southern Maine Association had a delinquency rate on its production loans of 1.1%, while the delinquency rate for the Federal Land Bank real estate loans were only slightly higher at the 1.7% level (13). As of the end of 1985, the Aroostook County Association had a delinquency rate of 1.2% on its production loans, while the delinquency rate for the Federal Land Bank real estate loans was lower at the .4% level (12). On the national level, Farm Credit had a delinquency rate on its total portfolio of 8%, as of the end of 1985 (4). Approximately $5.3 billion of the loans were on a non-accrual basis.

Even though the Springfield District is financially strong, the financial troubles of the entire system are placing constraints on the regional bank. In December 1985, the Farm Credit System received approval to set up an emergency line of credit from the Treasury, but no funds have yet been dispersed; however, the System was instructed by Congress and the Reagan administration to operate in a "tougher, more business-like manner" (14). Because of this pressure, a directive was issued in February, 1986, by the Farm Credit Administration which said that Farm Credit banks and associations should do nothing that could diminish their capital resources and revenues and weaken their ability to assist Farm Credit entities that are incurring losses. This statement was taken by Farm Credit lenders to mean they should take a more conservative stance in making new loans and maintain higher interest rates (15).

The ability for the whole System to weather this current farm financial situation depends on the stronger district banks. The weaker banks in the Farm Credit System require infusions of capital from the stronger banks to maintain their liquidity. This year the Springfield district will probably be required to transfer the majority of its reserves to aid districts in the Midwest which are in financial trouble. Given the difficulties the Farm Credit System is currently experiencing on the national level, the local associations may not have the option of taking on higher risk borrowers from the Farmers' Home Administration.

Commercial Banks

Over the past few years, the banking community in the Midwestern states has been hit hard financially. In Maine the financial strength of the banking industry is a different story. With the deregulation of the banking industry, many out-of-state banks have either moved into the region or made major purchases of local Maine banks. These changes have increased the financial stability of Maine's banking industry. This section will describe how the banks in this state have supported agriculture in the past, and how they might in the future.

Past Agricultural Lending. On the national level, banks have typically been a subordinate source of agricultural real estate credit over the years. Table 4 shows that banks held $1.5 billion or 12.6% of the total farm real estate debt in 1960. By 1983, banks held $8.4 billion (7.7%) of the total farm real estate debt (6).

A greater decline occurred in commercial bank farm real estate lending within the state of Maine over those years. In 1960, Maine banks held $2.4 million or 10% of the state's total farm real estate debt. By 1983, Maine banks had increased their loan volume to $6.5 million in nominal terms, but that was only 3.7% of Maine's total farm real estate debt.

With regard to non-real estate debt, banks have tended to be a major source of credit. Table 5 shows that banks held $4.8 billion or 41.8% of the nation's total non-real estate farm debt in 1960. Bank's peak market share occurred in 1975 when they held 49.7% of the nation's total non-real estate farm debt. By 1983, total market share was down to 39.6% (6).

In Maine, banks were the major source of non-real estate loans in 1960. At that time, they held $11.8 million or 37.6% of the state's total non-real estate farm debt. However, by 1983, banks held only 6% or $14.5 million of the state's total non-real estate farm debt. This reduction in market share can be explained by the level of competition from the Farm Credit System and the Farmers' Home Administration. Both agencies have been able to offer loans at a lower interest rate than that at which most Maine banks have been willing to lend.

Table 4. Commercial Banks' Past Lending Experience
Farm Real Estate Debt Outstanding
January 1, 1960-83 (nominal dollars)

Year	National Total	Bank Share	Percent of Total	Maine Total	Bank Share	Percent of Total
	----$million----			----$million---		
1960	12,082	1,523	12.60%	24.072	2.417	10.04%
1965	18,894	2,417	12.79%	36.019	3.842	10.66%
1970	29,183	3,545	12.15%	58.369	5.643	9.67%
1975	44,637	5,966	13.36%	91.862	8.274	9.01%
1980	85,421	8,623	10.09%	152.410	7.590	4.98%
1983	109,507	8,441	7.71%	174.207	6.500	3.73%

Source: Agricultural Finance Statistics, 1960-83, USDA, Economic Research Service, Bulletin #706.

Table 5. Commercial Banks' Past Lending Experience
Farm Non-Real Estate Debt Outstanding
January 1, 1960-83 (nominal dollars)

Year	National Total	Bank Share	Percent of Total	Maine Total	Bank Share	Percent of Total
	----$million----			----$million---		
1960	11,528	4,819	41.80%	31.308	11.759	37.56%
1965	16,367	6,990	42.71%	37.445	13.547	36.18%
1970	21,168	10,330	48.80%	64.302	13.478	14.49%
1975	36,687	18,238	49.71%	75.716	12.817	10.89%
1980	75,313	31,034	41.21%	134.068	17.207	8.46%
1983	91,379	36,149	39.56%	160.924	14.500	6.03%

Source: Agricultural Finance Statistics, 1960-83, USDA, Economic Research Service, Bulletin #706.

The savings banks in the state have reduced their real estate loan volume slightly from $1.1 million in 1982 to $781,000 in September, 1985. However, over the same time period, the savings banks have gone from supplying no operating loans in 1982 to financing $3.3 million by September, 1985 (16).

Trust company and national bank figures have remained relatively constant over time. As of 1981, all the trust companies and national banks had financed $5.6 million worth of real estate loans (16). By September, 1985, that had been reduced to $4.7 million. Farm loans not secured by real estate remained essentially at the same nominal level, increasing from $14 million in 1981 to only $14.3 million as of September, 1985. Adjusted for inflation during the period, the total value of non-secured farm loans at trust companies and national banks would be lower in 1985 than in 1981. Also, the percentage of farm loans versus commercial loans has been declining from 2% of the total loans in 1981, to only 1.4% as of September, 1985 (16).

Future Agricultural Lending. Over the past 20 years, commercial banks' share of the agricultural credit market has declined. However, if the Farmers' Home Administration reduces the level of direct lending and increases the level of loan guarantees, the banking industry may be under more pressure to increase its level of agricultural lending.

