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AGRICULTURAL CREDIT IN THAILAND*

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Chapter I: Background

I.1. Introduction

In recent years, the Government of Thailand has placed increased emphasis on agricultural and rural development. Agricultural credit policy has been an important instrument of government policy-making and resource allocation. Since 1975, public and private institutions have been encouraged to provide increasing amounts of credit to agriculture. This credit has taken the form of loans to various types of farmer groups (informal groups, associations, cooperatives, etc.), individual farmers, and agro-businesses. A distinctive feature of the Thai approach to agricultural credit has been heavy reliance on groups of farmers as the main credit delivery system.

Relatively little comprehensive information is available about rural financial markets in Thailand. The purpose of this paper is to summarize the research conducted by the authors during May 1978 in response to a request from USAID/Thailand. This paper summarizes key findings presented in somewhat greater detail in the original report prepared at the end of that research. Detailed analysis was not possible in the short time available. However, this paper presents data and information generally not compiled elsewhere, and, on the basis of limited analysis, suggests some accomplishments and potential problems.

The research reported in this paper had four objectives:

1. Identify the major components of the rural financial markets and the principal policy instruments employed in recent years,

2. Assess the recent performance of the formal (institutional) agricultural credit system, with special emphasis on:

- a. credit flows
- b. allocation of funds
- c. interest rates and term structure, and
- d. loan repayment,

3. Identify the major impact of formal credit flows on agriculture, and

4. Analyze the various types of delivery systems used for formal credit and evaluate their performance.

I.2. Scope of Study, Terminology and Data Limitations

Given limited time, resources and data, it was necessary to narrow the scope of the research. Attention was focused on credit rather than on the savings side of the financial market. Thailand emphasizes the use of rural financial markets to increase the flow of funds to agriculture rather than mobilize savings. Furthermore, data are more readily available on credit flows. As data are more readily available from formal than informal credit sources, our focus is largely on the formal market. Informal credit, of course, may be more important for certain groups of borrowers.

Several definitions require clarification. The Thais refer to three types of credit: formal, commercial and informal. Formal credit refers to loans from institutions, the most important being commercial banks and the Bank for

Agriculture and Agricultural Cooperatives (BAAC). Commercial lenders are businesses and individuals, such as rice merchants and moneylenders, whose primary or secondary activity is moneylending. Informal lenders are friends, relatives, and others who occasionally lend money as part of family or friendship obligations.

Several methods are used to group farmers for purposes of lending or providing other goods and services. "Informal groups" or "informal borrowing groups" refer to groups of farmers organized largely for purposes of borrowing. Joint liability for repayment is frequently involved even though the lender processes the loan with each individual. "Formal groups" refer to cooperatives, cooperative societies, associations, etc. which have juristic status. These result from prior experiments with methods of delivering goods and services to farmers. Some consolidation, amalgamation, name changing, etc. has occurred, which contributes to a confusion in the Thai literature.^{1/}

Due to the widespread usage of groups, caution is required in interpreting "loans to individual farmers" as reported in certain Thai documents. Normally, data so described would be interpreted as loans to farmers, each of whom is responsible for repayment. However, in Thailand lending is so frequently channeled through a farmers group that many "individual" loans are really loans through informal groups where the group assumes

^{1/} See Section III for a more detailed discussion of formal and informal groups.

joint liability. Individual loans, in the normal sense of the term, are few and are mostly limited to large farmers borrowing from commercial banks.

It is surprisingly difficult to develop consistent data series on formal agricultural credit in Thailand. Several problems exist. First, the banking community defines credit to include "bills, loans and overdrafts". Limiting credit to loans underestimates commercial bank lending to agriculture, which traditionally has included a large amount of overdrafts. Furthermore, Bank of Thailand reports on commercial bank lending to agriculture have historically included a broad range of credit to agricultural processing and marketing firms. In recent years, emphasis has been placed on loans to farmers, and the series reported appears to converge with data on agricultural credit obtained from other sources in the Bank of Thailand. This suggests that some redefinition in loans has occurred.

A common problem is an inability to distinguish between loans made and loans outstanding. Data were found in which the definition changed in the middle of a time series. Caution is also required in distinguishing commercial bank lending between branches and central offices. For example, the Thai Farmer's Bank has in its central office an active Agricultural Credit Section making loans to small and medium size farmers. This Section, however, has represented only 1/5 to 1/3 of the Bank's total commitment to agriculture in recent years. The balance represents loans made by branches and the Bank's deposits with BAAC.

Double counting can easily occur due to inter-institutional lending. As described below, commercial banks deposit funds with BAAC and these funds are occasionally reported as credit. BAAC lends to farmers and to formal groups of farmers. The groups, in turn, lend some of these funds, along with their own savings, to their members. It is possible, then, that one Baht^{2/} deposited by a commercial bank with BAAC could be counted as three Baht in loans to agriculture.

Comprehensive data covering credit lent to farmers by cooperatives do not exist. Some cooperatives do little more than relend funds supplied by BAAC or commercial banks. Others perform other functions such as selling agricultural inputs and pesticides. Frequently these inputs are sold on open account with a monthly interest charge, but the value is not usually included in data on loans made or outstanding to farmers. Thus, data on cooperative loans to farmers appear to underestimate the total credit received by farmers from that source.

I.3. Organization

This paper is organized as follows. Chapter II provides an overview of agricultural credit institutions, key credit policies and sources of funds. Chapter III includes an analysis of the use of farmer groups to meet credit related development objectives. Chapter IV summarizes the limited evidence

^{2/} The dollar/Baht exchange rate has been approximately 20 Baht per dollar for the last several years.

available on the performance of rural financial markets. Chapter V summarizes the major conclusions of the study. A set of appendix tables contain data not presented in the text.

Chapter II:

Rural Financial Markets in Thailand

II.1. Overview of Credit System and Key Policies

Several domestic and international sources provide funds used by formal credit institutions in agricultural lending. An overview of most of the agricultural credit system, with emphasis on formal sources, is provided in Figure 1. The principal institutions involved in mobilizing and allocating resources and lending to agriculture are the Bank of Thailand or Central Bank (BOT), the Bank for Agriculture and Agricultural Cooperatives (BAAC), commercial banks, farmer cooperatives and farmer associations.

The BOT plays two roles.^{3/} It regulates and coordinates the use of resources, especially for commercial banks, and provides resources to formal credit institutions.

The BOT has provided resources to the formal credit system since 1967 when it was first authorized to rediscount promissory notes arising out of agricultural transactions. As shown in Table 1, four different types of notes can be discounted. The first covers loans for agricultural production costs, to date almost 90 percent of the value of total notes discounted (Table 2). In 1971 the BOT began discounting notes for agricultural marketing loans; these represent less than one percent of total volume. The discounting of notes for livestock production and purchasing agricultural inputs was started in

^{3/} Information on the BOT reported here is drawn largely from Bank of Thailand (1977).

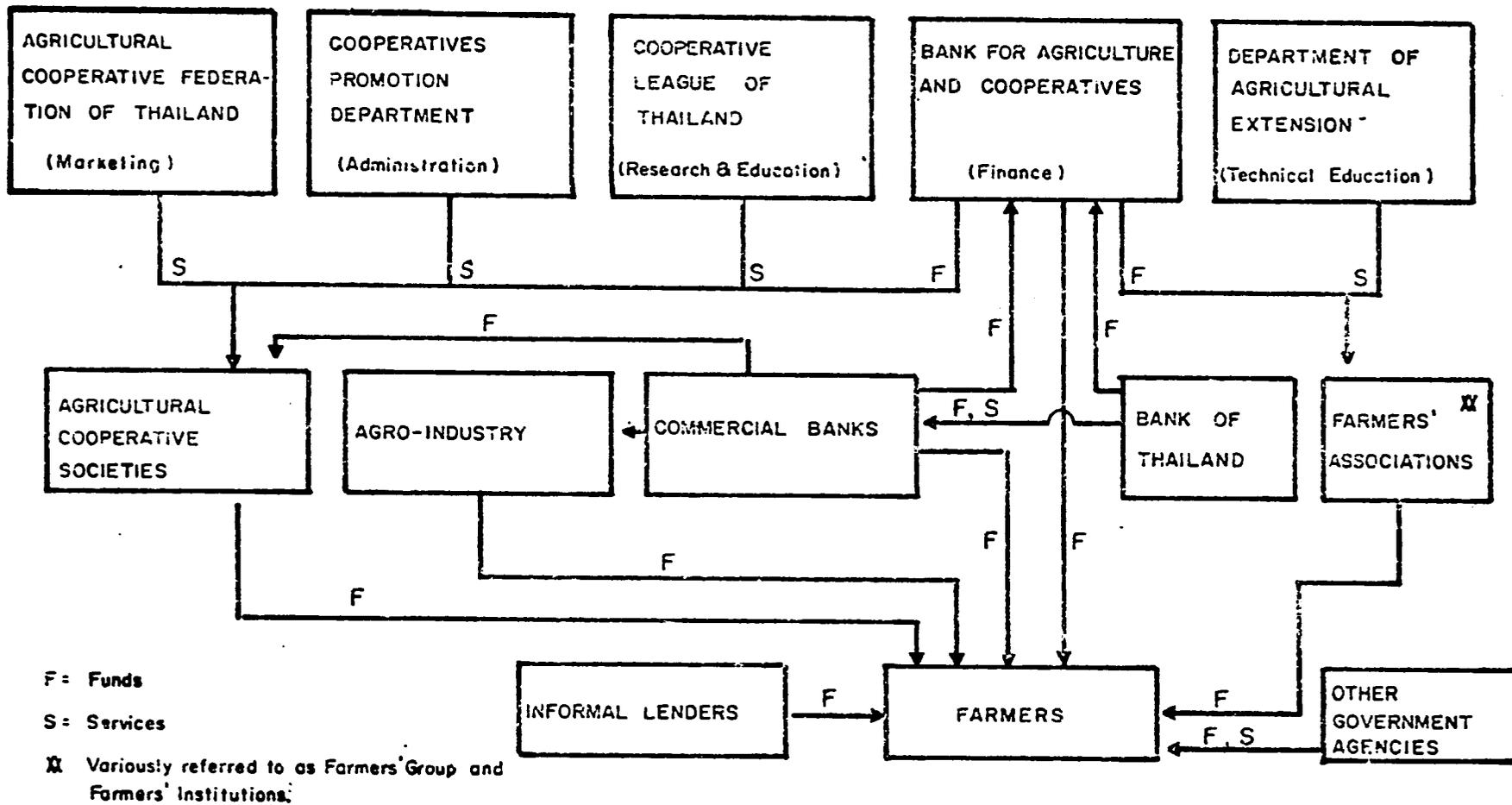


Figure 1. Funds and Services Related to Agricultural Credit in Thailand

Table 1. **Rediscount Facilities of the Bank of Thailand**

Specifications	Type of Note Discounted			
	Agricultural Production	Marketing	Livestock	Inputs ^{a/}
Date initiated	1968	1971	January, 1974	October, 1974
Maximum maturity	12 months	180 days	5 years	not reported
Minimum amount	฿10,000	none	฿10,000	฿10,000
Maximum amount	90% of farmer's debt	(same)	(same)	90% of amount used
Interest rate charged ^{b/}	5% per annum	(same)	(same)	(same)
Maximum rate authorized ^{c/}	10% per annum	7% per annum	(same)	(same)

^{a/} Designed for use by cooperatives and farmer groups in the purchase of inputs for resale to members.

^{b/} Rate charged by BOT.

^{c/} **Maximum rate lenders can charge borrowers.**

Source: Bank of Thailand, 1977.

Table 2. Volume of Rediscount Operations, Total, By Lender and By Type of Note,
Bank of Thailand, 1970-1977
(Million Baht)

Year	Lender			Amount by Type			
	Total	BAAC	Commercial Banks	Agricultural Production	Marketing	Livestock	Inputs
1970	138.0	129.7	8.3	138.0	-	-	-
1971	84.2	76.3	7.9	84.2	-	-	-
1972	205.4	200.1	5.3	202.7	2.7	-	-
1973	282.0	277.6	4.1	281.1	0.9	-	-
1974	499.0	454.7	44.3	467.6	1.8	29.6	-
1975	707.0	564.8	142.2	590.0	3.7	42.7	70.6
1976	1,174.0	1,073.5	100.5	1,030.5	2.5	100.5	40.5
1977	1,206.4	1,022.4	184.0	1,000.0	-	184.0	22.4
TOTAL	4,296.0	3,799.1	496.6	3,794.1	11.6	356.8	133.5
Percent	100.0	88.4	11.6	88.3	0.3	8.3	3.1

Source: Bank of Thailand

1974. The latter category was created to provide low cost funds, through BAAC, for agricultural cooperatives and farmer groups to purchase inputs for resale to members.

By the end of 1977, a total of about 4.3 million Baht in loans had been rediscounted through the BOT. This is a modest amount relative to total agricultural credit, and BAAC alone represents almost 90 percent of the total amount discounted. Two reasons appear to explain limited rediscounting by commercial banks. First, commercial banks argue that the narrow spread between the interest rate charged by BOT and the rate lenders are permitted to charge borrowers (Table 1) provides insufficient incentive to lenders. Secondly, loans rediscounted by the commercial banks cannot be included in the BOT loan quotas discussed in the next paragraph.

Prior to 1975, only 5 of the 29 commercial banks in Thailand did much farm lending. Since response to the rediscounting mechanism had been modest, in 1975 the BOT adopted a quota system to regulate commercial bank lending to agriculture. The quota required that by the end of 1975, the amount of loans outstanding to agriculture should total at least 5 percent of a commercial bank's total lending at the end of 1974. This quota could be met either through direct lending or through deposits with BAAC. To encourage the maximum flow to farmers, loans for agro-businesses, warehouses, and fertilizer and machinery imports were excluded from the lending applicable to the quotas. The next year the quota system was adjusted. By the end of 1976, the banks were required

to have in loans outstanding to agriculture an amount equal to at least 7 percent of 1975 deposits. For 1977, the quota was raised to 9 percent of 1976 year-end deposits. Although several banks exceeded their quota, it became increasingly difficult for them to find suitable clients. Thus, while the 1978 quota was raised to 11 percent, two percent could be covered by agrobusiness loans.

Recently, the BOT created a third inducement for increased agricultural lending. The previous tight control over opening new commercial bank branches was relaxed. But all branches are required to lend at least 60 percent of their local deposits in the local area served by the branch, and at least one-third of these loans must go to farmers. As noted in Table 3, there was a surge of new branch openings in 1976, but the rate of increase slowed in 1977 as banks experienced insufficient demand by credit-worthy clients. In spite of the rapid increase, however, there was no change in the proportion of branches located in the relatively wealthy Central region compared to the rest of the country.

In its coordinating role, the BOT helps determine the proportion of a commercial bank's quota to be channelled to BAAC. Several banks do little farm lending, so their entire quota is deposited with BAAC.^{4/} Other banks prefer to lend

^{4/} All but three of the 16 foreign banks with branches in Thailand currently meet their quotas with deposits with BAAC rather than lend directly to farmers.

**Table 3. Number of Commercial Bank Branches;
Total, and By Region,
Thailand, 1970-1977**

Year	Number of Branches		Region			
	Total	Increase over Previous Year	North	Northeast	Central	South
1970	647	-	94	74	374	105
1971	682	35	96	75	404	107
1972	731	49	103	85	433	110
1973	779	48	117	91	459	112
1974	846	67	124	99	503	120
1975	895	49	134	102	535	124
1976	1,055	170	163	135	627	140
1977	1,184	119	184	158	692	150

Source: Bank of Thailand

their entire quota themselves, because they consider the eight percent rate paid on BAAC deposits too low, and they are doubtful as to when the deposits will be refunded. An additional reason may be that through lending to new customers, banks hope to attract additional deposits, part of which can be lent to non-agricultural customers. BOT also works with BAAC, the Ministry of Agriculture and Cooperatives, and commercial banks to classify cooperatives according to financial status and management capabilities. This information is used to help lenders allocate credit among cooperatives.

Finally, it should be noted that BOT's authority is largely restricted to commercial banks. It is only indirectly involved with management of cooperatives that receive the loans. Furthermore, it is not responsible for audit and regulation of BAAC. Thus, the single most important source of agricultural credit falls outside of BOT responsibility and control.

II.2. Sources of Funds to Credit Institutions

II.2.1. The Bank for Agriculture and Agricultural Cooperatives (BAAC)^{5/}

In terms of volume, the single most important source of formal credit for Thai agriculture is the BAAC. It was established in 1966 to a) take over the cooperative lending activities of the former Bank of Cooperatives, and b) institute direct credit

^{5/} Much of this section is drawn from Ingle (1973) with updated BAAC published and unpublished data.

to farmers. Ingle (1973) estimated that the Bank for Cooperatives, from its formation in 1947 up to 1966, had lent over 840 million Baht. The borrowers included a wide variety of credit, production, marketing and land improvement cooperatives and societies.

BAAC receives its loanable funds from several sources. Government support is evident in four ways: requiring commercial bank deposits, rediscounting notes, arranging foreign loans, and furnishing ownership capital. Over half of BAAC liabilities outstanding at the end of 1976 were for commercial bank deposits (Table 4). According to BOT statistics, these deposits totaled $\text{฿}1,670.8$ million at the end of 1975 and $\text{฿}4,528.0$ million at the end of 1977, thus reflecting the impact of the BOT quota system. The second most important source of BAAC loanable funds was rediscounted notes with BOT. These totaled almost \$1 billion in 1976.

BAAC makes loans to individual farmers, largely through informal borrowing groups. In the past farmers were required to deposit 5 percent of these loans with BAAC to be held for three years earning 9 percent interest. This requirement was recently dropped due to the high cost of maintaining such accounts. At the end of 1976, these funds represented 7 percent of total BAAC liabilities. The BAAC is also authorized to accept savings and time deposits from the investing public. These accounts represented another 15 percent of liabilities.

Table 4 BAAC Liabilities and Capital
as of December 31, 1976
(Million Baht)

Item	Amount	Percent
Liabilities		
Deposits		
Savings deposits (4½%) ^{a/}	335	5.4
Time deposits (6-8%)	595	9.6
Loan compensatory deposits (9%) ^{b/}	433	7.0
Commercial banks (8%) ^{c/}	<u>3,160</u>	51.2
Sub-total	4,523	
Notes payable to BOT (5%) ^{d/}	981	15.9
Other borrowings		
USAID loans	174	2.8
Loan from Japan	93	1.5
Other	<u>108</u>	1.7
Sub-total	375	
Other liabilities	<u>295</u>	4.8
Total liabilities	6,174	99.9
Capital		
Paid-up Capital		
Held by Ministry of Finance	983	76.6
Held by cooperatives and individuals	<u>17</u>	1.3
Sub-total	1,000	
Reserves	57	4.4
Accumulated profit	<u>227</u>	17.7
Total Capital	1,284	100.0

^{a/} Number in parenthesis indicates rate of interest paid.
^{b/} Compulsory deposits from loans to individual farmers.
^{c/} Commercial bank deposits specified by BOT.
^{d/} Rediscount operations with BOT.

Source: BAAC, Tenth Year of Operations, 1976, Bangkok

The Ministry of Finance, with almost $\text{E}1$ billion in paid-up capital, is the largest source of BAAC capital. Reserves and accumulated profits represent most of the rest of the capital.

Overall responsibility for the BAAC rests with the Ministry of Finance. A Board of Directors, appointed by the Government, develops policies and is responsible for supervision. The Board also appoints a Manager responsible for administration and operations.

The BAAC has a network of 58 provincial branches covering most of the country's 72 provinces. In addition, at the end of 1976 it had 331 field offices staffed with credit supervisors to appraise farm assets, assist with loan applications and provide training in credit use. Field supervisors are not authorized to make financial transactions, however, so mobile units from provincial branches travel to field offices to make disbursements and accept payments and deposits during periods of peak activity. Farmers are also encouraged to save time and minimize travel expense by using postal money order facilities for deposit and repayment transactions.

BAAC lending to individual farmers includes short, medium and long term loans. Informal groups are the principal channel for most of this credit. A group member may borrow as an individual providing the group leader recommends the loan. Typically, this occurs with long-term loans. More frequently, however, joint liability is required. In some cases this may be limited to another member cosigning the note, but in most cases the entire group accepts joint liability. Through this

arrangement BAAC can lend to tenants, whereas cooperatives normally require land ownership for membership. Beginning in 1976 the BAAC required that 10 percent of the members of a group pledge their land to the group for loan collateral. This policy was introduced to improve loan repayment.

A substantial share of BAAC lending goes to cooperatives and farmer associations. These funds are used for relending to members, and for financing cooperative inventories, rice purchases from members and construction of physical facilities.

II.2.2. Commercial Banks

Historically, only four of Thailand's commercial banks had significant amounts of agricultural lending. They include the Bangkok Bank (publicly owned), Krung Thai Bank (government owned), the Thai Farmers' Bank and the Bank of Ayudhya, both privately owned. At present, 16 banks make loans directly to farmers. Bank funds come from domestic and international sources, and from rediscounting agricultural notes with the BOT, but as noted above, banks have made limited use of this facility.

The Bangkok Bank's most evident lending to agriculture begins in 1963 with the creation of a special Farm Credit Program. The Bank estimated that by the end of 1975 it had lent a total of almost \$2 billion under this program (Himathongkam, 1976). Several types of loans are made. Loans to individual farmers are made using mortgaged land as collateral. Loans are also made without collateral to landless farmers who are

members of joint liability groups. In recent years, the Bank has become one of the few lending to farmer cooperatives. Finally, agro-business loans represent a substantial share of total agricultural lending. Firms such as rice, flour, sugar, and livestock feed mills, vegetable and animal oil processing plants, and canneries receive much of this credit.

The Krung Thai Bank initiated agricultural credit programs in 1958. Since 1966, it has been actively working with the Office of Accelerated Rural Development of the Ministry of Interior, especially in Northeastern Thailand where internal security has been threatened (Krung Thai Bank, 1977). This lending has involved credit in cash and in kind for various types of village oriented projects.^{6/} The Bank also has direct lending programs to individual farmers, exporters of agricultural products and agro-businesses.

The Thai Farmers' Bank lends to agriculture through its branches and through the Agricultural Credit Section in the central office. This Section was started in 1967 and lends primarily to small and medium farmers, while the branches tend to make individual loans to larger farmers with land given as collateral. The Credit Section uses informal joint liability groups for much of its lending. It has participated in various projects with other government units such as the Office of Accelerated Rural Development, Public Welfare Department, and

^{6/} For a discussion of the background and early results of this type of program, see Gamble (1969 and 1971).

the Royal Irrigation Department. In 1977, about one-fourth of the funds the Bank provided to agriculture were lent through the Agricultural Credit Section, and the balance included lending by branches and BAAC deposits (Achawasamit, 1977).