Banks are profit maximizing businesses primarily interested in lending to firms with a low default risk and sound financial statements. However, many farmers who will be seeking financing when the Farmers' Home Administration permanently enacts its changes may have an unacceptable degree of risk associated with their farming operation. Farmers' Home Administration is offering a loan guarantee for up to 90% of the principal and interest to facilitate the transition from direct lending by the Farmers' Home Administration to direct lending by private banks. Guarantees may reduce the level of default risk perceived by a lender enabling higher risk borrowers to obtain financing. The loan guarantee program does, however, have some problems associated with it from the commercial lenders' point of view.

Many of the commercial banks have been reluctant to use the Farmers' Home Administration guarantee program due to the foreclosure rules. If the loan goes in default and the lender wishes to foreclose, the Farmers' Home Administration has the option of preventing the foreclosure. When this occurs, the Farmers' Home Administration will service the loan; however, there will be no interest accruing on the loan for the bank. Many banks feel the Farmers' Home Administration may exercise its option to prevent foreclosures in many cases, forcing the banks to incur losses they would not have if they were allowed to foreclose at the time they deemed appropriate.

Another program that has been recently enacted to aid in the transition is the state's linked deposit program. Under the program, the state treasury will purchase below market interest certificates of deposit at banks willing to lend to farmers at below market rates. The treasury is authorized to use no more the $4 million of state revenues, at an interest rate of no less than 2% below what the funds would have otherwise received. The linked deposit program will give the banks a lower cost of capital allowing them to make farm loans at below market interest rates. The details of the allocation of funds among the various eligible institutions have yet to be decided.

SOURCES OF FUNDING USED IN OTHER STATES

Numerous innovative financing arrangements have been developed by various states to help their citizens remain in farming or to enter farming. As was discussed in the previous section, a linked deposit (called a linked investment) program has been recently enacted in Maine but has not yet been implemented. Other states have taken different approaches and met with varying degrees of success. In this section we describe the characteristics of these different approaches and give the details of specific programs for each state involved.

Revolving Fund Programs

Alaska, Hawaii, Washington and Wyoming are currently using a revolving fund to finance their emergency farm finance programs. A revolving fund is a flexible pool of funds controlled by a state agency for the purpose of making direct loans to farmers. When loans are repaid, the funds are then relent to other farmers; hence, the funds revolve.

Alaska has used a revolving fund loan program since 1953. The fund is currently financed at $70 million, with a total of $55 million loaned to 274 borrowers. The direct loans carry an interest rate of 8%. Operating loans must be repaid within one year, and collateral loans repaid within seven years. Development loans or land purchases must be repaid within 30 years (40).

Hawaii has a program designed to aid farmers who have had difficulty acquiring financing. The farmer must prove his management ability, devote at least one-third of his time to the farm, and generate at least one-third of his income from the farm. Operating loans may be repaid up to ten years and real estate loans must be repaid within 40 years. The operating loans carry an interest rate between 12% and 13.5% (40).

Washington established its revolving fund with $800,000 from its Rural Rehabilitation Trust Fund (40). Loans are made to family or part-time farmers. The loans can only be used for operating expenses or debt refinancing. The maximum amount of a loan is $50,000, to be repaid within ten years. The interest rate for the loan is 10 percent. The borrower must operate a family farm, derive at least 60% of his income from the farm operation, and be unable to find financing from any other source.

Wyoming has maintained a revolving fund since 1921, funded by revenues from mineral royalties and the sale of state lands. The fund has doubled since 1980, and is currently financed at $275 million (40). The loans can be used for operating expenses, debt refinancing, capital improvements, and land purchases. The maximum loan amount is $400,000 with an interest rate that is determined each year by a Farm Loan Board. The rate must be between 4% and 10% by state statute. The only other requirement is that the borrower be a state resident and a registered voter.

Tax-Exempt Revenue Bonds

In 1980, Iowa developed a program to generate loan funds by issuing tax exempt revenue bonds. These loan funds were to be used by beginning farmers to purchase real estate. The state created a farm development authority to issue public offerings of tax exempt bonds and then use the money for real estate and non-real estate loans to beginning farmers. The program was not successful because of Internal Revenue Service regulations and the lack of Farmers' Home Administration guarantees (23,41). The Internal Revenue Service would not allow the grouping of smaller tax exempt bonds into one large bond issue (23). Iowa quickly enacted an amendment to the original legislation, empowering the authority to issue bonds for each individual farmer. Each bond is privately placed with a local lender who makes and services the loan. This method reduces the cost of issuing a tax exempt bond and allows the bond to be flexible, depending on the farmer's needs. Local lenders desire privately placed bonds because they can use the tax advantages for themselves (23).

Vermont developed a direct loan program by taking $400,000 from its Industrial Development Authority to lend to financially stressed farmers. The loans have an interest rate of 4% with a maximum repayment period of five years for operating loans, and 20 years for real estate loans. The borrower must be a full-time Vermont resident with less than $150,000 in equity. The program was authorized in 1985, and ended on June 30, 1986 (40).

Linked Deposit Programs

Six states are currently engaged in a linked deposit program to assist financially stressed farmers; they are: Illinois, Indiana, Kansas, Michigan, Missouri, and Ohio. A linked deposit program is a means to facilitate more lending participation by commercial banks. The state invests low yielding certificates of deposit at financial institutions willing to provide agricultural financing for farmers. Since the lender receives a lower cost for his money, he is able to pass the savings on to the farmer through a lower interest rate.

Illinois began a linked deposit program in 1980. The program was recently increased by $100 million in 1985 (40). Loans made under this program must be less than $50,000 and be for operating expenses. The banks may charge up to 2.5% more than the interest paid on the state funds in the bank. Currently, the program has provided 9,960 loans for a total of $176 million. The recent interest rate charged was ten percent.

Indiana established its linked deposit program in 1985. The state will allow up to $50 million of its investment funds to be invested in 5 1/2% certificates of deposit at banks which will lend money at 8% to farmers for operating loans (40). To be eligible the farmer must have a net worth of less than $250,000, derive at least 75% of his income from the farm, and have a debt to equity ratio of at least 1.25. The maximum loan amount is $50,000. Currently, 940 loans have been made totaling $33.5 million.

Kansas established a linked deposit program with $15 million from a highway fund. The state is authorized to purchase 7.88% certificates of deposits from banks that are willing to lend at low interest rates to farmers. The loans may be used for operating expenses, refinancing debt, and land purchases. Maximum amount for the loans is $50,000 with an interest rate not to exceed 10.38 percent (40). To be eligible for a loan the borrower must earn 70% of his income from the farm and have an annual interest cost that is more than 25% of total annual farm expenses.

Michigan established a linked deposit program in 1985 by using $139 million from a common cash fund. The state purchases certificates of deposit from banks at two percent below the 90-day Treasury-bill rate. Loans may be used for debt refinancing, operating expenses, or equipment purchases. The maximum amount for a loan is $100,000 with an interest rate no greater than 5% above the certificate interest rate (40). A total of 2,911 loans has been made, totaling $131.8 million.

Missouri enacted a linked deposit program in May, 1985, by authorizing the use of $50 million from the state treasury. There are two programs available to the banks, a short-term program lasting 35 days with a roll-over option at the treasury bill rate or for up to one year. There are no eligibility requirements set up by the state; the only requirements are those of each financial institution.

Ohio enacted a linked deposit program in April, 1985, by taking $100 million from the state's investment portfolio to invest in certificates of deposit at below market rates. The state would only purchase certificates of deposits from banks willing to provide loans at three to four percent under the market rate for farm loans. The maximum amount for a loan is $100,000. The limit for the program was reached by June, 1985, with 1,575 loans totaling $100 million (40).

Other Financing Programs

Loan Guarantees

Minnesota was the first state to enact a loan guarantee program (5). The state created a $10 million fund which guarantees the lender 90% of the loss of principal and interest in case of default (23). Wisconsin also has appropriated $10 million to guarantee loans made to financially stressed farmers. To be eligible, the farmer must have a debt to equity ratio greater than 40 percent.

Secondary Loan Markets

Wyoming appropriated $50 million from its investment portfolio to purchase Farmers' Home Administration guaranteed loans from state financial institutions. This established a secondary market for farm loans. The state requires the bank to charge no more than 2 percent above the Treasury Bill rate to farmers who receive a guaranteed loan (40). The only requirement is that the loan meet the standards for the Farmers' Home loan guarantee program.

Interest Buy-downs or Deferrals

Illinois created an interest rate deferral program for operating loans in 1985. The state paid for half the interest on operating loans made in 1985, where the interest will be repaid to the state in five equal payments over five years. The farmer must have illustrated a cash flow problem and netted less than 25 percent of his gross income based on 1984 tax returns. A new program was developed for 1986, with $24 million, for operating loan interest deferrals and grants. The grant program paid for two percent of a farm's outstanding debt, with a maximum per farm of $2,000. To be eligible for these two programs the farmer must have had a debt to asset ratio between 55 and 70 percent (40).

The State of Minnesota created an interest subsidy program to make repayment schedules more manageable for the beginning farmer. The state has an adjustment of 4% on loans within 20 years. For example, if the loan interest rate were 10%, 6% would be paid by the beginning farmer and 4% paid by the state treasury (23). The state allows the beginning farmer to use its portion of the loan interest paid interest free until the end of the loan period. At that point, the farmer must repay all of interest paid by the state treasury in one balloon payment.

Minnesota has also created two new interest deferral programs. One program is concerned with existing debt, and the other is concerned with operating loans made in 1985 (40). In the first program, the state pays for 60 days worth of interest on existing debt, with the banks required to match with another 60 days worth of interest. This program only deals with the first $25,000 of principal of ownership or operating loans. The only requirement for eligibility is that the lender sign a statement that it believes the borrower will be unable to repay the loan. The second program was an interest subsidy for operating loans made in 1985. The program reduced the interest rate on the first $75,000 worth of principal. The state paid for two-thirds of the difference between the interest rate charged to the borrower and an established rate set by the state. The remaining third was paid by the bank where the loan was made. To be eligible, borrowers must have had a debt to asset ratio of greater than 50 percent.

North Dakota enacted the "Family Farm Survival Act of 1985" to assist financially stressed farmers within the state. The act authorizes a program to provide subordinated operating loans to farmers. The program requires a local bank to provide 35% of the loan with the Bank of North Dakota making up the difference. The Bank of North Dakota will charge an 8% interest rate, and the local lender cannot charge an interest rate above 12.7%. The state will defer the interest on its portion of the loan depending on the size of the loan: farmers pay 3% on loans less than \$50,000, 4% on loans less than \$75,000, and 5% on loans less than \$125,000. The rest of the interest is deferred for up to five years. To be eligible, a farmer must have a debt to asset ratio above 50 percent, and have suffered a natural or financial disaster in one of the last four years.

Wisconsin provides an interest buy-down program for operating loans. The state will pay all the interest above nine percent. The program is authorized until March, 1986. To be eligible, a farmer must have a debt to equity ratio above 40 percent and have purchased hail insurance.

Tax Incentives

The State of North Dakota developed a program that entitles a landowner who sells 20 acres or more to a beginning farmer to exempt the capital gains from state income tax liability (23,41). Also, a landowner who enters into a contract for a deed on 80 acres or more with a beginning farmer may have the interest income tax exempt. The contract for the deed must have terms of 15 years or more and an interest rate of not more than the Internal Revenue Service minimum interest rate for various sales.

Minnesota has a similar program that exempts interest income on landowner sponsored loans. The Minnesota program, however, does not set a range for the interest rate (23). A possible disadvantage is the price paid for seller financed farmland. The per acre price of seller financed farmland was found to be higher than the price paid for land financed through conventional means (42).

North Dakota developed another program that provides a landowner who enters a lease agreement with a qualified beginning farmer on 20 acres or more to exempt from state tax liability rental income of \$25,000 or less (23).