The Bank of Ayudhya established an Agricultural Credit Section in 1971. Like the Thai Farmers' Bank, it makes direct loans to individual farmers and groups through the central office and branches, and participates in various government development projects. No information was reported on the relative importance of each type of lending activity (Yaowarat, 1977).

II.2.3. Cooperatives and Farmers' Associations

Cooperatives and Farmers' Associations acquire funds from several sources for use both in their corporate operations and for relending to farmers. The sources of funds to Agricultural Cooperatives, Land Settlement Cooperatives and Farmers' Associations, as of the end of 1975, are reported in Table 5. Members have been an important source of funds through deposits and ownership capital. However, 86 percent of total liabilities were due to BAAC. An additional 11 percent represented loans from Government and other sources. Nongovernmental sources appear to be fairly insignificant, however, so the strong dependence on Government sources is obvious.

Like the other lenders previously discussed, Cooperatives and Associations make loans to individual farmers with land used as collateral. Most loans, however, are made with a single cosignor or joint liability of an informal group.

Table 5 Sources of Funds to Cooperatives and
Farmers' Associations,
Thailand, 1975

Item	Outstanding Balance Year-end 1975 (Million Baht)	Percent of Total
Liabilities		
Loans from BAAC	1,997.7	86.1
Loans from Govt. and others	264.5	11.4
Deposits from members	<u>56.9</u>	<u>2.5</u>
Total liabilities	2,319.1	100
Capital		
Share capital	269.4	40.2
Reserves, accumulated funds and profits	<u>399.8</u>	<u>59.8</u>
Total capital	669.2	100

Source: Bamrungwong (1977)

II.2.4. Other Institutions

Several other institutions provide credit to agriculture. Various government offices implement agricultural development projects with credit components. Commercial banks participate in these projects, though it is not clear to what extent the funds involved are included in the data reporting commercial bank lending.

Another source of funds has been the Farmers' AID Fund, established in 1974 to provide part of the financing for operations of the Farmers' Marketing Organization (FMO). Receipts for the Fund are obtained from export premiums on rice and sugar, and the Fund can also receive budgetary allocations and borrow from the banking system. In 1975 the FMO spent $\text{P}350$ million to distribute 150,000 tons of fertilizer to rice and sugar cane farmers. In 1977, $\text{P}1,250.5$ million were earmarked from the Fund to finance facilities and working capital requirements of agricultural cooperatives (Bamrungwong, 1977).

II.3. Flows of Funds to Farmers and to Formal Agricultural Groups

As noted in the previous section, individual farmers have access to institutional credit through both informal and formal borrowing groups, Farmers' Associations and Agricultural Cooperative Societies. Farmers also borrow from commercial banks as individuals and in groups. Some funds flow from commercial banks through Farmers' Associations and Agricultural Cooperative Societies. However, the sources of such funds are dominated by BAAC.

II.3.1. Funds from BAAC

BAAC loan volumes for the period 1970-1977 are shown in Table 6. The increases in loans made and outstanding since 1974 clearly reflect the increase in deposits made by commercial banks. As shown in this table, much of the increase in lending by BAAC was in direct loans to farmers. Other lenders complain that BAAC is an increasingly competitive source of lending. Commercial banks that prefer to meet their quotas by lending directly to farmers rather than through deposits with BAAC particularly resent this competition. The complaint is also heard from the Farmers' Associations and Agricultural Cooperative Societies, who cite delays in loan decisions and excessive formalities in loan transactions.

It was impossible to assess the implications of such complaints. Given the sharp increases in flows of funds since 1974, bureaucratic delays would not be surprising. On the other hand, restrictive qualifications for membership in Agricultural Cooperative Societies, such as land ownership, deny access to farmers otherwise capable of repaying institutional debt. These farmers can be reached, however, by BAAC loans through informal borrowing groups.

Table 7 shows the flow of funds from BAAC to the various types of Agricultural Cooperative Societies from 1970 to 1976. In this period there was a rapid change in the number of societies as well as in membership. Some Farmers' Associations merged and others were transformed into Agricultural Cooperative

Table 6 BAAC Loans by Type of Agricultural Borrower,
1970-1977 (Million Baht)

Year	Loans to Individuals		Loans to Farmers' Associations		Loans to Agricultural Cooperative Societies	
	Made	Outstanding	Made	Outstanding	Made	Outstanding
1970	563.3	753.7			198.1	409.2
1971	509.4	843.3			203.5	539.5
1972	670.9	993.8			276.7	681.5
1973	773.7	1101.2	3.4	3.4	307.0	785.3
1974	1203.7	1446.1	142.7	138.6	388.7	966.6
1975	2100.9	2472.8	387.8	440.9	866.1	1642.4
1976	3200.9	3848.9	288.2	533.0	814.7	2172.9
1977	3789.2	5012.0	267.4	589.6	1005.6	2679.0

Source: BAAC, May, 1978

Table 7 BAAC Loans to Agricultural Cooperative Societies,
By Functional Type of Society,
1970-1977 (million Baht)

Year	Credit Only		Land Improvement		Buy and Sell	
	Loans Made	Loans out-standing	Loans Made	Loans Out-standing	Loans Made	Loans Out-standing
1970	197.7	403.9	0.2	2.3	0.1	3.1
1971	187.1	519.0	1.6	17.5	0.1	3.0
1972	200.4	631.6	43.4	48.1	0.1	1.8
1973	251.7	630.6	54.8	77.9	0.6	2.3
1974	295.3	877.5	55.5	75.6	37.8	36.9
1975	563.3	1472.9	50.8	85.1	100.2	106.2
1976	691.8	1997.4	0.0	0.0	123.2	175.5

Source: BAAC, May, 1978

Societies. Mergers also occurred among the latter, and many expanded the scope of their functions. In 1975, just 26 of the total 555 Agricultural Cooperative Societies were organized only for credit (Cooperatives Promotion Department). In short, there has been considerable change in size as well as scope of functions of the formal groups from which farmers borrow. A particularly interesting and unique feature of agricultural credit in Thailand is the increasing tendency to use groups as a means of channelling the expanded flow of funds to agriculture.

II.3.2. Funds from Commercial Banks

Data are not yet available for comprehensive analysis, but enough information exists to show a tremendous recent increase in agricultural lending by banks. Only 4 banks did much agricultural lending a few years ago, but today 16 have an agricultural portfolio. For this reason, the share of the total credit market held by the banks that traditionally lent to agriculture has fallen. This section presents information on the magnitude of some recent changes in bank lending.

First, at the aggregate level, BOT publishes data on bank lending as shown in Table 8. The effect of the BOT quota policy is clearly evident. From 1971 to 1974, the agricultural share of total bank loans actually declined. Beginning in 1975, the share began to rise, so that by the end of 1977 it exceeded 5 percent. Two problems exist with these data. First, inter-bank transfers are included so there is undoubtedly some double

Table 8 Commercial Bank Loans and Overdrafts:
Outstanding^{a/}, Total and Agricultural,
Thailand, 1971-1977
(Million Baht)

Year	End of Year Balance		Percent Agricultural
	Total	Agricultural ^{b/}	
1971	31,709.8	742.7	2.34
1972	35,845.7	771.2	2.15
1973	51,291.2	990.5	1.93
1974	68,815.7	1,305.3	1.90
1975	82,898.8	2,823.7	3.41
1976	96,377.3	4,121.4	4.28
1977 (Sept.)	113,548.9	5,806.4	5.11

a/ Including inter-bank transfers.

b/ Including agro-industries.

Source: Bank of Thailand, Monthly Bulletin, Vol. XVII,
No. 12, December, 1977.

counting. Secondly, agro-industries are defined as agricultural and it is probable there has been some redefinition of loans in an effort to meet the quota (Himathongkam, 1977).

Another measure of credit flows is given in Table 9. These data show the BOT goal for total bank lending to agriculture and actual lending and deposits with BAAC. The goal more than tripled from 1975 to 1978, and actual lending exceeded the goal in 1976 and 1977. Over half the total volume was direct lending to farmers and cooperatives. From 1975 to 1977 the total volume outstanding in direct bank loans increased by 2.6 times from $\text{฿}2.2$ billion to almost $\text{฿}5.9$ billion. This rapid rise is expected to continue in 1978.

The best documentation of the recent changes in individual bank credit operations is for the Bangkok Bank. Table 10 shows loans made and outstanding to farmers and cooperatives beginning in 1963. These data include lending from branches and the central office. A tremendous increase occurred in this Bank's agricultural portfolio after 1974. From 1974 to 1975 loans made almost quadrupled, and nearly doubled again by 1976. Loans outstanding increased tenfold from 1974 to 1977.

Bangkok Bank's rapid growth in agricultural lending can be appreciated by comparing it with the BAAC which, as noted, has also greatly expanded. In 1970, loans outstanding in the Bank were only 10 percent of the BAAC balance the same year, but that proportion increased to 30 percent in 1977.

Table 9 Agricultural Lending by Commercial Banks:
Year-end Balances, Direct, and BAAC Deposits,
1975-1978
(Million Baht)

Year	Goal	Actual		Total
		Direct	BAAC Deposits	
1975	4,333.3	2,233.6	1,670.8	3,904.4
1976	6,139.0	3,810.9	3,160.6	6,971.5
1977	9,647.0	5,891.8	4,528.0	10,419.8
1978	14,387.0	NA	NA	NA
Percent (1977)		56.5	43.5	100.0

Source: Bank of Thailand

Table 10 Agricultural Loans Made and Outstanding
 to Farmers and Cooperatives:
 Bangkok Bank, 1963-1978
 (Million Baht)

Year	Loans Made	Loans Outstanding
1963	9.6	8.2
1964	7.1	12.4
1965	18.2	24.3
1966	29.9	31.5
1967	63.0	57.2
1968	94.1	93.1
1969	124.6	149.8
1970	93.2	129.1
1971	77.3	114.4
1972	89.7	117.4
1973	98.0	127.1
1974	173.3	186.5
1975	674.7	624.2
1976	1,232.0	1,045.8
1977	NA	1,834.0
1978 (March)	NA	2,024.1

Source: Bangkok Bank

The Thai Farmers' Bank reported credit lent through the Agricultural Credit Section, and total lending including deposits with BAAC (Table 11). Loans outstanding by the Agricultural Credit Section roughly tripled from 1975 to 1977, while the total doubled. This growth rate was slightly slower than that of the Bangkok Bank, and direct lending to farmers may be only 25 percent as large.

Little published data exist for the Krung Thai Bank and Bank of Ayudhya. At the end of September, 1977, the Krung Thai Bank had almost 700 million Baht on deposit with BAAC, and an outstanding balance of 840 million Baht in agricultural loans (Krung Thai Bank, 1977). The Bank of Ayudhya reported total lending to farmers of 527 million Baht in 1976 and 582 million Baht outstanding on October 31, 1977 (Yaowarat, 1977).

II.3.3. Funds to Farmers from Agricultural Cooperative Societies and Farmers' Associations

Data to document the flow of funds from Farmers' Associations to farmers are incomplete. The principal function of Farmers' Associations is to channel educational services to members: production management from the Agricultural Extension Department and business management from the Cooperatives Promotion Department. Many members of the Farmers' Associations borrow directly from BAAC but it appears that some Farmers' Associations make loans to members. Some loans are associated with sale of inputs to members and are disbursed in kind. Other loans are in cash. The best approximation of the total

Table 11 Agricultural Loans Outstanding:
 Thai Farmers Bank, 1967-1977
 (Million Baht)

Year	Agricultural Credit Section	Total ^{a/}
1967	1.1	
1968	1.9	
1969	3.7	
1970	6.6	
1971	12.1	
1972	24.9	
1973	34.1	
1974	43.3	
1975	99.3	553.9
1976	184.0	769.0
1977	304.8	1,168.0

a/ Includes lending through the Agricultural Credit Section and branches, and deposits with BAAC. Only years 1975-1977 were reported.

Source: Achawasamit (1977)

volume of loans is the data on loans made and outstanding by BAAC to Farmers' Associations: 267.4 million Baht and 589.6 million Baht, respectively, in 1977. (See Table 6).

More adequate data are available to document the flow of loans from Agricultural Cooperative Societies to their members. In the year ending March 31, 1976, these Societies had made loans to their members in the amount of 1,894.6 million Baht (Cooperatives Promotion Department).

II.3.4. Total Funds to Agriculture

Table 12 presents data summarizing total agricultural lending in Thailand relative to agricultural output. Credit to output ratios provide evidence on the relative importance of credit. These data represent the best estimate of total credit volumes. Errors and omissions obviously exist as discussed earlier. Only two banks are included in the data for 1973 and 1974, so total credit is substantially underestimated those two years.

The sharp expansion in agricultural credit is clearly seen by comparing credit to the value of agricultural GNP. The credit to agricultural GNP ratio must have been in the order .03 to .04 in 1973 and 1974. By 1977 it exceeded .13. The second ratio calculated includes only the value of crops, since most credit goes to crop producers. The ratio of credit to value of crops was approximately .04 to .05 in 1973 and 1978, and rose to .18 by 1977. Thus from these two measures, it appears that between 1973 and 1977 agricultural credit grew about four times as fast as agricultural output.

Table 12. Total Agricultural Credit^{a/} and
Credit to Output Ratios
Thailand, 1973-1977

Year	Source of Credit			Ratios	
	Banks (Million Baht)	BAAC	Total	Credit Ag. GNP ^{c/}	Credit Value of Crops ^{d/}
1973	161 ^{b/}	1,890	2,051	.028	.036
1974	230 ^{b/}	2,551	2,781	.033	.045
1975	2,234	4,556	6,790	.076	.102
1976	3,811	6,555	10,366	.108	.143
1977	5,892	8,281	14,173	.134	.180

^{a/} Year-end outstanding balance of credit to farmers, Farmers Associations and Farmers Cooperative Societies.

^{b/} Bangkok Bank and Thai Farmers Bank only.

^{c/} Estimated total GNP from agriculture.

^{d/} Estimated total value of crop output.

Sources: Credit data obtained from various sources reported in text. Agricultural production data was obtained from Ministry of Agriculture and Cooperatives, Selected Economic Indicators Relating to Agriculture, Bangkok, 1977.

II.4. Interest Rate Structure in Thailand

Interest rates in Thailand are determined by a combination of controls and market forces. Table 13 lists some of the important categories of interest rates in the country.

The most difficult interest rate to establish is that charged by informal agricultural lenders, including merchants, moneylenders, friends, relatives, etc. This rate varies by source, by risk of loan and borrower, by region, and by purpose of the loan. Friends and relatives may lend at zero rates. Recent estimates place the informal rate from 15.8 to 36 percent for rice farmers. There are reports that some borrowers pay much higher rates.

The Thai usury law sets a maximum 15 percent rate for loans by institutional lenders. Loans to agro-business cannot exceed 12.5 percent, while loans to farmers have a maximum rate of 12 percent. As in other countries, there are reports that some lenders circumvent these rules by assessing non-interest charges on loans. Given the low rate permitted, it is not surprising that lenders are reluctant to lend to farmers. Therefore, the Thai objective of benefitting farmers with cheap credit may be counterproductive because it discourages lending, particularly by banks, and encourages lenders to reduce costs by concentrating their portfolio in less risky, lower cost loans to large farmers. The need to impose a quota to force banks to lend to farmers is a logical result of low interest rates. The reluctance of banks to deposit funds in BAAC is also

Table 13 Nominal Interest Rate Structure,
Thailand, 1977

Year	Interest Rate, Percent per annum
Informal agricultural lenders	15.8 - 36 ^{a/}
Maximum lending rate, any formal loans	15
Maximum lending rate, loans to agro-businesses	12.5
Maximum lending rate, loans to farmers	12
Maximum lending rate, loans to cooperatives	9
Maximum lending rate, farm loans rediscounted with BOT	7-10 ^{b/}
Government bonds	8.5 - 9
Commercial bank deposits with BAAC	8
Commercial bank and BAAC time deposits:	
Over 12 months	8
6 < 12 months	7
3 < 6 months	6
Rediscount rate charged by BOT for rediscounted farm loans	5
Commercial bank and BAAC savings deposits	4.5

^{a/} Rice farmers only.

^{b/} See Table 1.

Source: Bank of Thailand, Monthly Bulletin, Vol. XVII, No. 12, December, 1977; Onchan "Agricultural Credit in Thailand" and other sources.

understandable, considering that the BAAC rate is 8 percent, while Banks can earn 9 percent on government bonds, and at least 12 percent on loans.

Some insights into the spread between cost of funds and lending rates can be obtained from Table 13. In 1975, the composition of commercial bank deposits in Thailand was approximately as follows: 17 percent demand deposits, 9 percent savings deposits, and 74 percent time deposits. Assuming zero, 4.5, and 7 percent as the respective rates of interest paid, the weighted average cost of money for banks approximated 5.5 percent. Thus, the cost of bank lending to agriculture, including defaults, would have to be no greater than 6.5 percent in order to break even with a 12 percent maximum loan rate. Given the source of funds reported in Table 4, the BAAC may have a weighted cost of funds closer to 6.5 percent, or roughly one percent higher than commercial banks. Of course, since BAAC receives a large share of its funds in deposits from banks, it does not have the high administrative costs of mobilizing deposits which banks incur. Thus, the total cost of loanable funds may actually be less for BAAC than for banks. In any case, the BAAC must operate about as efficiently as banks in order to break even in its lending operations.

The interest rate structure also helps explain the pattern of use of the BOT rediscount facility. Borrowing at 5 percent from the BOT may have a greater impact on reducing the average cost of funds to BAAC than to banks. BAAC has only a 4 percent spread between the lending rate to farmers and the 8 percent

rate paid on commercial bank deposits, but a 5 percent spread between the rediscount rate and the maximum rate permitted on rediscounted loans. Raising the maximum rate lenders can charge for rediscounted loans could make this a more attractive source, and encourage banks to use it more.

Two final comments on interest rates are relevant. First, the real rate of interest is important, in addition to the nominal interest rate as discussed here.^{2/} When there is inflation, the real rate of interest will be lower than the nominal rate. Appendix Table 4 reports various price indices, and it is clear that Thailand experienced high rates of inflation in 1973 and 1974 compared to previous years. The inflation rate also appears to have accelerated in 1977. Therefore in at least two of the last seven years lenders have experienced a real decline in the value of their loan portfolios. That is, the real value repaid is less than the value lent. Of course, savers suffered a similar erosion in the real value of their deposits. Two problems may emerge if inflation continues at high levels. Lenders may increasingly use noninterest charges, such as application fees, compensatory balances, etc., to increase the real rate of return from loans. Lenders may also resist lending to agriculture, and concentrate more on large, less risky loans.

^{2/} The real rate of interest is frequently defined as the nominal rate minus the rate of inflation.

Second, the preceding discussion of interest rates has been based on the assumption that all loans are repaid. In Section IV, the problem of default and its effect on lending costs is discussed.

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Chapter III:

Reliance on Groups to Meet Credit and Credit-Related Objectives

Group structures and group action play an important part in meeting agricultural credit objectives. Three groups can be readily identified: informal borrowing groups, Farmers' Associations and Agricultural Cooperative Societies.

III.1. Informal Borrowing Groups

An informal borrowing group contains from five to 30 members. Such groups are used by Agricultural Cooperative Societies, Farmers' Associations, commercial banks and by BAAC. Typically the initial members of an informal borrowing group are selected by the lender and a leader is elected by the members. Additional farmers are added through joint decisions of the lender and existing members of the group. For example, in one Agricultural Cooperative Society, the lender and at least two-thirds of the present members must agree before a new member is added to the group. As a condition to loan eligibility, each member of an informal borrowing group agrees to assume liability for loans acquired by other members of the group. His liability is limited to the ratio of his loan to the total loan for which the group is jointly liable.

The lender gains two possible advantages from an informal borrowing group: a reduction of administrative costs, especially after the group has been formed, and socio-economic sanctions to ensure repayment of joint liability loans. Peer pressures and the threat of legally enforced sanctions thus substitute in

part for collateral. Informal borrowing groups permit lending to borrowers who have no land to pledge as collateral. However, some members of an informal borrowing group pledge land as collateral to obtain individual loans in addition to the amount borrowed subject to joint liability. BAAC requires that at least 10 percent of the members of a group pledge land in addition to joint liability.

In one Agricultural Cooperative Society visited, three classes of loans were made to Society members in 1977. Class I loans comprised 70 percent of the total. These loans were made through informal borrowing groups and were limited to a maximum of 7,000 Baht for each member. Class II loans were made to individuals who were members of informal borrowing groups and pledged land as collateral for loans in excess of 7,000 Baht. These loans were limited to a maximum of 40,000 Baht for the qualifying member. Class II loans comprised 20 percent of the total. The remaining 10 percent of loans were Class III loans to individuals who were joined in the note by a co-signer. Such loans were subject to a maximum of 7,000 Baht per individual. Class II and III loans required a recommendation of the group leader despite the absence of joint liability of the group for the "excess" loan. In this particular Agricultural Cooperative Society, it is interesting that the repayment record was said to be best for Class I loans.

Informal borrowing groups have become especially prominent since the expansion of credit in 1974. One significant result

of this is that farmers in groups used by commercial banks have been identified as eligible for bank loans as individuals because of a history of successful repayment in an informal borrowing group. It is likely that few of these individuals would have been detected without the experience of informal borrowing groups.

A high proportion of the 3,233.9 million Baht reportedly loaned by BAAC in 1976 to individual farmers were, in fact, loans made to informal lending groups (BAAC). The same is true of loans made to individuals by other lenders, including Agricultural Cooperative Societies, Farmers' Associations and commercial banks. As of March 31, 1978, more than 700,000 farmers were reached through informal lending groups by BAAC (Table 14). The number reached by Farmers' Associations, Agricultural Cooperative Societies and commercial banks is unknown.

III.2. Formal Groups

Cooperatives have a long history in Thailand's agricultural credit system. They were introduced in 1916, mainly "to free farmers from heavy debts and exorbitant interest rates" (Ministry of National Development, 1967). Early success encouraged the government to provide funds to cooperatives for relending to members against land mortgages. The Cooperative Society Act of 1928 and the Civil Associations Act of 1940 provided legal status for the further development of various types of cooperatives (Machima). In 1943, the Bank for Cooperatives

Table 14

BAAC Lending To Informal
Borrowing Groups, 1975-1978

Year	Number of Informal Borrowing Groups (BAAC) <u>c/</u>	Number of Farmers in Groups <u>d/</u>	Borrowers Per Informal Borrowing Group
1975 <u>a/</u>	33,894	516,314	15
1976 <u>a/</u>	39,714	604,787	15
1977 <u>a/</u>	40,568	618,540	15
1978 <u>b/</u>	45,383	702,075	16

- a/ December 31.
b/ March 1.
c/ BAAC, Monthly Report
d/ BAAC, Annual Report

was organized to replace direct government loans to finance Agricultural Cooperative Societies. In 1966, the Bank for Cooperatives was replaced by BAAC with authority to lend to individual farmers as well as to Agricultural Cooperative Societies.