FINANCIAL CHARACTERISTICS OF MAINE FARMERS

Maine Farm Finance Survey

In response to a request by the Maine Department of Agriculture, Food and Rural Resources, the USDA Crop Reporting Service conducted a farm level survey in an attempt to assess the financial condition of the Maine farmer as of the end of 1985. A summary of the survey results is included in this discussion because, although it may not be generally representative of all farms in Maine, it provides some insight into the current credit situation in Maine and points to some of the areas where future financing needs may occur. The survey was mailed to a random, stratified sample of about 30% (478) of the farmers within the state. A set proportion of farms from each major farm type was randomly drawn from lists maintained by the New England Crop and Livestock Reporting Service of USDA. Out of those, 96 (or 21%) responded to the survey. Of the respondents, 40 are dairy farmers, 29 are potato farmers, and 27 are classified as "other". The "other" category includes apple, blueberry, beef, sheep, and other various farm types.

Table 6. Maine Farm Finance Survey Respondent Profile

Item	Dairy	Potato	Other	Total
Number of Respondents	40	29	27	96
Average Age of Farmer	54.53	46.93	56.09	52.60
Average Years Farming	28.73	22.07	25.52	25.83
Average Acres Owned	298.38	346.14	214.22	288.54
Average Acres Rented	89.48	78.00	67.97	84.41

It is important to note that there was only one survey mailing to each of the randomly chosen farms. There was no follow-up reminder mailing, nor was a subsample telephone survey of nonrespondents conducted to test for bias in the survey results. For these reasons, the survey results should be used with extreme caution and not be the sole basis for conclusion.

Table 6 shows the profile of the survey respondents. The respondents were instructed to answer all questions as of January 1, 1986. The average age for all the respondents was 52.6 years. The average age for the dairy farmers was 54.5 years, while the average age for the potato farmers was 46.9 years. The average number of years farming for the total group was 25.8 years. The dairy farmers had been farming an average of 28.7 years, while the potato farmers had been farming for 22.1 years. The mean acreage owned for the total group was 288 acres and the mean acreage rented was 84 acres. As expected, the potato farmers operated the most acreage by owning on average 346 acres and renting 78 acres.

Farm Financial Condition

Solvency measures describe the amount of money a farmer would have left after all assets are converted to cash and used to pay off all farm debts. In general, solvency ratios measure the relationship between claims on the business (debts) and either total assets or equity. The debt-to-asset ratio is one such solvency ratio. It is an indicator of the total amount owed as a percentage of the total value of the farm's assets at a point in time. Researchers at USDA have used debt-to-asset ratios as a measure of the amount of financial stress facing farmers with the following categories (1):

Debt-to-Asset Ratio	Status of Farmer
Over 100%	Technically insolvent
70% - 100%	Extreme financial problems
40% - 70%	Serious financial problems
Under 40%	No apparent financial problems

Before discussing the debt-to-asset ratios obtained in the survey, a word of caution should be extended about the reliability of this ratio as an indicator of the financial condition of a farm. First, the total debt component of the ratio does not take into account how that debt is structured, which can influence the ability of a farmer to service and repay the debt. Second, it is extremely difficult to place a value on some categories of farm assets. Finally, a change in the value of assets can be the result of a profit or loss in the previous year and/or the result of an increase or decrease in the asset values. Without an income statement and the knowledge of asset values on the previous balance sheet, it is difficult to identify the reasons for the change in asset values for an individual operation (43). Thus, the debt-to-asset ratio should be ideally used as just one small component in the analysis of the financial strength of a farm operation. However, given the reality of the reluctance of farmers to report financial data at all, it is usually the only measure of financial condition obtainable from a mail survey.

Out of the 96 respondents, only 26 farmers completely answered the survey questions regarding total assets and total debt. This is only 27% of the respondents; however, the results do shed some light on some of the problem areas. Of the 26 farmers, the mean debt-to-asset ratio was 41.4% with average total assets of $354,032 and average total debt of $146,569. The average debt-to-asset ratio for all U.S. farmers was between 25% and 27% as of January 1, 1986 (43).

Table 7 contains the balance sheet information for different categories of respondents as well as statistical comparisons of selected average debt-to-asset ratios. Separating the farmers by farm type, dairy farmers reported a debt-to-asset ratio of 40.5% and potato farmers reported a ratio of 45.7%. However, a statistical comparison of the means for these two groups indicated that there was no significant difference between the mean debt-to-asset ratios at the 90% level of confidence. The dairy farms reported a higher average total asset level, $421,235 compared to $316,102 for the potato farms. Both groups reported carrying roughly the same average debt level.

Table 7. Average Balance Sheet Information
1986 Maine Farm Finance Survey

Category	No.	Average Assets	Average Debts	Average Equity	Average Debt-to-asset Ratio
		----------dollars--------			
By Farm Type					
Dairy	12	421,235	155,422	265,792	40.5%
Potato	10	316,102	154,750	161,352	45.7%
By County					
Aroostook	11	240,547	117,500	123,047	46.7%
All Other Counties	15	437,254	167,887	269,367	42.8%
By Gross Sales					
< $10,000	2	82,500	50,000	32,500	57.6%
$10,000-$39,999	1	525,000	10,000	515,000	1.9%
$40,000-$99,999	5	197,604	92,700	104,904	39.6%
$100,000+	18	418,156	179,850	238,306	46.7%
By Lender					
FmHA	15	353,588	159,354	194,233	50.7%
Other	11	354,638	129,136	225,501	35.9%
By Acreage					
< 100 acres	0	-	-	-	-
100-299 acres	7	191,302	111,112	80,190	55.1%
300+ acres	19	413,985	159,632	254,352	40.6%
By Age					
< 35 years	3	468,740	293,259	174,917	68.4%
35-44 years	7	407,728	168,469	239,259	48.9%
45-54 years	11	334,501	116,914	217,587	38.0%
55+ years	5	253,000	92,800	160,200	38.2%
TOTAL		354,032	146,569	207,463	41.4%

Statistical Tests of Differences in Mean Debt-to-Asset Ratios

Statistical Comparison	Calculated Test Statistic (T)	Degrees of Freedom
Farm Type	.6337	20
County	.4304	24
Lender*	1.7411	24
Age*	1.9648	24

*Statistically significant at the 99% level of confidence.

A comparison of average debt-to-asset ratios reported by farmers in Aroostook County and the rest of the state is also reported in Table 7. Aroostook County farmers reported an average debt-to-asset ratio of 46.7%, while farmers from all other counties reported an average ratio of 42.7%. However, this difference was not found to be statistically significant at the 90% level of confidence.

On an age group comparison, farmers less than 35 years old had an average debt-to-asset ratio of 68.4%. The farmers between the ages of 35 and 44 had an average debt-to-asset ratio of 48.9% and the group of farmers older than 44 had an average debt-to-asset ratio of 38%. Because of the small number of respondents in some of the age categories, the respondents were grouped into two categories for statistical comparison. There was a significant difference between the mean debt-to-asset ratio of those farmers 44 years of age and younger and the mean ratio of farmers older than 44 at the 99% level of confidence. Though limited by a small sample size, these results do tend to support the argument that the younger farmer typically has a higher debt load than older, more established farmers in the same commodity group. With a higher relative level of debt, the younger farmers are a higher credit risk for the lender.

The Farmers' Home Administration borrowers also tended to have a higher debt-to-asset ratio. The average debt-to-asset ratio for the Farmers' Home Administration borrower was 50.7%, while other borrowers had an average debt-to-asset ratio of only 35.9%. The difference between these two means was statistically significant at the 99% level of confidence.

Table 8 contains the percentages of average reported debt-to-asset ratios divided into those less than 40% and greater than or equal to 40% for different categories of respondents. The farm type comparison shows 50% of the dairy farmers had a debt-to-asset ratio of 40% or greater, while 70% of the potato farmers had a debt-to-asset ratio of 40% or greater. The regional comparison shows that 72.7% of the farmers in Aroostook county had a debt-to-asset ratio greater than 40% compared to 53.3% of the farmers in the rest of the state. Table 8 also contains

Table 8. Relative Indebtedness of Respondents

	1986 Maine Farm Finance Survey			
	Debt to Asset Ratio < 40%		Debt to Asset Ratio >= 40%	
Category	No.	percent	No.	Percent
By Farm Type				
Dairy	6	50.00%	6	50.00%
Potato	3	30.00%	7	70.00%
Other	1	25.00%	3	75.00%
By County				
Aroostook	3	28.27%	8	72.73%
All Other Counties	7	46.67%	8	53.33%
By Gross Sales				
Less than $10,000	0	-	2	100%
$10,000-$39,999	1	100%	0	-
$40,000-$99,999	4	80.00%	1	20.00%
$100,000+	5	27.78%	13	72.22%
By Lender				
FmHA	2	28.57%	5	71.43%
Other	8	42.11%	11	57.89%
By Acreage				
< 100 acres	0	-	0	-
100-299 acres	2	28.57%	5	71.43%
300+ acres	8	42.11%	11	57.89%
By Age				
< 35 years	0	-	3	100%
35-44 years	2	28.57%	5	71.43%
45-54 years	6	54.44%	5	45.45%
>= 55 years	2	40.00%	3	60.00%
TOTAL	10	38.46%	16	61.54%

comparisons of percentages of respondents reporting debt-to-asset ratios of 40% or greater or less than 40% by gross sales, by current lender, by acreage and by age. The numbers of respondents in the different categories were too small for any statistical comparisons.

Current Sources of Funds

Out of the 96 respondents, 26 (27%) were Farmers' Home Administration borrowers, while 70 were borrowers from other lenders such as commercial banks and the Farm Credit System. Table 9 contains percentages of respondents in different catergories based on whether they were primarily Farmers' Home Administration borrowers or borrowed from another lending source. Results from statistical tests performed to detect significant correlation between categories are also reported in Table 9. The regional comparison shows Aroostook county to have a higher percentage of farmers borrowing from the Farmers' Home Administration. Thirty-six percent of the Aroostook county farmers were Farmers' Home borrowers. This compares to only 22.7% of the farmers from the rest of the state. However, using the chi-square statistical test, the hypothesis that the regional classification and the current lender were not statistically related could not be rejected at the 90% level of confidence. This indicates that a Maine farmer is equally likely to borrow from Farmers' Home whether he lives in Aroostook County or elsewhere in the state.

In the less than 35 age group, 50% were Farmers' Home borrowers. In the 35-44 age group, 47.1% were Farmers' Home borrowers. Both the 45-54 age group and the 55+ age group had substantially lower percentages, 24.1% and 15% respectively. By aggregating farmers into two groups (less than 45 years old and greater than and equal to 45 years old) to obtain an acceptable number of observations in each category, the hypothesis that there was no statistical relationship between the age and lender categories was rejected at the 99% level of confidence. This indicates that the younger farmer tends to depend on the Farmers' Home Administration for financing.

Table 9. Respondents by Type of Current Lender
1986 Maine Farm Finance Survey

Category	FmHA No.	Borrower Percent	Other No.	Borrower Percent
By County				
Aroostook	11	36.67%	19	63.33%
All Other Counties	15	22.73%	51	77.27%
By Age				
Less than 35 years	5	50.00%	5	50.00%
35-44 years	8	47.06%	9	52.94%
45-54 years	7	24.14%	22	75.86%
55+ years	6	15.00%	34	85.00%
By Farm Type				
Dairy	14	35.00%	26	65.00%
Potato	9	31.03%	20	68.97%
Other	3	11.11%	24	88.89%
TOTAL	26	27.08%	70	72.92%

Statistical Tests of Relationship Between Category and Lender

Statistical Comparison	Test Statistic (Chi-square)	Degrees of Freedom
County	2.029	1
Age*	8.441	1
Farm Type	.119	1

*Statistically significant at the 99% level of confidence.

On a farm type comparison, 35% of the dairy farmers were Farmers' Home borrowers while 31% of the potato farmers were Farmers' Home borrowers. However, no statistical relationship could be determined between the farm type and lender categories at the 90% level of confindence. This result means that dairy farmers and potato farmers in Maine are equally likely to be Farmers' Home customers.