The Cooperative Society Act of 1968 initiated the amalgamation of Agricultural Cooperative Societies, and established the Cooperative League of Thailand. Amalgamation was designed to strengthen the Societies by merging many small and weak Societies into fewer, stronger ones. The League was given responsibilities for research and education, as well as certain promotional functions. Some of these functions overlap with those of the Cooperatives Promotion Department of the Ministry of Agriculture and Cooperatives.

There now exist in Thailand six main types of cooperative societies: Agricultural Cooperative Societies, Land Settlement Cooperatives, Fishery Cooperatives, Consumer Cooperatives, Thrift and Credit Cooperatives, and Services Cooperatives (Machima).

III.2.1. Farmers Associations

The other type of formal groups in agriculture are referred to variously as Farmers' Groups and Farmers' Associations. They were begun informally in Kampangpet Province where paddy producers sought to "protect themselves from middlemen... and to seek methods and techniques to improve cultivation methods" (Dalodom). Farmers' Associations expanded rapidly in

number and membership. In 1962, Farmers' Associations were allowed to register as legal entities. When registered, they are entitled to transact business with others and hence to borrow and lend. The Director General of the Department of Agricultural Extension is the registrar of Farmers' Associations.

Table 15 shows the number and membership of Farmers' Associations over the period 1973-1977. In this period of rapid credit expansion, it is interesting to note the rapid increase in both the number of Associations and membership. The number of members per association remained essentially constant over this period, contrasting sharply with the increase in average size of Agricultural Cooperative Societies.

Once a Farmers' Association is formed, representation of the Extension Department with respect to the Association is limited to the village level. At higher levels, the Cooperatives Promotion Department is the supervisory agency. At the village level, the extension agent is responsible for certifying the amount and terms of loan applications by the Farmers' Association and authenticates statements made in the applications. He coordinates educational programs in production management of Association members, leaving to the Cooperatives Promotion Department responsibilities for educational programs in business management, buying and selling, and accounting. BAAC is given responsibility for collecting loans to members made with BAAC funds.

At one time it was thought that Farmers' Associations would evolve into Agricultural Cooperative Societies. However,

Table 15 **Farmers' Associations and Membership**
1973-1977

Year	Number of Associations	Number of Members	Members per Association
1973	568	62,824	111
1974	1,293	130,060	101
1975	2,411	258,191	107
1976	3,238	311,458	96
1977	3,454	344,539	100

Source: Department of Agricultural Extension

Table 16 **Agricultural Cooperative Societies**
and Membership
1973-1977

Year	Number of Societies	Number of Members	Members per Society
1973	771	324,043	420
1974	620	331,966	535
1975	555	363,115	654
1976	602	464,121	771
1977	664	468,808	706

Source: Cooperatives Promotion Department

it is apparent that many of the Farmers' Associations grow and assume many of the functions performed by Agricultural Cooperative Societies that resulted from amalgamation since 1968.

III.2.2. Agricultural Cooperative Societies

It seems clear that the long term strategy is for Agricultural Cooperative Societies to be the principal source of institutional credit for farmers. Table 16 shows the number and membership of Agricultural Cooperative Societies for the period 1973-1977. The reduction in number of Societies after 1973 resulted from the amalgamation policy. This, combined with a rise in membership, increased the size of the average Society sharply through 1976. In 1977, however, the number of Societies increased and the average size diminished. The Agricultural Cooperative Societies range widely, from 150 members to as many as 5,000. On the average, Cooperative Societies have six to seven times the membership of Farmers' Associations.

Table 17 shows the percentage of households represented in the combined membership of Farmers' Associations and Agricultural Cooperative Societies. The percentage is highest in the Central Region and lowest in the South. Cropland per member household varies little among the regions, suggesting a greater size homogeneity among group members in various regions than exists among all the households in those regions.

In the fiscal year beginning April 1, 1975, Agricultural Cooperative Societies had 1,245.3 million Baht in loans outstanding to Society members. During the following year they

Table 17 Membership in Farmers' Associations and Agricultural Cooperative Societies, By Region Thailand, 1974

Region	Members <u>a/</u> (Households)	All Farmer Households <u>b/</u>	Member House- holds as a percent of all households	Average Cropland per House- hold <u>c/</u>
Central	215,259	1,002,860	21.46	30
Northeast	216,467	2,117,943	10.22	34
North	166,619	1,274,459	13.07	26
South	64,297	664,738	9.77	28
TOTAL	663,272	5,060,000	13.11	30

a/ Excluding Land-Settlement and Fishery Cooperatives

b/ Source: The Fourth National Economics and Social Development Plan. The proportion of farmer households in 1970, National Statistics Organization.

c/ Measured in rai. Estimated by Agricultural Promotion Development: Registered Farmer Groups and Cooperatives Promotion Department; Cooperative Statistics in Thailand 1974.

lent 1,305.3 million Baht and received 656.0 million Baht in repayments. Thus, at the end of the fiscal year, March 31, 1976, they held 1,894.6 million Baht in loans outstanding to members (Cooperatives Promotion Department).

In total, perhaps as many as 30 percent of the farm families in Thailand now have access to institutional credit, nearly all through informal borrowing groups and many through Associations and Societies. Because of the prominence given to Agricultural Cooperative Societies in institutional lending, the remainder of this section will be limited to a discussion of their formation, operation and credit characteristics. As will be apparent, some of the problems faced by Agricultural Cooperative Societies are common as well to Farmers' Associations.

The basic law relating to Agricultural Cooperative Societies includes provisions for non-agricultural cooperative societies (Cooperative Societies Act). In the 1968 Cooperatives Societies Act, it is provided that "no person other than the cooperative societies registered under this Act and the Cooperative League of Thailand shall use the word 'cooperative' as the name, or a part thereof, of his business". Whatever similarities there may be between Agricultural Cooperative Societies and Farmers' Associations, they are distinguished in terms of nomenclature and hence in terms of reported statistics.

At least 150 members are required to start an Agricultural Cooperative Society. A new Society is eligible for a maximum of one million Baht loan from BAAC in the first year. This

loan limit serves, for practical purposes, to restrain the initial membership of the Society to the minimum, due to the attractiveness of dividing the maximum loan among the smallest number of members. The BAAC loan maximum is increased at the rate of 500,000 Baht per year, reaching three million Baht after three years. Thereafter, the loan maximum is ten times the capital stock of the Society. In practice, the maximum is fixed by the judgement of the BAAC, with guidance from the Bank of Thailand, concerning payment capabilities of the Society.

The time and formalities involved in reaching decisions on loan maximum appears to influence repayment performance of the Societies on loans received from BAAC. Due to the long time required to receive proceeds from new loans, the Societies are induced to simply relend funds received from members in repayment for previous loans. This factor is important in explaining the apparently high level of arrears in BAAC loans to Agricultural Cooperative Societies. In 1971, 54 percent of Societies reported making loans to members out of repayments received from members. The remaining 46 percent remitted all loan payments to BAAC (Cooperative League of Thailand).

The capital stock of an Agricultural Cooperative Society is provided by government subscription and stock sales to members. To be eligible to borrow, each member must own at least one share of stock priced at 50 Baht. One share entitles the member to borrow, if otherwise eligible, as much as 1,000 Baht. An additional share must be purchased for each added 1,000 Baht

borrowed. Patronage refunds are paid to members, both borrowers and nonborrowers, subject to the income of the Society. Each member receives dividends in proportion to the amount of business conducted with the Society. Dividends are limited to a maximum of eight percent of net profits earned by the Society in a given year. In some Societies, the member's dividend is paid in cash, while in others it is paid in additional shares. Members' liability is limited to the value of the stock owned in the Society. Thus for the farmer, the cost of borrowing from the Agricultural Cooperative Society includes the cost of stock ownership, less any dividend he might receive. In summary, a member's cost of borrowing from an Agricultural Cooperative Society expressed as a rate is given by

$$\frac{\text{Interest} + \text{Service Charges} - \text{Dividends}}{\text{Net Proceeds from Loan}}$$

where the loan disbursement is reduced by the value of stock increments required of the borrower. To convert the borrowing cost to a time rate requires, of course, accounting for the length(s) of time the loan proceeds are available to the borrower.

Several types of Agricultural Cooperative Societies exist. Some are restricted solely to credit. This often is the case with a newly formed Society. At the end of 1975, 26 of 555 Agricultural Cooperative Societies were organized for credit only. The number doubtless was smaller at the end of 1976 and subsequent years, as the organized Societies grew, and as amalgamation continued. If a Society is to assume other functions (e.g. buy and/or sell), hired managerial services are a

necessity. Indeed, it appears that only the use of informal borrowing groups makes it possible to conduct the credit function of a Society without hired managerial services. It is estimated that an Agricultural Cooperative Society must have at least 400 members to support a hired manager.

Some Societies add the sale of inputs to the credit function. Inputs are typically farm business inputs which are eligible for purchase with loan proceeds. Some loans for inputs are in kind, and the value of such loans are excluded from the sums reported elsewhere in this report. However, household goods and services (including funeral expenses) also are sold by some Agricultural Cooperative Societies, but loans from the Societies cannot be used for such purchases. The availability of household goods and services from the Society is undoubtedly important in reducing the reliance of members on merchant-lenders.

Some Societies purchase, process and sell commodities produced by members. Some of these functions are performed at the village level. Others, for example rice milling, occur at district or provincial levels. Some of the problems associated with marketing functions will be discussed later. Still other Societies are organized for investment in fixed assets, such as irrigation and other land improvements.

The recruitment and retention of effective managers is an important problem, especially in the large multi-purpose Agricultural Cooperative Societies. Many managers are recruited

from existing personnel in the Agricultural Cooperative Societies, while others are recruited from vocational schools. A goal for the future, as stated by the Cooperative League of Thailand, is to require university degrees for managers. Currently, many are recruited with as little as a grade 10 level of education.

The education and experience of managers is supplemented by short courses devised and conducted by the Cooperative League of Thailand, in collaboration with the Cooperatives Promotion Department and the Agricultural Cooperative Federation of Thailand. The Cooperatives Promotion Department contributes to administrative and control aspects of the courses (e.g. accounting). The Agricultural Cooperative Federation of Thailand contributes to marketing components of the courses (e.g. inventory management). Managers of the Agricultural Cooperative Societies also contribute by suggesting priorities in topics to be covered. High priorities are given by managers to credit and inventory management.

The cost of salaries for managers is prohibitive for an Agricultural Cooperative Society with as few as the minimum required 150 members. In the future management costs for newly formed Agricultural Cooperative Societies will be met by support from the Cooperatives Promotion Department in the form of funds from the Budget Bureau via NESDB. In the first five years of operation, the Cooperatives Promotion Department will meet the total cost of hired management. In the sixth year, the Agricultural Cooperative Society must meet 20 percent of

the cost and an additional 20 percent in each of the following four years. After 10 years, the entire cost of hired management is borne by the Society. Through its authority to channel such funds to NESDB, the Budget Bureau effectively has the capacity to regulate the number of Agricultural Cooperative Societies that can be initiated each year.