Table 10 depicts the type of loan the Farmers' Home borrowers used and to what degree each loan program was used by the survey respondents. On the whole, 73% used the farm ownership loans, 69% used the operating loans, 31% used the limited resource loans, and 23% used the emergency loans. Aroostook County Farmers' Home borrowers depended more on the emergency loan and operating loan programs than the Farmers' Home borrowers in the rest of the state. However, the Farmers' Home borrowers in the rest of the state depended more on the farm ownership and limited resource loan programs than the Farmers' Home borrowers in Aroostook county.

Table 10. Current Farmers' Home Administration Borrowers' Loan Types - 1986 Maine Farm Finance Survey

Category	Emergency Loans		Operating Loans		Farm Ownership		Limited Resource	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
By County								
Aroostook	4	36.36%	8	72.73%	6	54.55%	2	18.18%
All Other Ct.	2	13.33%	10	66.67%	13	86.67%	6	40.00%
By Age								
< 35 years	1	20.00%	4	80.00%	3	60.00%	2	40.00%
35-44 years	2	25.00%	6	75.00%	7	87.50%	4	50.00%
45-54 years	3	42.86%	5	71.43%	4	57.14%	2	28.57%
55+ years	0	-	3	50.00%	5	83.33%	0	-
By Farm Type								
Dairy	2	14.29%	8	57.14%	12	85.71%	5	35.71%
Potato	4	44.44%	8	88.89%	4	44.44%	2	22.22%
Other	0	-	2	66.67%	3	100.00%	1	33.33%
TOTAL	6	23.08%	18	69.23%	19	73.08%	8	30.77%

Farmers' Future Plans

Out of the 96 total respondents, 49 (51%) of them are planning to leave farming within the next five years. Twenty-one farmers are leaving for retirement reasons. Financial problems are causing 15 respondent to leave farming, while 13 respondents are leaving farming due to a lack of profitability. Figures 7 through 11 depict the reported reasons for leaving farming by geographical region and by farm type. Figure 7 shows that 61% of those leaving farming in Aroostook county cited financial problems as the cause, while Figure 8 shows that the primary reason for leaving reported by those farmers in the rest of the state was retirement.

Using a farm type comparison, Figure 9 shows that 62% of the dairy farmers leaving will leave due to retirement, while Figure 10 shows that 65% of the potato farmers leaving will leave due to financial problems.