An important problem of Agricultural Cooperative Societies is the loss of effective managers. As a manager grows in skill, he becomes attractive to other farm-related business concerns, especially to commercial banks and to BAAC. The problem is exacerbated in a period of rapidly expanding agricultural loans, when the search for managerial skills is vigorous. A competent manager may be offered a salary much higher than that earned with the Society. In addition to providing higher salaries and greater security, the Societies might consider introducing a system-wide personnel recruitment service, including the possibility of greater mobility for managers and other hired personnel among Societies. Such a plan would add to the incentives of individual personnel to remain with the system and might also provide needed incentives to the Societies to offer competitive salaries and other rewards to skilled managers.

Commodity marketing constitutes a second problem and will likely become even more important as the scope of the Societies' functions expand. At the village and district levels private traders compete vigorously with the Society for members'

products. Such competition may indeed be healthy and desirable for many reasons, but it creates problems for the Society. Members are understandably reluctant to depend solely on potential patronage refunds to compensate for low prices offered by the Society for their products. Yet unless the Society acquires a substantial flow of commodities, the facilities of the system will be underused. The result is high cost operations and lowered patronage refunds. Further study of the prices the Agricultural Cooperative Societies can afford to pay to members may help to increase the use of storage and processing facilities. In many Societies the product procured from members is an extremely low percentage of their total production.

Chapter IV:

Performance of Rural Financial Markets in Thailand

A complete evaluation of the impact of expanded formal credit supplies in Thailand would involve two types of studies. One type would analyze the structure, performance and conduct of the financial markets themselves. The other would assess the impact of credit on agricultural development. In this section, some performance evidence is presented in addition to the information provided in the previous sections relative to the lending institutions. Then some evidence of Thailand's recent agricultural development is presented.

IV.1. Performance of the Formal Credit Market

Criteria for evaluating financial markets include the responsiveness of lenders to loan demand, the viability of institutions charged with meeting credit-related objectives, and the pricing of loan funds. The last two criteria are inter-related. Given intervention into the market by a new institution, pricing methods and levels are important unknowns and evolve through experimentation and competition (or failure in competition) among institutions. In this section, data are presented regarding the term structure of formal agricultural loans, the regional allocation of credit, the apparent use made of credit, and finally lending costs and loan repayment.

IV.1.1. Term Structure of Agricultural Loans

Credit for Thai farmers has traditionally been heavily weighted toward short-term maturities in spite of the importance of long-term assets, especially land, in farmers' asset portfolios. It was suggested above that commercial banks are making some progress in lengthening term structure, but most loans are still short-term. The BAAC loan volumes reported in Table 18 indicate a modest redirection toward intermediate loans. Intermediate loans rose from 26 percent in 1970 to 36 percent of total loans outstanding in 1976. Undoubtedly this change has helped finance the substantial mechanization that has occurred in Thai agriculture in recent years.

BAAC has provided a small amount of long-term credit to re-finance accumulations of debt. Some refinancing also has undoubtedly occurred with short-term and intermediate term debt. But the amount of long-term debt needed to provide significant debt relief far exceeds the modest amounts shown in Table 18. Demand will increase still further with future land and water development projects and increases in land values. The small supply of long-term credit in past years probably curbed the evolution of a land market and land-related developments.

IV.1.2. Regional Allocation of Credit

The regional allocation of credit is an important consideration because of wide inter-regional differences in income. Per capita income in the Northeast is especially low relative

Table 18 BAAC Loans, By Maturity and Principal Purpose, 1970-1976
(Million Baht)

Year	Short-term loans			Inter- mediate loans	Long term loans	
	Principal Crops	Produce Loans	Other		Refinance old debts ^{a/}	Development projects ^{b/}
1970	339.8		79.1	144.2	0.3	
1971	275.0		89.2	144.2	1.0	
1972	347.9		121.2	199.3	2.6	
1973	406.6		125.5	241.1	0.5	
1974	659.0	2.2	169.6	364.1	8.7	
1975	1013.0	4.7	280.5	708.8	88.5	5.7
1976	1517.1	3.9	430.2	1159.6	74.1	48.9
Percent (1976)	46.9	0.1	13.3	35.9	2.3	1.5

^{a/} Begun as a loan category in 1968.

^{b/} Begun as a loan category in 1975.

Source: BAAC

to other regions. Social infrastructure has been less well developed and financial services are less available in lower income regions.

Table 19 reports the regional distribution of BAAC activities in 1971 and 1976. BAAC added one branch in each region except the Northeast. Nonetheless, it increased by 42 percent the districts served by its branches in the Northeast, more than in all other regions except the South. The number of clients increased by 206 percent in the Northeast, more than in any other region and far exceeded the 131 percent increase for the country as a whole. The increase in BAAC loans outstanding was 105 times in the Northeast, somewhat more than for the country as a whole (95 times) and for the Central Plains as well (89 times) where the loan volume is substantially higher than in other regions. Only the South surpassed the Northeast in percentage increase of loan volume.

The only commercial bank data obtained which reports regional allocation of credit is for the Thai Farmers' Bank. At the end of 1977, outstanding credit of the Agricultural Credit Section was reported in percentages by region as follows: North - 25, Northeast - 21, East - 16, Central - 36, and South - 2 (achawasamit).

IV.1.3. Administrative Costs and Loan Repayment

Viability of formal financial institutions is a critical performance criterion. The problems faced in developing viable credit institutions center on (a) controlling default rates,

Table 19 BAAC Facilities, Outreach and Loan
Volumes By Region
1971 and 1976

<u>Region and Year</u>	<u>Number of Branches</u>	<u>Number of Districts Served</u>	<u>Number of Clients</u>	<u>Loans (Mil. B)</u>	
				<u>Made</u>	<u>Out- standing</u>
Central					
1971	19	136	93,171	9.2	16.5
1976	20	156	174,951	1330.9	1475.8
		+14.7%	+87.8%		
North					
1971	13	89	73,192	6.5	12.5
1976	14	116	158,265	872.3	1075.4
		+30.3%	+116.2%		
Northeast					
1971	16	109	62,281	6.5	8.1
1976	16	155	190,804	689.9	854.0
		+42.2%	+206.4%		
South					
1971	7	52	27,443	2.3	3.6
1976	8	77	80,767	334.6	436.9
		+48%	+194.3%		
Kingdom					
1971	55	386	262,087	24.4	40.6
1976	58	504	604,787	3227.8	3842.0
		+30.6%	+130.8%		

Source: BAAC

- (b) holding administrative costs to tolerable levels and
- (c) providing services to borrowers that are competitive with those provided by informal lenders.

The importance of the first two factors is clearly revealed in the definition of lending costs, LC:

$$LC = F + A + \left(\frac{D}{1-D} \right) (1 + F + A)$$

where F is the cost of funds to the lender,

A is the cost of administering loans, and

D is the default rate.

An interesting feature of this relationship is the multiplicative effect of the default rate. The reason for this is straightforward. Default results in the loss not only of principal and interest but also in the costs of funds and administration committed to loans.

Little information is available on loan repayment to commercial banks, and what is available is dated. The Bangkok Bank reported that accumulated past due accounts (6 months overdue) and accumulated past debt (over 18 months overdue) together represented approximately 1.0 to 1.5 percent of accumulated loan disbursements. The upper level was encountered in 1973, followed by a downtrend in this statistic until it reached its lowest level in 1975. The Bank reported few pending legal collection cases because they were too expensive and time consuming (Himathongkam).

The information obtained on the repayment performance of

farmers borrowing from Agricultural Cooperative Societies is also dated. As shown in Table 20, there appears to have been a deterioration in repayment from 1973 to 1975.

Information on BAAC loans made to Agricultural Cooperative Societies along with repayments for the 1967-1976 period is presented in Table 21. In every year except 1969, loans repaid are less than loans made; therefore there is a steady accumulation of loans outstanding. The ratio of loans made to loans outstanding at the beginning of the year fell from .58 to .41 over this period. As mentioned earlier, some Societies prefer to relend funds received as payments from members rather than repay BAAC. Thus by not repaying BAAC, they augment the funds made available to farmers.

The most detailed information on loan repayment is available from BAAC on loans to individual farmers made largely through informal borrowing groups. Table 22 shows principal collected as a percent of matured principal for 1970 through 1977. The implied default rate ranged from just over 20 to almost 50 percent and, therefore, is destructively high. Caution is needed, however, in interpreting these data. Some of the matured principal may in fact be eventually recovered as borrowers repay past due loans. However, a default rate of even half the amounts implied by these data would still be intolerably high for the level of interest rates currently charged on loans. The contribution of a 12 percent default rate to lending costs is given by the relationship, $\left(\frac{.12}{1-.12}\right)(1 + F + A)$. Assume costs

Table 20 Loans Due and Repaid by Members
of Agricultural Cooperative Societies
1973-1975
(Million Baht)

Year	Loans Due	Loans Repaid	
		Total	Percent of Loans Due
1973	711.3	404.8	56.9
1974	914.0	470.5	51.5
1975	1,351.3	651.5	48.2

Source: Auditing Department, Ministry of Agriculture
and Cooperatives

Table 21 Loans and Repayments of Agricultural
Cooperative Societies with BAAC
1967-1976
(Million Baht)

Year	Loans Outstanding January 1	Loans Made to Societies During Year	Loans Repaid by Societies During Year	Loans Outstanding December 31
1967	217.39	125.07	95.84	259.19
1968	259.19	135.33	129.13	295.76
1969	295.76	129.46	132.67	317.59
1970	317.59	167.56	106.47	409.08
1971	409.08	164.04	73.18	539.45
1972	539.45	244.63	134.64	681.49
1973	681.49	245.76	203.22	785.29
1974	785.29	388.66	217.37	966.58
1975	966.58	866.13	190.69	1,642.36
1976	1,642.36	672.07 ^{a/}	299.77 ^{a/}	2,069.66 ^{a/}

^{a/} As of September 30, 1976.

Source: BAAC

Table 22 Principal Collected as a Percent of
Matured Principal, BAAC Loans to Individuals
1970-1977

Year	Percent
1970	72.5
1971	50.7
1972	55.7
1973	58.9
1974	72.6
1975	71.2
1976	77.7
1977	72.5

Source: BAAC

of loan funds of eight percent and administrative costs of six percent. Then, instead of lending costs of 26% ($.08 + .06 + .12$), they actually amount to 29.6%:

$$.08 + .06 + \left(\frac{.12}{1-.12}\right)(1 + .08 + .06) = .296$$

As default rates increase, their contribution to lending costs increases disproportionately.

Administrative costs also are important, especially in programs that require intensive monitoring on the use of loan proceeds. The annual costs of administering BAAC loans to individual farmers is given in Table 23. In 1976, 47.9 percent of administrative costs were comprised of personnel costs including salaries, wages and fringe benefits. Some of these costs vary with loan volume but many do not. Travel costs accounted for 5.4 percent and presumably vary with loan volume. The remaining 46.7 percent was not identified, but might well be largely fixed with respect to loan volume. Hence a substantial part of administrative costs do not vary with loan volume, but as loan volume increases, total administrative costs would be expected to decline somewhat as a percent of loan volume. This appears to have occurred in 1975 and 1976.