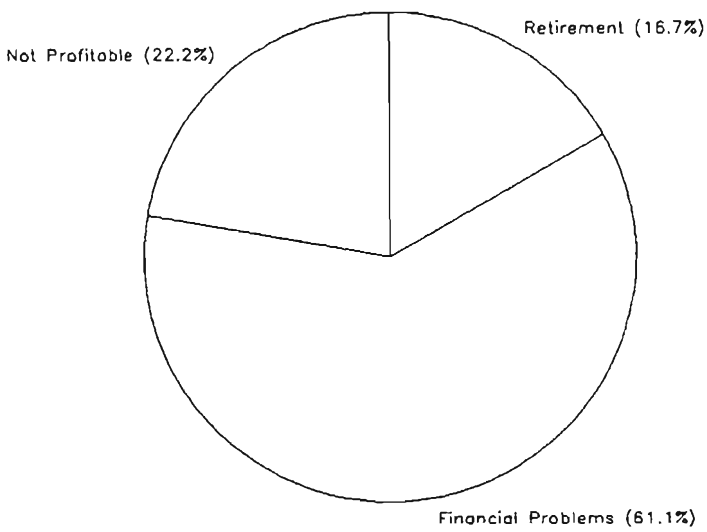

Figure 7. Reported Reasons for Leaving Farming - Aroostook County

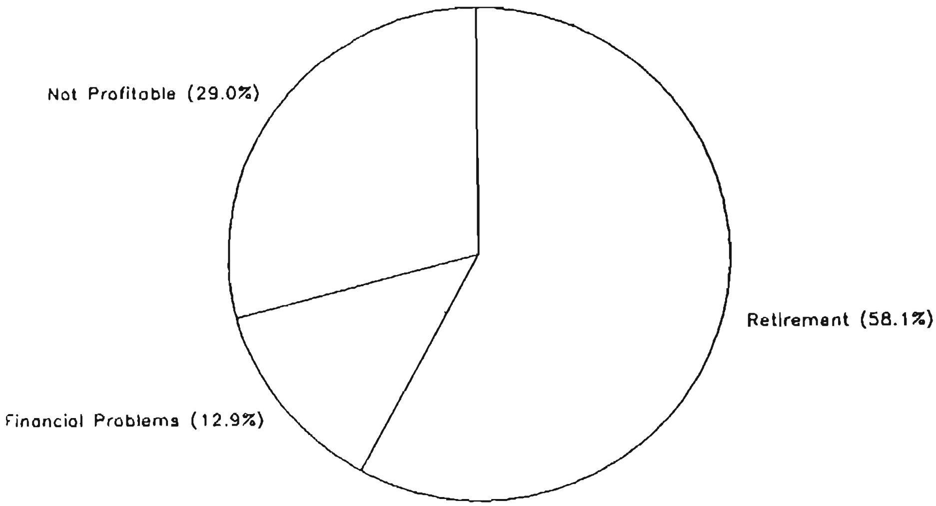

Figure 8. Reported Reasons for Leaving Farming - Rest of State

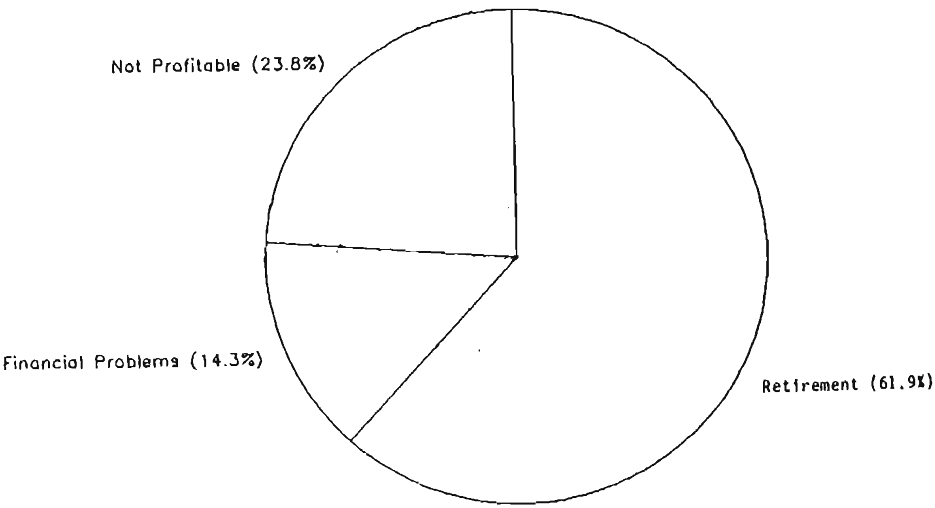

Figure 9. Reported Reasons for Leaving Farming - Dairy Farmers

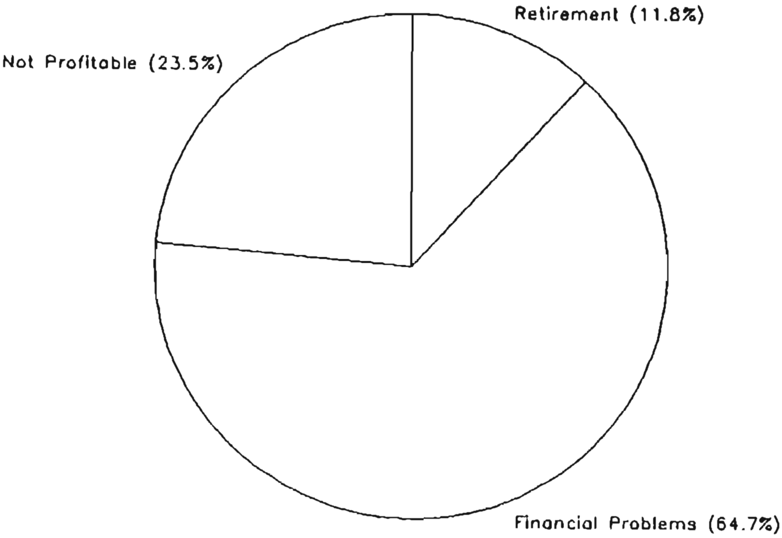

Figure 10. Reported Reasons for Leaving Farming - Potato Farmers

Table 11 lists farmers' opinions on what has caused financial problems for Maine farmers. The leading cause reported was the low prices received for their products, with two-thirds of the farmers citing it as a cause. The second most cited cause was that farmers have used too much credit in the past with 29% of the farmers citing it as a cause. The third most cited reason (19.8%) was difficulty with management.

Table 11. Farmers' Opinion of Causes of Financial Problems
1986 Maine Farm Finance Survey

Reason	Number	Percentage of Total
Prices Received	64	66.67%
Weather	0	-
Interest Rates	8	8.33%
Management	19	19.79%
Too Much Credit	28	29.17%
Input Costs	6	6.25%
Lower Land Values	0	-
Assessed Land Values or Real Estate Taxes	7	7.29%
All Other	14	14.58%

Of the farmers who are not leaving farming within five years, 20, or 21% of the total respondents, are planning expansions, while 24, or 25% of the total respondents, are not. Table 12 lists the plans for expansion for different categories of farmers. Comparing farmers in different regions, 36% of Aroostook farmers planning to remain in farming are planning expansions, while 48.5% of the farmers from the rest of the state are planning to expand.

Table 12. Plans for Expansion for Those Remaining in Farming 1986 Maine Farm Finance Survey

Category	Expanding Number	Expanding Percent	Not Expanding Number	Not Expanding Percent
By County				
Aroostook	4	36.36%	7	63.64%
All Other Counties	16	48.48%	17	51.52%
By Age				
Less than 35 years	5	62.50%	3	37.50%
35-44 years	6	60.00%	4	40.00%
45-54 years	5	38.46%	8	61.54%
55+ years	4	30.77%	9	69.23%
By Farm Type				
Dairy	10	55.56%	8	44.44%
Potato	4	36.36%	7	63.64%
Other	6	40.00%	9	60.00%
TOTAL	20	45.45%	24	54.55%
Percent of Total Respondents		20.83%		25.00%

As expected, as the age of the farmer increases, the likelihood for expansion plans reported diminishes. Of the farmers less than 35 years old who plan to remain, 62.5% were planning expansions. Sixty percent of 35-44 age group were planning expansions. This compares to 38.5% for the 45-54 age group and 31% for the 55+ age group.

A larger percentage of the dairy farmers were planning expansions than were the potato farmers. Fifty-five percent of the dairy farmers were planning to expand, compared to 36% of the potato farmers.

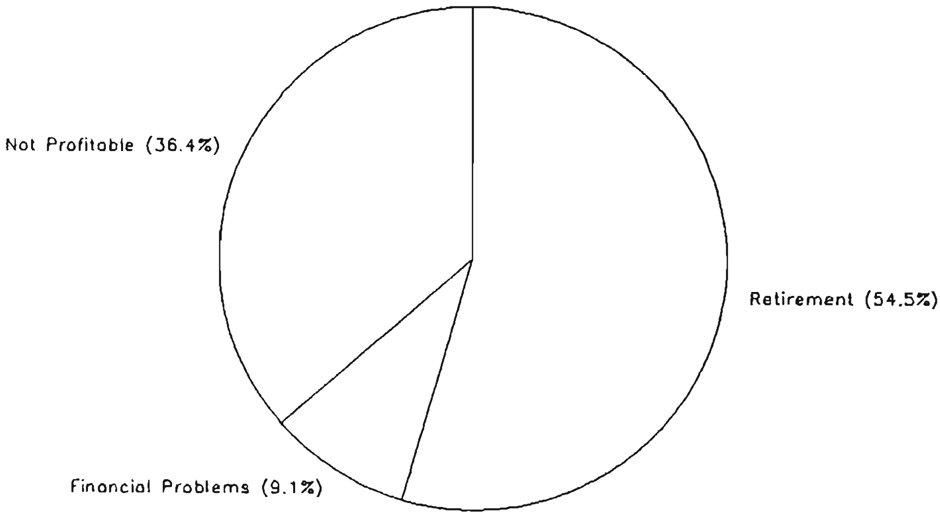

Figure 11. Reported Reasons for Leaving Farming - Other Farmers

Of the 44 farmers who plan to remain in farming, a large majority plans to acquire a portion of their financing from commercial banks. In Figure 12 shows that 40.4% of the farmers were planning to use a commercial bank as a source for funding. Twenty-one percent plan to use Farmers' Home funding, while 19.15% plan to use Farm Credit as a credit source.