The data in Table 23 suggest an estimate of seven percent as an approximate expectation for future administrative costs. Assuming a 7 percent cost of funds (see Section II.4), a 7 percent cost of administration, and a 12 percent default rate, lending costs are:

$$\begin{aligned} \text{LC} &= .07 + .07 + \left(\frac{.12}{1-.12}\right) (1 + .07 + .07) \\ &= .14 + (.1364) (1.14) = 29.6\% \end{aligned}$$

Table 23 Annual Costs of Administering BAAC
Loans to Individual Farmers,
1970-1976

Administrative Costs as a Percent of:

<u>Year</u>	<u>Loans Made</u>	<u>Loans Outstanding</u>
1970	7.8	5.8
1971	12.6	7.6
1972	11.6	7.8
1973	11.5	8.1
1974	10.0	8.2
1975	8.5	7.3
1976	7.2	6.0

Source: BAAC

This amount far exceeds the 12 percent interest rate charged individual farmers. The rate charged farmers by Agricultural Cooperative Societies may exceed 12 percent, due to stock purchase requirements. Also lenders may charge an effective rate in excess of 12 percent if they charge loan service fees. However, information on the level of these charges, if any, are not available.

An important relationship can be observed between administrative costs and default rates. A substantial part of administrative costs are caused by the need to monitor borrowers' use of loan proceeds. Paradoxically, restraints on the use of loans (e.g. denying their use for consumption purposes) may increase default rates among small farm borrowers. If they cannot use institutional loans to finance consumption, they must rely on informal credit made available by lenders with effective sanctions to collect loans when due. Hence the amount left out of cash income to repay formal debt is limited.

There is another more subtle reason to suppose that restraints on the use of loans add to default rates as well as administrative costs. Credit with restraints is simply not as valuable to the borrower. He has less reason to protect his credit rating with institutional lenders who impose such restraints than he has with the informal lender who does not.

The considerations listed above, therefore, suggest three recommendations to increase the viability of formal lending institutions:

1. Increase interest rates so they better reflect lending costs.
2. Search for sanctions that are effective in curbing default rates. Group lending may be useful.
3. Consider modifying restraints on use of loan proceeds, thus lowering administrative costs and default rates.

IV.2. Rural Financial Markets and Agricultural Development

In attempting to assess the impact of expanded institutional credit on aggregate farm production and income in Thailand, this section will first present an overview of the general performance of the agricultural sector, particularly during the past decade. Trends in production, yields, use of new farm inputs, and income will be reviewed briefly. Finally, the possible effect of credit on this performance will be briefly discussed.

With an average rate of growth of over 5 percent during the past two decades, the agricultural sector of Thailand has performed reasonably well. However, most of the increase in production resulted from expansion in cultivated area rather than increased yields per unit of land cultivated. Agricultural productivity, as measured by yield trends, has either increased slowly or in some cases stagnated (Appendix Table 2). From 1965 to 1973, the annual compound growth rate in rice yield was less than .25 percent per year (Brannon, 1977).

According to available indicators, agricultural production has risen considerably since the mid 1960's. For some products increases have been especially rapid. Fishery production, for example, has increased more than tenfold from 1960 to 1976. Livestock production, however, has lagged behind crop production (Appendix Table 1).

Trends in yields are not as impressive as total production. Since 1960, considerable variations in yields of major crops have been observed. Rice yields, for example, increased from 256 kilograms per rai^{B/} in 1960 to 281 in 1963, dropped to 229 in 1968, increased to 292 in 1971, then dropped to 268 in 1974, and have finally begun to increase since 1974 (Appendix Table 2). Statistics for corn seem to follow the same trend except that yields started to decline again in 1976. Cassava yields appear to have been quite constant, especially since 1970. Sugar cane has had an upward trend, though it seems to have declined slightly since 1972. Kenaf and mungbeans have had downward trends.

Low productivity may partly be explained by the fact that much of Thai agriculture is still carried out under traditional conditions. It must be noted, however, that there has been a considerable increase in the use of purchased inputs, particularly of fertilizer and machinery, in recent years. Between 1966 and 1976, fertilizer consumption grew from 114,025 to

^{B/} One rai = 0.4 acres.

618,084 metric tons, an average increase of about 40 percent per year. This increase has been concentrated in the Central Plain, which accounted for 61 percent of the total fertilizer utilization as compared with 21, 11, and 6 percent in the Northeast, South, and North, respectively. In the past, fertilizer was used mainly in vegetable and rice production. However, in recent years it has been used increasingly in upland crops and fruit production. Even though fertilizer consumption has been increasing substantially, the consumption per rai has been too small to have any real effect on national yields. The amount of fertilizer per rai of rice was only 3.37 kilograms in 1971, though it increased to 7.4 kilograms in 1976. Nonetheless, this is far less than the fertilizer consumption of Taiwanese farmers, who average over 50 kilograms per rai (Agricultural Economics Division, 1977). Also, fertilizer use per rai for other crops has been much smaller than for rice (e.g., only 0.06 kilogram for corn and 1.1 kilograms for cassava in 1974). Only two crops appear to have a relatively high rate of fertilization: tobacco and sugar cane. These recorded fertilizer consumption per rai of 38 and 29 kilograms, respectively, in 1972. Thailand's low level of fertilizer consumption, even when compared to other Asian countries, is explained by the unfavorable price relationship between crop and fertilizer. For example, in 1976 4.1 kilograms of paddy were required to purchase one kilogram of fertilizer when compared with 2.5 in Indonesia and 0.5 in Taiwan (Brannon, 1977).

The rate of increase in farm mechanization has been substantial. In 1967, the total number of two- and four-wheel tractors was 19,540 units. It increased to 110,000 and 130,130 units from 1970 to 1975. Today, about 40 percent of Thai farmers use tractor power in their field preparation. Tractor use is concentrated largely in the Central Plain where most of the ploughing is done by contractors (Adulvidhya, 1977). Even though there is no evidence to suggest that tractors make any significant contribution to yield per rai, they have certainly facilitated the rapid expansion of cultivated area (previously forest). This, in turn, contributed to the rise in agricultural production in Thailand. Besides tractors, other sources of mechanical power, such as water pumps, threshers, and sprayers, have also been increasingly used.

Time-series data on input prices are not available to suggest how much of the increased quantity of agricultural credit might have been used to meet the rising cost of farm inputs. It is also not possible to study the inflationary effect of credit expansion on the input and product markets. Available data on fertilizer show a greater increase in price than that of agricultural products (fertilizer price index of 219.54 as compared with agricultural product price index of 174.5 in 1975). In 1976, as a result of government intervention in the fertilizer market, the price of fertilizer decreased substantially. Nevertheless, the fertilizer-product price relationship has remained unfavorable. As for other

purchased inputs, such as tractors, water pumps, pesticides, and sprayers, prices have increased substantially since early 1970's. Hence, a considerable part of the expanding credit must have been used by farmers to meet the increasing financial requirements due to rising input prices. Furthermore, data on price indices for agricultural products and on consumer and wholesale prices over the last decade also reveal a deteriorating trend in the terms of trade against the agricultural sector (see Appendix Tables 3 and 4).

As regards farm income, estimates by the Agricultural Economics Division, Ministry of Agriculture and Cooperatives are available only in certain years up to 1975. During the period 1970 to 1975, farm net cash income per household increased considerably from $\text{฿}3,530.9$ to $\text{฿}10,903.5$, with the increase during 1970 to 1973 being greater than 1973 to 1975. Income disparities among regions were quite substantial--farm income in the Northeast was only about half of that in the Central Plain. It appears, then, that in the long run farm income has tended to increase considerably but that income is unequally distributed across the regions and between farm and non-farm sectors. This problem has been of increasing concern to the Government, and there have been some efforts to solve it.

Few data are available regarding the role of credit in the increasing use of purchased inputs in Thai agriculture. Farm-level analysis suggests that over the past decade a major portion of credit was used for productive purposes and that a significant number of loans were used to purchase fertilizer,

farm implements and machinery. Recently, an increasing amount of credit has been used for land development projects, especially in the Central Plain (Onchan, 1977). Moreover, much credit in kind from the cooperatives and merchants takes the form of fertilizer, pesticides, and farm equipment. This type of loan has increased in quantity since early 1970 and should have had an impact on agricultural productivity in areas where it was available.

As noted above, lack of data makes it impossible to quantify the impact of recent changes in rural financial markets on the development of Thai agriculture. The acceptable overall performance of the agricultural sector during the past decade might be attributed to a variety of factors (for example, improved transportation and communication), one of which may be the expansion of institutional credit. However, to analyze the specific impact of credit on production and income, farm-level data are required. It was quite evident in a visit to a rice-growing village in Supanburi province, that credit provided through the agricultural cooperative has considerably affected the production and income of the farmers. Farmers have been able to save some money. Some have begun to purchase new inputs such as tractors and fertilizer. Others have been able to use the new inputs in increasing quantities. It appears that some farmers have reduced usage of commercial credit. Quite clearly, credit is more productively used in areas where agricultural infrastructure is readily available.

Credit alone will do little, if anything, to increase agricultural productivity in the absence of other supporting services.

Finally, some mention should be made on the distribution of the expanding institutional credit. Available data suggest that large farmers receive a greater proportion of loans from commercial banks than small farmers. However, there appears to be no significant difference in the distribution of cooperative loans among farms of different sizes. As regards the credit distribution among land tenure classes of farmers, it was found that full owners and part owners obtained sizeable proportions of loans from commercial banks and the BAAC, while tenants did not receive any credit from the two sources (Onchan, 1977). The unequal institutional credit distribution among farmers might have contributed to the persistent income disparities in Thai agriculture.

Chapter V:

Summary, Conclusions and Recommendations

V.1. Summary and Conclusions

In common with many Asian countries, Thailand has sought, since 1975, to expand substantially the flow of institutional loans to agriculture. As a result the percentage of Thai farmers reached by institutional credit has grown from less than 10 percent to more than 25 percent. From 1975 to 1977 commercial banks increased loans outstanding to agriculture and deposits with BAAC from approximately $\text{฿}4$ billion to $\text{฿}10.5$ billion. In the same period, total BAAC loans outstanding to farmers, Cooperative Societies and Farmers' Associations increased from $\text{฿}4.5$ billion to $\text{฿}8.3$ billion.

The RTG has used a combination of public and private sector institutions to accomplish this rapid expansion. The Bank of Thailand is the central coordinating institution. Each year it establishes, in negotiations with commercial banks, a quota for agricultural lending. The quota can be met by "direct" bank lending to farmers and cooperatives or by depositing funds with the BAAC. BAAC is the apex lending institution made responsible as the public sector institution for administering the flow of institutional loans to agriculture.

BAAC channels the funds from commercial banks and other sources in "direct" loans to agricultural borrowers and to Farmers' Associations and to Agricultural Cooperative Societies. In its "direct" lending it uses joint liability farmer groups as

a means of reducing administrative costs and of increasing the sanctions necessary to the control of arrears. The same technique is also used widely by commercial banks that make loans direct to agriculture (currently all 13 domestic banks and three of 16 foreign banks) and by Farmers' Associations and Agricultural Cooperative Societies.

To a degree perhaps unique among developing countries, Thailand has elected to use group techniques to organize institutional credit for agriculture and to meet credit-linked development objectives. Such a policy appears to conform readily with the history and cultural patterns of Thai agriculture, as agricultural cooperative organizations have existed in Thailand for at least 60 years.

Like several other countries, Thailand has chosen to increase agricultural credit more by mandate (e.g., quotas, interest rate maximums, constrained use of loan proceeds, etc.) than by incentives. The result is a system that is costly to the public sector, paternalistic with respect to farmers and has yet to demonstrate its viability. Apparent arrears and potential default rates are destructively high and ultimately threaten the continuance of the system. Allowable interest rates curb the use of savings as a means of funding the system, and the entire system is tilted towards lending rather than savings mobilization. Thus, the use of market mechanisms is severely limited.