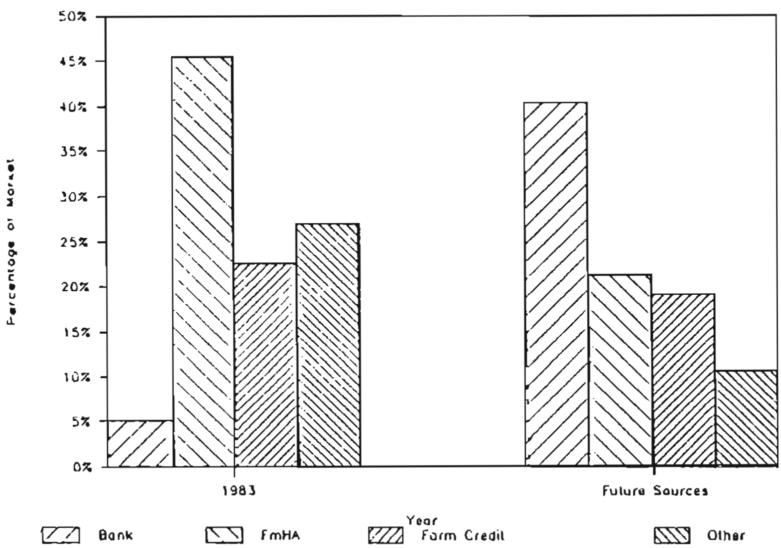

Figure 12. Planned Changes in Sources of Funds in Maine

Table 13 illustrates the future demand reported for different types of loan funds. Eighty-three percent of the respondents in Aroostook county expect to need operating loans, while those farmers reporting from the rest of the state primarily will need machinery loans. Sixty-eight percent of the dairy farmers will need machinery loans, while 91.67% of the potato farmers will need operating loans.

Table 13. Future Uses of Funds for Those Remaining in Farming 1986 Maine Farm Finance Survey

Category	Real Estate Number	Real Estate Percent	Operating Loans Number	Operating Loans Percent	Machinery Number	Machinery Percent	Refinancing Number	Refinancing Percent
By County								
Aroostook	3	25.00%	10	83.33%	4	33.33%	1	8.33%
All Other Counties	4	11.43%	9	25.71%	20	57.14%	3	8.57%
By Age								
< 35 years	1	12.50%	5	62.50%	3	37.50%	2	25.00%
35-44 years	2	18.18%	4	36.36%	5	45.45%	2	18.18%
45-54 years	4	26.67%	8	53.33%	8	53.33%	0	-
55+ years	0	-	2	15.38%	8	61.54%	0	-
By Farm Type								
Dairy	4	21.05%	4	21.05%	13	68.42%	2	10.53%
Potato	3	25.00%	11	91.67%	4	33.33%	2	16.67%
Other	0	-	4	25.00%	7	43.75%	0	-
TOTAL	7	14.89%	19	40.43%	24	51.06%	4	8.51%

Although the response rate for the farm credit survey was low, the results from the farmers who did respond have highlighted the possible critical areas for Maine's agriculture. The results show a number of interesting trends. The typical farmer in Aroostook county is probably under more financial stress than the typical farmer in the rest of the state, although there are financially strong and financially stressed farmers throughout the state.

Another trend is that younger farmers seem to be in a higher credit risk group than their older counterparts. This probably explains the tendency for farmers in the less than 45 age group to depend heavily on the Farmers' Home Administration for funding. Since this level of funding is going to decline in the future, the younger farmers will be seeking other funding sources.

Low farm prices, overborrowing and management difficulties seem to be the primary causes of the current financial stress faced by Maine farmers from their perspective. These reported problem areas are consistent with farmers' opinions throughout the country (43).

SUMMARY AND CONCLUSIONS

If the political climate remains in favor of reducing total expenditures, the Farmers' Home Administration will be withdrawing from direct lending to farmers and will move toward more loan guarantees. This means that farmers will seek direct financing from private sources of credit in increasing numbers in the future. This change is particularly significant for Maine farmers because they have relied relatively heavily on the Farmers' Home Administration loan programs in the recent past. Also, the commercial banks in Maine have not had a significant amount of recent agricultural lending experience. It is likely, therefore, that some farmers who have had no trouble obtaining financing at affordable rates in the past may find themselves without adequate financing at least during some transition period.

Other states have developed some innovative programs to deal with the financial stress of their farmers and the funding shortfalls encountered from other sources. One of the most common programs is the linked deposit program. The Maine legislature has enacted a linked deposit program which will be implemented in the near future to aid in the transition from public to private sources of credit. This program, coupled with the available loan guarantee programs, may enable commercial banks to gain some experience in agricultural lending at relatively low cost and help more existing farmers and potential young entrants to obtain appropriate financing.

From the evidence found in the USDA 1986 Maine Farm Finance Survey results and other sources discussed in this report, we conclude that there seems to be a significant amount of financial stress in the Maine farm sector. The ability to obtain financing through innovative financing schemes, although helpful to some, is not the answer to all of the financial problems faced by Maine's farmers. Low farm prices relative to costs of production, borrowing too much in the past and difficulty with management of the farm have all added to the problem from the farmers' perspective. Additional solutions will be required for these aspects of the problem.