In Thailand, as in other developing countries, an important

objective is to develop institutional alternatives to informal lenders. What appears to be needed is a set of specifications that would design the institution(s) in viable terms. Viability implies returns that cover costs of providing credit on terms that are superior for the farmer to credit from informal lenders.

Past policies have concentrated excessively on interest rate regulations and guided use of loan proceeds. But concessional interest rates invite diversion of funds from the intended small farmer to larger farmers. Restrictions on the use of loan proceeds add to administrative costs, due to monitoring requirements and, very likely, to default rates as well. Both policy provisions need to be reexamined.

In recent years Farmers' Associations and Agricultural Cooperative Societies have been reduced in number and increased in size. The objective is to increase their economic strength and to gain cost economies associated with size. The changes are especially marked in the case of the Societies, which appear to be the evolutionary goal of formal agricultural groups. However, as the Societies grow and increase the scope of their functions, the system is burdened with an increased need for managerial skills at the local unit level and with increased coordination problems for agencies that provide supervisory, regulatory, educational and other services.

Now is an appropriate time to reexamine the scope of functions to be assumed by the Associations and Societies, as well as the related problem of coordinating the specialized

agencies designed to furnish relevant services. For example, investments in infrastructure in the past decade have doubtless increased the competition among commodity buyers and processors. This may well account for observed difficulties among Societies in meeting competition from private traders - and thus high costs associated with underused storage and processing facilities.

At the same time, we recognize the complementary nature of a credit program associated with a marketing program. Should it be decided to curb marketing expansions among Associations and Societies, other means must be sought to strengthen the capacity to collect loans due. It remains to be seen whether the sanctions of the informal borrowing groups may yet provide such means.

Significant arrears are observed in debts owed to BAAC by Farmers' Associations and Agricultural Cooperative Societies, as well as in debt owed by farmers to Associations and Societies. Arrears in the debt to BAAC may be explained by incentives to relend member repayments instead of remitting them to BAAC and then borrowing new funds. The advantages of increased autonomy for Associations and Societies need to be considered, along with lines of credit. Perhaps policies in this direction will become more desirable as the skill level among management personnel is increased in Associations and Societies.

V.2. Recommendations

We see little need for massive external assistance, at this time, to increase the flow of institutional loan funds

to agriculture. Already more than one-fourth of Thai farmers are reached by institutional credit. This growth has occurred in a remarkably short period, leaving substantial problems of institutional adjustment and coordination to be solved. Efforts are needed to improve and consolidate the agricultural credit system before additional expansion occurs.

Studies are needed to determine specifications that must be met to assure viability of the credit system. Factors influencing returns must be included. Numerous studies of small farmers have suggested that flexibility in use of loan proceeds, timeliness of loan disbursement and reduced borrowing costs influence their demands for loans far more than interest rates. Yet higher interest rates might well facilitate institutional reforms necessary to such improvement. Default rates also might well be reduced (See Section IV for details).

Lending costs also must be studied. An important aspect of any study would be a review of the functional scope of Agricultural Cooperative Societies and Farmers' Associations. Increases in functional scope add to managerial burdens and to problems of coordination with servicing agencies. Given the scarcity of managerial resources, the efficiency of credit administrative is seriously affected. Consequently, the effects of functional scope on managerial requirements need to be examined. So do the alternatives for providing the managerial services. (See Section III for further details).

Finally, there is a need for studies to determine the effects of increased institutional credit on agricultural

productivity, rural incomes, demand for and supply of informal credit, etc. Such research is difficult, owing to the coincident effects of changes in price policy and investment in rural transportation and communications, all of which affect agriculture positively. It is disturbing that we could find little evidence that such studies had been or are being planned.

The nature of these recommendations suggest the desirability of establishing an evaluation and monitoring system to analyze and coordinate agricultural credit. This system might be placed within an existing institution (e.g., BOT, the new Evaluation Department of BAAC, or MOAC) or require the creation of an inter-agency unit. Substantial research talent is now available in Thailand in the government and in universities. This talent, if effectively used, could make major contributions to the monitoring and evaluation of agricultural credit. What is needed is an entity to take responsibility for the task, and organize the appropriate human and financial resources.

APPENDIX

Statistical Tables

Appendix Table 1. Index of Agricultural Production ^{a/}
Thailand, 1960-1976

Year	Index (1962=100)			
	Agricultural Production	Crop	Livestock	Fishery
1960	90.61	88.63	95.92	101.01
1961	97.56	97.09	96.84	107.29
1962	100	100	100	100
1963	103.70	101.80	104.69	128.55
1964	105.57	101.07	108.88	163.12
1965	124.04	122.20	118.07	168.57
1966	156.22	152.89	124.72	203.88
1967	146.23	140.39	145.62	270.16
1968	154.57	141.45	167.88	345.51
1969	170.21	159.54	171.50	401.57
1970	162.50	151.50	156.27	420.56
1971	172.17	158.90	176.63	463.4
1972	210.79	203.47	189.79	537.42
1973	309.15	319.37	202.57	720.04
1974	358.96	357.62	332.8	778.88
1975	384.92	382.91	374.03	814.39
1976	410.05	413.57	376.19	843.71

^{a/} Calculated from National Income of Thailand

Source: Ministry of Agriculture and Cooperatives, Selected Economic Indicators Relating to Agriculture, Bangkok, No. 84(2), April, 1977.

Appendix Table 2 a. Planted Area a/ and Yield b/ of Selected Crops,
Thailand, 1960-1976

Year	Rice		Maize		Cassava	
	Planted Area	Yield	Planted Area	Yield	Planted Area	Yield
1960	37,012	256	1,785	306	447	2.7
1961	38,619	256	1,916	321	621	2.8
1962	41,168	267	2,050	331	767	2.7
1963	41,229	281	2,612	353	875	2.4
1964	40,872	278	3,449	271	656	2.4
1965	40,961	268	3,605	283	637	2.3
1966	46,454	257	4,083	275	814	2.3
1967	41,612	231	4,138	318	880	2.3
1968	45,173	229	4,193	360	1,066	2.4
1969	47,400	283	4,248	400	1,193	2.6
1970	46,480	290	5,180	374	1,403	2.4
1971	47,043	292	6,368	361	1,384	2.3
1972	45,931	270	6,231	211	2,093	2.4
1973	52,270	285	7,172	326	2,674	2.4
1974	49,889	268	7,749	323	3,050	2.1
1975	55,602	275	8,200	349	3,078	2.2
1976	53,359	282	8,029	333	4,370	2.3

a/ 1,000 rai

b/ kg. per rai

Source: MDAC, Selected Economic Indicators Relating to Agriculture, Bangkok, No. 84(2), April, 1977.

Appendix Table 2 b. Planted Area a/ and Yield b/ of Selected Crops,
Thailand, 1960-1976

Year	Sugarcane		Kenaf		Mung beans	
	Planted Area	Yield	Planted Area	Yield	Planted Area	Yield
1960	986	5.5	877	208	327	184
1961	776	5.2	1,190	202	229	177
1962	636	5.0	712	192	310	173
1963	932	5.1	957	223	630	184
1964	1,014	5.0	1,365	222	632	174
1965	883	5.1	2,401	220	753	166
1966	778	4.9	3,314	200	850	155
1967	935	4.8	2,177	194	830	148
1968	1,137	5.2	1,585	199	1,250	147
1969	739	6.9	2,358	158	1,297	131
1970	862	7.6	2,631	145	1,493	99
1971	872	6.8	2,891	145	923	152
1972	1,133	8.4	2,951	145	1,284	149
1973	1,616	8.3	2,714	173	1,457	132
1974	1,935	7.5	2,524	152	1,293	145
1975	1,444	8.1	2,038	151	1,022	118
1976	3,118	7.5	1,009	181	2,492	111

a/ 1,000 rai

b/ kg. per rai

Source: MOAC, Selected Economic Indicators Relating to Agriculture, Bangkok, No. 84(2), April, 1977.

Appendix Table 3. Price Indices for Agricultural Products ^{a/}
Thailand, 1967-1976

Year	Paddy		Maize		Cassava		Sugarcane ^{b/}	Kenaf	Mung Beans	
	Farm Price	Bangkok Price	Farm Price	Bangkok Price	Farm Price	Bangkok Price	Farm Price	Farm Price	Farm Price	Bangkok Price
1967	100	112	100	116	100	88	-	100	100	110
1968	98.0	105	143.2	96	84.6	80	183.2	78.4	103.4	97
1969	86.1	102	95.1	109	138.5	75	85.8	112.6	103.4	83
1970	79.6	96	107.4	122	120.5	79	81.5	116.2	87.5	87
1971	59.7	78	84.0	118	130.8	102	84.7	133.5	85.2	134
1972	72.6	98	108.6	113	115.4	106	79.2	184.4	101.1	134
1973	113.6	137	175.3	174	84.6	135	100.0	176.6	106.5	160
1974	170.3	205	255.6	251	76.9	196	134.8	151.5	144.9	181
1975	185.2	213	229.6	247	105.1	176	198.1	172.5	151.7	240
1976	172.8	207	206.2	221	117.9	202	214.0	192.2	207.2	336

^{a/} Except as noted, farm index base year = 1967, Bangkok wholesale index base year = 1962.

^{b/} Base year - 1973.

Source: MOAC, Selected Economic Indicators Relating to Agriculture, Bangkok, No. 84(2), April, 1977.

Appendix Table 4. Consumer, Wholesale and Farm Input Price Indices,
Thailand, 1968-1977

Year	Consumer Price Index, Whole Kingdom a/	Percent Change over Previous Year	Wholesale Price Index, Whole Kingdom b/	Percent Change over Previous Year	Average Farm Input Price Index c/	Percent Change over Previous Year
1968	110.9	-	100.0	-		
1969	113.6	2.4	103.3	3.3		
1970	113.5	0	102.8	0.5		
1971	114.0	0.4	103.1	0.3		
1972	119.6	4.9	111.2	7.9		
1973	138.1	15.5	136.6	22.8		
1974	173.6	25.7	176.0	28.8	100	
1975	179.5	3.4	182.6	3.8	108.4	8.4
1976	186.0	3.6	189.8	3.9	109.4	0.9
1977	203.5	9.4	202.7	6.8	NA	

a/ October 1964 - September 1965 = 100

b/ 1968-100

c/ April-June 1974 = 100. This index was initiated in 1974.

Sources: Consumer and wholesale price index, Bank of Thailand, Monthly Bulletin, Vol. XVII, No. 12, December, 1977
Farm input price index, MOAC, Selected Economic Indicators Relating to Agriculture, Bangkok, No. 84(2), April, 1977.

Appendix Table 5. Average Net Cash Income Per
Agricultural Household, Thailand,
1970, 1973, and 1975

Region	1970	1973	1975
Central	5,908.87	12,547.19	15,798.87
East	3,460.80	12,528.50	16,744.04
West	3,507.68	15,739.60	22,199.32
North	3,702.90	9,592.80	10,663.59
Northeast	1,985.80	6,216.28	6,662.00
South	3,953.70	11,097.25	11,592.32
Average Whole Kingdom	3,530.90	9,294.70	10,903.50

Source: Division of Agricultural Economics, "Selected Economic Indicators Relating to Agriculture", 1977, and "Agricultural Statistics of Thailand, 1975-76", MOAC, 1977.

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